Habitat and Ecosystem Committee, Tuesday, September 15, 2026, 8:30 a.m. Until 10:30 a.m.

The Committee will receive a presentation on the Ecosystem Information Review project and a report from the Habitat and Ecosystem AP. The Committee will consider recommending approval of the revised Food Webs and Connectivity Policy and the Alterations to Riverine, Estuarine and Nearshore Flows Policy. The Committee will also review topics for a future meeting of the Habitat and Ecosystem Advisory Panel.

SEDAR Catch Advice and Data Committee, Tuesday, September 15, 2026, 10:45 a.m. Until 3:30 p.m.

The Committee will receive a report from the SEDAR Steering Committee, review assessment updates and the SEDAR schedule, and conduct the stock risk rating for hogfish, black grouper, and gag. The Committee will review terms of reference for red grouper, snowy grouper, and vermilion snapper. The Committee will review and approve an outline and timeline for the Standardized Bycatch Reduction Methodology review and receive an update on the Southeast Reef Fish Survey and the Southeast Area Monitoring and Assessment Program.

Snapper Grouper Committee, Tuesday, September 15, 2026, 3:45 p.m. Until 5 p.m., Wednesday, September 16, 2026, 8:30 a.m. Until 3:45 p.m., and Thursday, September 17, 2026, 8:30 a.m. Until 2:30 p.m.

The Committee will receive updates from the NMFS on amendments undergoing rulemaking and Exempted Fishing Permit applications. The Committee will continue discussion of Amendment 61 to the Snapper Grouper Fishery Management Plan to evaluate the composition of the Snapper Grouper Fishery Management Unit.

The Committee will discuss Amendment 44 to the Snapper Grouper Fishery Management Plan addressing jurisdictional and sector allocations of yellowtail snapper and mutton snapper, and Regulatory Amendment 39 to the Snapper Grouper Fishery Management Plan addressing sunsetting of Spawning Special Management Zones. The Committee will consider approving these two amendments for public hearings. The Committee will continue discussing Amendment 60 to the Snapper Grouper Fishery Management Plan addressing commercial management measures and receive a presentation on Vessel Monitoring Systems (VMS) and notification requirements. The Committee will review comments from public hearings held over the summer and approve all actions in the amendment. A public hearing on Amendment 60 will also be held, and comment will be accepted during the public comment period.

Wednesday, September 16, 2026, 4 p.m.—Public comment will be accepted from individuals attending the meeting in person and via webinar on all items on the Council's meeting agenda. The Council Chair will determine the amount of time provided to each commenter based on the number of individuals wishing to comment.

The Committee will continue discussing Regulatory Amendment 38 to the Snapper Grouper Fishery Management Plan, which addresses vessel limits for headboats, and will receive an update on the Snapper Grouper Management Strategy Evaluation (MSE) and the Wreckfish MSE. The Committee will provide comments and draft conclusions and recommendations for the Wreckfish Individual Transferable Quota Program Review. Lastly, the Committee will receive a report from the Blueline Tilefish Joint Sub-Committee and review and approve topics for the fall meeting of the Snapper Grouper AP.

Council Session II, Thursday, September 17, 2:45 p.m. Until 5 p.m.

The Council will hold elections for Chair and Vice Chair. The Council will then discuss a comprehensive amendment to address commercial trip limit sale and revise the abbreviated framework process. The Council will discuss potential modifications to the requirements for sea turtle release gear, management of cownose rays, and review and approve topics for the fall meeting of the Mackerel Cobia AP.

Council Session II, Friday, September 18, 8;30 a.m. Until 12 p.m.

The Council will review its workplan, reports from the committees that met during the week and the June 2026 report from the Executive Committee, review upcoming meetings, and discuss any other business as needed.

Documents regarding these issues are available from the Council office (see **ADDRESSES**).

Although non-emergency issues not contained in this agenda may come before this group for discussion, those issues may not be the subject of formal action during this meeting. Action will be restricted to those issues specifically identified in this notice and any issues arising after publication of this notice that require emergency action under section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act, provided the public has been notified of the Council's intent to take final action to address the emergency.

Special Accommodations

These meetings are physically accessible to people with disabilities. Requests for auxiliary aids should be directed to the Council office (see **ADDRESSES**) 5 days prior to the meeting.

Note: The times and sequence specified in this agenda are subject to change.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: August 25, 2026.

Rey Israel Marquez,

Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2026–17542 Filed 8–27–26; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XF907]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Year 1 of the Bremerton Waterfront Infrastructure Improvements Project in Puget Sound, Washington

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

ACTION: Notice; proposed incidental harassment authorization; request for comments on proposed authorization and possible renewal.

SUMMARY: NMFS has received a request from the United States Navy (Navy) for authorization to take marine mammals incidental to Year 1 of the Bremerton Waterfront Infrastructure Improvements Project in Puget Sound, Washington. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to take marine mammals incidental to the specified activities. NMFS is also requesting comments on a possible one-time, 1-year renewal that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorization.

DATES: Comments and information must be received no later than September 28, 2026.

ADDRESSES: Comments should be addressed to Permits and Conservation Division, Office of Protected Resources (OPR), National Marine Fisheries Service and should be submitted via email to *ITP.fleming@noaa.gov.* 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.

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments, including all attachments, must not exceed a 25-megabyte file size. All comments received are a part of the public record and will generally be posted online at *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act* without change. All personal identifying information (*e.g.,* name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Kate Fleming, OPR, 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). If such findings are made, 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).

National Environmental Policy Act

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

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

Summary of Request

On July 8, 2026, NMFS received a request from the Navy for an IHA to take marine mammals incidental to Year 1 of the Bremerton Waterfront Infrastructure Improvements 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 July 16, 2026. The Navy's request is for take of seven species of marine mammals, by Level B harassment and, for California sea lions (*Zalophus californianus*) and harbor seals (*Phoca vitulina*), 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 notes that the Navy provided information relevant to activities planned for the 2027 to 2028 work window (Year 1) in an application initially submitted with the intention of requesting promulgation of incidental take regulations and an associated Letter of Authorization for the first 5 years of a larger 15-year project. While the information and analysis associated with the Year 1 activities have been deemed adequate and complete for the purposes of this IHA, the Navy is in the process of substantially revising the planned activities and analysis for 2028 through 2032 (years 2 through 5). NMFS and the Navy anticipate that construction activities in years 2 through 5 would be analyzed under a future rule.

NMFS previously issued several incidental take authorizations (ITAs) to the Navy for similar work (90 FR 17419, April 25, 2025; 89 FR 47539, June 3, 2024; 84 FR 15963, April 17, 2019). The Navy complied with all the requirements (*e.g.,* mitigation, monitoring, and reporting) of the previous ITAs, and information regarding their monitoring results may be found in the Potential Effects of the Specified Activity on Marine Mammals and their Habitat section.

This proposed IHA would cover 1 year of a larger 15-year project. The Navy is in the process of revising its application to request incidental take authorization to cover the next 4 years of the project. The larger 15-year project involves construction of a new multi-mission dry dock (M2D2), and years 6 through 15 will be analyzed under future ITAs.

Description of Proposed Activity

Overview

The Navy has plans to construct a multi-mission dry dock at Puget Sound Naval Shipyard and Intermediate Maintenance Facility located at Naval Base (NAVBASE) Kitsap Bremerton over 15 construction seasons. During Year 1 of this project, the Navy proposes to install barge mooring anchors to support upcoming construction. Additionally, to ensure adequate pier capacity to accomplish mission requirements, the Navy proposes to begin construction of a new pier 2 to replace existing pier 4.

Dates and Duration

The proposed IHA would be valid for the statutory maximum of 1 year from the date of effectiveness. It will become effective upon written notification from the applicant to NMFS, but not beginning later than 1 year from the date of issuance or extending beyond 2 years from the date of issuance. In-water work would occur between July 16, 2027 and February 15, 2028, which reflects the implementation of a work window designed to protect fish species listed under the U.S. Endangered Species Act (ESA).

Construction is planned for approximately 11 days, up to 7 days per

week, during daylight hours only. However, project delays may occur due to a number of factors, including project funding, permitting requirements, availability of equipment and/or materials, weather-related delays, equipment maintenance and/or repair, and other contingencies.

Specific Geographic Region

The project is planned in Sinclair Inlet, located on the east side of the Kitsap Peninsula in Puget Sound, Washington (figure 1).

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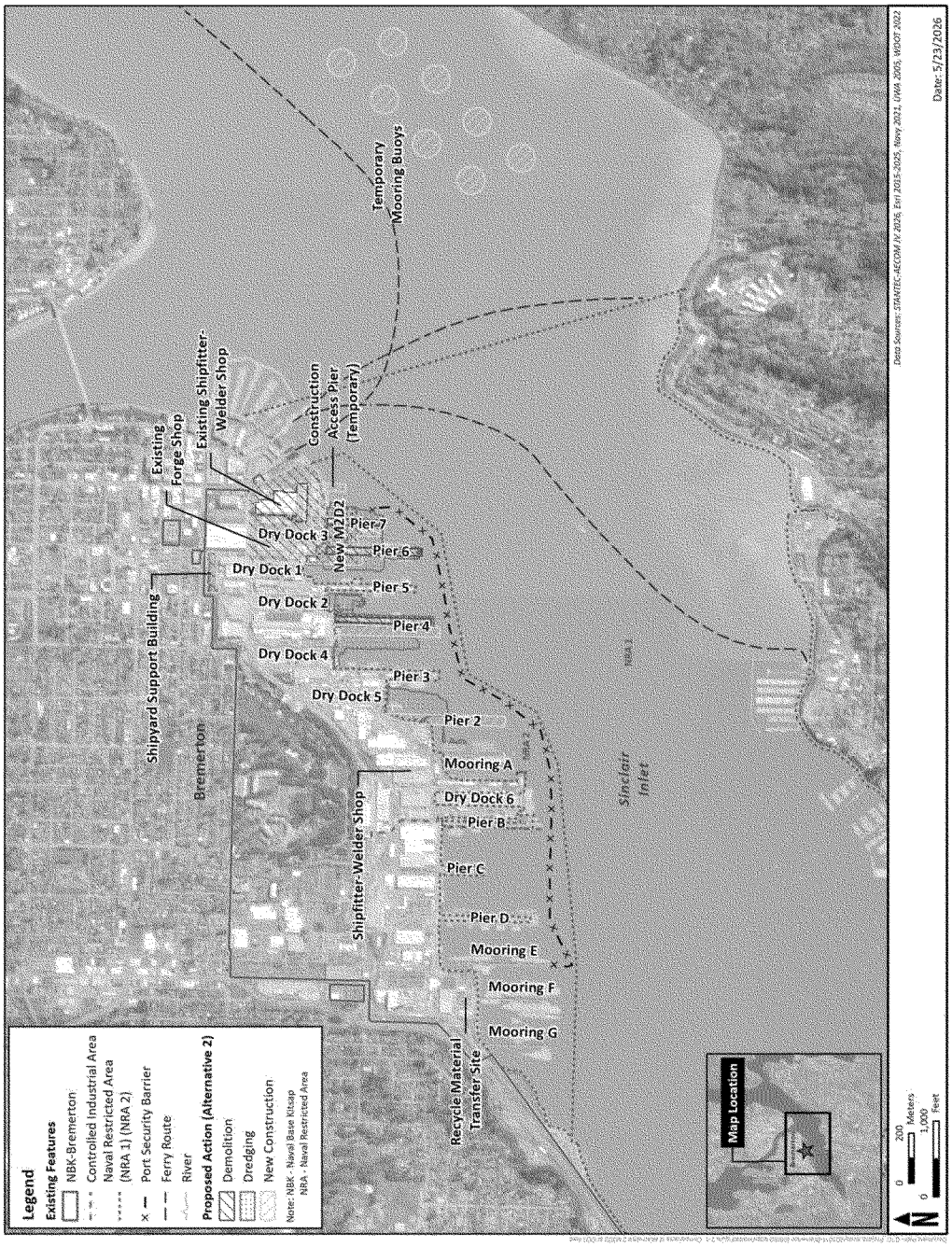

Figure 1. Locations of Year 1 Bremerton Waterfront Infrastructure Improvements Project activities. Pile driving is planned at pier 2 at NAVBASE Kitsap-Bremerton and Temporary Mooring Buoys in Sinclair Inlet</PHOTO>

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The inlet is connected to the main Puget Sound basin through Port Orchard Narrows and Rich Passage. Another relatively narrow waterway, Port Washington Narrows, connects Sinclair Inlet to Dyes Inlet. Pier 2 construction would be located at NAVBASE Kitsap-Bremerton, which occupies approximately 3 miles (5 kilometers (km)) along the northwestern shoreline of Sinclair Inlet. The temporary mooring anchors would be located in Sinclair Inlet, to the southeast of NAVBASE Kitsap-Bremerton and south of the mouth of Port Washington Narrows.

NAVBASE Kitsap-Bremerton contains multiple dry docks, piers, and wharves. In-water structures, shoreline fill, and erosion protection at NAVBASE Kitsap-Bremerton have resulted in a shoreline geometry and character that is quite different from undisturbed shorelines in Puget Sound. Bathymetry near existing piers and in turning basins immediately offshore has been altered by significant dredging to accommodate aircraft carriers and other Navy vessels. Water depths range from 40 to 45 feet (ft) (12 to 14 meters (m)), increasing from 45 to 50 ft (14 to 16 m) in dredged berthing areas. West of the project sites, further into the inlet, depths gradually decrease to less than 30 ft (9 m). For more details about the geographic setting of this project area, see section 2.2 (Geographic Region and Physical Settings of Activities) of the application.

Detailed Description of the Specified Activity

The Navy plans to construct portions of pier 2 and install temporary barge anchor mooring piles to support future construction. At pier 2, construction includes vibratory installing 36 36-inch (in) (91-centimeters (cm)) temporary steel pipe piles, 44 pairs of 24-in (61-cm) permanent steel sheet piles, and impact installing 14 24-in permanent concrete piles. Simultaneous pile driving of the same pile types is planned at this site (table 1). Construction of the temporary barge anchor mooring piles involves vibratory installation of eight 24-in temporary steel pipe piles. Only one pile would be installed at a time at this site. Although some project activities involve the installation of temporary piles, no pile removal is planned during the Year 1 Bremerton Waterfront Infrastructure Improvements Project.

Construction activities associated with the Year 1 Bremerton Waterfront Infrastructure Improvements Project that are not expected to produce noise that would exceed baseline levels at NAVBASE Kitsap-Bremerton include dredging for adequate draft pier-side berthing basins, backfilling behind the new sheet pile wall, installation of a cathodic protection system, and installation of new storm drain features. Additionally, a Hammerhead Crane would be demolished on a pier deck (above water level), and construction of a Radio Hill Complex Expansion and Forge Shop would occur inland at NBK Bangor. These activities are not expected to have the potential to result in incidental take of marine mammals. Therefore, only impact and vibratory pile driving are carried forward for further analysis.

Table 1 provides a summary of pile types, sizes, and numbers of piles to be installed over the 1-year period from July 16, 2027, through July 15, 2028.

TABLE 1—PILE DRIVING SUMMARY FOR YEAR 1 BREMERTON WATERFRONT INFRASTRUCTURE IMPROVEMENT PROJECT, INCLUDING PILE TYPES AND DRIVING DURATIONS

Component	Method	Size/type	Number of piles	Duration per pile (minutes or strikes)	Piles per rig	Rigs per day	Construction days
M2D2 Temporary Barge Anchor Mooring Piles	Vibratory	24-in steel pipe	8	50	4	1	2
Pier 2 Construction Bulkhead Temporary Piles	Vibratory	36-in steel pipe	36	50	5	2	4
Pier 2 Construction Bulkhead	Vibratory	24-in steel sheet	[1] 88	21	12	2	4
Pier 2 Construction Indicator Piles	Impact	24-in concrete	14	825	8	2	1

[1] Note that these 88 sheet piles are driven as pairs. Thus there will be 88 individual sheet piles installed as 44 interlocked pairs.

Proposed mitigation, monitoring, and reporting measures are described in detail later in this document (Proposed Mitigation and Proposed Monitoring and Reporting section).

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 likely and proposed to be 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 proposed to be 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 MAMMALS [1] WITH ESTIMATED TAKE FROM THE SPECIFIED ACTIVITIES

Common name	Scientific name	Stock	ESA/ MMPA status; strategic (Y/N) [2]	Stock abundance (CV, N_{min}, most recent abundance survey) [3]	PBR	Annual M/SI [4]
Order Artiodactyla—Cetacea—Mysticeti (baleen whales)						
Family Eschrichtiidae:						
Gray Whale	*Eschrichtius robustus*	Eastern North Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	131
Odontoceti (toothed whales, dolphins, and porpoises)						
Family Phocoenidae (porpoises):						
Dall's Porpoise	*Phocoenoides dalli*	CA-OR-WA	-, -, N	16,498 (0.61, 10,286, 2018)	99	≥0.66
Harbor Porpoise	*Phocoena phocoena*	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	*Zalophus californianus*	United States	-, -, N	257,606 (N/A, 233,515, 2014)	14,011	>321
Steller Sea Lion	*Eumetopias jubatus*	Eastern	-, -, N	36,308 (N/A,[5] 36,308, 2022)	2,178	93.2
Family Phocidae (earless seals):						
Harbor Seal	*Phoca vitulina*	Washington Inland Southern Puget Sound.	-, -, N	UNK (UNK,[6] UNK, 1999)	UND	3.4
Northern Elephant Seal	*Mirounga angustirostris*	California Breeding	-, -, N	194,907 (N/A, 88,794, 2023)	5,328	11.2

[1] Information on the classification of marine mammal species can be found on the web page for The Society for Marine Mammalogy's Committee on Taxonomy (*https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/*).

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

[3] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports.* CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance.

[4] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, 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.

[5] Nest is best estimate of counts, which have not been corrected for animals at sea during abundance surveys. Estimates provided are for the United States only.

[6] Abundance estimates are greater than 8 years old, so stock abundance is considered unknown. Pearson *et al.,* (2024) estimates the population abundance of the Washington Inland Southern Puget Sound stock of harbor seal to be 2,529.

As indicated above, all seven species (with seven managed stocks) in table 2 temporally and spatially co-occur with the specified activity to the degree that take is likely to occur. All species that could potentially occur in the proposed project area are included in table 3–1 of the IHA application. While humpback whales (Central America/Southern Mexico—CA/OR/WA; Mainland Mexico—CA/OR/WA; Hawai'i stocks), minke whales, and killer whales (southern resident and transient stocks) have been documented in the area, no take of these species is proposed for authorization.

Occurrence of these species within the project area is expected to be rare. In February 2026, the Navy provided the NMFS OPR with marine mammal observation data collected by The Whale Museum from locations in the project area (Sinclair Inlet) and nearby (Port Orchard, and Blake Island) between August 2022 and July 2024. In Sinclair Inlet, a minke whale was reported on 1 day in May 2024 (outside the project period) and one to two humpback whales were reported on 2 days in December 2022 and April 2024 (the latter date is also outside the project period). Southern Resident killer whales have only been observed in Sinclair inlet twice in the last 30 years (1997 and 2015). The data provided by the Navy show that transient killer whales more frequently visit Sinclair Inlet; however, the majority of reports occur outside the in-water work months (*i.e.,* July through February), with sightings reported on just 3 days during months when the project activities are planned (all in October). These species were not documented by PSOs monitoring for marine mammals during construction projects occurring within or near Sinclair Inlet (table 3). Given the rarity of these species in Sinclar Inlet and the short duration of activities proposed for Year 1, the Navy would avoid take of humpback, minke, and killer whales by implementing the measures described in the Proposed Mitigation and Proposed Monitoring and Reporting sections.

Marine mammal monitoring data collected by Protected Species Observers (PSOs) employed to monitor during construction projects (table 3), and local research groups contribute to our understanding of local occurrence of marine mammals near NAVBASE Kitsap-Bremerton and Sinclair Inlet (tables 4 and 5).

TABLE 3—MARINE MAMMAL MONITORING DURING CONSTRUCTION PROJECTS NEAR NAVBASE KITSTAP-BREMERTON AND SINCLAIR INLET, WASHINGTON

Project name	Location	Monitoring period	Monitoring days	Reference
Navy P454 Multi-Mission Drydock Test Pile Program.	NAVBASE Kitsap-Bremerton	August 22, 2023–November 1, 2023	22	Department of Navy (DoN) 2024.
Kitsap Transit Annapolis Passenger Ferry Dock Project.	Southern shoreline of Sinclair Inlet across from NAVBASE Kitsap-Bremerton.	December 12, 2019–January 22, 2020	8	Hamer Environmental, 2020.

TABLE 3—MARINE MAMMAL MONITORING DURING CONSTRUCTION PROJECTS NEAR NAVBASE KITSTAP-BREMERTON AND SINCLAIR INLET, WASHINGTON—Continued

Project name	Location	Monitoring period	Monitoring days	Reference
Washington State Department of Transportation Manette Bridge Replacement Project (2012).	Port Washington Narrows	July 2012–November 2012	52	Rand, 2012.
Washington State Department of Transportation Manette Bridge Replacement Project (2011).	Port Washington Narrows	August 2010–February 2011	52	Rand, 2011.

The Navy has conducted weekly shore-based pinniped surveys at NBK-Kitsap Bremerton since 2010 (Navy, 2025). Surveys were initially conducted once per month by boat, which allowed for counts along NBK Bremerton's Port Security Barrier (PSB) floats. Starting in 2014, the survey effort was expanded to include shore-based surveys and the number of surveys each month increased. During the last 6 survey periods (beginning in 2019–2020), the annual number of surveys conducted have been less variable than previous survey periods, ranging from 32 to 48 surveys annually rather than 10 to 52 surveys annually. As such, summary data from the last 6 survey periods are provided and used in consideration of take estimates. For each survey period, the Navy provides the average and maximum count by month. Tables 4 and 5 provide a summary of these metrics.

TABLE 4—MEAN OF THE MONTHLY MEAN COUNT FOR PINNIPED SURVEY PERIODS BETWEEN JANUARY 2019 TO FEBRUARY 2025

Species	2019–2020 (Jul–Feb)	2021–2022 (Jul–Feb)	2022–2023 (Jul–Feb)	2023–2024 (Jul–Feb)	2024–2025 (Jul–Feb)	All years (Jul 2019–Feb 2025, annually)
California Sea Lion	101	118	101	111	[1] 100	105
Steller sea lion [2]	.....	.....	.....	.....	2	2
Harbor seal	0.13	0	0.25	0.63	0	0.3

[1] The mean count for surveys conducted in February 2025 was not provided for California sea lions.
[2] Navy first began recording observations of Steller sea lions at Bremerton during their weekly pinniped monitoring surveys in 2024.

TABLE 5—MEAN OF THE MONTHLY MAXIMUM COUNT FOR PINNIPED SURVEY PERIODS BETWEEN JANUARY 2019 TO FEBRUARY 2025

Species	2019–2020 (Jul–Feb)	2021–2022 (Jul–Feb)	2022–2023 (Jul–Feb)	2023–2024 (Jul–Feb)	2024–2025 (Jul–Feb)	All years (Jul 2019–Feb 2025, annually)
California Sea Lion	120	155	128	145	111	132
Steller sea lion [1]	.....	.....	.....	.....	4	4
Harbor seal	0.25	0	0.63	0.75	0.25	1.6

[1] Navy first began recording observations of Steller sea lions at Bremerton during their weekly pinniped monitoring surveys in 2024.

Gray Whale

During migration from Mexico to the Arctic, a subpopulation of the Eastern North Pacific stock of gray whales, commonly referred to as the Pacific Coast Feeding Group (PCFG), stops and feeds along the coasts of Oregon and Washington including the Northern Puget Sound (Calambokidis *et al.,* 2024). A subgroup of the PCFG that feed in the Puget Sound, recently termed as ''Sounders'' gray whales occurs in highest concentrations on the southern ends of Whidbey and Camano Islands in the North Puget Sound, and is an area that corresponds to a Biologically Important Area (BIA) for feeding gray whales (Calambokidis *et al.,* 2024). This is well outside the project area, but gray whales occasionally occur within the central and south Puget Sound.

No gray whales were observed during any PSO monitoring conducted during construction projects located near NAVBASE Kitstap-Bremerton and Sinclair Inlet, Washington (table 3). However, according to marine mammal observation data collected by The Whale Museum and provided by the Navy, single gray whales were reported on 5 days between October 2022 and April 2024 in Sinclair Inlet.

Between 2019 and 2023, there was an Unusual Mortality Event (UME) for gray whales along the West Coast from Mexico through Alaska. While most of the strandings associated with this UME were documented along Washington's Pacific coast, 14 gray whale strandings were reported in inland waters between the months of February and July, 1 of which was near Bainbridge Island (May 2020), 1 in Sinclair Inlet (March 2021), and 1 near Seattle (April 2019).

Although no gray whale UMEs are currently active, Cascadia Research Collective is actively monitoring high numbers of stranded gray whales along the Washington Coast and in Puget Sound this year (2026). As of July 24, 2026, 30 stranded gray whales have been reported in these waters, with malnutrition commonly documented. At least 10 whales also had blunt force trauma consistent with vessel collision and 1 had recent evidence of entanglement (Cascadia Research Collective, *https://cascadiaresearch.org/working-list-of-gray-whale-strandings-in-2026/,* retrieved July 24, 2026).

Dall's Porpoise

Within the inland waters of Washington and British Columbia, this species is most abundant in the Strait of Juan de Fuca east to the San Juan Islands (Nyswander *et al.,* 2005). Dall's porpoises may be most abundant in Puget Sound during the winter (Nysewander *et al.,* 2005; Washington Department of Fish and Wildlife

(WDFW) 2007). While sightings have decreased in more recent decades (Evenson *et al.,* 2016), Dall's porpoises may occur in all areas of inland Washington at all times of year, but with different distributions throughout Puget Sound from winter to summer.

Dall's porpoises were not observed during monitoring efforts associated with projects occurring in or near Sinclair Inlet (DoN, 2024; Hamer Environmental, 2020; Rand, 2011, 2012).

Harbor Porpoise

Harbor porpoises are known to occur year-round in the inland trans-boundary waters of Washington and British Columbia, Canada and along the Oregon/Washington coast (Barlow *et al.,* 1988). There was a significant decline in harbor porpoise sightings within southern Puget Sound between the 1940s and 1990s but sightings have increased seasonally more recently (Carretta *et al.,* 2019). Annual winter aerial surveys conducted by the WDFW from 1995 to 2015 revealed an increasing trend in harbor porpoise in Washington inland waters, including the return of harbor porpoises to Puget Sound. The data suggest that harbor porpoises were already present in Juan de Fuca, Georgia Straits, and the San Juan Islands from the mid-1990s to mid-2000s, and then expanded into Puget Sound and Hood Canal from the mid-2000s to 2015, areas they had used historically but abandoned (Evenson *et al.,* 2016).

PSOs associated with the Navy's P454 Multi-Mission Drydock Test Pile Program at NAVBASE Kitsap-Bremerton observed one group of two harbor porpoises (DoN, 2024). Harbor porpoises were not reported by PSOs monitoring for marine mammals during other construction projects conducted in Sinclair Inlet (Hamer Environmental, 2021) and the mouth of Port Washington Narrows (Rand, 2011, 2012).

California Sea Lion

Only male California sea lions migrate into Pacific Northwest waters, with females remaining in waters near their breeding rookeries off the coast of California and Mexico. They use haulout sites along the outer coast, Strait of Juan de Fuca, and in Puget Sound. Haulout sites are located on jetties, offshore rocks and islands, log booms, marina docks and floats, and navigation buoys. This species also may be frequently seen resting in the water, rafted together in groups in Puget Sound.

In Washington inland waters, California sea lions are typically present most of the year though occurrence is low in mid-June through August, as most California sea lions would be returning to rookeries in California waters (Navy, 2025). As described below, surveys at the naval installations indicate that a few individuals remain year-round (Navy, 2025).

California sea lions have been documented in shore-based and boat-based surveys at NAVBASE Kitsap-Bremerton since 2010 (Navy, 2025). The maximum number of California sea lions documented on PSB floats at one time was 412 individuals (October 2019) (Navy, 2025). Using data from the most recent 6 survey periods completed during project months (July–February), the average of the monthly maximum count of California sea lions hauled out on the PSBs is 132 animals, and the average of the monthly mean count is 105 animals.

Additionally, California sea lions were consistently observed by PSOs during construction projects in Sinclair Inlet and the mouth of Port Washington Narrows: 332 groups of California sea lions with an average group size of 13 reported during the Navy's P454 Multi-mission Drydock Test Pile Program (DoN, 2024); 4 groups of 1 individual (for a total of 4 California sea lions) reported during Kitsap Transit's Annapolis Passenger Ferry Dock Project (Hamer Environmental, 2020); 256 individuals reported during WSDOT's Manette Bridge Replacement project in 2012 (Rand, 2012); and 72 individuals reported during WSDOT's Manette Bridge Replacement Project in 2011 (Rand, 2011).

Steller Sea Lion

Steller sea lions use haulout locations in Puget Sound and may occur at the same haulouts as California sea lions. The Navy indicates that between 2010 and 2023, only one Steller sea lion was detected (September 2022; see section 4.8.3 of the application), though NMFS notes the Navy first began recording observations of Steller sea lions at Bremerton during their weekly pinniped monitoring surveys in 2024 (Navy, 2025). Between July 2024 and February 2025, the mean of the monthly maximum count of Steller sea lions was four and the average of the monthly mean count was two.

Steller sea lions were rarely observed by PSOs during monitoring for construction projects conducted within or near the project area: 8 individuals were reported during 52 days of monitoring at the mouth of Port Washington Narrows between July and November 2012 (Rand, 2012). Steller sea lions were not observed by PSOs during any other monitoring conducted during construction projects in Sinclair Inlet (DoN, 2024; Hamer Environmental, 2020) and the mouth of Port Washington Narrows (Rand, 2011).

Harbor Seal

Harbor seals are the most common pinniped in the inland marine waters of Washington year-round (Calambokidis and Baird, 1994a). Harbor seals haul out on rocks, reefs and beaches, and feed in marine, estuarine and occasionally fresh waters. 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).

No haulout sites have been identified at NAVBASE Kitsap-Bremerton, but there is a haulout across Sinclair Inlet, approximately 0.7 mile (1.1 km) away. According to the Navy's pinniped haulout monitoring program, harbor seals are observed inconsistently and in small numbers at Bremerton between July and February (Navy, 2025). In its application, the Navy indicates that harbor seals were primarily observed swimming in the water near piers and other structures but were occasionally documented hauled out on floats and rarely seen hauled out on docked submarines. Most observations of harbor seals were of individuals, but on some occasions, multiple seals were seen in the same vicinity during surveys. Between the 2019–2020 survey period and the 2024–2025 survey period (for a total of 6 survey periods, July through February only), the mean of the monthly maximum count of harbor seals was one, while the mean of the monthly mean count during this time was 0.3 (Navy, 2025). Harbor seal pupping has not been documented at NAVBASE Kitsap-Bremerton.

In its application (see section 4.11.3), the Navy describes that dead harbor seals are occasionally located during these surveys or reported by shipyard personnel, with causes of death, if evident, including net entanglement, prematurely born pups, gunshot wounds, and predation wounds. The Navy indicates that in 2022, nine harbor seal carcasses were recorded at NAVBASE Kitsap-Bremerton. Many of the carcasses were too decomposed to determine cause of death.

Harbor seals are more consistently observed by PSOs during construction projects in Sinclair Inlet and the mouth of Port Washington Narrows: 207 sightings of single harbor seals were reported during the Navy's P454 Multi-Mission Drydock Test Pile Program, for

an average of 9 harbor seals per day; 40 individuals (an average of 5 per day) were observed across Sinclair Inlet during Kitsap Transit's Annapolis Passenger Ferry Dock Project (Hamer Environmental, 2020); 586 harbor seals were observed during WSDOT's Manette Bridge Replacement project in 2012 (Rand, 2012), and 194 harbor seals were observed in 2011 (Rand, 2011), which resulted an average group sizes of 11 and 4 harbor seals, respectively. However, the Rand (2012) report does not appear to have accounted for re-sightings and likely overestimates the number of harbor seals present during monitoring.

Northern Elephant Seal

The occurrence of elephant seals in Puget Sound is unpredictable. No regular haulouts exist in Puget Sound; individual elephant seals occasionally haul out for 2 to 4 weeks to molt, usually during the spring and summer and typically on sandy beaches (Calambokidis and Baird, 1994). These animals are usually yearlings or subadults and their haulout locations are unpredictable. A female elephant seal has been reported hauled out in Mutiny Bay on Whidbey Island, more than 30 km to the north of NAVBASE Kitsap-Bremerton, periodically since 2010. She was observed alone for her first three visits to the area, but in March 2015, she was seen with a pup. Since then, she has produced three more pups between 2018 and 2021 (Orca Network, 2025). Northern elephant seals generally give birth in January, but this individual has repeatedly given birth in March. She typically returns to Mutiny Bay in April and May to molt. Her pups have also repeatedly returned to haul out on nearby beaches, and one has also had a pup (Orca Network, 2025). Northern elephant seals are rarely reported near Bainbridge Island, which is much closer to the project site, at just under 5 km from NAVBASE Kitsap-Bremerton (Wakayama, 2025).

Northern elephant seals have not been detected at NAVBASE Kitsap-Bremerton, Sinclair Inlet (DoN, 2024; Hamer Environmental, 2020) or Port Washington Narrows (Rand, 2011, 2012) during PSO monitoring for construction projects occurring in these areas nor have they been reported during the Navy's pinniped monitoring program (Navy, 2025).

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). 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, 2019). We note that the names of two hearing groups and the generalized hearing ranges of all marine mammal hearing groups have been recently updated (NMFS, 2024) as reflected below in table 6.

TABLE 6—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, *Kogia,* river dolphins, Cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	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.e.,* all species within the group), where individual species' hearing ranges may not be as broad. Generalized hearing range chosen based on approximately 65 dB threshold from composite audiogram, previous analysis in NMFS (2018), and/or data from Southall *et al.* (2007, 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 frequency ranges, please see NMFS (2024) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section discusses how components of the specified activity may impact marine mammals and their habitat. The Estimated Take of Marine Mammals section includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis and Determination section considers the content of this section, the Estimated Take of Marine Mammals section, and the Proposed Mitigation section to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and whether those impacts are reasonably expected to, or reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

Acoustic effects on marine mammals during the specified activities could occur from vibratory and impact pile installation. The effects of underwater noise from the Navy's proposed activities have the potential to result in Level B harassment of marine mammals in the project area and, for some species as a result of impact pile driving, Level A harassment.

The Navy's proposed activities include the installation of approximately 146 steel or concrete piles with diameters of 24-in (including sheet piles) and 36-in. There are a variety of types and degrees of effects on marine mammals and their habitat (including prey) that could occur as a result of the specified activities. Below we provide a brief description of the types of sound generated by specified activities, the general impacts on marine mammals and their habitat from these types of activities, and a related project-specific analysis with consideration of the proposed mitigation measures.

Description of Sound Sources for Specified Activities

Activities associated with the project that have the potential to incidentally take marine mammals through exposure to sound would include vibratory and impact pile driving.

Impact hammers typically operate by repeatedly dropping and/or pushing a heavy piston onto a pile to drive the pile into the substrate. Sound generated by impact hammers is impulsive, characterized by rapid rise times and high peak sound pressure levels, a potentially injurious combination (Hastings and Popper, 2005). Vibratory hammers install piles by vibrating them and allowing the weight of the hammer to push them into the substrate, and extract piles by using vibration to break the sediment friction and allow a crane to pull the piles out. Vibratory hammers typically produce less sound (*i.e.,* lower sound pressure levels) than impact hammers. Peak sound pressure levels (SPLs) may be 180 dB or greater, but are generally 10 to 20 dB lower than SPLs generated during impact pile driving of the same-sized pile (Oestman *et al.,* 2009; California Department of Transportation (CALTRANS), 2015, 2020). Sounds produced by vibratory hammers are non-impulsive; compared to sounds produced by impact hammers, they have a slower rise time, reducing the probability and severity of injury, and the sound energy is distributed over a greater amount of time (Nedwell and Edwards, 2002; Carlson *et al.,* 2005).

The likely or possible impacts of the Navy's proposed activities on marine mammals could involve both non-acoustic and acoustic stressors. Potential non-acoustic stressors could result from the physical presence of the equipment and personnel; should any animals occur near the project site(s) close enough to be harassed due to the presence of equipment or personnel, we expect they would have already traveled through the Level B and/or Level A harassment zones for the specified in-water activities and, thus, would already be considered taken by acoustic impacts. Therefore, any impacts to marine mammals are expected to be primarily acoustic in nature.

Potential Effects of Underwater Sound on Marine Mammals

The introduction of anthropogenic noise into the aquatic environment from pile driving is the primary means by which marine mammals may be harassed from the Navy's specified activity. Anthropogenic sounds span a broad range of frequencies and sound levels and can have a range of highly variable impacts on marine life from none or minor to potentially severe responses depending on received levels, duration of exposure, behavioral context, and various other factors. Broadly, underwater sound from active acoustic sources, such as those in the Project, can potentially result in one or more of the following: temporary or permanent hearing impairment, non-auditory physical or physiological effects, behavioral disturbance, stress, and masking (Richardson *et al.,* 1995; Gordon *et al.,* 2003; Nowacek *et al.,* 2007; Southall *et al.,* 2007; Götz *et al.,* 2009).

We describe the more severe effects of certain non-auditory physical or physiological effects only briefly as we do not expect that use of impact and vibratory pile driving are reasonably likely to result in such effects (see below for further discussion). Potential effects from impulsive sound sources can range in severity from effects such as behavioral disturbance or tactile perception to physical discomfort, slight injury of the internal organs and the auditory system, or mortality (Yelverton *et al.,* 1973). Non-auditory physiological effects or injuries that theoretically might occur in marine mammals exposed to high level underwater sound or as a secondary effect of extreme behavioral reactions (*e.g.,* change in dive profile as a result of an avoidance reaction) caused by exposure to sound include neurological effects, bubble formation, resonance effects, and other types of organ or tissue damage (Cox *et al.,* 2006; Southall *et al.,* 2007; Zimmer and Tyack, 2007; Tal *et al.,* 2015). The project activities considered here do not involve the use of devices such as explosives or mid-frequency tactical sonar that are associated with these types of effects.

The degree of effect of an acoustic exposure on marine mammals is dependent on several factors, including, but not limited to, sound type (*e.g.,* impulsive vs. non-impulsive), signal characteristics, the species, age, and sex class (*e.g.,* adult male vs. mom with calf), duration of exposure, the distance between the noise source and the animal, received levels, behavioral state at time of exposure, and previous history with exposure (Wartzok *et al.,* 2004; Southall *et al.,* 2007). In general, sudden, high-intensity sounds can cause hearing loss as can longer exposures to lower-intensity sounds. Moreover, any temporary or permanent loss of hearing, if it occurs at all, will occur almost exclusively for noise within an animal's hearing range. We describe below the specific manifestations of acoustic effects that may occur based on the activities proposed by the Navy.

Richardson *et al.* (1995) described zones of increasing intensity of effect that might be expected to occur in relation to distance from a source and assuming that the signal is within an animal's hearing range. First (at the greatest distance) is the area within which the acoustic signal would be audible (potentially perceived) to the animal but not strong enough to elicit any overt behavioral or physiological response. The next zone (closer to the receiving animal) corresponds with the area where the signal is audible to the animal and of sufficient intensity to elicit behavioral or physiological responsiveness. The third is a zone within which, for signals of high intensity, the received level is sufficient to potentially cause discomfort or tissue damage to auditory or other systems. Overlaying these zones to a certain extent is the area within which masking (*i.e.,* when a sound interferes with or masks the ability of an animal to detect a signal of interest that is above the absolute hearing threshold) may occur; the masking zone may be highly variable in size.

Below, we provide additional details regarding potential impacts on marine mammals and their habitat from noise in general, starting with hearing impairment, as well as from the specific activities the Navy plans to conduct, to the degree it is available.

Hearing Threshold Shifts. NMFS defines a noise-induced threshold shift (TS) as a change, usually an increase, in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018, 2024). The amount of TS is customarily expressed in dB. A TS can be permanent or temporary. As described in NMFS (2018, 2024) there are numerous factors to consider when examining the consequence of TS, including, but not limited to, the signal temporal pattern (*e.g.,* impulsive or non-impulsive), likelihood an individual would be exposed for a long enough duration or to a high enough level to induce a TS, the magnitude of the TS, time to recovery (seconds to minutes or hours to days), the frequency range of the exposure (*i.e.,* spectral content), the hearing frequency range of the exposed species relative to the signal's frequency spectrum (*i.e.,* how animal uses sound within the frequency band of the signal; *e.g.,* Kastelein *et al.,* 2014), and the overlap between the animal and the source (*e.g.,* spatial, temporal, and spectral).

Auditory Injury (AUD INJ). NMFS (2024) defines AUD INJ as damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser, 2021). AUD INJ may or may not result in a permanent TS (PTS). PTS is subsequently defined as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2024). PTS does not generally affect more than a limited frequency range, and an animal that has incurred PTS has some level of hearing loss at the relevant frequencies; typically, animals with PTS or other AUD INJ are not functionally deaf (Au and Hastings, 2008; Finneran, 2016). Available data from humans and other terrestrial mammals indicate that a 40-dB TS approximates AUD INJ onset (Ward *et al.,* 1958, 1959; Ward, 1960; Kryter *et al.,* 1966; Miller, 1974; Ahroon *et al.,* 1996; Henderson *et al.,* 2008). AUD INJ levels for marine mammals are estimates, as with the exception of a single study unintentionally inducing PTS in a harbor seal (*Phoca vitulina*) (Kastak *et al.,* 2008), there are no empirical data measuring AUD INJ in marine mammals largely due to the fact that, for various ethical reasons, experiments involving anthropogenic noise exposure at levels inducing AUD INJ are not typically pursued or authorized (NMFS, 2024).

Temporary TS (TTS). TTS is a temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2024), and is not considered an AUD INJ. Based on data from marine mammal TTS measurements (Southall *et al.,* 2007, 2019), a TTS of 6 dB is considered the minimum TS clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Finneran *et al.,* 2000, 2002; Schlundt *et al.,* 2000). As described in Finneran (2015), marine mammal studies have shown the amount of TTS increases with the 24-hour cumulative sound exposure level (SEL_{24}) in an accelerating fashion: at low exposures with lower SEL_{24}, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SEL_{24}, the growth curves become steeper and approach linear relationships with the sound exposure level (SEL).

Depending on the degree (elevation of threshold in dB), duration (*i.e.,* recovery time), and frequency range of TTS, and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to more impactful (similar to those discussed in auditory masking, below). For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that takes place during a time when the animal is traveling through the open ocean, where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during time when communication is critical for successful mother/calf interactions could have more severe impacts. We note that reduced hearing sensitivity as a simple function of aging has been observed in marine mammals, as well as humans and other taxa (Southall *et al.,* 2007), so we can infer that strategies exist for coping with this condition to some degree, though likely not without cost.

Many studies have examined noise-induced hearing loss in marine mammals (see Finneran (2015) and Southall *et al.* (2019) for summaries). TTS is the mildest form of hearing impairment that can occur during exposure to sound (Kryter, 2013). While experiencing TTS, the hearing threshold rises, and a sound must be at a higher level in order to be heard. In terrestrial and marine mammals, TTS can last from minutes or hours to days (in cases of strong TTS) (Finneran, 2015). In many cases, hearing sensitivity recovers rapidly after exposure to the sound ends. For cetaceans, published data on the onset of TTS are limited to captive bottlenose dolphin (*Tursiops truncatus*), beluga whale (*Delphinapterus leucas*), harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaeorientalis*) (Southall *et al.,* 2019). For pinnipeds in water, measurements of TTS are limited to harbor seals, northern elephant seals, bearded seals (*Erignathus barbatus*) and California sea lions (Kastak *et al.,* 1999, 2007; Kastelein *et al.,* 2019b, 2019c, 2021, 2022a, 2022b; Reichmuth *et al.,* 2019; Sills *et al.,* 2020). TTS was not observed in spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to single airgun impulse sounds at levels matching previous predictions of TTS onset (Reichmuth *et al.,* 2016). These studies examine hearing thresholds measured in marine mammals before and after exposure to intense or long-duration sound exposures. The difference between the pre-exposure and post-exposure thresholds can be used to determine the amount of TS at various post-exposure times.

The amount and onset of TTS depends on the exposure frequency. Sounds below the region of best sensitivity for a species or hearing group are less hazardous than those near the region of best sensitivity (Finneran and Schlundt, 2013). At low frequencies, onset-TTS exposure levels are higher compared to those in the region of best sensitivity (*i.e.,* a low frequency noise would need to be louder to cause TTS onset when TTS exposure level is higher), as shown for harbor porpoises and harbor seals (Kastelein *et al.,* 2019a, 2019c). Note that in general, harbor seals and harbor porpoises have a lower TTS onset than other measured pinniped or cetacean species (Finneran, 2015). In addition, TTS can accumulate across multiple exposures, but the resulting TTS will be less than the TTS from a single, continuous exposure with the same SEL (Mooney *et al.,* 2009; Finneran *et al.,* 2010; Kastelein *et al.,* 2014, 2015). This means that TTS predictions based on the total SEL_{24} will overestimate the amount of TTS from intermittent exposures, such as sonars and impulsive sources. Nachtigall *et al.* (2018) describe measurements of hearing sensitivity of multiple odontocete species (bottlenose dolphin, harbor porpoise, beluga, and false killer whale (*Pseudorca crassidens*)) when a relatively loud sound was preceded by a warning sound. These captive animals were shown to reduce hearing sensitivity when warned of an impending intense sound. Based on these experimental observations of captive animals, the authors suggest that wild animals may dampen their hearing during prolonged exposures or if conditioned to anticipate intense sounds. Another study showed that echolocating animals (including odontocetes) might have anatomical specializations that might allow for conditioned hearing reduction and filtering of low-frequency ambient noise, including increased stiffness and control of middle-ear structures and placement of inner-ear structures (Ketten *et al.,* 2021). Data available on noise-induced hearing loss for mysticetes are currently lacking (NMFS, 2024). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species.

Relationships between TTS and AUD INJ thresholds have not been studied in marine mammals, and there are no measured PTS data for cetaceans, but such relationships are assumed to be similar to those in humans and other terrestrial mammals. AUD INJ typically occurs at exposure levels at least several dB above that inducing mild TTS (*e.g.,* a 40-dB TS approximates AUD INJ onset

(Kryter *et al.,* 1966; Miller, 1974), while a 6-dB TS approximates TTS onset (Southall *et al.,* 2007, 2019). Based on data from terrestrial mammals, a precautionary assumption is that the AUD INJ thresholds for impulsive sounds (such as impact pile driving pulses as received close to the source) are at least 6 dB higher than the TTS threshold on a peak-pressure basis and AUD INJ cumulative sound exposure level thresholds are 15 to 20 dB higher than TTS cumulative sound exposure level thresholds (Southall *et al.,* 2007, 2019). Given the higher level of sound or longer exposure duration necessary to cause AUD INJ as compared with TTS, it is considerably less likely that AUD INJ could occur.

Behavioral Effects. Exposure to noise also has the potential to behaviorally disturb marine mammals to a level that rises to the definition of harassment under the MMPA. Generally speaking, NMFS considers a behavioral disturbance that rises to the level of harassment under the MMPA a non-minor response—in other words, not every response qualifies as behavioral disturbance, and for responses that do, those of a higher level, or accrued across a longer duration, have the potential to affect foraging, reproduction, or survival. Behavioral disturbance may include a variety of effects, including subtle changes in behavior (*e.g.,* minor or brief avoidance of an area or changes in vocalizations), more conspicuous changes in similar behavioral activities, and more sustained and/or potentially severe reactions, such as displacement from or abandonment of high-quality habitat. Behavioral responses may include changing durations of surfacing and dives, changing direction and/or speed; reducing/increasing vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); eliciting a visible startle response or aggressive behavior (such as tail/fin slapping or jaw clapping); and avoidance of areas where sound sources are located. In addition, pinnipeds may increase their haulout time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006).

Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.,* 1995; Wartzok *et al.,* 2004; Southall *et al.,* 2007, 2019; Weilgart, 2007; Archer *et al.,* 2010). Behavioral reactions can vary not only among individuals but also within an individual, depending on previous experience with a sound source, context, and numerous other factors (Ellison *et al.,* 2012), and can vary depending on characteristics associated with the sound source (*e.g.,* whether it is moving or stationary, number of sources, distance from the source). In general, pinnipeds seem more tolerant of, or at least habituate more quickly to, potentially disturbing underwater sound than do cetaceans, and generally seem to be less responsive to exposure to industrial sound than most cetaceans. Please see appendices B and C of Southall *et al.* (2007) and Gomez *et al.* (2016) for reviews of studies involving marine mammal behavioral responses to sound.

Habituation can occur when an animal's response to a stimulus wanes with repeated exposure, usually in the absence of unpleasant associated events (Wartzok *et al.,* 2004). Animals are most likely to habituate to sounds that are predictable and unvarying. It is important to note that habituation is appropriately considered a ''progressive reduction in response to stimuli that are perceived as neither aversive nor beneficial,'' rather than a general moderation in response to human disturbance (Bejder *et al.,* 2009). The opposite process is sensitization, when an unpleasant experience leads an animal to subsequently respond, at a lower level of exposure, often in the form of avoidance.

As noted above, behavioral state may affect the type of response. For example, animals that are resting may show greater behavioral change in response to disturbing sound levels than animals that are highly motivated to remain in an area for feeding (Richardson *et al.,* 1995; Wartzok *et al.,* 2004; National Research Council (NRC), 2005). Controlled experiments with captive marine mammals have shown pronounced behavioral reactions, including avoidance of loud sound sources (Ridgway *et al.,* 1997; Finneran *et al.,* 2003). Observed responses of wild marine mammals to loud pulsed sound sources (*e.g.,* seismic airguns) have been varied but often consist of avoidance behavior or other behavioral changes (Richardson *et al.,* 1995; Morton and Symonds, 2002; Nowacek *et al.,* 2007).

Available studies show wide variation in response to underwater sound; therefore, it is difficult to predict specifically how any given sound in a particular instance might affect marine mammals perceiving the signal (*e.g.,* Erbe *et al.,* 2019). If a marine mammal does react briefly to an underwater sound by changing its behavior or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the stock or population. If a sound source displaces marine mammals from an important feeding or breeding area for a prolonged period, impacts on individuals and populations could be significant (*e.g.,* Lusseau and Bejder, 2007; Weilgart, 2007; NRC, 2005). However, there are broad categories of potential response, which we describe in greater detail here, that include alteration of dive behavior, alteration of foraging behavior, effects to breathing, interference with or alteration of vocalization, avoidance, and flight.

Avoidance and displacement. Changes in dive behavior can vary widely and may consist of increased or decreased dive times and surface intervals as well as changes in the rates of ascent and descent during a dive (*e.g.,* Frankel and Clark, 2000; Costa *et al.,* 2003; Ng and Leung, 2003; Nowacek *et al.,* 2004; Goldbogen *et al.,* 2013a, 2013b; Blair *et al.,* 2016). Variations in dive behavior may reflect interruptions in biologically significant activities (*e.g.,* foraging) or they may be of little biological significance. The impact of an alteration to dive behavior resulting from an acoustic exposure depends on what the animal is doing at the time of the exposure and the type and magnitude of the response.

Disruption of feeding behavior can be difficult to correlate with anthropogenic sound exposure, so it is usually inferred by observed displacement from known foraging areas, the appearance of secondary indicators (*e.g.,* bubble nets or sediment plumes), or changes in dive behavior. Acoustic and movement bio-logging tools also have been used in some cases to infer responses to anthropogenic noise. For example, Blair *et al.* (2015) reported significant effects on humpback whale foraging behavior in Stellwagen Bank in response to ship noise including slower descent rates, and fewer side-rolling events per dive with increasing ship nose. In addition, Wisniewska *et al.* (2018) reported that tagged harbor porpoises demonstrated fewer prey capture attempts when encountering occasional high-noise levels resulting from vessel noise as well as more vigorous fluking, interrupted foraging, and cessation of echolocation signals observed in response to some high-noise vessel passes. As for other types of behavioral response, the frequency, duration, and temporal pattern of signal presentation, as well as differences in species sensitivity, are likely contributing factors to differences in response in any given circumstance (*e.g.,* Croll *et al.,* 2001; Nowacek *et al.,* 2004; Madsen *et al.,* 2006; Yazvenko *et al.,* 2007). A

determination of whether foraging disruptions incur fitness consequences would require information on or estimates of the energetic requirements of the affected individuals and the relationship between prey availability, foraging effort and success, and the life history stage of the animal.

Respiration rates vary naturally with different behaviors and alterations to breathing rate as a function of acoustic exposure can be expected to co-occur with other behavioral reactions, such as a flight response or an alteration in diving. However, respiration rates in and of themselves may be representative of annoyance or an acute stress response. Various studies have shown that respiration rates may either be unaffected or could increase, depending on the species and signal characteristics, again highlighting the importance in understanding species differences in the tolerance of underwater noise when determining the potential for impacts resulting from anthropogenic sound exposure (*e.g.,* Kastelein *et al.,* 2001, 2005, 2006; Gailey *et al.,* 2007). For example, harbor porpoise respiration rates increased in response to pile driving sounds at and above a received broadband SPL of 136 dB (zero-peak SPL: 151 dB re 1 µPa; SEL of a single strike (SEL_{ss}): 127 dB re 1 μPa^2-s) (Kastelein *et al.,* 2013).

Avoidance is the displacement of an individual from an area or migration path as a result of the presence of a sound or other stressors and is one of the most obvious manifestations of disturbance in marine mammals (Richardson *et al.,* 1995). For example, gray whales are known to change direction—deflecting from customary migratory paths—in order to avoid noise from seismic surveys (Malme *et al.,* 1984). Harbor porpoises, Atlantic white-sided dolphins (*Lagenorhynchus actusus*), and minke whales have demonstrated avoidance in response to vessels during line transect surveys (Palka and Hammond, 2001). In addition, beluga whales in the St. Lawrence Estuary in Canada have been reported to increase levels of avoidance with increased boat presence by way of increased dive durations and swim speeds, decreased surfacing intervals, and by bunching together into groups (Blane and Jaakson, 1994). Avoidance may be short-term, with animals returning to the area once the noise has ceased (*e.g.,* Bowles *et al.,* 1994; Goold, 1996; Stone *et al.,* 2000; Morton and Symonds, 2002; Gailey *et al.,* 2007). Longer-term displacement is possible, however, which may lead to changes in abundance or distribution patterns of the affected species in the affected region if habituation to the presence of the sound does not occur (*e.g.,* Blackwell *et al.,* 2004; Bejder *et al.,* 2006; Teilmann *et al.,* 2006).

A flight response is a dramatic change in normal movement to a directed and rapid movement away from the perceived location of a sound source. The flight response differs from other avoidance responses in the intensity of the response (*e.g.,* directed movement, rate of travel). Relatively little information on flight responses of marine mammals to anthropogenic signals exist, although observations of flight responses to the presence of predators have occurred (Connor and Heithaus, 1996; Bowers *et al.,* 2018). The result of a flight response could range from brief, temporary exertion and displacement from the area where the signal provokes flight to, in extreme cases, marine mammal strandings (England *et al.,* 2001). However, it should be noted that response to a perceived predator does not necessarily invoke flight (Ford and Reeves, 2008), and whether individuals are solitary or in groups may influence the response.

Behavioral disturbance can also impact marine mammals in more subtle ways. Increased vigilance may result in costs related to diversion of focus and attention (*i.e.,* when a response consists of increased vigilance, it may come at the cost of decreased attention to other critical behaviors such as foraging or resting). These effects have generally not been demonstrated for marine mammals, but studies involving fishes and terrestrial animals have shown that increased vigilance may substantially reduce feeding rates (*e.g.,* Beauchamp and Livoreil, 1997; Fritz *et al.,* 2002; Purser and Radford, 2011). In addition, chronic disturbance can cause population declines through reduction of fitness (*e.g.,* decline in body condition) and subsequent reduction in reproductive success, survival, or both (*e.g.,* Harrington and Veitch, 1992; Daan *et al.,* 1996; Bradshaw *et al.,* 1998). However, Ridgway *et al.* (2006) reported that increased vigilance in bottlenose dolphins exposed to sound over a 5-day period did not cause any sleep deprivation or stress effects.

Many animals perform vital functions, such as feeding, resting, traveling, and socializing, on a diel cycle (24-hour cycle). Disruption of such functions resulting from reactions to stressors such as sound exposure are more likely to be significant if they last more than one diel cycle or recur on subsequent days (Southall *et al.,* 2007). Consequently, a behavioral response lasting less than 1 day and not recurring on subsequent days is not considered particularly severe unless it could directly affect reproduction or survival (Southall *et al.,* 2007). Note that there is a difference between multi-day substantive (*i.e.,* meaningful) behavioral reactions and multi-day anthropogenic activities. For example, just because an activity lasts for multiple days does not necessarily mean that individual animals are either exposed to activity-related stressors for multiple days or, further, exposed in a manner resulting in sustained multi-day substantive behavioral responses.

During PSO monitoring for the Navy's test pile project at NAVBASE Kitsap-Bremerton, harbor seals were most commonly observed milling and slow traveling when the sound source was not in operation. During pile driving, PSOs noticed slightly more looking around behavior as well as fast travel, resting (hauled out) and feeding. California sea lions were most commonly observed slow traveling when no pile driving was occurring. Observed changes in behavior during pile driving included porpoising, flushing, leaping, and swimming away from the pile, hauling out, barking, and fast travel. Two harbor porpoises were observed slow traveling when no pile driving was occurring.

Physiological stress responses. An animal's perception of a threat may be sufficient to trigger stress responses consisting of some combination of behavioral responses, autonomic nervous system responses, neuroendocrine responses, or immune responses (*e.g.,* Selye, 1950; Moberg, 2000). In many cases, an animal's first and sometimes most economical (in terms of energetic costs) response is behavioral avoidance of the potential stressor. Autonomic nervous system responses to stress typically involve changes in heart rate, blood pressure, and gastrointestinal activity. These responses have a relatively short duration and may or may not have a significant long-term effect on an animal's fitness.

Neuroendocrine stress responses often involve the hypothalamus-pituitary-adrenal system. Virtually all neuroendocrine functions that are affected by stress—including immune competence, reproduction, metabolism, and behavior—are regulated by pituitary hormones. Stress-induced changes in the secretion of pituitary hormones have been implicated in failed reproduction, altered metabolism, reduced immune competence, and behavioral disturbance (*e.g.,* Moberg, 1987; Blecha, 2000). Increases in the circulation of glucocorticoids are also equated with stress (Romano *et al.,* 2004).

The primary distinction between stress (which is adaptive and does not normally place an animal at risk) and ''distress'' is the cost of the response. During a stress response, an animal uses glycogen stores that can be quickly replenished once the stress is alleviated. In such circumstances, the cost of the stress response would not pose serious fitness consequences. However, when an animal does not have sufficient energy reserves to satisfy the energetic costs of a stress response, energy resources must be diverted from other functions. This state of distress will last until the animal replenishes its energetic reserves sufficient to restore normal function.

Relationships between these physiological mechanisms, animal behavior, and the costs of stress responses are well-studied through controlled experiments and for both laboratory and free-ranging animals (*e.g.,* Holberton *et al.,* 1996; Hood *et al.,* 1998; Jessop *et al.,* 2003; Krausman *et al.,* 2004; Lankford *et al.,* 2005; Ayres *et al.,* 2012; Yang *et al.,* 2022). Stress responses due to exposure to anthropogenic sounds or other stressors and their effects on marine mammals have also been reviewed (Fair and Becker, 2000; Romano *et al.,* 2002b) and, more rarely, studied in wild populations (*e.g.,* Romano *et al.,* 2002a). For example, Rolland *et al.* (2012) found that noise reduction from reduced ship traffic in the Bay of Fundy was associated with decreased stress in North Atlantic right whales. In addition, Lemos *et al.* (2022) observed a correlation between higher levels of fecal glucocorticoid metabolite concentrations (indicative of a stress response) and vessel traffic in gray whales. Yang *et al.* (2022) studied behavioral and physiological responses in captive bottlenose dolphins exposed to playbacks of ''pile-driving-like'' impulsive sounds, finding significant changes in cortisol and other physiological indicators but only minor behavioral changes. These and other studies lead to a reasonable expectation that some marine mammals will experience physiological stress responses upon exposure to acoustic stressors and that it is possible that some of these would be classified as ''distress.'' In addition, any animal experiencing TTS would likely also experience stress responses (NRC, 2005), however distress is an unlikely result of this project based on observations of marine mammals during previous, similar construction projects.

Vocalizations and Auditory Masking. Since many marine mammals rely on sound to find prey, moderate social interactions, and facilitate mating (Tyack, 2008), noise from anthropogenic sound sources can interfere with these functions, but only if the noise spectrum overlaps with the hearing sensitivity of the receiving marine mammal (Southall *et al.,* 2007; Clark *et al.,* 2009; Hatch *et al.,* 2012). Chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital biological functions (Clark *et al.,* 2009). Acoustic masking is when other noises such as from human sources interfere with an animal's ability to detect, recognize, or discriminate between acoustic signals of interest (*e.g.,* those used for intraspecific communication and social interactions, prey detection, predator avoidance, navigation) (Richardson *et al.,* 1995; Erbe *et al.,* 2016). Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired from maximizing their performance fitness in survival and reproduction. The ability of a noise source to mask biologically important sounds depends on the characteristics of both the noise source and the signal of interest (*e.g.,* signal-to-noise ratio, temporal variability, direction), in relation to each other and to an animal's hearing abilities (*e.g.,* sensitivity, frequency range, critical ratios, frequency discrimination, directional discrimination, age or TTS hearing loss), and existing ambient noise and propagation conditions (Hotchkin and Parks, 2013).

Marine mammals vocalize for different purposes and across multiple modes, such as whistling, echolocation click production, calling, and singing. Changes in vocalization behavior in response to anthropogenic noise can occur for any of these modes and may result from a need to compete with an increase in background noise or may reflect increased vigilance or a startle response. For example, in the presence of potentially masking signals, humpback whales and killer whales have been observed to increase the length of their songs (Miller *et al.,* 2000; Fristrup *et al.,* 2003) or vocalizations (Foote *et al.,* 2004), respectively, while North Atlantic right whales (*Eubalaena glacialis*) have been observed to shift the frequency content of their calls upward while reducing the rate of calling in areas of increased anthropogenic noise (Parks *et al.,* 2007). Fin whales (*Balaenoptera physalus*) have also been documented lowering the bandwidth, peak frequency, and center frequency of their vocalizations under increased levels of background noise from large vessels (Castellote *et al.,* 2012). Other alterations to communication signals have also been observed. For example, gray whales, in response to playback experiments exposing them to vessel noise, have been observed increasing their vocalization rate and producing louder signals at times of increased outboard engine noise (Dahlheim and Castellote, 2016). Alternatively, in some cases, animals may cease sound production during production of aversive signals (Bowles *et al.,* 1994; Wisniewska *et al.,* 2018).

Under certain circumstances, marine mammals experiencing significant masking could also be impaired from maximizing their performance fitness in survival and reproduction. Therefore, when the coincident (masking) sound is human made, it may be considered harassment when disrupting or altering critical behaviors. It is important to distinguish TTS and PTS, which persist after the sound exposure, from masking, which occurs during the sound exposure. Because masking (without resulting in TS) is not associated with abnormal physiological function, it is not considered a physiological effect, but rather a potential behavioral effect (though not necessarily one that would be associated with harassment).

The frequency range of the potentially masking sound is important in determining any potential behavioral impacts. For example, low-frequency signals may have less effect on high-frequency echolocation sounds produced by odontocetes but are more likely to affect detection of mysticete communication calls and other potentially important natural sounds such as those produced by surf and some prey species. The masking of communication signals by anthropogenic noise may be considered as a reduction in the communication space of animals (*e.g.,* Clark *et al.,* 2009) and may result in energetic or other costs as animals change their vocalization behavior (*e.g.,* Miller *et al.,* 2000; Foote *et al.,* 2004; Parks *et al.,* 2007; Di Iorio and Clark, 2010; Holt *et al.,* 2009). Masking can be reduced in situations where the signal and noise come from different directions (Richardson *et al.,* 1995), through amplitude modulation of the signal, or through other compensatory behaviors, including modifications of the acoustic properties of the signal or the signaling behavior (Hotchkin and Parks, 2013). Masking can be tested directly in captive species (*e.g.,* Erbe, 2008), but in wild populations it must be either modeled or inferred from evidence of masking compensation. There are few

studies addressing real-world masking sounds likely to be experienced by marine mammals in the wild (*e.g.,* Branstetter *et al.,* 2013).

Masking occurs in the frequency band that the animals utilize and is more likely to occur in the presence of broadband, relatively continuous noise sources, such as vibratory pile driving. Energy distribution of vibratory pile driving sound spans a broad frequency spectrum and is anticipated to be within the audible range of marine mammals present in the proposed action area. Since noises generated from the proposed construction activities are mostly concentrated at low frequencies (< 2 kHz), these activities likely have less effect on mid-frequency echolocation sounds produced by odontocetes (toothed whales). However, lower frequency noises are more likely to affect detection of communication calls and other potentially important natural sounds such as surf and prey noise. Low-frequency noise may also affect communication signals when they occur near the frequency band for noise and thus reduce the communication space of animals (*e.g.,* Clark *et al.,* 2009) and cause increased stress levels (*e.g.,* Holt *et al.,* 2009). Unlike TS, masking, which can occur over large temporal and spatial scales, can potentially affect the species at population, community, or even ecosystem levels, in addition to individual levels. Masking affects both senders and receivers of the signals, and at higher levels for longer durations, could have long-term chronic effects on marine mammal species and populations. However, the noise generated by the Navy's proposed activities will only occur intermittently, across an estimated 11 days during the authorization period in a relatively small area focused around the proposed construction site. Thus, while the Navy's proposed activities may mask some acoustic signals that are relevant to the daily behavior of marine mammals, the short-term duration and limited areas affected make it very unlikely that the fitness of individual marine mammals would be impacted.

Airborne Acoustic Effects

Pinnipeds that occur near the project site could be exposed to airborne sounds associated with construction activities that have the potential to cause behavioral harassment, depending on their distance from these activities. Airborne noise would primarily be an issue for pinnipeds that are swimming or hauled out near the project site within the range of noise levels elevated above airborne acoustic harassment criteria. Cetaceans are not expected to be exposed to airborne sounds that would result in harassment as defined under the MMPA. Airborne noise would primarily be an issue for pinnipeds that are swimming or hauled out near the project site within the range of noise levels elevated above the acoustic criteria. We recognize that pinnipeds in the water could be exposed to airborne sound that may result in behavioral harassment when looking with their heads above water. Most likely, airborne sound would cause behavioral responses similar to those discussed above in relation to underwater sound. For instance, anthropogenic sound could cause hauled out pinnipeds to exhibit changes in their normal behavior, such as reduction in vocalizations, or cause them to temporarily abandon the area and move further from the source. However, these animals would likely previously have been 'taken' because of exposure to underwater sound above the behavioral harassment thresholds, which are generally larger than those associated with airborne sound. Thus, the behavioral harassment of these animals is already accounted for in these estimates of potential take. Therefore, we do not believe that authorization of additional incidental take resulting from airborne sound for pinnipeds is warranted, and airborne sound is not discussed further.

Potential Effects on Marine Mammal Habitat

The Navy's proposed activities could have localized, temporary impacts on marine mammal habitat, including prey, by increasing in-water SPLs. Increased noise levels may affect acoustic habitat and adversely affect marine mammal prey in the vicinity of the project areas (see discussion below). Elevated levels of underwater noise would ensonify the project areas where both fishes and mammals occur and could affect foraging success. Additionally, marine mammals may avoid the area during the proposed construction activities; however, any displacement due to noise is expected to be temporary and is not expected to result in long-term effects to the individuals or populations.

The total area likely impacted by the Navy's activities is relatively small compared to the available habitat in Puget Sound. Avoidance by potential prey (*i.e.,* fish) of the immediate area due to increased noise is possible. The duration of fish and marine mammal avoidance of this area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution, and behavior is anticipated. Any behavioral avoidance by fish or marine mammals of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity.

The nearshore and intertidal habitat where the proposed project would occur is highly industrialized. Most marine mammals do not generally use the area within the footprint of the project area. Temporary, intermittent, and short-term habitat alteration may result from increased noise levels during the proposed construction activities. Effects on marine mammal habitat would be limited to temporary pile installation noise, and effects on prey species would be similarly limited in time and space.

Water quality. Temporary and localized reduction in water quality would occur as a result of in-water construction activities. Most of this effect would occur during the installation of piles when bottom sediments are disturbed. The installation of piles would disturb bottom sediments and may cause a temporary increase in suspended sediment in the project area. The small resulting sediment plume is expected to settle out of the water column within a few hours. Studies of the effects of turbid water on fish (marine mammal prey) suggest that concentrations of suspended sediment can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton, 1993).

Effects to turbidity and sedimentation are expected to be short-term, minor, and localized. Since the currents are so strong in the area, following the completion of sediment-disturbing activities, suspended sediments in the water column should dissipate and quickly return to background levels in all construction scenarios. Turbidity within the water column has the potential to reduce the level of oxygen in the water and irritate the gills of prey fish species in the proposed project area. However, turbidity plumes associated with the project would be temporary and localized, and fish in the proposed project area would be able to move away from and avoid the areas where plumes may occur. Therefore, it is expected that the impacts on prey fish species from turbidity, and therefore on marine mammals, would be minimal and temporary. In general, the area likely impacted by the proposed construction activities is relatively small compared to the available marine mammal habitat in Puget Sound.

Potential Effects on Prey. Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (*e.g.,* crustaceans, cephalopods, fishes,

zooplankton). Marine mammal prey varies by species, season, and location and, for some, is not well documented. Studies regarding the effects of noise on known marine mammal prey are described here.

Fishes utilize the soundscape and components of sound in their environment to perform important functions such as foraging, predator avoidance, mating, and spawning (*e.g.,* Zelick *et al.,* 1999; Fay, 2009). Depending on their hearing anatomy and peripheral sensory structures, which vary among species, fishes hear sounds using pressure and particle motion sensitivity capabilities and detect the motion of surrounding water (Fay *et al.,* 2008). The potential effects of noise on fishes depends on the overlapping frequency range, distance from the sound source, water depth of exposure, and species-specific hearing sensitivity, anatomy, and physiology. Key impacts to fishes may include behavioral responses, hearing damage, barotrauma (pressure-related injuries), and mortality.

Fish react to sounds that are especially strong and/or intermittent low-frequency sounds, and behavioral responses such as flight or avoidance are the most likely effects. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. The reaction of fish to noise depends on the physiological state of the fish, past exposures, motivation (*e.g.,* feeding, spawning, migration), and other environmental factors. Hastings and Popper (2005) identified several studies that suggest fish may relocate to avoid certain areas of sound energy. Additional studies have documented effects of pile driving on fishes (*e.g.,* Scholik and Yan, 2001, 2002; Popper and Hastings, 2009). Several studies have demonstrated that impulse sounds might affect the distribution and behavior of some fishes, potentially impacting foraging opportunities or increasing energetic costs (*e.g.,* Fewtrell and McCauley, 2012; Pearson *et al.,* 1992; Skalski *et al.,* 1992; Santulli *et al.,* 1999; Paxton *et al.,* 2017). However, some studies have shown no or slight reaction to impulse sounds (*e.g.,* Peña *et al.,* 2013; Wardle *et al.,* 2001; Jorgenson and Gyselman, 2009; Cott *et al.,* 2012). More commonly, though, the impacts of noise on fishes are temporary.

SPLs of sufficient strength have been known to cause injury to fishes and fish mortality (summarized in Popper *et al.,* 2014). However, in most fish species, hair cells in the ear continuously regenerate and loss of auditory function likely is restored when damaged cells are replaced with new cells. Halvorsen *et al.* (2012b) showed that a TTS of 4 to 6 dB was recoverable within 24 hours for one species. Impacts would be most severe when the individual fish is close to the source and when the duration of exposure is long. Injury caused by barotrauma can range from slight to severe and can cause death, and is most likely for fish with swim bladders. Barotrauma injuries have been documented during controlled exposure to impact pile driving (Halvorsen *et al.,* 2012a; Casper *et al.,* 2013, 2017).

Fish populations in the proposed project area that serve as marine mammal prey could be temporarily affected by noise from pile installation. The frequency range in which fishes generally perceive underwater sounds is 50 to 2,000 Hz, with peak sensitivities below 800 Hz (Popper and Hastings, 2009). Fish behavior or distribution may change, especially with strong and/or intermittent sounds that could harm fishes. High underwater SPLs have been documented to alter behavior, cause hearing loss, and injure or kill individual fish by causing serious internal injury (Hastings and Popper, 2005).

Zooplankton is a food source for several marine mammal species, as well as a food source for fish that are then preyed upon by marine mammals. Population effects on zooplankton could have indirect effects on marine mammals. Data are limited on the effects of underwater sound on zooplankton species, particularly sound from construction (Erbe *et al.,* 2019). Popper and Hastings (2009) reviewed information on the effects of human-generated sound and concluded that no substantive data are available on whether the sound levels from pile driving, seismic activity, or any human-made sound would have physiological effects on invertebrates. Any such effects would be limited to the area very near (1 to 5 m) the sound source and would result in no population effects because of the relatively small area affected at any one time and the reproductive strategy of most zooplankton species (short generation, high fecundity, and very high natural mortality). No adverse impact on zooplankton populations is expected to occur from the specified activity due, in part, to large reproductive capacities and naturally high levels of predation and mortality of these populations. Any mortality or impacts that might occur would be negligible.

The greatest potential impact to marine mammal prey during construction would occur during impact pile driving. However, impact pile installation of 24-in steel piles is planned on just 1 construction day for a maximum of 11,550 strikes estimated to complete this activity. The remaining vibratory pile driving is planned to occur on just 10 construction days. This in-water construction activities would only occur during daylight hours, allowing fish to forage and transit the project area in the evening. Impact pile driving and vibratory pile driving would possibly elicit behavioral reactions from fishes such as temporary avoidance of the area but is unlikely to cause injuries to fishes or have persistent effects on local fish populations. Additionally, the proposed construction activity would avoid the spawning season of ESA-listed salmon species. Construction also would have minimal permanent and temporary impacts on benthic invertebrate species, a marine mammal prey source. In addition, it should be noted that the area in question is lower-quality habitat since it is already highly developed and experiences a high level of anthropogenic noise from normal operations and other vessel traffic.

Potential Effects on Foraging Habitat

The Navy's Year 1 Bremerton Waterfront Infrastructure Improvement Project is not expected to result in any habitat-related effects that could cause significant or long-term negative consequences for individual marine mammals or their populations, since installation of in-water piles would be temporary and intermittent. The total seafloor area affected by pile installation is a very small area compared to the vast foraging area available to marine mammals outside this project area. At best, the areas impacted provide marginal foraging habitat for marine mammals and fishes. Furthermore, pile driving at the project locations would not obstruct movements or migration of marine mammals.

The area impacted by the project is relatively small compared to the available habitat just outside the project area, and there are no areas of particular importance that would be impacted by this project. Any behavioral avoidance by fish of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity. As described in the preceding, the potential for the Navy's construction to affect the availability of prey to marine mammals or to meaningfully impact the quality of physical or acoustic habitat is considered to be insignificant. Therefore, impacts of the project are not likely to have adverse effects on marine mammal foraging habitat in the proposed project area.

In summary, given the relatively small areas being affected, as well as the temporary and mostly transitory nature of the proposed construction activities, any adverse effects from the Navy's activities on prey habitat or prey populations are expected to be minor and temporary. The most likely impact to fishes at the project site would be temporary avoidance of the area. Any behavioral avoidance by fish of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity. Thus, we preliminarily conclude that impacts of the specified activities are not likely to have more than short-term adverse effects on any prey habitat or populations of prey species. Further, any impacts to marine mammal habitat are not expected to result in significant or long-term consequences for individual marine mammals, or to contribute to adverse impacts on their populations.

Estimated Take of Marine Mammals

This section provides an estimate of the number of incidental takes proposed for authorization 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 would primarily be by Level B harassment, as use of the acoustic source/s (*i.e.,* vibratory and impact pile driving) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for AUD INJ (Level A harassment) to result, primarily for very high frequency species, phocids, and otariids, 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 proposed 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 proposed to be authorized for this activity. Below we describe how the proposed 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 proposed 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, 2021; Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared sound pressure levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1 µPa)) for continuous (*e.g.,* vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 µPa for non-explosive impulsive (*e.g.,* impact pile driving) or intermittent (*e.g.,* scientific sonar) sources. Generally speaking, Level B harassment take estimates based on these behavioral harassment thresholds are expected to include any likely takes by 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 proposed Year 1 Bremerton Infrastructure Improvements Project includes the use of continuous (vibratory) and impulsive (impact pile driving) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 µPa 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 proposed Year 1 Bremerton Infrastructure Improvements Project includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving) 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 7—THRESHOLDS IDENTIFYING THE ONSET OF AUD INJ

Hearing group	AUD INJ onset acoustic thresholds * (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1:* $L_{pk,flat}$: 222 dB; $L_{E,LF,24h}$: 183 dB	*Cell 2:* $L_{E,LF,24h}$: 197 dB.
High-Frequency (HF) Cetaceans	*Cell 3:* $L_{pk,flat}$: 230 dB; $L_{E,HF,24h}$: 193 dB	*Cell 4:* $L_{E,HF,24h}$: 201 dB.
Very High-Frequency (VHF) Cetaceans	*Cell 5:* $L_{pk,flat}$: 202 dB; $L_{E,VHF,24h}$: 159 dB	*Cell 6:* $L_{E,VHF,24h}$: 181 dB.
Phocid Pinnipeds (PW) (Underwater)	*Cell 7:* $L_{pk,flat}$: 223 dB; $L_{E,PW,24h}$: 183 dB	*Cell 8:* $L_{E,PW,24h}$: 195 dB.
Otariid Pinnipeds (OW) (Underwater)	*Cell 9:* $L_{pk,flat}$: 230 dB; $L_{E,OW,24h}$: 185 dB	*Cell 10:* $L_{E,OW,24h}$: 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 ($L_{p,0\text{-}pk}$) has a reference value of 1 µPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1 μPa^2s. 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.e.,* 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.e.,* 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 proposed project. Marine mammals are expected to be affected via sound generated by the primary components of the project (*i.e.,* vibratory 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 agreed upon by NMFS and the Navy for each pile size and activity each year are presented in table 8.

The Navy indicated that two hammers may operate simultaneously during pier 2 construction activities. The Navy assumes that all concurrent pile driving on a given day would be of the same pile size and type. Source levels for the combination of piles that the Navy proposes are also presented in table 8.

The methods for how the source levels for the concurrent vibratory activities are derived are described here: When two noise sources have overlapping sound fields, the sources are considered additive and combined using the rules of dB addition. For addition of two simultaneous sources, the difference between the two sound source levels is calculated, and if that difference is between 0 and 1 dB, 3 dB are added to the higher sound source levels; if the difference is between 2 and 3 dB, 2 dB are added to the highest sound source levels; if the difference is between 4 and 9 dB, 1 dB is added to the highest sound source levels; and with differences of 10 or more dB, there is no addition.

The Navy calculated the maximum estimated likelihood of two impact hammer strikes completely overlapping in time at approximately 0.25 percent (see section 6.6.3 of the application) and based on this low likelihood did not adjust RMS levels for calculation of Level B harassment isopleths during concurrent driving. NMFS concurs with the Navy's approach.

TABLE 8—ESTIMATES OF MEAN UNDERWATER SOUND LEVELS GENERATED DURING VIBRATORY AND IMPACT PILE INSTALLATION

[Unattenuated]

Method	Type	Size (in)	RMS	Peak	SEL_{ss}	[1] Adjusted sound levels for concurrent driving of two of the same hammers and piles types/sizes	Reference
Vibratory	Steel Pipe	24	161	N/A	N/A	N/A	Navy, 2015.
		36	167	N/A	N/A	170 RMS	Navy, 2015.
	Steel Sheet	24	160	N/A	N/A	163 RMS	Caltrans, 2015.
Impact	Concrete	24	174	188	164	No Change	Navy, 2015.

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

[1] Source levels for concurrent vibratory driving adjusted as described in the text. SEL_{ss} for impact driving was not adjusted because the total number of strikes for all all concurrent hammers is input separately. SPL RMS and SPL Peak for impact driving were not adjusted based on the low calculated likelihood of overlapping strikes.

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:

$TL = B \times \text{Log10}\ (R_1/R_2)$,

Where:

TL = transmission loss in dB

B = transmission loss coefficient

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

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

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 Sinclair Inlet 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 9), and the resulting estimated isopleths (table 10), are reported below.

To calculate Level A harassment isopleths for two simultaneous vibratory hammers, the NMFS User Spreadsheet was used with modified inputs to account for accumulation, weighting, and source overlap in space and time (table 9).

To calculate Level A harassment isopleths for two impact hammers operating simultaneously, the NMFS User Spreadsheet calculator was used with modified inputs to account for the total estimated number of strikes for all piles in a day. For simultaneous impact pile driving of two 24-in concrete piles, the total estimated number of strikes per day was summed to estimate total sound exposure during simultaneous installation, and the number of piles per day was reduced to one. The SEL_{ss} for two simultaneous impact hammers was not adjusted because the cumulative SEL depends on the total amount of energy, which is accounted for using total strikes per day for two identical piles.

TABLE 9—USER SPREADSHEET INPUTS

Method	Pile size and type	Spreadsheet tab used	Weighting factor adjustment (kHz)	Piles per day	Duration to drive a single pile (minutes)	Strikes per day
1 Vibratory Hammer	24-in Steel pipe	A.1 Vibratory pile driving	2.5	4	50	N/A
2 Vibratory Hammers	36-in steel pipe	A.1 Vibratory pile driving	2.5	10	50	N/A
2 Vibratory Hammers	24-in steel sheet	A.1 Vibratory pile driving	2.5	24	21	N/A
2 Impact Hammers	24-in Concrete	E.1 Impact pile driving	2	1	N/A	11,550

TABLE 10—PROJECTED DISTANCES TO LEVEL A AND LEVEL B HARASSMENT ISOPLETHS (m) BY MARINE MAMMAL HEARING GROUP

Component	Hammer	Pile size and type	Level A harassment (m)					Level B harassment zone (m)
			LF	HF	VHF	PW	OW	
M2D2 Temporary Barge Anchor Mooring Piles.	1 vibratory hammer	24-in steel pipe	21	8	17	27	9	5,412
Pier 2 Construction Bulkhead Temporary Piles.	2 vibratory hammers	36-in steel pipe	95	37	78	122	41	7,356
Pier 2 Construction Bulkhead	2 vibratory hammers	24-in steel sheet	33	13	27	42	14	21,522
Pier 2 Construction Indicator Piles	2 impact hammers	24-in concrete	301	38	465	267	100	86

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, Kitsap Transit, and WSDOT (table 3). Specifically, data sources consulted included the Navy's ''Summary of Weekly Marine Mammal Surveys at Navy Northwest Region Installations: 2008–2025'' (Navy, 2025) and PSO monitoring completed across four projects within or near the project area: the Navy's P454 Multi-Mission Drydock Test Pile Program; Kitsap Transit's Annapolis Passenger Ferry Dock Project; WDSOT's Mannette Bridge Replacement Project (years 2011 and 2012). Species-specific data summaries of the above are included in the Description of Marine Mammals in the Area of Specified Activities section.

No gray whales, Dall's porpoises or northern elephant seals were documented during any of the projects listed above. For these species, NMFS considered: (1) The Orca Network archived sightings (Orca Network, 2026); (2) the whale museum sightings data provided to OPR by the Navy in February 2026; (3) Cascadia Research Collective gray whale strandings in 2026 (Cascadia Research Collective, *https://cascadiaresearch.org/working-list-of-gray-whale-strandings-in-2026/,* retrieved May 28, 2026); and (4) an observation of Dall's porpoise documented by PSO's during the WSDOT's Mukilteo Multimodal Project from the Mukilteo—Clinton Ferry monitoring location (90 FR 31965, July 16, 2025).

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 proposed for authorization.

Exposure Estimates

For species with rare or infrequent occurrence during the in-water work window, the likelihood of occurrence was reviewed on the basis of past records of occurrence (using the data sources listed above and described in Description of Marine Mammals in the Area of Specified Activities) and the total number of work days. In most cases, the occurrence of the species in

this category (*i.e.,* gray whales, Dall's porpoise, and elephant seals), would not be anticipated to extend for multiple days. The equation used to estimate take for species with rare or infrequent occurrence is:

Exposure estimate = Probable abundance during construction × Probable duration

Where:

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

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

The Navy proposed this approach for large whales, killer whales, and northern elephant seals. NMFS agrees that this approach is appropriate for these species and also adds Dall's porpoise due to the infrequent sightings of this species at the project location.

For less frequently observed small species (*i.e.,* harbor porpoise, Dall's porpoise, and Steller sea lions), Navy initially proposed to use density estimates from the Navy's Marine Mammal Species Density Database (Navy, 2019) to estimate the likelihood of occurrence. The Navy proposed to use local occurrence information to estimate the likelihood of occurrence for California sea lions and harbor seals. However, NMFS finds it more appropriate to use local monitoring data to estimate the likelihood of occurrence for all of these species (except Dall's porpoise, see above). As such, for harbor porpoises, Steller sea lions, California sea lions, and harbor seals, NMFS and the Navy agreed to predict a daily occurrence based on local monitoring data referenced above, and estimate take by multiplying the estimated daily occurrence for each species by the number of in-water construction days, generally using the following equation;

Take by Level B harassment = marine mammal occurrence × days of pile driving activities.

The Navy proposes to implement a shutdown of pile driving activity if any large whale or killer whale is observed within or approaching any defined harassment zone (Proposed Mitigation section). Additionally, the Navy plans 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. Given the plan to shut down and because large whales and killer whales are generally conspicuous, no takes by Level B or Level A harassment are anticipated for these species (except gray whales) and none are proposed for authorization.

In most cases where proposed shutdown zones are greater than or equal to the calculated Level A harassment zones, take by Level A harassment is not proposed for authorization. However, there are scenarios for some pinniped species and installations (*i.e.,* California sea lions and harbor seals during impact pile driving) where take by Level A harassment is proposed to be 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.

Low Frequency and High Frequency Cetaceans

For humpback whales, gray whales, minke whales, and killer whales, the Navy plans to shut down operations upon observation of these species approaching the estimated Level B harassment zone. Although the Navy requested take by Level B harassment for these species, given the plan to shut down and because large whales and killer whales are generally conspicuous, NMFS has preliminarily determined that no takes by Level B or Level A harassment are expected to occur for humpback whales, minke whales, and killer whales, and none are proposed for authorization. However, given the recent reports of stranded gray whales in Puget Sound, NMFS proposes and the Navy agrees that up to two gray whales may be taken by Level B harassment during the project period.

No takes by Level A harassment of any large whale or killer whales are anticipated and none are proposed for authorization.

Very High Frequency Cetaceans

NMFS and the Navy predict that one group of two Dall's porpoise could occur within the project area during active pile driving over the course of the 11-day period for a total of two takes by Level B harassment.

NMFS and the Navy predict that two harbor porpoises could occur within the Level B harassment zone each construction week. This results in four takes by Level B harassment.

Although the estimated Level A harassment zone would be larger than the proposed shutdown zone for very high frequency cetaceans on 1 construction day (impact pile driving of 24-in concrete piles, see Proposed Mitigation section), no take by Level A harassment is estimated for Dall's porpoises or harbor porpoises and none are proposed for authorization due to the rarity of occurrence of these species in the project area.

Otariids and Phocids

Steller Sea Lion. NMFS predicts that two Steller sea lions could occur within the Level B harassment zone each construction day. This results in 22 takes by Level B harassment. No takes by Level A harassment of Steller sea lions are anticipated and none are proposed for authorization.

California Sea Lion. NMFS predicts that 132 California sea lions could occur within the Level B harassment zone each construction day. This results in 1,452 takes by Level B harassment.

For all pinnipeds, the Navy plans to shut down at distances slightly larger than the Level A harassment zones (table 12). However, given the regular occurrence of California sea lions and the nature of docks and piers in the project site, the Navy and NMFS agree that it is possible that several 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. Based on the resident nature of this species at this site, the Navy requested that NMFS authorize 55 takes by Level A harassment. However, given the short duration of the proposed work for year 1 and the planned mitigation measures, we find it more appropriate to proposes to authorize 10 takes by Level A harassment of California sea lions.

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated (*i.e.,* 1,452 takes by Level B harassment − 10 takes by Level A harassment = 1,442 takes by Level B harassment). Therefore, for California sea lions, NMFS proposes to authorize 1,442 takes by Level B harassment and 10 takes by Level A harassment for a total of 1,452 takes across the 11 days of construction.

Harbor seal. NMFS predicts that nine harbor seals could occur within the Level B harassment zone, which encompasses a harbor seal haulout along the southern shoreline of Sinclair Inlet during all vibratory activities, each construction day. This results in 99 takes by Level B harassment.

Given the regular occurrence of harbor seals and the nature of docks and piers in the project site, the Navy and NMFS agree that it is possible that several animals 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. Based on the resident nature of this species at this site, the

Navy requested that NMFS authorize 11 takes by Level A harassment of harbor seals. However, given the short duration of the proposed work for year 1 and the planned mitigation measures, we find it more appropriate to propose to authorize 10 takes by Level A harassment of harbor seals.

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated (*i.e.,* 99 takes by Level B harassment − 10 takes by Level A harassment = 89 takes by Level B harassment). Therefore, for harbor seals, NMFS proposes to authorize 89 takes by Level B harassment and 10 takes by Level A harassment for a total of 99 takes across the 11 days of construction.

Northern Elephant Seals. Because the occurrence of northern elephant seals in Puget Sound is unpredictable and generally uncommon, NMFS estimates that one northern elephant seal could occur within the project area on 1 day during the 11 days that in-water work is planned. This results in one take by Level B harassment.

No takes by Level A harassment of northern elephant seals are anticipated and none are proposed for authorization.

TABLE 11—TAKE BY STOCK AND HARASSMENT TYPE AND AS A PERCENTAGE OF STOCK ABUNDANCE

Species	Stock	Level A harassment	Level B harassment	Total harassment proposed	Proposed take as a percentage of stock abundance
Gray whale	Eastern North Pacific	0	2	2	<1
Dall's Porpoise	CA-WA-OR	0	2	2	<1
Harbor Porpoise	Washington Inland	0	4	4	<1
California Sea Lion	United States	10	1,442	1,452	0.6
Steller Sea Lion	Eastern United States	0	22	22	<1
Harbor Seal	Washington Inland Southern Puget Sound	10	89	99	4
Northern Elephant Seal	California Breeding	0	1	1	<1

Proposed 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 proposed mitigation requirements and has included them in the proposed IHA.

Shutdown Zones

For all pile driving activities, the Navy proposes to implement shutdowns within designated zones. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones vary based on the activity type and marine mammal hearing group (table 12).

For large whales and killer whales (LF and HF cetacean hearing groups, respectively), the Navy proposes to shut down at distances based on the largest harassment zone for each activity and hearing group. For both hearing groups, this corresponds to 5.4 km during vibratory pile driving of 24-in steel, 7.4 km during vibratory pile driving of 24-in steel sheet piles, 21.5 km during vibratory pile driving of 36-in steel. (NMFS notes that the Level B harassment zone is truncated 8.2 km to the east of pier 2 by Bainbridge Island, and 5.2 km to the west of pier 2, also by land). For large whales and killer whales, during impact pile driving the largest harassment zone corresponds to 310 m for low frequency cetaceans and 90 m for high frequency cetaceans. If a large whale or killer whale is observed approaching these shutdown zones, the Navy would implement shutdown measures.

The Navy also plans to take measures to ensure that they are aware of large whale and killer whale locations so that work is not conducted when these species are within the vicinity of the project area. Such measures include contacting and/or reviewing the latest sightings data from the Orca Network on at least a daily basis (Proposed Monitoring and Reporting section).

With the Navy's proposed shutdown zones, and efforts to determine the locations of the nearest marine mammal sightings, all incidental harassment would be prevented for most large whales and all killer whales.

For phocids and otariids, the proposed shutdown zones are based on the estimated Level A harassment isopleths for all activities. The

shutdown zones are also based on the estimated Level A harassment isopleths for very high-frequency cetaceans during vibratory pile driving.

In cases where it would be challenging to detect marine mammals at the Level A harassment isopleth, (*e.g.,* very high-frequency cetaceans during impact pile driving), smaller shutdown zones have been proposed (table 12).

TABLE 12—PROPOSED SHUTDOWN ZONES

Component	Hammer/s	Size/type	Proposed shutdown zones (m)					Level B harassment zone
			LF	HF	VHF	PW	OW	
M2D2 Temporary Barge Anchor Buoys.	1 vibratory hammer	24-in steel pipe ..	5,412	5,412	20	30	10	5,412
Pier 2 Construction Bulkhead Temporary Piles.	2 vibratory hammers ...	36-in steel pipe ..	[1] 21,522	[1] 21,522	80	130	50	[1] 21,522
Pier 2 Construction Bulkhead	2 vibratory hammers ...	24-in steel sheet	[1] 7,365	[1] 7,365	30	50	20	[1] 7,365
Pier 2 Construction Indicator Piles	2 impact hammers	24-in Concrete ...	310	90	350	270	100	86

[1] Underwater noise would be truncated by Bainbridge Island to the east, approximately 8.2 km from pier 2, and truncated by land to the west at about 5.2 km from pier 2.

PSOs

The number and placement of PSOs during all construction activities (described in the Proposed Monitoring and Reporting section) would ensure that the shutdown zones are generally visible, such that PSOs are reasonably confident of their ability observe species at relevant distances. The Navy would employ at least four PSOs during all vibratory pile driving and removal activities and at least three PSOs during impact pile driving activities.

Pre-Clearance Monitoring Through Post-Activity Monitoring

PSOs would monitor the shutdown zones and beyond to the extent that PSOs can see. Monitoring beyond the shutdown zones enables observers to be aware of and communicate the presence of marine mammals in the project areas outside the shutdown zones and thus prepare for a potential cessation of activity should the animal enter the shutdown zone.

Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 minutes or longer occurs, PSOs would observe the shutdown zones and as much of the harassment zones as possible for a period of 30 minutes. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones are clear of marine mammals for which take is authorized.

Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals. Monitoring of the shutdown zones and beyond to the extent that PSOs can see would 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 a marine mammal is observed entering or within 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 shutdown zone, 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 shutdown zones 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.

Finally, construction activities must be halted upon observation of a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met entering or within any harassment zone. If a marine mammal species for which take is not authorized enters a harassment zone, all in-water activities will cease until the animal leaves the zone or has not been observed for at least 15 minutes. Pile driving will proceed if the unauthorized species is observed leaving the harassment zone or if 15 minutes have passed since the last observation.

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-s 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.

NMFS conducted an independent evaluation of the proposed measures and has preliminarily determined that the proposed 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.

Proposed 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 proposed IHA.

Visual Monitoring

Visual monitoring would be conducted by trained PSOs positioned at suitable vantage points to be able to observe the entirety of 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.

The Navy intends to employ four PSOs to monitor the shutdown zones and the surrounding area during vibratory pile driving and three PSOs to monitor the shutdown zones and the surrounding area during impact pile driving. At least one PSO would be placed near the pile driving site during all impact and vibratory pile driving activities. During vibratory pile driving two of the PSOs would be placed at suitable vantage points to generally be able to observe the entirety of the shutdown zones, which includes the full extent of the Level B harassment zones for large whales and killer whales. Such locations may include Waterman Point, Illahee State Park, and/or Annapolis Ferry Dock.

Monitoring would 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 would contact the Orca Network and monitor social media to review updated sighting locations of large whales, including ESA-listed southern resident killer whales 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.

Reporting

The Navy would 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 would 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 would 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.

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 would be submitted electronically in a format that can be queried such as a spreadsheet or

database and would 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 USACE must report the incident to the NMFS OPR (*PR.ITP.MonitoringReports@noaa.gov* and *itp.fleming@noaa.gov*) and the West Coast Regional Stranding Coordinator 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 the LOA. USACE 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 activities 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 California sea lions and harbor seals, Level A harassment, from underwater sounds generated by pile installation. 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 five species of marine mammals (all low-frequency and very-high-frequency cetaceans, Steller sea lions, and northern elephant seals), no take by Level A harassment is anticipated, due to the rarity of the species near the project area, or due to the relatively small Level A harassment zones. 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 of the Level A harassment zones (low-frequency and high-frequency cetaceans, and pinnipeds) (Proposed Mitigation section).

Take by Level A harassment is proposed for California sea lions and 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 of these two species proposed for authorization is very low; NMFS expects no more than 10 takes by Level A harassment for California sea lions and 10 takes by Level A harassment for harbor seals. 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 individual, 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 previously conducted and monitored activities potentially affecting marine mammals at NAVBASE Kitsap-Bremerton. Reporting from these activities has described no apparently consequential behavioral reactions or long-term effects on marine mammal populations (DoN, 2024). 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 a stock is unlikely to result in any effects on rates of reproduction and survival of the stock as a whole.

Additionally, pile driving and extraction is expected on only 11 days during the year and thus would not occur on every day, and these individuals would likely return to normal behavior during gaps in pile driving activity within each day of construction and in between workdays. 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 (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.

As described above, increased sightings and strandings of gray whales 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 proposed, 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 preliminary determination that the impacts resulting from this activity are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or proposed for authorization;
- Any Level A harassment is anticipated to cause only slight AUD INJ, including PTS of a few decibels within the lower frequencies associated with impact pile driving of 24-in concrete on 1 construction day, 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 area is industrialized; therefore, individuals taken are likely habituated to anthropogenic activities and behavioral reactions are expected to be minor and temporary;
- The project areas 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;
- The proposed 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 proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from the proposed 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 (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 propose to authorize incidental take of seven marine mammal stocks (table 2). The total amount of taking proposed for authorization is less than 4 percent of each of these stocks. 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. As such, the 89 proposed takes by Level B harassment, and 10 proposed takes by Level A harassment, compared to the abundance estimate, suggests that about

4 percent of the stock would be expected to be impacted.

Based on the analysis contained herein of the proposed activity (including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS preliminarily 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 ESA of 1973 (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 incidental take authorizations, NMFS consults internally whenever we propose to authorize take for ESA-listed species.

No incidental take of ESA-listed species is proposed for authorization or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to the Navy for conducting Year 1 of the Bremerton Waterfront Infrastructure Improvement project in Puget Sound, Washington, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.*

Request for Public Comments

We request comment on our analyses, the proposed authorization, and any other aspect of this notice of proposed IHA for the proposed construction project. We also request comment on the potential renewal of this proposed IHA as described in the paragraph below. Please include with your comments any supporting data or literature citations to help inform decisions on the request for this IHA or a subsequent renewal IHA.

On a case-by-case basis, NMFS may issue a one-time, 1-year renewal IHA following notice to the public providing an additional 15 days for public comments when (1) up to another year of identical or nearly identical activities as described in the Description of Proposed Activity section of this notice is planned, or (2) the activities as described in the Description of Proposed Activity section of this notice would not be completed by the time the IHA expires and a renewal would allow for completion of the activities beyond that described in the *Dates and Duration* section of this notice, provided all of the following conditions are met:

- A request for renewal is received no later than 60 days prior to the needed renewal IHA effective date (recognizing that the renewal IHA expiration date cannot extend beyond 1 year from expiration of the initial IHA).
- The request for renewal must include the following:

1. An explanation that the activities to be conducted under the requested renewal IHA are identical to the activities analyzed under the initial IHA, are a subset of the activities, or include changes so minor (*e.g.,* reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates (with the exception of reducing the type or amount of take).

2. A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.

- Upon review of the request for renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures will remain the same and appropriate, and the findings in the initial IHA remain valid.

Dated: August 25, 2026.

Kimberly Damon-Randall,

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

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XF971]

North Pacific Fishery Management Council; Public Meeting

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

ACTION: Notice of hybrid meeting.

SUMMARY: The North Pacific Fishery Management Council (Council) will hold a Crab Plan Team Meeting on September 14–17, 2026.

DATES: The meeting will be held on Monday, September 14, through Thursday, September 17, 2026, 8 a.m. to 5 p.m. Alaska Time.

ADDRESSES: The meeting will be a hybrid meeting. Attend in-person at the Traynor Room, Alaska Fisheries Science Center, 7600 Sand Point Way NE, Seattle, WA 98115, in Building 4. If you plan to attend in person, please notify Anita Kroska (*akroska@npfmc.org*) at least 2 days before the meeting (or 2 weeks prior if you are a foreign national). You will also need a valid U.S. REAL Identification Card. Join online through the link at *https://meetings.npfmc.org/Meeting/Details/6146.*

Council address: North Pacific Fishery Management Council, 1007 West 3rd Ave., Suite 400, Anchorage, AK 99501–2252; telephone: (907) 271–2809.

FOR FURTHER INFORMATION CONTACT: Anita Kroska, Council staff; phone; (907) 271–2805; email: *akroska@npfmc.org.* For technical support, please contact our admin Council staff, email: *support@npfmc.org;* telephone: (907) 271–2809.

SUPPLEMENTARY INFORMATION:

Agenda

Monday, September 14–Thursday, September 17

The agenda will include (a) Council updates; (b) Eastern Bering Sea (EBS) Ecosystem Status Report (ESR) updates; (c) Ecosystem and Socioeconomic Profile (ESP) Report Cards; (d) Tanner crab Center for Independent Experts (CIE) Review results; (e) Tanner crab final Stock Assessment and Fishery Evaluation (SAFE); (f) Snow crab final SAFE; (g) Bristol Bay red king crab (BBRKC) final SAFE; (h) St. Matthew blue king crab (SMBKC) final SAFE; (i) NOAA Summer trawl survey results; (j) Fishery summary; (k) Overfishing status