E 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XF437]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Homeporting United States Coast Guard Offshore Patrol Cutters at Naval Station Newport, Rhode Island

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

ACTION: Notice; proposed incidental harassment authorizations; request for comments on proposed authorizations and possible renewals.

SUMMARY: NMFS has received a request from the United States Coast Guard (USCG), on behalf of the United States Navy (Navy), for authorization to take marine mammals incidental to construction activities associated with the project Homeporting USCG Offshore Patrol Cutters (OPCs) at Naval Station (NAVSTA) Newport, Rhode Island (RI). Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue two consecutive 1-year incidental harassment authorizations (IHAs) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on possible one-time, 1-year renewals for each IHA that could be issued under certain circumstances and if all requirements are met, as described in the **Request for Public Comments** section at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorizations and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than [*INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE* **FEDERAL REGISTER**].

ADDRESSES: Comments should be addressed to the Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service and should be submitted via email to *ITP.esch@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: Carter Esch, Office of Protected Resources, NMFS (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

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

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking; other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to as "mitigation"); and requirements pertaining to the monitoring and reporting of the takings. The definitions of all applicable MMPA statutory terms used above are included in the relevant sections below (see also 16 U.S.C. 1362; 50 CFR 216.3, 216.103).

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.

These actions are 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 IHAs qualifies to be categorically excluded from further NEPA review.

Summary of Request

On April 20, 2025, NMFS received a request from the USCG, on behalf of the Navy, for authorization for the taking of marine mammals incidental to construction activities supporting the project Homeporting USCG OPC at NAVSTA in Newport, RI, over the course of approximately 1.5 years. Following NMFS' review of the application drafts and associated discussions, the USCG iteratively submitted revised versions of the application on June 20, July 15, and December 19 of 2025. The application was deemed adequate and complete on December 20, 2025. USCG's request is for authorization of take of seven species of marine mammals by Level B harassment and, for six of these species, Level A harassment. Neither USCG nor NMFS expect serious injury or mortality to result from this activity and; therefore, an IHA is appropriate.

NMFS previously issued ITAs for similar activities at NAVSTA Newport, including incidental take regulations (ITRs; 2021 final rule (86 FR 71162, December 15, 2021)) and a Letter of Authorization (LOA; 87 FR 6145, February 3, 2022) and subsequent modified LOA (88 FR 5856, January 30, 2023), associated with bulkhead repairs and replacement. NMFS issued an IHA (87 FR 78072, December 21, 2022) and renewal IHA (90 FR 11400, March 6, 2025) to the Navy on behalf of NOAA's Office of Marine and Aviation Operations for a construction project associated with the relocation of NOAA's research vessels to NAVSTA Newport. More recently, NMFS issued an IHA to the Navy for the Pier 171 Repair and Replacement project (90 FR 57953, December 15, 2025). The Navy and associated parties have 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 Specified Activities on Marine Mammals and their Habitat** section.

Description of the Proposed Activity

Overview

The USCG proposes to construct a modern pier and associated shore-side facilities at NAVSTA Newport in Coddington Cove, Newport, RI, to provide a fully mission-capable homeport to four 360-foot (ft) (109.7 meters (m)) long OPCs the USCG will acquire to replace the aging fleet of medium endurance cutters (figure 1). The proposed construction activities are necessary because the existing Navy Pier 1, which is the only feasible location for OPC berths at NAVSTA Newport, has been condemned due to structural deficiencies. USCG would demolish the existing Navy Pier 1 and construct its replacement immediately adjacent to the south, replace the existing riprap revetment with a new bulkhead at location S45 South, and construct a landside maintenance and weapons detachment building with a laydown area and parking. In-water demolition activities would include removal of concrete and steel pipe piles by cutting them off below the mudline, a process that is not expected to result in incidental take of marine mammals. The in-water activities that have the potential to take marine mammals, by Level A harassment and Level B harassment, include impact pile driving, vibratory pile driving and extraction, and down-the-hole (DTH) excavation. In total, the USCG anticipates conducting 355 non-consecutive days of in-water construction over approximately 1.5 years (Year 1: 190 days; Year 2: 165 days). The first year of in-water construction activities would begin June 1, 2027, and continue through May 31, 2028, and the second year of construction activities would begin June 1, 2028, and continue through October 31, 2029.

Figure 1 — Proposed Project Area in Coddington Bay at Naval Station (NAVSTA) Newport, RI

The USCG has requested issuance of two consecutive IHAs, one for each year of construction activities. Given the similarities in activities between project years, NMFS is issuing a single **Federal Register** notice to solicit public comments on the issuance of the two similar, but separate, IHAs.

Dates and Duration

The USCG anticipates that the homeporting project would occur over a 1.5-year period, beginning June 1, 2027, and ending October 31, 2028. The Year 1 IHA would be effective from June 1, 2027, through May 31, 2028, and the Year 2 IHA would be effective from June 1, 2028, through May 31, 2029. The specified activities could occur any time during each project year, although the USCG proposes to conduct the majority of in-water activities between May and December, annually (*i.e.,* avoiding winter months). A total of 190 days and 165 days of in-water work are planned for Year 1 and Year 2, respectively. USCG anticipates that all work would be limited to daylight hours. No in-water activities with the potential to result in incidental take of marine mammals would occur concurrently.

Specific Geographic Region

Coddington Cove is a protected embayment on the western side of Aquidneck Island in Narragansett Bay (figure 1). The cove covers an area of approximately 395 acres (1.6 square kilometers (km^2)), receiving partial protection by the Coddington Point mass to the south and a breakwater to the north; however, the northwestern section of the cove is exposed to the open-water conditions of Narragansett Bay. The tides in Coddington Cove are semi-diurnal, with two high tides and two low tides per day.

Proposed specified activities would occur in shallow, nearshore waters (less than 34 ft; 10 m). Based on a bathymetric survey the Navy conducted between December 2023 and January 2024, water depths near the Pier 1 location generally range between -30 and -40 ft mean lower low water (MLLW) and are, on average, approximately -5 ft MLLW at the proposed S45 South bulkhead location (Haley & Aldrich, Inc., 2024). Water temperature in the Coddington Cove ranges from 36 degrees Fahrenheit (°F; 2

degrees Celsius (°C)) in winter to 68°F (20°C) in summer, and salinity in the nearshore areas of Narragansett Bay at NAVSTA Newport ranges between 29.2 and 33.7 parts per thousand (Navy, 2017a). A benthic survey conducted in 2024 indicated substrates primarily consist of mud or gravelly mud, including varying amounts of cobble and shell debris (Stantec Consulting Services Inc., 2024).

In addition to underwater noise-producing activities at NAVSTA Newport, vessel noise from commercial shipping and recreational traffic in Narragansett Bay contributes to the ambient underwater soundscape in the proposed project area. Underwater noise data collected at the Naval Undersea Warfare Center (NUWC) Division indicated that ambient noise in the project area ranged from approximately 120 to 123 dB referenced to a pressure of 1 micropascal (dB re 1 μPa) root mean square (RMS).

Detailed Description of the Action

The proposed activity would establish adequate pier and support facilities to homeport four new OPCs at NAVSTA Newport, RI. In Year 1, the USCG would demolish the existing 158,500 ft^2 (14,725 m^2) Navy Pier 1 and construct a new 80,000 ft^2 (7,432 m^2) USCG OPC Pier 1 immediately adjacent to the south of the existing Navy Pier 1 footprint (*e.g.*, figure 1-3 in USCG's application**),** and install a new 315-ft (96-m) S45 South bulkhead to replace the existing riprap revetment. In Year 2, the USCG would install a fender system for the new USCG OPC Pier 1 constructed in Year 1. Detailed descriptions follow table 1, which summarizes in-water activities by year.

Demolition of the Navy Pier 1 would include removal of existing piles and concrete-filled steel support piles, steel fender piles, timber fender piles, transverse concrete beams, concrete pile caps, concrete pier deck, three buildings on the pier deck, cleats, bollards, and other amenities located on the pier deck. In-water demolition activities would include removal of concrete and steel pipe piles by cutting them off below the mudline, a process that is not expected to result in incidental take of marine mammals and is not discussed further herein.

Once completed the new USCG OPC Pier 1 would tie into the S45 North bulkhead, which was upgraded by NAVSTA Newport in 2024 as part of the Bulkheads Repair and Replacement project under a separate ITA (88 FR 5856, January 30, 2023)

Table 1 — Summary of Planned Construction Activities by Year

Activity (timing)	Installation method	Number of piling events[1]	Material	Pile size	Impact driving strikes per pile [DAILY TOTAL]	Vibratory driving minutes per pile [DAILY TOTAL]	Maximum number of piles installed/ extracted per day	Number of construction days
YEAR 1								
Construct new Bulkhead S45 South (June to August 2027)	Vibratory install/extract templates	36 (4 x 9 moves)	Steel pipe pile	16-inch diameter	N/A	30 [120]	4	9
	Vibratory install	168	Steel sheet pile (PZ35)	22.6-inch wide	N/A	30 [180]	6	28
Construct new USCG OPC Pier 1 (August to December 2027)	Vibratory install/extract templates	172 (4 x 43 moves)	Steel pipe piles	16-inch diameter	N/A	30 [120]	4	43
	Vibratory install first 35 ft Impact install last 43 ft	258	Steel pipe piles	36-inch diameter	4,300 [12,900]	45 [135]	3	86
	DTH excavation (assumes 20 percent of piles need DTH)[2]	52			13 strikes/ second	300 [600]	2	26
	Auger drilling inside pipe to lift sediment (no rock drilling)	258			N/A	120 [360]	3	86
YEAR 2								
Construct Pier 1 fender system (June to October 2028)	Vibratory install/extract Templates	280 (4 x 70 moves)	Steel pipe piles	16-inch diameter	N/A	20 [80]	4	70
	Vibratory install	570	Fiberglass composite pile	16-inch diameter	N/A	20 [120]	6	95

Legend: N/A = not applicable for activity

[1] A piling event may be a pile installation or extraction.

[2] DTH excavation may be used to clear boulders and other hard driving conditions for steel pipe piling. DTH excavation will only be used when an obstruction or pile refusal prevents the pile from being advanced to the required penetration depth.

S45 South Bulkhead (Year 1)

Prior to pier construction, the existing riprap revetment located at S45 South, approximately 250 ft south of the existing Navy Pier 1, would first be replaced with a new 315-linear-ft bulkhead consisting of an interlocking 23-in steel sheet pile wall, installed using vibratory pile driving only (*i.e.*, no impact pile driving or DTH excavation). To guide the process, a template secured by a set of four 16-inch steel pipe piles would be installed and subsequently extracted a total of nine times (36 vibratory actions total) throughout installation of the 168 PZ35 steel sheet piles (22.6-inch wide) comprising the sheet pile wall. The new sheet pile wall would be anchored laterally with tie rods connected to a short steel pile wall approximately 50 ft landward (referred to as a "deadman system").

USCG OPC Pier 1 (Year 1)

The proposed new USCG OPC Pier 1 would have two OPC berths on each side, with a cast-in-place concrete deck, 16-inch diameter fiberglass composite fender piles (to be installed in Year 2), fendering camels, mooring fittings, brow stands, mooring devices, and deck fittings. The 36-in USCG OPC Pier 1 support piles would be installed to a 35-foot penetration depth by vibratory pile driving, followed by impact pile driving for the final 45 ft of the full 80-ft target penetration depth. USCG OPC Pier 1 support piles would be installed using a template system similar to that described for bulkhead construction, where vibratory pile installation and extraction of a set of four 16-inch steel pipe piles securing a template would precede and follow, respectively, support pile installations on 43 occasions (for a total of 172 piling events). Where obstructions such as solid bedrock, boulders, or debris are encountered, impact pile driving may be followed by DTH excavation. Based on previous knowledge of site-wide substrate conditions, USCG estimates DTH excavation would be necessary for approximately 20 percent of the 36-inch support pile installations. Further, it is assumed that auger (rotary) drilling would be required for all support pile installations (n=258), to lift sediment and clear boulders/obstructions to make way for the new pier piles. However, auger drilling is not likely to result in incidental take of marine mammals, and we do not discuss it further.

USCG OPC Pier 1 Fender system (Year 2)

In Year 2, the USCG would construct a fender system to absorb impact energy from docking ships, protecting both the OPC vessel's hull and the new USCG OPC Pier 1 structure from damage. Using only vibratory pile driving, the USCG would install a set of four 16-inch steel pipe piles to hold a template to then guide their vibratory installation of a portion of the fender system fiberglass composite piles, extract all four 16-inch steel pipe piles once the target fiberglass composite fender system piles were installed, and then move to the next location. That process would be repeated 70 times, requiring 280 vibratory piling actions total (4 piles x 70) to facilitate installation of the 570 16-inch fiberglass composite piles required to construct the entire fender system.

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

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the ITA 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. Information regarding population trends and threats for the following species may be found in NMFS' Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species*).

Table 2 lists all species or stocks for which take is expected and proposed to be authorized for this activity and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no mortality or serious injury is anticipated or proposed to be authorized for the USCG's project, 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. Atlantic and Gulf of America Marine Mammal Stock Assessments. All values presented in table 2 are the most recent available at the time of publication (including from the draft 2024 SARs) and are available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*.

Table 2 — Status of Marine Mammal Species [1] Likely To Occur Near the Project Area

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— Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						

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]
Family Delphinidae:						
Atlantic white-sided dolphin	*Leucopleurus* [5] *acutus*	Western North Atlantic	-, -, N	93,233 (0.71, 54,443, 2021)	544	28
Common dolphin/Short beaked	*Delphinus delphis delphis*	Western North Atlantic	-, -, N	93,100 (0.56, 59,897, 2021)	1,452	414
Family Phocoenidae (porpoises)						
Harbor porpoise	*Phocoena phocoena*	Gulf of Maine/ Bay of Fundy	-, -, N	85,765 (0.53, 56,420, 2021)	649	145
Order Carnivora—Superfamily Pinnipedia						
Family Phocidae (earless seals):						
Gray seal [6]	*Halichoerus grypus*	Western North Atlantic	-, -, N	27,911 (0.20, 23,624, 2021)	1,512	4,570
Harbor seal	*Phoca vitulina*	Western North Atlantic	-, -, N	61,336 (0.08, 57,637, 2018)	1,729	339
Harp seal	*Pagophilus groenlandicus*	Western North Atlantic	-, -, N	7.6 M (UNK, 7.1, 2019)	426,000	178,573
Hooded seal	*Cystophora cristata*	Western North Atlantic	-, -, N	593,500 (UNK, UNK, 2005)	UNK	1,680

[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 SARs can be found online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments.* CV is the coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable.

[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.

[5] Genus reclassification for Atlantic white-sided dolphins (Society for Marine Mammalogy). The Society for Marine Mammalogy Taxonomy Committee completed the annual 2025 Taxonomic review of the Official List of Marine Mammal Species and Subspecies, announcing reclassification updates on July 21, 2025. Following work by Galatius *et al.* (2025) and Vollmer *et al.* (2019), the Committee implemented major revisions to the genera within the subfamily Lissodelphininae. The Atlantic white-sided dolphin (formerly *Lagenorhynchus acutus*) has been reassigned to the genus *Leucopleurus*, now *Leucopleurus acutus*. (Society for Marine Mammalogy (2025) List of Marine Mammal Species and Subspecies - Updated July 2025; available at *https://marinemammalscience.org/*; July 21, 2025).

[6] NMFS' stock abundance estimate (and associated PBR applies to the U.S. population only. Total stock abundance (including animals in Canada) is approximately 394,311. The annual M/SI value given is for the total stock.

As indicated above, all seven species (with seven managed stocks) in table 2 temporally and spatially co-occur with the activity to the extent that take is reasonably likely to occur. While several large whale species have been documented seasonally in New England waters, the spatial occurrence of these species is such that take is not expected to occur, and they are not discussed further beyond the explanation provided here. The humpback (*Megaptera novaeangliae*), fin (*Balaenoptera physalus*), sei (*Balaenoptera borealis*), sperm (*Physeter macrocephalus*) and North Atlantic right whales (*Eubaleana glacialis*) occur seasonally in the Atlantic Ocean, offshore of RI. However, due to the relatively shallow depths of Narragansett Bay and nearshore location of the project area, these marine mammals are unlikely to occur in the project area. Therefore, the USCG did not request, and NMFS is not proposing to authorize, takes of these species.

Marine mammal observation data is available from previous projects in and around NAVSTA Newport. A recent project within Coddington Cove to construct a pier for NOAA ships included pile driving and removal from June 2024 to January 2025. The monitoring report included 3 sightings of unidentified dolphins, including a pod of 5 animals on August 28, 2024, 10 animals on November 4, 2024 off Taylor Point (about 3 miles (4.8km) west-southwest of the pier), and 1 animal on November 25, 2024 (Werre, 2025). The report also included a detection of 12 common dolphins off Taylor Point on November 1, 2024 (Werre, 2025). Monitoring did not result in any confirmed harbor porpoise, gray seal, harp seal, or hooded seal sightings (Werre, 2025). However, from November 2024 through January 2025, harbor seals were the most regularly occurring marine mammal species, accounting for 26 of the 31 total seal detections, and 80 of the 109 overall individual marine mammal detections (Werre, 2025).

Harbor seals are also common in Narragansett Bay, with over 22 documented haulout sites. Results from the bay-wide count for 2019 recorded 572 harbor seals, which also included counts from Block Island (DeAngelis, 2020). During a 1-day Narragansett Bay-wide count in 2025, there were at least 551 seals observed, with all 22 haulout sites represented (The Jamestown Press, 2025). This is an increase from a count of 357 seals in 2021 and above the average of 427 seals calculated across years prior (Save the Bay, 2022).

In RI waters, harbor seals prefer to haul out on isolated intertidal rock ledges and outcrops. The Sisters seal haulout site is the closest to the project area, approximately 1 mile (1.6 km) south of the Navy Pier 1 location, on the open water edge of Coddington Cove. NAVSTA employees have reported seals hauled out at The Sisters, particularly at low tide and, in observations off the haulout site gathered between 2011 and 2020, the NUWC Division Newport noted a steady increase in wintertime harbor seal occurrence (NUWC Division, 2011). During this period, harbor seals were rarely observed at The Sisters haulout site in the early fall (*i.e.*, September and October), but began to occur consistently in mid-November (0-10 animals) in a population that steadily increased in number to a peak population size of 40-50 animals in March. The number of harbor seals began to decline in April and the haulout site was typically abandoned for the season by mid-May (DeAngelis, 2020).

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To assess noise impacts, it is necessary to characterize marine mammal hearing ranges. Not all marine mammal species have equal hearing capabilities or hear over the same frequency range (*e.g.* Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Subsequently, NMFS (2018, 2024) described generalized hearing ranges for marine mammal hearing groups (table 3). Generalized hearing ranges were chosen based on the approximately 65-decibel (dB) threshold from the composite audiograms, previous analyses in NMFS (2018), and/or data from Southall *et al.* (2007) and Southall *et al* (2019). Of the species potentially present in the action area, Atlantic white-sided and common dolphins are considered high-frequency (HF) cetaceans, and harbor porpoise are considered very high-frequency (VHF) cetaceans. Harbor, gray, hooded and harp seals are phocid pinnipeds (PW).

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

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 36 kHz
High-frequency (HF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
Very High-frequency (VHF) cetaceans (true porpoises, *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 ~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 detail concerning these groups and associated generalized hearing ranges, please see (NMFS, 2024) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

This section includes a summary and provides a discussion of the ways in which components of the specified activity may impact marine mammals and their habitat. The **Estimated Take of Marine Mammals** section later in this document 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 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 are expected to potentially occur from impact pile driving, vibratory pile driving and extraction, and DTH excavation. The effects of underwater noise from the USCG's proposed activities have the potential to result in Level B harassment of marine mammals in the action area and, for some species as a result of certain activities, Level A harassment.

Overall, the proposed activities include installation and extraction of temporary and permanent piles at NAVSTA Newport. 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 the Specified Activities

Activities associated with the project that have the potential to incidentally take marine mammals though exposure to sound would include impact pile installation, vibratory pile installation and extraction, and DTH excavation. 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 (SPLs), 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. Vibratory hammers typically produce less sound (*i.e.*, lower SPLs) than impact hammers. Peak 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 and, compared to sounds produced by impact hammers, have a slower rise time that reduces the probability and severity of injury, given the sound energy is distributed over a greater amount of time (Nedwell and Edwards, 2002; Carlson *et al.*, 2005).

DTH excavation uses a combination of drilling and impact hammering mechanisms to advance development of a hole in rock, with or without simultaneously advancing a pile/casing into that hole. DTH excavation is accomplished by the efficient progression of a drill bit, rotated under pressure while simultaneously hammered by a specialized percussive hammer located within the drill string (*i.e.*, "behind" the bit), the combined forces moving the bit forward to fracture rock. Traditional impact and vibratory pile driving involve a hammer striking the top of the pile, causing the entire length of the submerged pile to radiate sound as a linear source. However, the DTH hammering mechanism is integrated into the drill itself, so the primary sound generation point is at the interface of the drill bit and the substrate (*i.e*., rock) deep within the ground/seabed, radiating sound pressure more like a point rather than linear source. DTH systems often involve a single hammer (mono-hammer), but multi- or "cluster" hammer drills are also used widely. For construction of the USCG OPC Pier, the USCG anticipate that installation of approximately 20 percent of the 36-inch steel pipe piles may require DTH excavation using a mono-hammer.

The sounds produced by the DTH excavation methods simultaneously contain both a continuous non-impulsive component from the drilling action and an impulsive component from the hammering effect. Therefore, for purposes of evaluating Level A harassment and Level B harassment under the MMPA, NMFS treats DTH systems simultaneously as both impulsive (Level A harassment thresholds) and continuous, non-impulsive (Level B harassment thresholds) sound source types.

The likely or possible impacts of USCG's proposed activities on marine mammals could be generated from both non-acoustic and acoustic stressors. Potential non-acoustic stressors include the physical presence of the equipment, vessels, and personnel; however, the closest known haulout site is located approximately 1 mi (1.6 km) from the Navy Pier 1 location, thus we expect that visual and other non-acoustic stressors would be limited. Should any animals approach the project site(s) closely enough to be harassed due to the presence of equipment or personnel, we expect they would have already traveled through the Level A harassment and/or Level B 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.

Acoustic Effects

The introduction of anthropogenic noise into the aquatic environment by impact pile driving, vibratory pile driving and extraction, and DTH excavation is the means by which marine mammals may be harassed by USCG's specified activities. In general, animals exposed to natural or anthropogenic sound may experience behavioral, physiological, and/or physical effects, ranging in magnitude from none to severe (Southall *et al.,* 2007, 2019). Generally, exposure to pile driving and extraction and other construction noise has the potential to result in auditory threshold shifts (TSs) and behavioral reactions (*e.g.,* avoidance, temporary cessation of foraging and vocalizing, changes in dive behavior). Exposure to anthropogenic noise can also lead to non-observable physiological responses such as an increase in stress hormones. Additional noise in a marine mammal's habitat can mask acoustic cues used by marine mammals to carry out daily functions such as communication and predator and prey detection. The effects of pile driving and demolition noise on marine mammals are dependent on several factors, including, but not limited to, sound type (*e.g.,* impulsive vs. non-impulsive), the species, age and sex class (*e.g.,* adult male vs. mother with calf), duration of exposure, the distance between the pile and the animal, received levels, behavior at time of exposure, and previous history with exposure (Wartzok *et al.,* 2003; Southall *et al.,* 2007). Here we discuss physical auditory effects (TSs) followed by behavioral effects and potential impacts on habitat.

NMFS defines noise-induced 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, 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 and vocalization 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) and Permanent Threshold Shift (PTS) — 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; Finneran 2024). AUD INJ may or may not result in a 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 Threshold Shift (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, elephant seals (*Mirounga angustirostris*), bearded seals (*Erignathus barbatus*) and California sea lions (*Zalophus californianus*) (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 threshold shift 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 shift 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 SEL thresholds are 15 to 20 dB higher than TTS cumulative SEL 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 (*e.g.*, pile driving, DTH) 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 haul out 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), respectively, 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 as a "progressive reduction in response to stimuli that are perceived as neither aversive nor beneficial," rather than as, more generally, moderation in response to human disturbance (Bejder *et al.*, 2009). The opposite process is sensitization, when an unpleasant experience leads to subsequent responses, often in the form of avoidance, at a lower level of exposure.

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 (*Eschrictius robustus*) 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, 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.

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 (*Orcinus orca*) 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 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. Pile driving sound energy is distributed over a broad frequency spectrum, within the hearing range of marine mammals that may occur 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 USCG's proposed activities will only occur intermittently, across an estimated 355 days during the authorization period in a relatively small area focused around the proposed construction site. Thus, while the USCG'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. Phocid pinnipeds (*i.e.*, seals) 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 seals that are swimming or hauled out near the project site within the range of noise levels elevated above airborne acoustic harassment criteria. Although seals are known to haul out regularly on manmade objects (*e.g.*, pier), we believe that incidents of take resulting solely from airborne sound are unlikely given the proximity of the proposed project area to local haulout sites (Figure 4-1 of application), which we assume would be preferred habitat. We do not anticipate that cetaceans would be exposed to airborne sounds that would result in harassment, as defined under the MMPA.

We recognize that seals 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 seals to exhibit changes in their normal behavior, such as reduction in vocalizations, or cause them to flush from haulouts, temporarily abandon the area, and or move further from the source. However, these animals would previously have been 'taken' because of exposure to underwater sound above the behavioral harassment thresholds, which are in all cases 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 incidental take resulting from airborne sound for seals is warranted, and airborne sound is not discussed further here.

Potential Effects on Marine Mammal Habitat

The USCG'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 near 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, 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 USCG's activities is relatively small compared to the available habitat in Narragansett Bay. 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 tugging 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 proposed project will occur within the same footprint as existing marine infrastructure. The nearshore and intertidal habitat where the proposed project will occur is an area of relatively high marine vessel traffic. 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 mammals will be limited to temporary displacement from pile installation and extraction noise, and effects on prey species will be similarly limited in time and space.

Water quality – Temporary and localized reduction in water quality will occur as a result of in-water construction activities. Most of this effect would occur during the installation and extraction of piles when bottom sediments are disturbed. The installation and extraction of piles would disturb bottom sediments and may cause a temporary increase in suspended sediment in the project area. During pile extraction, sediment attached to the pile moves vertically through the water column until gravitational forces cause it to slough off under its own weight. 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. 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 Narragansett Bay.

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 and extraction. 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 mortalities or impacts that might occur would be negligible.

The greatest potential impact to marine mammal prey during construction would occur during impact pile driving, vibratory pile driving and extraction, and DTH excavation. However, the duration of impact pile driving would be limited to the final stage of installation ("proofing") after the pile has been driven as close as practicable to the design depth with a vibratory driver. In-water construction activities would only occur during daylight hours, allowing fish to forage and transit the project area in the evening. Vibratory pile driving could 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. 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 relatively low-quality habitat, given it is already highly developed and regularly experiences a high level of anthropogenic noise from normal operations and other vessel traffic.

Potential Effects on Foraging Habitat

The 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 and extraction of many in-water piles would be temporary and intermittent. The total seafloor area affected by pile installation and extraction is a very small area compared to the vast foraging area available to marine mammals outside this project area. 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 USCG’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 USCG'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 IHAs, 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 sources (*i.e.,* impact pile driving, vibratory installation and extraction, DTH excavation) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for Level A harassment (AUD INJ/PTS) to result, primarily for harbor porpoises and seals because predicted AUD INJ zones are larger than are observable. AUD INJ is unlikely to occur for 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 pressure received levels (RMS SPL) of 120 dB (referenced to 1 re 1 μPa) for continuous (*e.g.,* vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μPa for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources. Generally speaking, estimates of take by Level B harassment 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.

USCG's proposed activity includes the use of continuous (vibratory pile driving, DTH) and impulsive (impact pile driving and DTH hammering) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μPa, respectively, are applicable.

Level A harassment – NMFS' 2024 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) (table 4). USCG's proposed activity includes the use of impulsive (impact pile driving and DTH hammering) and non-impulsive (vibratory pile driving and DTH drilling) sources.

The 2024 Updated Technical Guidance criteria include both updated thresholds and updated weighting functions for each hearing group (table 4). These thresholds criteria thresholds are provided in the table below. The references, analysis, and methodology used in the development of the criteria thresholds, as well as the detailed description of the updated weighting functions, are described in NMFS' 2024 Updated Technical Guidance, which may be accessed at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance-other-acoustic-tools*.

Table 4 — Thresholds Identifying the Onset of Auditory Injury (AUD INJ)

	AUD INJ Onset Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1* $L_{p,\text{0-pk,flat}}$: 222 dB $L_{E,p,\text{ LF,24h}}$: 183 dB	*Cell 2* $L_{E,p,\text{ LF,24h}}$: 197 dB
High-Frequency (HF) Cetaceans	*Cell 3* $L_{p,\text{0-pk,flat}}$: 230 dB $L_{E,p,\text{ HF,24h}}$: 193 dB	*Cell 4* $L_{E,p,\text{ HF,24h}}$: 201 dB
Very High-Frequency (VHF) Cetaceans	*Cell 5* $L_{p,\text{0-pk,flat}}$: 202 dB $L_{E,p,\text{VHF,24h}}$: 159 dB	*Cell 6* $L_{E,p,\text{ VHF,24h}}$: 181 dB
Phocid Pinnipeds (PW) (Underwater)	*Cell 7* $L_{p,\text{0-pk.flat}}$: 223 dB $L_{E,p,\text{PW,24h}}$: 183 dB	*Cell 8* $L_{E,p,\text{PW,24h}}$: 195 dB
Otariid Pinnipeds (OW) (Underwater)	*Cell 9* $L_{p,\text{0-pk,flat}}$: 230 dB $L_{E,p,\text{OW,24h}}$: 185 dB	*Cell 10* $L_{E,p,\text{OW,24h}}$: 199 dB

* Dual metric thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating AUD INJ onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds are recommended for consideration.

Note: Peak sound pressure level ($L_{p,\text{0-pk}}$) has a reference value of 1 μPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1μPa^{2}s. In this table, thresholds are abbreviated to be more reflective of International Organization for Standardization standards (ISO 2017). The subscript "flat" is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals (*i.e.*, 7 Hz to 165 kHz). The subscript associated with cumulative sound exposure level thresholds 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 thresholds could be exceeded in a multitude of ways (*i.e.,* varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these thresholds will be exceeded.

As described previously, DTH systems have both continuous, non-impulsive, and impulsive components as discussed in the *Description of Sound Sources* section above. When evaluating Level B harassment, NMFS recommends treating DTH as a continuous source and applying RMS SPL thresholds of 120 dB re 1 μPa. When evaluating Level A harassment, NMFS recommends treating DTH as an impulsive source, applying the thresholds in the second column of table 4. NMFS (2022) guidance on DTH systems recommends source levels for DTH systems (*https://media.fisheries.noaa.gov/2022-11/PUBLIC%20DTH%20Basic%20Guidance_November%202022.pdf*). NMFS has applied those levels in our analysis (see table 5 for NMFS' proposed source levels) of potential acoustic impacts from DTH systems during USCG OPC Pier 1 construction in Year 1 (*i.e.,* the only year in which it would be required).

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 pile driving and extraction, impact pile driving, DTH).

Source levels for vibratory pile installation and extraction, impact pile driving, DTH, and drilling are based on reviews of measurements of the same or similar types and dimensions of pile available in the literature. Source levels for vibratory installation and extraction of piles of the same diameter are assumed equal. Tables 5 and 6 present source levels for in-water construction activities planned for Year 1 and Year 2, respectively.

Table 5 — Source Levels for Proposed Activities (Year 1)

Pile Type	Installation/Extraction Method	Pile Diameter	Peak SPL, dB re 1 μPa	RMS SPL, dB re 1 μPa	SEL, dB re 1 μPa2-sec	Reference
Steel pipe pile	Vibratory	16-inch	N/A	163	N/A	NMFS, 2025a
	Vibratory	36-inch	N/A	170	170	Caltrans 2015; NMFS 2022c
	Impact		210	193	183	Caltrans 2015; NMFS 2022c

	DTH		194	174	164	NMFS 2022b
Steel Sheet pile	Vibratory	PZ35 / 22.6-inch(2)	175	160	N/A	Caltrans 2020; NMFS 2022c
Fiberglass composite	Vibratory	16-inch	N/A	162	N/A	Caltrans 2020; NMFS 2022c (data based on timber pile)

Table 6 — Source Levels for Proposed Activities (Year 2)

Pile Type	Installation/Extraction Method	Pile Diameter	Peak SPL, dB re 1 µPa	RMS SPL, dB re 1 µPa	SEL, dB re 1 µPa2-sec	Reference
Steel pipe pile (template)	Vibratory	16-inch	N/A	163	N/A	NMFS, 2025a
Fiberglass composite	Vibratory	16-inch	N/A	162	N/A	Caltrans 2020; NMFS 2022c (data based on timber pile)

Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source in the acoustic field. 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:

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

TL = transmission loss in dB

B = transmission loss coefficient

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

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

Absent site-specific acoustical monitoring with differing measured *TL*, a practical spreading loss value of 15 is used as the *TL* coefficient in the above formula for nearshore environments. Site-specific *TL* data for Coddington Cove 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 TL model described above was used to calculate the expected noise propagation from impact pile driving, vibratory pile driving and extraction, and DTH excavation using representative source levels to estimate the harassment zones or area exceeding the noise criteria, resulting in the maximum distances to the Level B harassment isopleths shown in table 7. In addition, areas ensonified above the Level B harassment thresholds were calculated and truncated to account for landmass interference, where applicable, using a Geographic Information System. For Year 1, the largest calculated distance to the Level B harassment isopleth is 39,811 m, which would be produced during DTH excavation of the 36-in steel pipe piles supporting USCG OPC Pier 1. For Year 2, the largest calculated distance to the Level B harassment isopleth is 7,356 m, produced during vibratory installation and extraction of 16-in steel pipe template piles used to facilitate construction of the USCG OPC Pier 1 fender system (table 7). When accounting for attenuation from landmass interference, activities in both years would generate an estimated maximum distance to the Level B harassment threshold isopleth of approximately 4,000 m, ensonifying a maximum area of 9.67 km^2 (table 7).

The ensonified area associated with Level A harassment (AUD INJ) 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 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 (AUD INJ). However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources such as pile driving and DTH, 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, which includes but is not limited to PTS.

The USCG used NMFS' 2024 Updated Technical Guidance and optional User Spreadsheet to calculate the maximum distances to Level A harassment (AUD INJ onset) thresholds for all in-water construction activities in Year 1 (*i.e.,* impact pile driving, vibratory installation and extraction, and DTH excavation) and Year 2 (*i.e.*, vibratory installation and extraction). Inputs used in the optional User Spreadsheet tool include values in table 1 (*e.g.* number of piles per day, duration, and/or strikes per pile) and tables 5 and 6 (*i.e.,* source levels). Sound source locations were chosen to model the greatest possible affected area from the representative notional pile location. The resulting estimated distances to harassment threshold isopleths and total ensonified areas are reported below in table 7. As described for the maximum calculated areas based on the Level B harassment isopleths, areas ensonified above the Level A harassment thresholds were calculated and truncated to account for landmass interference, where applicable (table 7).

Table 7 — Maximum Distances to MMPA Harassment Threshold Isopleths and Associated Ensonified Areas[1]

Structure	Pile diameter/size and type	Activity	Level A (AUD INJ/PTS) harassment Maximum distance (m)/area km[2]			Level B (behavioral) harassment Maximum distance (m)/area km[2]
			HFC	VHFC	PW	
Vibratory methods						
Bulkhead S45 South Construction (Year 1)	22.6-in wide steel sheet piles (PZ35)	Install	6.3/ 0.00013	13.4/ 0.000489	21.2/0.00105	4,642/7.346
	16-in steel pipe (template) piles	Install/ Extract	7.6/0.00018	16.3/0.000672	25.6/ 0.00144	7,356/ 7.385
Pier 1 Construction (Year 1)	36-in steel pipe piles	Install	24.2/0.00184	51.5/0.00833	81.1/0.0206	21,544/9.6737
	16-in steel pipe (template) piles	Install/ Extract	7.6/0.00018	16.3/0.00083	25.6/ 0.00205	7,345/7.660
Pier 1 Fender System Construction (Year 2)	16-in fiberglass composite fender piles	Install	6.6/ 0.00014	13.9/ 0.000607	22.0/ 0.00152	6,310/ 9.674
	16-in steel pipe (template) piles	Install/ Extract	5.8/0.00011	12.4/0.000481	19.5/0.00119	7,356/7.660
Impact methods						
Pier 1 Construction (Year 1)	36-in steel pipe piles	Install	698.3/ 1.138	8,469.3/ 9.6737	4,861.9/ 9.6737	1,585/ 2.855
	36-in steel pipe piles	DTH	414.1/ 0.4773	5,022.9/ 9.6737	2,883.4/ 5.9874	39,811/ 9.6737

[1] The anticipated duration of vibratory pile installation/extraction required for 16-in diameter steel pipe template piles is longer for Bulkhead S45 and Pier 1 (120 min/day) versus Pier 1 Fender System (80 min/day) construction, resulting in differences in the distances and areas associated with Level A harassment thresholds for those activities.

[2] The harassment zones will be truncated due to the presence of intersecting landmasses and would encompass a maximum area of 9.67 km^2 during Year 1 and Year 2.

For a given activity (*e.g.*, pile driving), Level A harassment zones are typically smaller than Level B harassment zones. However, in rare cases, the maximum calculated distance to the Level A harassment threshold isopleth is greater than the maximum calculated distance to the Level B harassment threshold isopleth (*e.g.*, values for impact pile driving of 36-inch steel pipe piles in Year 1 for very high-frequency (VHF) cetaceans and phocids (PW)) (table 7). Calculations of Level A harassment isopleths include a duration component that, in the case of impact pile driving and DTH methods, is estimated through the total number of expected daily strikes within a 24-hour period and the associated pulse duration. When analyzing potential acoustic impacts for a stationary sound source such as impact pile driving or DTH, we assume that an animal would be exposed to all of the strikes expected for that activity within that 24-hour period. In contrast, calculation of Level B harassment isopleths does not include a duration component. Due to differences in the parameters that characterize each form of harassment, it is assumed that Level B harassment occur instantaneously rather than building through exposure to a series of hammer strikes over a longer duration. Thus, depending on the duration included in the calculation, the calculated radii to Level A harassment isopleths can be larger than the calculated radii to the Level B harassment isopleth for the same activity.

Marine Mammal Occurrence and Take Estimation

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

Marine Mammal Occurrence

Potential exposures to construction noise for each acoustic threshold were estimated using marine mammal density estimates from the Navy Marine Species Density Database (NMSDD) (Navy, 2017a) (table 8). Monthly densities of species were evaluated in terms of minimum, maximum, and average annual densities within

Narragansett Bay. Average densities were used for all cetaceans. The average densities were calculated using all data records provided for each cetacean, where density survey data was available over a 12-month survey period.

The NMSDD models densities for harbor and gray seals as a harbor-gray seal guild due to difficulty in distinguishing these two species at sea. Given records of its year-round occurrence in Narragansett Bay, the harbor seal is expected to be the most commonly occurring phocid pinniped species in the project area (Kenney and Vigness-Raposa, 2010); thus, take estimation for the harbor seal incorporates the maximum (*i.e.,* versus minimum or average) density estimate for the harbor-gray seal guild. Based on stranding records, gray seals are the second-most commonly occurring phocid species in Rhode Island waters and, particularly during spring and early summer and occasionally during other months of the year (Kenney, 2020). Therefore, the average density for the pooled harbor-gray seal guild was used for gray seal take estimation.

Unlike the pooled harbor-gray seal density model, the NMSDD includes models specific to the hooded seal and the harp seal that are separate from each other (and from the pooled harbor-gray seal density model). Both species are considered only occasional visitors in Narragansett Bay. Sightings of either species, either live or stranded, are considered rare - particularly compared to harbor and gray seal sighting frequencies (Kenney, 2015). Thus, take estimation for the hooded seal considers only the minimum density estimate available for the hooded seal density model (versus the average or maximum). Similarly, take estimation for the harp seal considers only the minimum density estimate available for the harp seal density model (versus the average or maximum).

Table 8 — Densities Used in Exposure Analysis, by Species

Species	Density model strategy for species (Individual or Grouped)	Density model output used for take estimation (minimum, average, or maximum)	Density in Project Area (species per km^2)

Atlantic white-sided dolphin	Individual	Average	0.003
Common dolphin	Individual	Average	0.011
Harbor porpoise	Individual	Average	0.012
Harbor seal[1]	Grouped	Maximum	0.623
Gray seal[1]		Average	0.131
Harp seal[2]	Individual	Minimum	0.05
Hooded seal[2]	Individual	Minimum	0.001

[1] The NMSDD models density (*i.e.*, minimum, average, and maximum estimates) for harbor and gray seals as a combined harbor-gray seal guild, due to difficulty in distinguishing these two species at sea. Harbor seals are more common than gray seals in Narragansett Bay; thus, of the three density estimates produced by the model, take estimation used the maximum and average density estimates for harbor and gray seals, respectively.
[2] Harp seal occurrence in Narragansett Bay is rare, thus, take estimation is based on the minimum density estimate produced by the density model for this species. For the same reason, this approach was used for the hooded seal, another infrequent visitor to Narragansett Bay.

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.

For each species, USCG multiplied the density (*N*) by the largest ensonified area (table 7) and the maximum days of activity (table 1) (take estimate = $N \times$ ensonified area $\times$ days of pile driving/extraction, DTH) in order to calculate estimated take by Level A harassment and Level B harassment. USCG used the pile type, size, and construction method that produce the largest isopleth to estimate exposure of marine mammals to noise impacts. The exposure estimate was rounded to the nearest whole number at the end of the calculation. Estimated take by activity type for each species is shown in table 6-10 in the application.

For each species, tables 9 and 10 show the total requested number of takes by Level A harassment and Level B harassment for all activities for Year 1 and Year 2, respectively. For Year 1, USCG is requesting incidental take by Level B harassment of 7 species (Atlantic white-sided dolphin, common dolphin, harbor porpoise, harbor seal, gray seal, harp seal, and hooded seal) and, for all species except the Atlantic white-sided dolphin, by Level A harassment. When determining sufficient numbers of take to request for authorization (relative to the number estimated through exposure analysis), USCG increased the estimated take by Level B harassment for Atlantic white-sided dolphins from 6 to 16 takes in Year 1 and 7 to 16 takes in Year 2, as the estimated take was less than the documented average group size (NUWC, 2017). A similar adjustment was made for common dolphins, resulting in an increase from estimated to requested take by Level B harassment from 24 to 30 takes in Year 1, and 22 to 30 in Year 2. NMFS concurs with the USCG's approach and, for each IHA, is proposing to authorize 16 takes of Atlantic white-sided dolphins by Level B harassment and 30 takes of common dolphins by Level B harassment. For hooded seals, Year 1 exposure modeling predicts one take by Level A harassment and one take by Level B harassment, while Year 2 exposure modeling predicts zero takes by Level A harassment and three takes by Level B harassment. Year 1 activities include impact installation methods (*i.e.*, impact pile driving and DTH methods), which are expected to produce large Level A harassment zones for phocids (PW) (up to 4,861.9 m; table 7). Hooded seal occurrence in the project area is rare, but possible, primarily from January through May. To guard against unauthorized take, the USCG requested and NMFS is proposing to authorize, one take by Level A harassment and one take by Level B harassment for each month of potential overlap of specified activities and hooded seal occurrence (table 9). Year 2 construction would include only vibratory installation methods, producing small Level A harassment zones with radii no larger than 22 meters. Therefore, for Year 2, NMFS is proposing to authorize 5 takes of hooded seals by Level B harassment only (table 10).

Table 9 – Proposed Take by Stock and Harassment Type and as a Percentage of Stock Abundance (Year 1)

Species Name	Stock	Stock Abundance	Level A (AUD INJ/PTS)	Level B (Behavioral)	Proposed maximum annual take	Proposed take as percentage of stock
Atlantic white-sided dolphin[1]	Western North Atlantic	93,233	0	16	16	0.017
Common dolphin[1]	Western North Atlantic	93,100	1	30	31	0.033
Harbor porpoise	Gulf of Maine / Bay of Fundy	85,765	13	22	35	0.041
Harbor seal	Western North Atlantic	61,336	615	1,186	1,801	0.029
Gray seal	Western North Atlantic	27,911	129	250	379	1.358
Harp seal	Western North Atlantic	7,600,000	50	94	144	<0.001
Hooded seal[2]	Western North Atlantic	Unknown	5	5	10	N/A

[1] Requested take by Level B harassment has been increased to mean group size (NUWC, 2017). Mean group size was not used for those take estimates that exceeded the mean group size.
[2] USCG is conservatively requesting 1 take by Level A harassment, incidental to impact installation methods, and 1 take by Level B harassment of hooded seals per month of construction when this species may occur in the project area (January through May). Impact installation methods and the associated incidental Level A harassment are limited to Year 1.

Table 10 – Proposed Take of Marine Mammals by Level B Harassment by Species, and Percent of Stock (Year 2)

Species Name	Stock	Stock Abundance	Level A (AUD INJ)	Level B (Behavioral)	Proposed maximum annual take	Proposed take as percentage of stock
Atlantic white-sided dolphin[1]	Western North Atlantic	93,233	0	16	16	0.017
Common dolphin[1]	Western North Atlantic	93,100	0	30	30	0.032
Harbor porpoise	Gulf of Maine / Bay of Fundy	85,765	0	23	23	0.027
Harbor seal	Western North Atlantic	61,336	0	1,240	1,240	2.022

Gray seal	Western North Atlantic	27,911	0	260	260	0.932
Harp seal	Western North Atlantic	7,600,000	0	100	100	0.001
Hooded seal[2]	Western North Atlantic	Unknown	0	5	5	N/A

[1] Requested take by Level B harassment has been increased to mean group size (NUWC, 2017). Mean group size was not used for those take estimates that exceeded the mean group size.
[2] USCG is conservatively requesting 1 take by Level B harassment of hooded seals per month of construction when this species may occur in the project area (January through May). No impact installation methods are planned for Year 2, thus no Level A harassment is anticipated..

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 ITAs 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 sections were either proposed by the USCG in its adequate and complete application or are the result of subsequent coordination between NMFS and the USCG. The USCG 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 measures below as proposed mitigation requirements (see section 11 of the USCG's application for more detail), and has included them in both of the proposed IHAs.

In addition to the measures described later in this section, the USCG would follow these general mitigation measures:

- Authorized take, by Level A harassment and Level B harassment, would be limited to the species and numbers listed in tables 9 or 10. Construction activities must be halted upon observation of either 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 is within the harassment zone.
- The taking by serious injury or death of any of the species listed in tables 9 and 10, or taking of any species of marine mammal other than those listed in tables 9 and 10, would be prohibited and would result in the modification, suspension, or revocation of the IHAs, if issued. Exceeding the numbers of incidental take for a

given species that are proposed for authorization (tables 9 and 10) would be prohibited and would result in the modification, suspension, or revocation of the IHAs, if issued.

- The USCG must ensure that construction supervisors and crews, the marine mammal monitoring team, and relevant USCG staff are trained prior to the start of all construction activities, so that responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.
- The USCG, construction supervisors and crews, Protected Species Observers (PSOs), and relevant USCG staff must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 meters 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.
- The USCG must employ PSOs and establish monitoring locations as described in section 5 of the IHAs and the USCG's Marine Mammal Monitoring and Mitigation Plan, which would be submitted to NMFS for approval no later than 30 days in advance of construction work. The USCG must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions. A minimum of two PSOs would be required to monitor for marine mammals during vibratory pile installations and extractions; a minimum of three PSOs would be required to monitor for marine mammals during impact pile driving and use of DTH methods.

Additionally, the following mitigation measures apply to the USCG's in-water construction activities:

Establishment of Shutdown Zones — The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting a marine mammal (or in anticipation of an animal entering the defined area). The USCG proposes shutdown zones with radial distances identified in tables 11 and 12 for all construction activities (*i.e.*, pile driving or extraction, and DTH). To prevent injury from physical interaction with construction equipment, the USCG proposes a minimum shutdown zone of 10 m (33 ft) be implemented during all in-water construction activities having the potential to affect marine mammals to ensure marine mammals are not present within this zone and to protect marine mammals from collisions with project vessels during pile driving and other construction activities. These activities could include, but are not limited to, barge positioning, drilling, or pile driving. The other shutdown zones proposed by the USCG are based on the size of the Level A harassment zone for each pile size/type and driving method, although some of the zones for Year 1 are too large to monitor completely (*i.e.*, for VHFC and PW during impact pile driving and DTH); in these cases, the proposed shutdown zone would be limited to a radial distance of 200 m from the acoustic source For example, even though the Level A harassment zone (8,469-m radius) for the VHFC hearing group during impact pile driving of 36-in steel pipe support piles would be truncated by land interference at a radial distance of approximately 4,000 m, the USCG anticipates that it would not be practicable to deploy PSOs to monitor the entirety of the remaining ensonified area. Thus, the USCG proposes to maintain a maximum shutdown zone of 200 m for that activity. NMFS concurs with this approach.

If an activity is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until the animal has voluntarily exited and been visually confirmed beyond the relevant shutdown zone indicated in tables 11 and 12, or 15 minutes have passed without re-detection of the animal. If a marine mammal species not covered under these IHAs enters a harassment zone, all in-water activities must cease and remain shut down until the animal leaves the harassment zone or has not been observed for a minimum of 15 minutes. However, if a marine mammal enters the Level B harassment zone, in-water work would proceed and PSOs would document the marine mammal's presence and behavior.

Table 11 – Proposed Shutdown Zones for Project Activities (Year 1)

Pile Type	Pile Size	Activity	Shutdown Zone (m)		Level B Harassment Zone (m)
			Seals (PW)	Cetaceans (HFC, VHFC)	All Marine Mammal Species[1,2]
Steel sheet (PZ35)	22.6-in wide	Vibratory Install	25	25	4,642
Steel pipe (template)	16-in diameter	Vibratory Install/ Extract	30	20	7,356
Steel pipe (permanent)	36-in diameter	Vibratory Install	85	55	21,544
		Impact Install	200*	200*	1,585
		DTH	200*	200*	39,811

[1] Harassment zones may not reach the maximum distance due to the presence of intersecting land masses. Refer to figures 6-1 through 6-9 of USCG's IHA application for visual depictions of the harassment zones PSOs will monitor.
[2] At least three PSOs must be assigned to monitor during impact pile driving and use of DTH methods.
* Based on practicable shutdown zone distance implemented for other similar projects in the region (*e.g.*, NMFS, 2022b).

Table 12 – Year 2: Proposed Shutdown Zones for Project Activities (Year 2)

Pile Type	Pile Size	Activity	Shutdown Zone (m) Seals (PW)	Shutdown Zone (m) Cetaceans (HFC, VHFC)	Level B Harassment Zone (m) All Marine Mammal Species[1,2]
Fiberglass composite fender	16-in diameter	Vibratory Install	25	15	6,310
Steel pipe (template)	16-in diameter	Vibratory Install/ Extract	20	15	7,345

[1] Harassment zones may not reach the maximum distance due to the presence of intersecting land masses. Refer to figures 6-1 through 6-9 of USCG's IHA application for visual depictions of the harassment zones PSOs will monitor.
[2] At least three PSOs must be assigned to monitor during impact pile driving and use of DTH methods.

Pre- and Post-Activity Monitoring —Monitoring would take place from 30 minutes prior to initiation of pile driving activity (*i.e.*, pre-start clearance monitoring) through 30 minutes post-completion of pile driving activity. In addition, monitoring for 30 minutes would take place whenever a break in the specified activity (*i.e.*, impact pile driving, vibratory pile driving or extraction, DTH) of 30 minutes or longer occurs. Pre-start clearance monitoring would be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones indicated in tables 11 and 12 are clear of marine mammals. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals.

Soft Start —The USCG would use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. A 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 procedures are used 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.

NMFS also considered the use of bubble curtains as a mitigation measure. Bubble curtains were deemed not practicable, as they would not be effective in the limited working area of Pier 1 and Bulkhead S45 South.

Based on our evaluation of the applicant's proposed measures, as well as other measures we considered, NMFS 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 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 USCG in its adequate and complete application and/or are the result of subsequent coordination between NMFS and USCG has agreed to the requirements. NMFS describes these below as requirements, and has included them in the proposed IHAs.

The USCG would abide by all monitoring and reporting measures contained within the IHAs, if issued, and their Marine Mammal Monitoring and Mitigation Plan (to be submitted for NMFS approval no later than 30 days prior to the start of construction). A summary of those measures and additional requirements proposed by NMFS is provided below.

Visual Monitoring — A minimum of two or three NMFS-approved PSOs must be stationed at strategic vantage points for the entirety of vibratory (*i.e.*, vibratory pile driving/extraction) or impact (*i.e.*, impact pile driving and DTH) installation methods, respectively. PSOs would be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods. At least one PSO would have prior experience performing the duties of a PSO during an activity pursuant to a NMFS-issued ITA or Letter of Concurrence (LOC). Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued ITA.

- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator would be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued ITA or LOC.

PSOs would also have the following additional qualifications:

- The ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to: (1) the number and species of marine mammals observed; (2) dates and times when in-water construction activities were conducted; (3) dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and (4) marine mammal behavior; and
- The ability to communicate orally, by radio or in person, with Project personnel to provide real-time information on marine mammals observed in the area as necessary.

The USCG must establish monitoring locations as described in the approved Marine Mammal Monitoring and Mitigation Plan (see figure 11-1 of the USCG's IHA application for map indicating potential locations). During vibratory pile installations and extractions, a minimum of two PSOs must be assigned to each activity location to monitor the shutdown zones. At least three PSOs must be assigned to monitor shutdown zones during impact pile driving and use of DTH methods, activities producing the largest Level A harassment zones. PSOs would record all observations of marine mammals, regardless of distance from the pile being driven, as well as the additional data indicated below and in section 6 of the IHAs, if issued.

Acoustic Monitoring

The USCG must establish acoustic monitoring procedures as described in a NMFS-approved Acoustic Monitoring Plan (see summary in section 13.2 of the USCG's application) to verify the sound source levels predicted. An acoustic monitoring plan would be submitted to NMFS no later than 60 days prior to the beginning of in-water construction for approval. The USCG proposes to monitor a minimum of 10 percent and up to 10 of each type of pile and method installation method combination listed in table 13-1 of the application with at least 2 hydrophones, 1 placed approximately 10 m from the incident pile, and 1 further away, in accordance with a hydroacoustic monitoring plan that would be approved by NMFS in advance of construction. The estimated harassment and/or shutdown zones may be modified with NMFS' approval following NMFS' acceptance of an acoustic monitoring report. See section 13 of the USCG's IHA application for more detail.

At minimum, the methodology would include:

- For underwater recordings, a stationary hydrophone system with the ability to measure SPLs will be placed in accordance with NMFS' most recent guidance for the collection of source levels (NMFS, 2012).
- A close-range hydrophone placed at a horizontal distance of 10 m from the pile. Additional hydrophones would be placed at (1) a horizontal distance no less than three times the water depth and (2) in the far field, well away from the source. Hydrophones would be placed at a depth of half the water depth at each measurement location. Exact positioning of the hydrophone(s) would ensure a direct, unobstructed path between the sound source and the hydrophone(s);
- Measurement systems would be deployed using configurations which minimize self or platform noise and ensure stable positioning throughout the recordings;

- The recordings would be continuous throughout each acoustic event for which monitoring is required;
- The sound source verification (SSV) measurement systems would have a sensitivity appropriate for the expected SPLs. The frequency range of SSV measurement systems would cover the range of at least 20 Hz to 20 kHz. The dynamic range of the measurement system would be sufficient such that at each location, the signals would avoid poor signal-to-noise ratios for low amplitude signals, and would avoid clipping, nonlinearity, and saturation for high amplitude signals;
- All hydrophones used in SSV measurements systems would be required to have undergone a full system laboratory calibration conforming to a recognized standard procedure, from a factory or accredited source to ensure the hydrophone(s) receives accurate SPLs, at a date not to exceed 2 years before deployment.
- Environmental data would be collected, including but not limited to, the following: wind speed and direction, air temperature, humidity, surface water temperature, water depth, wave height, weather conditions, and other factors that could contribute to influencing the airborne and underwater SPLs (*e.g.*, aircraft, boats, *etc*.).
- The project engineer would supply the acoustics specialist with the substrate composition, hammer model and size, hammer energy settings, depth of drilling, and boring rates and any changes to those settings during the monitoring.

For acoustically monitored construction activities, data from the continuous monitoring locations would be post-processed to obtain the following sound measures:

- Maximum peak SPL recorded for all activities, expressed in dB re 1 μPa. This maximum value will originate from the phase of hammering during which hammer energy was also at maximum.
- From all activities occurring during the time that the hammer was at maximum energy, these additional measures will be made, as appropriate:
  - mean, median, minimum, and maximum RMS SPL (dB re 1 μPa);
  - mean duration of a pile strike (based on the 90 percent energy criterion);
  - number of hammer strikes;
  - mean, median, minimum, and maximum SEL_{ss} (dB re μPa^2 sec);
  - Median integration time used to calculate RMS SPL (for vibratory monitoring, the time period selected is 1-second intervals. For impulsive monitoring, the time period is 90 percent of the energy pulse duration);
  - A frequency spectrum (power spectral density) (dB re μPa^2 per Hz) based on all strikes with similar sound; and
  - Finally, the SEL_{24} would be computed from all the strikes associated with each pile occurring during all phases, *i.e.,* soft start. This measure is defined as the sum of all SEL_{ss} values. The sum is taken of the antilog, with $\log_{10}$ taken of result to express (dB re μPa^2 sec).

Reporting –The USCG would be required to submit an annual draft summary report on all construction activities and marine mammal monitoring results for each IHA (*i.e.*, Year 1 IHA, Year 2 IHA) to NMFS within 90 days following the end of construction or 60 calendar days prior to the requested issuance of any subsequent IHA for similar activity at the same location, whichever comes first. The draft summary report would include an overall description of construction work completed, a narrative regarding marine mammal sightings, and associated raw PSO data sheets (in electronic spreadsheet format). Specifically, the report must include:

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

Upon observation of a marine mammal, the following information must be reported:

- Name of PSO who sighted the animal(s) and PSO location and activity at the time of the sighting;
- Time of the sighting;
- Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
- Distance and bearing of each observed marine mammal relative to the pile being driven or removed for each sighting;
- Estimated number of animals (min/max/best estimate);
- Estimated number of animals by cohort (*e.g.*, adults, juveniles, neonates, group composition, *etc.*);

- Animal’s closest point of approach and estimated time spent within the estimated harassment zone(s);
- Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.,* no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- Number of marine mammals detected within the harassment zones, by species; and
- Detailed information about implementation of any mitigation (*e.g.,* shutdowns and delays), a description of specified actions that ensured, and resulting changes in behavior of the animal(s), if any.

Acoustic monitoring report(s) must be submitted on the same schedule as visual monitoring reports *(i.e.,* within 90 days following the completion of construction). The acoustic monitoring report must contain the informational elements described in the Acoustic Monitoring Plan (see summary in section 13.2 of the USCG's application) and, at minimum, must include:

- Hydrophone equipment and methods: (1) recording device, sampling rate, calibration details, distance (m) from the pile where recordings were made; and (2) the depth of water and recording device(s);
- Location, identifier, orientation (*e.g.*, vertical, battered), material, and geometry (shape, diameter, thickness, length) of pile being driven, substrate type, method of driving during recordings (*e.g.*, hammer model and energy), and total pile driving duration;

- Whether a sound attenuation device is used and, if so, a detailed description of the device used, its distance from the pile and hydrophone, and the duration of its use per pile;
- For impact pile driving: (1) number of strikes per day and per pile and strike rate; (2) depth of substrate to penetrate; (3) decidecade (one-third octave) band spectra in tabular and figure formats computed on a per-pulse basis, including the arithmetic mean or median for all computed spectra; (4) pulse duration and median, mean, maximum, minimum, and number of samples (where relevant) of the following sound level metrics : (5) RMS SPL; (6) SEL_{24}, Peak (PK) SPL, and SEL_{ss}; and
- For vibratory driving/extraction: (1) duration of driving per pile; (2) vibratory hammer operating frequency; (3) decidecade (one-third octave) band spectra in tabular and figure formats for 1-second windows, including the arithmetic mean or median for all computed spectra; and (4) median, mean, maximum, minimum, and number of samples (where relevant) of the following sound level metrics: 1-sec RMS SPL, SEL_{24} (and timeframe over which the sound is averaged).

If no comments were received from NMFS within 30 days after the submission of the draft summary report, the draft report would constitute the final report. If the USCG received comments from NMFS, a final summary report addressing NMFS' comments would be submitted within 30 days after receipt of comments.

Reporting Injured or Dead Marine Mammals — In the event that personnel involved in the USCG's activities discover an injured or dead marine mammal, the USCG would report the incident to the NMFS Office of Protected Resources (*PR.ITP.MonitoringReports@noaa.gov*, *ITP.esch@noaa.gov*) and to the Greater Atlantic Region Regional Stranding Coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, the USCG would immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the IHA. The USCG would not resume their activities until notified by NMFS. The report would include the following information:

- Description of the incident;
- Environmental conditions (*e.g.,* Beaufort sea state, visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Photographs or video footage of the animal(s) (if equipment is available);
- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive; and
- General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

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

To avoid repetition, the majority of our analysis applies to all 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.

Noise associated with the USCG's OPC Pier 1 and Bulkhead S45 South construction project has the potential to disturb or displace marine mammals. Specifically, underwater sounds generated during impact pile driving, vibratory pile installation and extraction, and DTH excavation may result in take of seven species (*i.e.*, common dolphin, harbor porpoise, harbor seal, gray seal, harp seal, and hooded seal) by Level B harassment and six of these seven species (*i.e.*, all but the Atlantic white-sided dolphin) by Level A harassment, in the form of PTS.

No serious injury or mortality would be expected, even in the absence of required mitigation measures, given the nature of the activities. No take by Level A harassment is anticipated for Atlantic white-sided dolphins due to the application of proposed mitigation measures, such as shutdown zones that encompass the Level A harassment zones. The potential for harassment would be minimized through the construction method and the implementation of the planned mitigation measures (see **Proposed Mitigation** section).

Take by Level A harassment is proposed for authorization for six species (*i.e.*, common dolphin, harbor porpoise, harbor seal, gray seal, harp seal, and hooded seal) in Year 1, as the Level A harassment zones exceed the size of the shutdown zones for specific construction scenarios. Therefore, there is the possibility that an animal could enter a Level A harassment zone without being detected, and remain within that zone for a duration long enough to incur AUD INJ in the form of PTS (*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), Any take by Level A harassment is expected to arise from, at most, a small degree of PTS, not severe hearing impairment or impairment within the ranges of greatest hearing sensitivity. Animals would have 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 PTS.

Further, the amount of take by Level A harassment proposed for authorization is very low for most marine mammal stocks and species. For three species, the Atlantic white-sided dolphin, common dolphin, and harp seal, NMFS anticipates and proposes to authorize no more than 13 Level A harassment takes over the duration of USCG's planned activities; for the other 4 stocks, NMFS proposes to authorize no more than 615 takes by Level A harassment for any stock. If hearing impairment occurs, it is most likely that the affected animal would lose only a few dBs in its hearing sensitivity. Due to the small degree anticipated, any PTS potential incurred would not be expected to affect the reproductive success or survival of any individuals, much less result in adverse impacts on the species or stock.

Proposed takes by Level B harassment would be due to potential behavioral disturbance and TTS. A 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.

As described above, NMFS expects that marine mammals would likely move away from an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice through use of soft start. USCG would also shut down pile driving activities if marine mammals enter the shutdown zones (tables 11 and 12) further minimizing the likelihood and degree of PTS that would be incurred.

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). 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 simply to 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 are 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.

The project is also not expected to have significant adverse effects on affected marine mammals' habitats. No ESA-designated critical habitat or biologically important areas (BIAs) associated with feeding or reproduction (*i.e.*, pupping) are located within the project area. For example, while seasonal nearshore marine mammal surveys conducted at NAVSTA Newport from May 2016 to February 2017 help identify several harbor seal haulout sites in Narragansett Bay, no pupping was observed.

The project activities would not modify existing marine mammal habitat for a significant amount of time. The activities may cause a low level of turbidity in the water column and some fish may leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected (with no known particular importance to marine mammals), the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

For all species and stocks, take would occur within a limited, relatively confined area (Coddington Cove) of the stock's range. Given the availability of suitable habitat nearby, any displacement of marine mammals from the project area is not expected to affect marine mammals' fitness, survival, and reproduction due to the limited geographic area that would be ensonified and affected in comparison to the much larger habitat for marine mammals within Narragansett Bay and outside the bay along the RI coasts. Level A harassment and Level B harassment would be reduced to the level of least practicable adverse impact to the marine mammal species or stocks and their habitat through use of mitigation measures described herein.

Some individual marine mammals in the project area, such as harbor seals, may be present and be subject to repeated exposure to sound from construction activities occurring on multiple days. However, specified activities like pile driving are not expected to occur every day, and these individuals would likely return to normal behavior during gaps in activity both within a given day and between workdays. As discussed above, there is similar transit and haulout habitat available for marine mammals within and outside of the Narragansett Bay along the RI coast, outside of the project area, where individuals could temporarily relocate during construction activities to reduce exposure to elevated sound levels from the project. Therefore, any behavioral effects of repeated or long duration exposures are not expected to affect survival or reproductive success of any individuals negatively. Thus, even repeated Level B harassment of some small subset of an overall stock is unlikely to result in any effects on rates of reproduction and survival of the stock.

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;
- No Level A harassment of Atlantic white-sided dolphins is anticipated or proposed for authorization;
- The low numbers of take by Level A harassment for common dolphins, harbor porpoises, harbor seals, gray seals, hooded seals, and harp seals proposed for authorization are expected to be of a small degree;

- The intensity of anticipated takes by Level B harassment is expected to be relatively low for all stocks. Level B harassment would primarily occur in the form of behavioral disturbance, potentially resulting in avoidance of the project areas around where pile driving (vibratory or impact) and/or DTH excavation is occurring. Some low-level TTS may limit the detection of acoustic cues for some individual marine mammals for relatively brief amounts of time in the relatively confined footprints of the activities;
- The ensonified areas are very small relative to the overall habitat ranges of all species and stocks;
- Nearby areas of similar habitat value (*e.g.,* transit and haulout habitats) within and outside of Narragansett Bay are available for marine mammals that may temporarily vacate the project area during construction activities;
- The specified activity and associated ensonifed areas do not overlap habitat areas known to be of special significance (BIAs or ESA-designated critical habitat);
- Effects from the activities on species that serve as prey for marine mammals are expected to be short-term and, therefore, any associated impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue to adverse impacts on their populations;
- The lack of anticipated significant or long-term negative effects to marine mammal habitat; and
- The efficacy of the mitigation measures in reducing the effects of the specified activities on all species and stocks.

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, for both proposed IHAs, 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 sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers (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.

The instances of take NMFS proposes to authorize are below one-third of the estimated stock abundance for all impacted stocks (tables 9 and 10). In fact, take of individuals is 2 percent or less of the abundance for all affected stocks. Indeed, even if each take NMFS proposes to authorize occurred to a new individual, the number of animals would be considered small relative to the size of the relevant stocks or populations. Furthermore, the takes proposed for authorization would be limited to individuals occurring local to the USCG's construction activities, an area that represents a small portion of the range for any of the seven species considered here. Thus, the likelihood that each take would occur to a new individual is low and, while some individuals may return multiple times in a day, PSOs would count them as separate takes if the individuals are not identifiable.

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, for both proposed IHAs, that small numbers of marine mammals would be taken relative to the population size of the affected species or stocks, with no species take exceeding 2 percent of the best available population abundance estimate.

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 IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened 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 two consecutive IHAs to the USCG for conducting the USCG OPC Homeporting Project in Newport, RI, from June 1, 2027 through May 31, 2028, and from June 1, 2028 through May 31, 2029, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. Drafts of the proposed IHAs 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 authorizations, and any other aspect of this notice of proposed IHAs for the proposed construction project. We also request comment on the potential renewal of these proposed IHAs 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 these IHAs 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: February 18, 2026.

Shannon Bettridge,

Acting Director, Office of Protected Resources,

National Marine Fisheries Service.

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