demonstrated that a tribe has jurisdiction. In those areas of Indian country, this proposed action does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Sulfur dioxide, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: October 5, 2021.

Deborah Jordan,

Acting Regional Administrator, Region IX.

[FR Doc. 2021–22168 Filed 10–12–21; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 217

[Docket No. 210924–0196]

RIN 0648–BK69

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to U.S. Navy Construction at Naval Station Newport in Newport, Rhode Island

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

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS has received a request from the U.S. Navy (Navy) for authorization to take marine mammals incidental to construction activities for bulkhead replacement and repairs at Naval Station Newport (NAVSTA Newport) over the course of five years (2022–2027). As required by the Marine Mammal Protection Act (MMPA), NMFS is proposing regulations to govern that take, and requests comments on the proposed regulations. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorization and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than November 12, 2021.

ADDRESSES: You may submit comments on this document, identified by NOAA–NMFS–2021–0096, by the following method:

- *Electronic submission:* Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to *https://www.regulations.gov* and enter NOAA–NMFS–2021–0096 in the Search box, click the ''Comment'' icon, complete the required fields, and enter or attach your comments.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.,* name, address), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, or Adobe PDF file formats only.

FOR FURTHER INFORMATION CONTACT: Stephanie Egger, Office of Protected Resources, NMFS, (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Availability

A copy of the Navy's application and any supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-us-navy-construction-naval-station-newport-rhode-island*. In case of problems accessing these documents, please call the contact listed above (see **FOR FURTHER INFORMATION CONTACT**).

Purpose and Need for Regulatory Action

This proposed rule would establish a framework under the authority of the MMPA (16 U.S.C. 1361 *et seq.*) to allow for the authorization of take of marine mammals incidental to the Navy's construction activities for bulkhead replacement and repairs at NAVSTA Newport.

We received an application from the Navy requesting five-year regulations and authorization to take multiple species of marine mammals. Take would occur by Level A and Level B harassment incidental to impact and vibratory pile driving. Please see Background below for definitions of harassment.

Legal Authority for the Proposed Action

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1371(a)(5)(A)) directs the Secretary of Commerce 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 for up to five years if, after notice and public comment, the agency makes certain findings and issues regulations that set forth permissible methods of taking pursuant to that activity and other means of effecting the ''least practicable adverse impact'' on the affected species or stocks and their habitat (see the discussion below in the Proposed Mitigation section), as well as monitoring and reporting requirements. Section 101(a)(5)(A) of the MMPA and the implementing regulations at 50 CFR part 216, subpart R provide the legal basis for issuing this proposed rule containing five-year regulations, and for any subsequent letters of authorization (LOAs). As directed by this legal authority, this proposed rule contains mitigation, monitoring, and reporting requirements.

Summary of Major Provisions Within the Proposed Rule

Following is a summary of the major provisions of this proposed rule regarding Navy construction activities. These measures include:

- Required monitoring of the construction areas to detect the presence of marine mammals before beginning construction activities;
- Shutdown of construction activities under certain circumstances to avoid injury of marine mammals; and
- Soft start for impact pile driving to allow marine mammals the opportunity to leave the area prior to beginning impact pile driving at full power.

Background

Section 101(a)(5)(A) 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, regulations are issued, and notice is provided to the public.

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), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

NMFS has defined ''negligible impact'' in 50 CFR 216.103 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.

Except with respect to certain activities not pertinent here, 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).

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 promulgation of regulations and subsequent issuance of an incidental take authorization) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 of the Companion Manual for NOAA Administrative Order 216–6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has preliminarily determined that the issuance of this proposed rule qualifies to be categorically excluded from further NEPA review.

Information in the Navy's application and this document collectively provide the environmental information related to proposed issuance of these regulations and subsequent incidental take authorization for public review and comment. We will review all comments submitted in response to this document prior to concluding our NEPA process or making a final decision on the request for incidental take authorization.

Summary of Request

In July 2020, NMFS received a request from the Navy requesting authorization to take small numbers of seven species of marine mammals incidental to construction activities including bulkhead replacement and repairs at NAVSTA Newport. The Navy has requested regulations that would establish a process for authorizing such take via a LOA. NMFS reviewed the Navy's application, and the Navy provided responses addressing NMFS' questions and comments on February 22, 2021. The application was deemed adequate and complete and published for public review and comment on May 19, 2021 (86 FR 27069). We did not receive substantive comments on that notice and request for comments and information.

The Navy requests authorization to take a small number of seven species of marine mammals by Level A and B harassment. Neither the Navy nor NMFS expects serious injury or mortality to result from this activity. The proposed regulations would be valid for five years (2022–2027).

Description of Proposed Activity

Overview

The Navy proposes to replace or repair several sections of deteriorating, unstable, hazardous, and eroding bulkhead, sheet pile, and revetment (approximately 2,730 total linear feet (ft)) along the Coddington Cove waterfront of NAVSTA Newport. Over time, the existing storm sewer systems and bulkheads along the Coddington Cove waterfront have severely degraded due to erosion from under-capacity stormwater system piping and aging infrastructure. This impacts the ability of the installation to minimize shoreline erosion and minimize safety risks from associated upland subsidence, while also maintaining potential berthing space. The Navy plans to conduct necessary work, including impact and vibratory pile driving, to repair and replace bulkheads over five years.

Dates and Duration

The proposed regulations would be valid for a period of five years (2022–2027). The specified activities may occur at any time during the 5-year period of validity of the proposed regulations. The Navy expects pile driving to occur on approximately 222 non-consecutive in-water pile driving days over the five-year duration. Pile driving activities are anticipated to be completed within 4 years. However, because the proposed construction is dependent on the allocation of funding, the Navy is requesting that the LOA be issued for the entire 5-year construction period to ensure flexibility in the project schedule. Table 1 provides the anticipated construction schedule for the proposed activities.

TABLE 1—CODDINGTON COVE BULKHEAD REPLACEMENT AND REPAIR SUMMARY SCHEDULE

Section ID	Bulkhead replacement (lf)	Revetment replacement (lf)	Outfalls replaced	Dredging area (ft^2)	Dredging volume (cy)	Construction start date
S45	310	250	Yes (3)	8,400	650	May 15, 2022.
S366	90	0	Yes (1)	1,350	100	October 15, 2023.
Pier 1	100	0	No	1,500	120	October 15, 2023.
LNG	650	0	Yes (2)	9,750	760	October 15, 2024.
S499/Pier 2	510	90	Yes (5)	9,000	700	October 15, 2025.
S50	730 (repair)	0	Yes (2)	0	0	October 15, 2026.

Source: NAVFAC Mid-Atlantic 2018.

Specific Geographic Region

NAVSTA Newport, encompasses 1,399 acres extending 6–7 mi along the western shore of Aquidneck Island in the towns of Portsmouth, Rhode Island, and Middletown, Rhode Island, and the City of Newport, Rhode Island. The base footprint also includes the northern third of Gould Island in the town of Jamestown, Rhode Island. The base is located in the southern part of the state near where Narragansett Bay adjoins the Atlantic Ocean. The locations of the proposed bulkhead repairs at Coddington Cove are identified in Figure 1.

Narragansett Bay is one of Rhode Island's principle water features. Narragansett Bay is approximately 22 nautical miles (nmi) (40 kilometers (km)) long and 7 nmi (16 km) wide. The average depth of Narragansett Bay is 29 ft. The Narragansett Bay's most prominent bathymetric feature is a submarine valley that runs between Conanicut and Aquidneck Islands to Rhode Island Sound, and defines the East Passage of Narragansett Bay. The shipping channel in the East Passage serves as the primary shipping channel for the rest of Narragansett Bay and is generally 100 ft deep. The shipping channel from the lower East Passage splits just south of Gould Island with the western shipping channel heading to Quonset Point and the eastern shipping channel heading to Providence and Fall River (Navy, 2008).

Coddington Cove is located on the western side of Aquidneck Island and is a protected embayment formed by Coddington Point to the south and a 4,000 ft long rubble-mound breakwater to the north. It covers an area of 1.6 square nmi with water depths up to 50 ft The area is a Restricted Area and is closed to all commercial and recreational vessel traffic, unless authorized by the appropriate personnel (Navy, 2008). According to a 2015 bathymetric survey of Coddington Cove, water depths in the proposed project area are less than 34 ft mean lower low water. Water depths in the pier are artificially deep to accommodate the berthing of large ships (NAVFAC, 2015).

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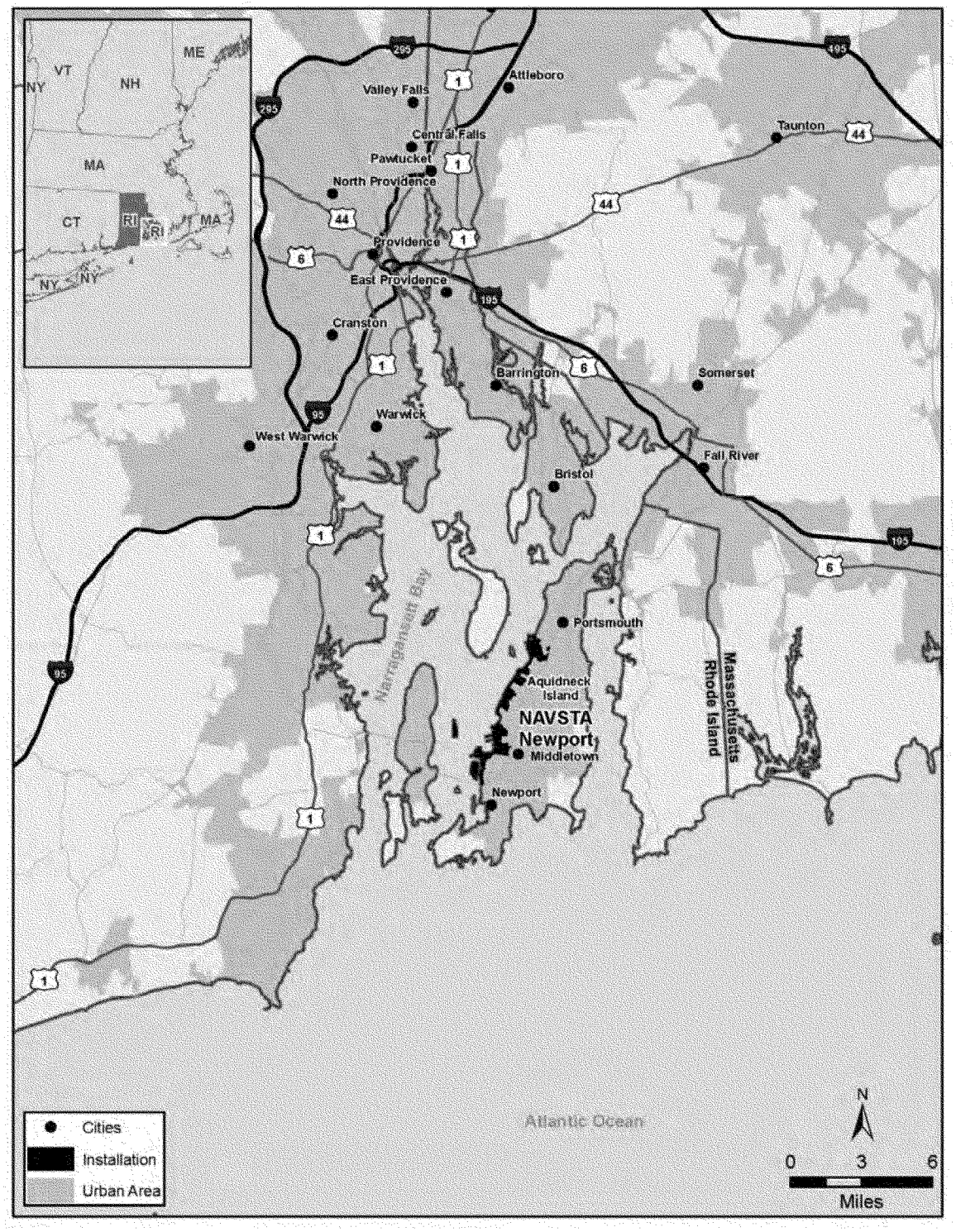

Figure 1-- Project Location

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Detailed Description of Specific Activity

The proposed project is the replacement or repair of several sections of deteriorating, unstable, hazardous, and eroding bulkhead along the Coddington Cove waterfront of NAVSTA Newport. As part of the replacement/repairs, existing stormwater outfalls in the repair areas would also be replaced or improved. Improvements would include changing outfall pipe material and/or changing outfall pipe diameter. Stormwater outfall improvements would reduce flooding and improve conveyance, as well as minimize shoreline erosion and associated sedimentation of adjacent receiving waters. The specific sections proposed for bulkhead repair and replacement are described from north to

south in the following paragraphs and are summarized in Table 2 at the end of this section.

Section S499/Pier 2: Currently, this section of bulkhead is in serious condition and has a high priority for replacement/repair because the steel sheet pile has widespread moderate-to-advanced corrosion across multiple zones. There are also significant section losses of steel sheet pile and timber planking occurring at multiple locations. In addition, the protective coatings have separated and failed along the bulkhead.

Replacement and repair of Section S499/Pier 2 includes the demolition of the existing north marginal wharf; excavation and replacement of approximately 310 ft of existing steel bulkhead underneath and north of Pier 2; and replacement of approximately 90 ft of rip rap revetment north of Pier 2. Demolition of the marginal wharf would include the removal of approximately 8,500 square ft (ft^2) of concrete decking and the demolition of 80 (36-inch (in) diameter) concrete encased piles.

The existing bulkhead structure would be replaced with a new combined wall system (see Figure 1–3 of the application). Because of the proximity of important buildings, a deadman and tie rod anchoring system cannot be installed at this location. Approximately 140 (70 pairs) (31.5-in) sheet piles; 35 (42-in) steel pipe piles; and 79 (14-in) H-piles would be installed approximately 12 in seaward of the existing bulkhead using a vibratory and impact hammer, as necessary. The existing bulkhead would be excavated landside and cut off approximately 5 ft below ground level. The interstitial space would be backfilled with stone.

Section S366: In its current condition, this section of bulkhead is in a serious condition with a high priority for replacement/repair because the steel sheet piling exhibits heavy corrosion with numerous areas that exhibit 100 percent loss of section, as well as separation of the protective coating, vegetation growth through the structure, and rust pack. The timber planking protecting the concrete encasement has rotted at the waterline in some areas.

Replacement of Section S366 would include the demolition and replacement of approximately 90 ft of existing steel sheet pile bulkhead just north of Pier 1. The existing bulkhead would then be replaced with a new deadman anchored king pile system. The system would consist of approximately 28 (14 pairs) (22.5-in) Z-shaped sheet piles; 15 (30-in) steel pipe piles; and 14 (14-in) H-piles. These piles would be installed approximately 1ft in front of the existing bulkhead using a combination of vibratory and impact hammers, as necessary. The existing steel sheet pile wall would be excavated landside to a depth of approximately 8–10 ft and cut off at the limit of excavation. An 8-ft high concrete deadman anchor system would be installed approximately 50 ft behind the new bulkhead and would be connected to the bulkhead by tie rods (see Figure 1–6 of the application). Stone would be used as the backfill material to allow a rapid drop down of the water at the back of the bulkhead after a severe storm.

Section Pier 1: Pier 1 was not accessible during the condition assessment and is assumed to be in similar condition as S366. The waterside inspection was limited due to the presence of vessels and other obstacles that would not allow the inspection vessel to pass (NAVFAC Mid-Atlantic, 2018).

Section Pier 1 includes demolition and replacement of approximately 100 ft of existing steel sheet pile bulkhead underneath Pier 1 (see Figure 1–7 of the application). In order to access the bulkhead underneath the pier, partial demolition of Pier 1 would occur. Demolition would involve the removal of concrete decking, but the removal of support piles is not anticipated.

Should demolition of the underlying support piles be required to perform bulkhead replacement/repair, the use of impact or vibratory hammers would not be required. Piles would be cut off at mudline or extracted with a sling (*i.e.,* dead pull). The existing steel sheet pile wall would be excavated landside to a depth of approximately 13 ft below ground surface and cut off at the limit of excavation. The existing bulkhead would then be replaced with a new deadman and tie rod anchored sheet pile system. The system would consist of approximately 54 (27 pairs) (22.5-in) Z-shaped sheet piles and approximately 26 (14-in) H-piles. These piles would be installed approximately 1ft in front of the existing bulkhead using a combination of vibratory and impact hammers, as necessary. Bulkhead replacement would include shoreline dredging to a depth of approximately 14 ft at the toe of the existing bulkhead to ensure proper installation of the new bulkhead.

Section S45: In its current condition, this section of bulkhead is in serious condition with a high priority for replacement/repair because the steel sheet piles and cap exhibit heavy corrosion with numerous areas that exhibit 100 percent loss of section resulting in extensive landside erosion.

Replacement of Section S45 would include the demolition and replacement of approximately 310 ft of existing steel sheet pile bulkhead just south of Pier 1. The existing bulkhead would then be replaced with a new deadman anchored king pile system. The system would consist of approximately 4 (30-in) steel pipe piles; 160 (80 pairs) (22.5-in) Z-shaped sheet piles; and approximately 76 (14-in) H-piles. These piles would be installed approximately 1ft in front of the existing bulkhead using a combination of vibratory and impact hammers, as necessary. The existing steel sheet pile wall would be excavated landside to a depth of approximately 10 ft below ground surface and cut off at the limit of excavation (see Figure 1–8 of the application).

Section LNG: In its current condition, this section of bulkhead is in serious condition with high priority for replacement/repair due to heavy corrosion with numerous areas that exhibit 100 percent loss of section. Where the steel sheet piling is in poor condition, there is extensive landside erosion.

Section LNG includes excavation and replacement of approximately 650 ft of existing steel bulkhead south of the T-Pier. The existing bulkhead would be replaced with a new deadman anchored sheet pile system. The system would be similar to the system installed at Pier 1 and would consist of approximately 346 (173 pairs) (22.5-in) Z-shaped sheet piles; and approximately 164 (14-in) H-piles. These piles would be installed approximately 1ft in front of the existing bulkhead using a combination of vibratory and impact hammers. The existing steel sheet pile wall would be excavated landside to a depth of approximately 13ft below ground surface and cut off at the limit of excavation.

TABLE 2—BULKHEAD PILE INSTALLATION ACTIVITY

Facility	Method of pile driving	Pile type	Pile Size	Number of sheets (pairs)/ piles	Strikes per pile	Vibratory driving minutes per pile	Maximum number of piles installed per day	Maximum number of pile driving days
S45	Vibratory/Impact	Z-shaped Steel Sheet Pile.	3.75 ft per pair/22.5-in each.	80 pair	530	13	10	27
	Impact	Steel Pipe Pile	30-in	4	530	NA	2	4
	Vibratory	Steel H-pile	14-in	76	NA	10	12	13
S366	Vibratory/Impact	Z-shaped Steel Sheet Pile.	3.75 ft per pair/22.5-in each.	14 pair	530	13	10	5
	Impact	Steel pipe pile	30-in diameter	15	530	NA	2	15
	Vibratory	Steel H-pile	14-in	14	NA	10	12	3
S499/Pier 2	Vibratory/Impact	Z-shaped Steel Sheet Pile.	5.25 ft per pair/31.5-in each.	70 pair	530	13	8	23
	Impact	Steel Pipe Pile	42-in	35	530	NA	4	18
	Vibratory	Steel H-pile	14-in	79	NA	10	12	14
LNG	Vibratory/Impact	Z-shaped Steel Sheet Pile.	3.75 ft per pair/22.5-in each.	173 pair	530	13	10	58
	Vibratory	Steel H-pile	14-in	164	NA	10	12	28
Pier 01	Vibratory/Impact	Z-shaped Steel Sheet Pile.	3.75 ft per pair/22.5-in each.	27 pair	530	13	10	9
	Vibratory	Steel H-pile	14-in	26	NA	10	12	5
Total sheet piles pairs/pipe and H-piles installed.	364/413.							
Total days pile driving.								222

Legend: NA = not applicable, ft = foot; Start date of in-water work and duration are to be determined.

Pile installation would occur using land-based or barge-mounted cranes, as appropriate. Cranes would be equipped with both vibratory and impact hammers. Piles would be installed initially using vibratory means and then finished with impact hammers, as necessary. Impact hammers would also be used where obstructions or sediment conditions do not permit the efficient use of vibratory hammers. Impact hammers would utilize soft start techniques to minimize noise impacts in the water column. The Navy does not yet know what type/size of hammers would be used to complete the work. For purposes of this analysis, underwater noise was modeled without accounting for potential noise minimization measures.

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

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the Navy's application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's 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's website (*https://www.fisheries.noaa.gov/find-species*).

Table 3 lists all species or stocks for which take is expected and proposed for authorization, 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. For taxonomy, we follow Committee on Taxonomy (2021). 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 is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species 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's U.S. Atlantic and Gulf of Mexico SARs (*e.g.,* Hayes *et al.* 2021). All values presented in Table 3 are the most recent available at the time of publication and are available in the 2020 SARs (Hayes *et al.* 2021).

TABLE 3—MARINE MAMMAL SPECIES LIKELY TO OCCUR NEAR THE PROJECT AREA

Common name	Scientific name	Stock	ESA/ MMPA status; strategic (Y/N) [1]	Stock abundance (CV, N_{min}, most recent abundance survey) [2]	PBR	Annual M/SI [3]
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae:						
Atlantic white-sided dolphin	*Lagenorhynchus acutus*	Western North Atlantic	-, -; N	93,233 (0.71; 54,443; 2016).	544	26
Common dolphin	*Delphinus delphis*	Western North Atlantic	-, -; N	172,974 (0.21; 145,216; 2016).	1,452	399
Family Phocoenidae (porpoises):						
Harbor porpoise	*Phocoena phocoena*	Gulf of Maine/Bay of Fundy	-, -; N	95,543 (0.31; 74,034; 2016).	851	217
Order Carnivora—Superfamily Pinnipedia						
Family Phocidae (earless seals):						
Harbor seal	*Phoca vitulina*	Western North Atlantic	-,-; N	75,834 (0.15; 66,884, 2012).	2,006	350
Gray seal	*Halichoerus grypus*	Western North Atlantic	-,-; N	27,131 (0.19, 23,158, 2016)[4].	1,389	4,729
Harp seal	*Pagophilus groenlandicus*	Western North Atlantic	-,-; N	7,400,000	unknown	232,422
Hooded seal	*Cystophora cristata*	Western North Atlantic	-,-; N	593,500	unknown	1,680

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

[2] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region.* CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable.

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

[4] This abundance value and the associated PBR value reflect the U.S. population only. Estimated abundance for the entire Western North Atlantic stock, including animals in Canada, is 451,131. The annual M/SI estimate is for the entire stock.

As indicated above, all seven species in Table 3 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have proposed authorizing take. Several depleted species of whales occur seasonally in the waters off Rhode Island including Humpback (*Megaptera novaeangliae*), Fin (*Balaenoptera physalus*), Sei (*Balaenoptera borealis*), Sperm (*Physeter macrocephalus*) and North Atlantic Right whales (*Eubaleana glacialis*). These whales are seasonally present in New England waters; however, due to the depths of Narragansett Bay and near shore location of the project area, these listed marine mammals are unlikely to occur. Therefore, no takes were requested and none are anticipated or proposed for authorization by NMFS and they are not discussed further.

Atlantic White-Sided Dolphin

Atlantic white-sided dolphins are found in the temperate waters of the North Atlantic and specifically off the coast of North Carolina to Maine in U.S. waters (NOAA Fisheries, 2020a). The Gulf of Maine population of white-sided dolphin primarily occurs in continental shelf waters from Hudson Canyon to Georges Bank, and in the Gulf of Maine and lower Bay of Fundy. From January to May they occur in low numbers from Georges Bank to Jeffreys Ledge (off New Hampshire). They are most common from June through September from Georges Bank to lower Bay of Fundy, with densities declining from October through December (Hayes *et al.,* 2019).

Since stranding recordings for the Atlantic white-sided dolphin began in Rhode Island in the late 1960s, this species has become the third most frequently recorded small cetacean. There are occasional unconfirmed opportunistic reports of white-sided dolphins in Narragansett Bay, typically in fall and winter. Atlantic white-sided dolphins in Rhode Island are inhabitants of the continental shelf, with a slight tendency to occur in shallower water in the spring when they are most common (approximately 64 percent of records). Seasonal occurrence of Atlantic white-sided dolphins decreases significantly following spring with 21 percent of records in summer, 10 percent in winter, and 7.6 percent in fall (Kenny and Vigness-Raposa, 2010).

Common Dolphin

The common dolphin is one of the most widely distributed species of cetaceans, found world-wide in temperate and subtropical seas. In the North Atlantic, they are common along the shoreline of Massachusetts and at sea sightings have been concentrated over the continental shelf between the 100-meter (m) and 2000-m isobaths over prominent underwater topography and east to the mid-Atlantic Ridge. The common dolphin can be found from Cape Hatteras northeast to Georges Bank from mid-January to May and in Gulf of Maine from mid-summer to autumn (Hayes *et al.,* 2019).

Common dolphins occur in the Rhode Island waters (encompassing Narragansett Bay, Block Island Sound, Rhode Island Sound, and nearby coastal and continental shelf areas) year-round. They occur across much of the shelf but most commonly in waters deeper than approximately 60 m. Seasonality is not particularly strong, but sightings are more common in spring at approximately 35 percent of records followed by 26 percent in summer, 22 percent in winter, and 18 percent in fall (Kenny and Vigness-Raposa, 2010).

Strandings occur year-round. In the stranding record for Rhode Island, common dolphins are the second most frequently stranded cetacean (exceeded only by harbor porpoises) and the most common delphinid. There were 23 strandings in Rhode Island between 1972 and 2005 (Kenny and Vigness-Raposa, 2010). A common dolphin was

most recently recorded in Narragansett Bay in October of 2016 (Hayes *et al.,* 2019). There are no recent records of common dolphins far up rivers, however such occurrences would only show up in the stranding database if the stranding network responded, and there is no centralized clearinghouse for opportunistic sightings of that type. In Rhode Island, there are occasional opportunistic reports of common dolphins in Narragansett Bay up as far as the Providence River, usually in winter.

Harbor Porpoise

Harbor porpoises are found in northern temperate and subarctic coastal and offshore waters in both the Atlantic and Pacific Oceans. In the western North Atlantic, harbor porpoises are found in the northern Gulf of Maine and southern Bay of Fundy region in waters generally less than 150 m deep, primarily during the summer (July to September). During fall (October to December) and spring (April to June), harbor porpoises are widely dispersed between New Jersey and Maine. Lower densities of harbor porpoises occur during the winter (January to March) in waters off New York to New Brunswick, Canada (Hayes *et al.,* 2019).

Harbor Seal

Harbor seals occur in all nearshore waters of the North Atlantic and North Pacific Oceans and adjoining seas above approximately 30°N (Burns, 2009). They are year-round residents in the coastal waters of eastern Canada and Maine, occurring seasonally from southern New England to New Jersey from September through late May. Harbor seals' northern movement occurs prior to pupping season that takes place from May through June along the Maine coast. In autumn to early winter, harbor seals move southward from the Bay of Fundy to southern New England (Hayes *et al.,* 2019). Overall, there are five recognized subspecies of harbor seal, two of which occur in the Atlantic Ocean. The western Atlantic harbor seal is the subspecies likely to occur in the proposed project area. There is some uncertainly about the overall population stock structure of harbor seals in the western North Atlantic Ocean. However, it is theorized that harbor seals along the eastern U.S. and Canada are all from a single population (Temte *et al.,* 1991).

Harbor seals are regularly observed around all coastal areas throughout Rhode Island, and occasionally well inland up bays, rivers, and streams. In general, rough estimates indicate that approximately 100,000 harbor seals can be found in New England waters (DeAngelis, 2020). It should be noted for all the seals that the available data are strongly dominated by stranding records, which comprised 446 out of 507 total records for harbor seals (88 percent) (Kenny and Vigness-Raposa, 2010). Seals are very difficult to detect during surveys, since they tend to be solitary and the usual sighting cue is only the seal's head above the surface. Of the available records, 52.5 percent are in spring, 31.2 percent in winter, 9.5 percent in summer, and 6.9 percent in fall. In Rhode Island, there are no records offshore of the 90-m isobath. Based on seasonal monitoring in Rhode Island, seals begin to arrive in Narragansett Bay in September, with numbers slowly increasing in March before dropping off sharply in April. By May, seals have left Narragansett Bay (DeAngelis, 2020).

Seasonal nearshore marine mammal surveys were conducted at NAVSTA Newport between May 2016 and February 2017. The surveys were conducted along the western shoreline of Coasters Harbor Island northward to Coggeshall Point and eastward to include Gould Island. The only species that was sighted during the survey was harbor seal. During the spring survey, one harbor seal was sighted on 12 May 2016. The seal was observed near the surface of the water and engaged in several small dives during the encounter. A group of three harbor seals was sighted on 1 February 2017, during the winter survey. All three of the harbor seals were at the surface and watched the vessel pass. One dead harbor seal carcass was observed in the 12 May 2016 survey and reported to the Mystic Aquarium Stranding Network (Moll *et al.,* 2016, 2017; Navy, 2017b).

In Rhode Island waters, harbor seals prefer to haul out on well-isolated intertidal rock ledges and outcrops. Numerous Naval Station employees have reported seals hauled out on an intertidal rock ledge north-northwest of Coddington Point named ''The Sisters'' that is 0.9 miles from the project area (see Figure 4–1 of the application) (NUWC Division, 2011). This haulout has been studied by the NUWC Division Newport since 2011 and has demonstrated a steady increase in use during winter months when harbor seals are present in the bay. Harbor seals are rarely observed at The Sisters haulout in the early fall (September–October) but consistent numbers in mid-November (0–10 animals) are regularly observed with a gradual increase of 20+ animals until peak numbers in the upper 40s occur during March, typically at low tide. The number of harbor seals begins to drop off in April, and by mid-May they are not observed hauled out at all (DeAngelis, 2020). Haulout spaces at The Sisters haulout site is primarily influenced by tide level, swell, and wind direction (splashing the haul out) (Moll *et al.,* 2017; DeAngelis, 2020).

Including The Sisters haulout, there are 22 haul out sites in Narragansett Bay (see Figure 4–1 of the application); however, none of these 22 other haulouts are within the project area. During a one-day Narragansett Bay-wide count in 2018, there were at least 423 seals observed, and all 22 haulout sites were represented. Preliminary results from the bay-wide count for 2019 recorded 572 harbor seals; this count also included counts from Block Island (DeAngelis, 2020).

Gray Seal

The Western North Atlantic stock of gray seal occurs in the project area. The western North Atlantic stock is centered in Canadian waters, including the Gulf of St. Lawrence and the Atlantic coasts of Nova Scotia, Newfoundland, and Labrador, Canada, and the northeast U.S. continental shelf (Hayes *et al.* 2017). In general, this species can be found year-round in the coastal waters of the Gulf of Maine (Hayes *et al.,* 2019).

Gray seal occurrences in Rhode Island are mostly represented by stranding records—155 of 193 total records (80 percent). Gray seal records in the region are primarily from the spring (approximately 87 percent), with much smaller numbers in all other seasons (5.7 percent in winter, 5.2 percent in summer, and 2.1 percent in fall). Strandings were broadly distributed along ocean-facing beaches in Long Island and Rhode Island, with a few spring records in Connecticut (Kenny and Vigness-Raposa, 2010). As with other seals, habitat use by gray seals in Rhode Island is poorly known. They are seen mainly when stranded or hauled out and infrequently at sea. There are very few observations of gray seals in Rhode Island other than strandings. The annual numbers of gray seal strandings in the Rhode Island study area since 1993 have fluctuated markedly, from a low of 1 in 1999 to a high of 24 in 2011 (Kenney, 2020). The very strong seasonality observed in gray seal occurrence in Rhode Island between March and June is clearly related to the timing of pupping in January–February. Most stranded individuals encountered in Rhode Island area appear to be post-weaning juveniles and starved or starving juveniles (Nawojchik, 2002; Kenney, 2005). Annual informal surveys conducted since 1994 observed a small number of gray seals in Narragansett Bay in 2016 (ecoRI News, 2016).

Harp Seal

The harp seal is a highly migratory species, and its range can extend from the Canadian Arctic to New Jersey. In U.S. waters, the species has an increasing presence in the coastal waters between Maine and New Jersey and are considered members of the western North Atlantic stock with general presence from January through May (Hayes *et al.,* 2019).

Harp seals in Rhode Island are known almost exclusively from strandings (approximately 98 percent). Strandings are widespread on ocean-facing beaches throughout Long Island and Rhode Island and the records are almost entirely from spring (approximately 68 percent) and winter (approximately 30 percent). Harp seals are nearly absent in summer and fall. Harp seals also make occasional appearances well inland up rivers (Kenny and Vigness-Raposa, 2010). During late winter of 2020, a healthy harp seal was observed hauled out and resting near ''The Sisters'' haulout site (DeAngelis, 2020).

Hooded Seal

The hooded seal is a highly migratory species, and its range can extend from the Canadian Arctic to as far south as Puerto Rico (Mignucci-Giannoni and Odell, 2001 as cited in Hayes *et al.,* 2019). In U.S. waters, the species has an increasing presence in the coastal waters between Maine and Florida. Hooded seals in the U.S. are considered members of the western North Atlantic stock and generally occur in New England waters from January through May and further south off the southeast U.S. coast and in the Caribbean in the summer and fall seasons (McAlpine *et al.* 1999; Harris *et al.* 2001; and Mignucci-Giannoni and Odell, 2001 as cited in Hayes *et al.,* 2019).

Hooded seal occurrences in Rhode Island are predominantly from stranding records (approximately 99 percent). They are rare in summer and fall but most common in the area during spring and winter (45 percent and 36 percent of all records, respectively) (Kenney, 2005; Kenny and Vigness-Raposa, 2010). Hooded seal strandings are broadly distributed across ocean-facing beaches in Rhode Island and they occasionally occur well up rivers, but less often than harp seals. Hooded seals have been recorded in Narragansett Bay but are considered occasional visitors and are expected to be the least encountered seal species in the bay (RICRMC, 2010).

Unusual Mortality Events

An unusual mortality event (UME) is defined under Section 410(6) of the MMPA as a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response. There are no active UME investigations for species affected in the project area.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 4.

TABLE 4—MARINE MAMMAL HEARING GROUPS

[NMFS, 2018]

Hearing group	Generalized hearing range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz.
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
High-frequency (HF) cetaceans (true porpoises, *Kogia,* river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	275 Hz to 160 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.* 2006; Kastelein *et al.* 2009; Reichmuth and Holt, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. Seven marine mammal species (three cetacean and four phocid pinniped species) have the reasonable potential to co-occur with the proposed construction activities. Please refer to Table 3. Of the cetacean species that may be present, two are classified as a mid-frequency cetacean (*i.e.,* dolphins), and one is classified as a high-frequency cetacean (*i.e.,* harbor porpoise).

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section includes a summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat. The Estimated Take 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 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 how those impacts on individuals are likely to impact marine mammal species or stocks.

Acoustic effects on marine mammals during the specified activity can occur from vibratory and impact pile driving. The effects of underwater noise from the Navy's proposed activities have the potential to result in Level A and Level B harassment of marine mammals in the action area.

Description of Sound Sources

The marine soundscape is comprised of both ambient and anthropogenic sounds. Ambient sound is defined as the all-encompassing background sound in a given place and is usually a composite of sound from many sources both near and far. The sound level of an area is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.,* waves, wind, precipitation, earthquakes, ice, atmospheric sound), biological (*e.g.,* sounds produced by marine mammals, fish, and invertebrates), and anthropogenic sound (*e.g.,* vessels, dredging, aircraft, construction).

The sum of the various natural and anthropogenic sound sources at any given location and time—which comprise ambient sound—depends not only on the source levels (as determined by current weather conditions and levels of biological and shipping activity) but also on the ability of sound to propagate through the environment. In turn, sound propagation is dependent on the spatially and temporally varying properties of the water column and sea floor, and is frequency-dependent. As a result of the dependence on a large number of varying factors, ambient sound levels can be expected to vary widely over both coarse and fine spatial and temporal scales. Sound levels at a given frequency and location can vary by 10–20 dB from day to day (Richardson *et al.* 1995). The result is that, depending on the source type and its intensity, sound from the specified activity may be a negligible addition to the local environment or could form a distinctive signal that may affect marine mammals.

In-water construction activities associated with the project would include impact pile driving and vibratory pile driving. The sounds produced by these activities fall into one of two general sound types: Impulsive and non-impulsive. Impulsive sounds (*e.g.,* explosions, gunshots, sonic booms, impact pile driving) are typically transient, brief (less than 1 second), broadband, and consist of high peak sound pressure with rapid rise time and rapid decay (ANSI 1986; NIOSH 1998; ANSI 2005; NMFS 2018a). Non-impulsive sounds (*e.g.* aircraft, machinery operations such as drilling or dredging, vibratory pile driving, and active sonar systems) can be broadband, narrowband or tonal, brief or prolonged (continuous or intermittent), and typically do not have the high peak sound pressure with raid rise/decay time that impulsive sounds do (ANSI 1995; NIOSH 1998; NMFS 2018a). The distinction between these two sound types is important because they have differing potential to cause physical effects, particularly with regard to hearing (*e.g.,* Ward 1997 in Southall *et al.* 2007).

Two types of pile hammers would be used on this project: Impact and vibratory. Impact hammers operate by repeatedly dropping a heavy piston onto a pile to drive the pile into the substrate. Sound generated by impact hammers is characterized by rapid rise times and high peak levels, a potentially injurious combination (Hastings and Popper 2005). Vibratory hammers install piles by vibrating them and allowing the weight of the hammer to push them into the sediment. Vibratory hammers produce significantly less sound than impact hammers. Peak sound pressure levels (SPLs) may be 180 dB or greater, but are generally 10 to 20 dB lower than SPLs generated during impact pile driving of the same-sized pile (Oestman *et al.* 2009). Rise time is slower, reducing the probability and severity of injury, and sound energy is distributed over a greater amount of time (Nedwell and Edwards 2002; Carlson *et al.* 2005).

The likely or possible impacts of the Navy's proposed activity on marine mammals could involve both non-acoustic and acoustic stressors. Potential non-acoustic stressors could result from the physical presence of the equipment and personnel. However, any impacts to marine mammals are expected to primarily be acoustic in nature. Acoustic stressors include effects of heavy equipment operation during pile driving.

Acoustic Impacts

The introduction of anthropogenic noise into the aquatic environment from pile driving is the primary means by which marine mammals may be harassed from the Navy's specified activity. In general, animals exposed to natural or anthropogenic sound may experience physical and psychological effects, ranging in magnitude from none to severe (Southall *et al.* 2007). In general, exposure to pile driving noise has the potential to result in auditory threshold shifts 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 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 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. mom 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.* 2004; Southall *et al.* 2007). Here we discuss physical auditory effects (threshold shifts), followed by behavioral effects and potential impacts on habitat.

NMFS defines a noise-induced threshold shift (TS) as a change, usually an increase, in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS 2018). The amount of threshold shift is customarily expressed in dB. A TS can be permanent or temporary. As described in NMFS (2018), 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), the 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, the 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 an 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).

Permanent Threshold Shift (PTS)—NMFS defines PTS 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 2018). Available data from humans and other terrestrial mammals

indicate that a 40 dB threshold shift approximates PTS onset (see Ward *et al.* 1958, 1959; Ward 1960; Kryter *et al.* 1966; Miller 1974; Ahroon *et al.* 1996; Henderson *et al.* 2008). PTS levels for marine mammals are estimates, and, with the exception of a single study unintentionally inducing PTS in a harbor seal (Kastak *et al.* 2008), there are no empirical data measuring PTS in marine mammals, largely due to the fact that, for various ethical reasons, experiments involving anthropogenic noise exposure at levels inducing PTS are not typically pursued or authorized (NMFS 2018).

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 2018). Based on data from cetacean TTS measurements (see Southall *et al.* 2007), a TTS of 6 dB is considered the minimum threshold shift clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.* 2000; Finneran *et al.* 2000, 2002). As described in Finneran (2015), marine mammal studies have shown the amount of TTS increases with cumulative sound exposure level (SELcum) in an accelerating fashion: At low exposures with lower SELcum, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SELcum, the growth curves become steeper and approach linear relationships with the noise 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 serious (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 a time when communication is critical for successful mother/calf interactions could have more serious 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.

Currently, TTS data only exist for four species of cetaceans (bottlenose dolphin, beluga whale (*Delphinapterus leucas*), harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaeorientalis*)) and five species of pinnipeds exposed to a limited number of sound sources (*i.e.,* mostly tones and octave-band noise) in laboratory settings (Finneran 2015). TTS was not observed in trained spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to impulsive noise at levels matching previous predictions of TTS onset (Reichmuth *et al.* 2016). In general, harbor seals and harbor porpoises have a lower TTS onset than other measured pinniped or cetacean species (Finneran 2015). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species. No data are available on noise-induced hearing loss for mysticetes. For summaries of data on TTS in marine mammals or for further discussion of TTS onset thresholds, please see Southall *et al.* (2007), Finneran and Jenkins (2012), Finneran (2015), and Table 5 in NMFS (2018). Installing piles requires a combination of impact pile driving and vibratory pile driving. For this project, these activities would not occur at the same time and there would be pauses in activities producing the sound during each day. Given these pauses and that many marine mammals are likely moving through the ensonified area and not remaining for extended periods of time, the potential for TS declines.

Behavioral Harassment—Exposure to noise from pile driving and removal also has the potential to behaviorally disturb marine mammals. 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. 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, l*et al*one the stock or population. However, 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).

Disturbance may result in changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where sound sources are located. Pinnipeds may increase their haulout time, possibly to avoid in-water disturbance (Thorson and Reyff 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.* 1995; Wartzok *et al.* 2003; Southall *et al.* 2007; 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–C of Southall *et al.* (2007) for a review of studies involving marine mammal behavioral responses to sound.

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. 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.

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.,* Seyle 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 is a state of distress, and it 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). 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. 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 stress responses would be classified as distress. In addition, any animal experiencing TTS would likely also experience stress responses (NRC, 2003), however distress is an unlikely result of this project, based on observations of marine mammals during previous, similar projects in the area.

Masking—Sound can disrupt behavior through masking, or interfering 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). Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher intensity, and may occur whether the sound is natural (*e.g.,* snapping shrimp, wind, waves, precipitation) or anthropogenic (*e.g.,* pile driving, shipping, sonar, seismic exploration) in origin. 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. Masking of natural sounds can result when human activities produce high levels of background sound at frequencies important to marine mammals. Conversely, if the background level of underwater sound is high (*e.g.,* on a day with strong wind and high waves), an anthropogenic sound source would not be detectable as far away as would be possible under quieter conditions and would itself be masked.

Airborne Acoustic Effects—Although pinnipeds are known to haul out regularly in Narraganset Bay and some in the vicinity of the project area, we believe that incidents of take resulting solely from airborne sound are unlikely. There is a possibility that an animal could surface in-water, but with head out, within the area in which airborne sound exceeds relevant thresholds and thereby be exposed to levels of airborne sound that NMFS associates with harassment, but any such occurrence would likely be accounted for in our estimation of incidental take from underwater sound. Therefore, authorization of incidental take resulting from airborne sound for pinnipeds is not warranted, and airborne sound is not discussed further here. Cetaceans are not expected to be exposed to airborne sounds that would result in harassment as defined under the MMPA.

Marine Mammal Habitat Effects

The Navy's construction activities could have localized, temporary impacts on marine mammal habitat by increasing in-water sound pressure levels and slightly decreasing water quality. Construction activities are of short duration and would likely have temporary impacts on marine mammal habitat through increases in underwater sound. Increased noise levels may affect acoustic habitat (see masking discussion above) and adversely affect marine mammal prey in the vicinity of the project area (see discussion below). During impact and vibratory pile driving, elevated levels of underwater noise would ensonify the project area where both fish and mammals may occur and could affect foraging success. Additionally, marine mammals may avoid the area during construction, 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.

A temporary and localized increase in turbidity near the seafloor would occur in the immediate area surrounding the area where piles are installed. The sediments on the sea floor will be disturbed during pile driving; however, suspension will be brief and localized and is unlikely to measurably affect marine mammals or their prey in the area. In general, turbidity associated with pile installation is localized to about a 25-ft (7.6-m) radius around the pile (Everitt *et al.* 1980). Cetaceans are not expected to be close enough to the pile driving areas to experience effects of turbidity, and any pinnipeds could avoid localized areas of turbidity. Therefore, we expect the impact from increased turbidity levels to be discountable to marine mammals and do not discuss it further.

In-Water Construction Effects on Potential Foraging Habitat

The proposed activities would not result in permanent impacts to habitats used directly by marine mammals except for the actual footprint of the project. The total seafloor area affected by pile installation is a very small area compared to the vast foraging area

available to marine mammals in the surrounding area.

Avoidance by potential prey (*i.e.,* fish) of the immediate area due to the temporary loss of this foraging habitat is also possible. The duration of fish avoidance of this area after pile driving stops is unknown, but we anticipate a rapid return to normal recruitment, distribution and behavior. Any behavioral avoidance by fish of the disturbed area would still leave large areas of fish and marine mammal foraging habitat in the nearby vicinity in the project area.

Effects on Potential Prey

Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (*e.g.,* fish). Marine mammal prey varies by species, season, and location. Here, we describe studies regarding the effects of noise on known marine mammal prey.

Fish 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 which 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 fish, although several are based on studies in support of large, multiyear bridge construction projects (*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.,* Pena *et al.* 2013; Wardle *et al.* 2001; Jorgenson and Gyselman, 2009; Cott *et al.* 2012).

SPLs of sufficient strength have been known to cause injury to fish and fish mortality. 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.* (2012a) showed that a TTS of 4–6 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.* 2012b; Casper *et al.* 2013).

The most likely impact to fish from pile driving activities at the project areas would be temporary behavioral avoidance of the area. The duration of fish avoidance of an area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution and behavior is anticipated.

The area impacted by the project is relatively small compared to the available habitat in the remainder of the project area and surrounding waters, 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 paragraphs, the potential for the Navy's construction to affect the availability of prey to marine mammals or to meaningfully impact the quality of physical or acoustic habitat is considered to be insignificant.

Estimated Take

This section provides an estimate of the number of incidental takes proposed for authorization, which will inform both NMFS' consideration of small numbers and the negligible impact determination.

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 be by Level A and B harassment, in the form of disruption of behavioral patterns and potential TTS and PTS for individual marine mammals resulting from exposure to pile driving and removal. As described previously, no serious injury or mortality is anticipated or proposed to be authorized for this activity. Below we describe how the take is estimated.

Generally speaking, we estimate take by considering: (1) Acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of 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 estimate.

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.,* frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.* 2007, Ellison *et al.* 2012). Based on what the available

science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 µPa (rms) (reference pressure microPascal, root mean square) for continuous (*e.g.,* vibratory pile-driving, drilling) and above 160 dB re 1 µPa (rms) for non-explosive impulsive (*e.g.,* seismic airguns) or intermittent (*e.g.,* scientific sonar) sources.

The Navy's construction includes the use of continuous (vibratory pile driving) and impulsive (impact pile driving) sources, and therefore the level of 120 and 160 dB re 1 µPa (rms) is applicable.

Level A harassment—NMFS' *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing* (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise. The technical guidance identifies the received levels, or thresholds, above which individual marine mammals are predicted to experience changes in their hearing sensitivity for all underwater anthropogenic sound sources, and reflects the best available science on the potential for noise to affect auditory sensitivity. The technical guidance does this by identifying threshholds in the follow manner:

- Dividing sound sources into two groups (*i.e.,* impulsive and non-impulsive) based on their potential to affect hearing sensitivity;
- Choosing metrics that best address the impacts of noise on hearing sensitivity, *i.e.,* sound pressure level (peak SPL) and sound exposure level (SEL) (also accounting for duration of exposure); and
- Dividing marine mammals into hearing groups and developing auditory weighting functions based on the science supporting the fact that not all marine mammals hear and use sound in the same manner.

These thresholds were developed by compiling and synthesizing the best available science, and are provided in Table 5 below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection.*

The Navy's proposed construction includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving) sources.

TABLE 5—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

Hearing group	PTS onset acoustic thresholds * (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1:* $L_{pk,flat}$: 219 dB; $L_{E,LF,24h}$: 183 dB	*Cell 2:* $L_{E,LF,24h}$: 199 dB.
Mid-Frequency (MF) Cetaceans	*Cell 3:* $L_{pk,flat}$: 230 dB; $L_{E,MF,24h}$: 185 dB	*Cell 4:* $L_{E,MF,24h}$: 198 dB.
High-Frequency (HF) Cetaceans	*Cell 5:* $L_{pk,flat}$: 202 dB; $L_{E,HF,24h}$: 155 dB	*Cell 6:* $L_{E,HF,24h}$: 173 dB.
Phocid Pinnipeds (PW) (Underwater)	*Cell 7:* $L_{pk,flat}$: 217 dB; $L_{E,PW,24h}$: 185 dB	*Cell 8:* $L_{E,PW,24h}$: 201 dB.
Otariid Pinnipeds (OW) (Underwater)	*Cell 9:* $L_{pk,flat}$: 232 dB; $L_{E,OW,24h}$: 203 dB	*Cell 10:* $L_{E,OW,24h}$: 219 dB.

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa^{2}s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The 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 acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels transmission loss coefficient.

Sound Propagation

Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition and topography. The general formula for underwater TL is:

$$TL = B * \log_{10}(R_1/R_2),$$

where

B = transmission loss coefficient (assumed to be 15)

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.

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions, including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field) environment not limited by depth or water surface, resulting in a 6 dB reduction in sound level for each doubling of distance from the source (20*log(range)). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling of distance from the source (10*log(range)). As is common practice in coastal waters, here we assume practical spreading (4.5 dB reduction in sound level for each doubling of distance). Practical spreading is a compromise that is often used under conditions where water depth increases as the receiver moves away from the shoreline, resulting in an

expected propagation environment that would lie between spherical and cylindrical spreading loss conditions. Practical spreading was used to determine sound propagation for this project.

Sound source levels

The intensity of pile driving sounds is greatly influenced by factors such as the type of piles, hammers, and the physical environment in which the activity takes place. There are sound source level (SSL) measurements available for certain pile types and sizes from the similar environments from other Navy pile driving projects that were evaluated and used as proxy sound source levels to determine reasonable sound source levels likely to result from the pile driving and removal activities (Table 6). Some of the proxy source levels are expected to be conservative, as the values are from larger pile sizes.

TABLE 6—UNDERWATER NOISE SOUND SOURCE LEVELS MODELED FOR IMPACT AND VIBRATORY PILE DRIVING

Pile size, type	Method	Sound pressure levels (SPL) or sound exposure level (SEL) at 10 m distance		
		Peak SPL	RMS SPL	SELL
42-in Diameter Steel Pipe [1]	Impact	211	196	181
30-in Diameter Steel Pipe [2]	Impact	211	196	181
14-in Steel H-pile [3]	Vibratory	NA	158	158
31.5-in Z-shaped Steel Sheet [4]	Impact	211	196	181
31.5-in Z-shaped Steel Sheet [5]	Vibratory	NA	163	163
22.5-in Z-shaped Steel Sheet [3]	Impact	205	190	180
22.5-in Z-shaped Steel Sheet [5]	Vibratory	NA	163	163

Legend: All sound pressure levels (SPLs) are unattenuated; dB = decibels; rms = root mean square, SEL = sound exposure level; NA = Not applicable; NR = Not reported.

Notes:

[1] = Navy pers comm. 2021.

[2] = Navy San Diego Bay Acoustic Compendium (NAVFAC SW 2020).

[3] = Caltrans 2015.

[4] = A proxy value for 31-in sheet piles could not be found for impact driving so the proxy for a 30-in steel pipe pile has been used from NAVFAC SW (2020). This value was also used for Z-shaped steel sheets for the Navy's Dry Dock 1 Modification and Expansion, Portsmouth Naval Shipyard, Kittery, Maine 2021 IHA (86 FR 14598; March 17, 2021).

[5] = For vibratory driving of 31-in sheet piles and 22.5-in Z-shaped steel sheet piles, 163 dB SPL was used based on measurements conducted by the Naval Facilities Engineering Command Mid-Atlantic (NAVFAC Mid-Atlantic) in the Technical Memorandum Nearshore Marine Mammal Surveys, Portsmouth Naval Shipyard (2018).

For 42-in steel piles, a SSL of 181 db SEL was used for impact driving and is similar to SSL of 180 dB SEL for 36-in piles in CALTRANS (2015). There are no SSL values for 42-in piles in CALTRANS, the nearest values are for 36-in and 60-in steel pipe piles. For 30-in steel pipe piles, a SSL of 181 dB SEL was used for impact pile driving as a proxy from the Navy's San Diego Bay Acoustic Compendium (NAVFAC SW 2020) (the median value from the greatest sound levels recorded for 30-in steel piles). The SSL used for 30-in steel piles during impact pile driving is also more conservative than the SSL of 177 dB SEL for 30-in steel piles in CALTRANS (2015). For 31.5-in sheet piles, a SSL of 181 dB SEL was used for impact pile driving as a proxy from 30-in steel pipe piles (NAVFAC SW 2020), which is also slightly more conservative than a SSL of 180 dB SEL for 24-in piles in CALTRANS (2015) (no larger sheet piles are described in CALTRANS 2015). During vibratory pile driving of 31.5-in sheet piles, the Navy used a SSL of 163 dB SPL, which is also more conservative than a SSL of 160 dB SPL for 24-in sheet piles in CALTRANS (2015) (no large sheet piles are described in CALTRANS 2015). For 22.5-in Z-shaped steel sheet piles, a SSL of 180 dB SEL was used for impact pile driving and is also equivalent to 24-in sheet piles in CALTRANS (2015). During vibratory pile driving, a SSL of 163 dB SPL is a proxy from NAVFAC Mid-Atlantic (2018) and is also more conservative than 24-in sheet piles in CALTRANS (2015) where the SSL is 160 dB SPL for 24-in sheet piles (no larger sheet piles are described in CALTRANS (2015). For 14-in steel H-piles, a SSL of 158 dB SPL was used from CALTRANS (2015).

Level A Harassment

In conjunction with the NMFS Technical Guidance (2018), in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, NMFS developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that, because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimation of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources (such as from impact and vibratory pile driving), the NMFS User Spreadsheet (2020) predicts the closest distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would not incur PTS. Inputs used in the User Spreadsheet (Tables 7 and 8), and the resulting isopleths are reported below (Table 9).

TABLE 7—NMFS TECHNICAL GUIDANCE (2020) USER SPREADSHEET INPUT TO CALCULATE PTS ISOPLETHS FOR VIBRATORY PILE DRIVING

[User spreadsheet input—Vibratory Pile Driving Spreadsheet Tab A.1 Vibratory Pile Driving Used.]

	14-in steel H-pile	22.5-in Z-shaped sheet piles	31.5-in Z-shaped sheet piles
Source Level (RMS SPL)	158	163	163
Weighting Factor Adjustment (kHz)	2.5	2.5	2.5
Number of piles within 24-hr period	12	10	8
Duration to drive a single pile (min)	10	13	13
Propagation (xLogR)	15	15	15
Distance of source level measurement (m)	10	10	10

TABLE 8—NMFS TECHNICAL GUIDANCE (2020) USER SPREADSHEET INPUT TO CALCULATE PTS ISOPLETHS FOR IMPACT PILE DRIVING

[User spreadsheet input—Impact Pile Driving Spreadsheet Tab E.1 Impact Pile Driving Used.]

	22-in Z-shaped piles	31.5-in Z-shaped piles	30-in pile	42-in pile
Source Level (Single Strike/shot SEL)	180	181	181	181
Weighting Factor Adjustment (kHz)	2	2	2	2
Number of strikes per pile	530	530	530	530
Number of piles per day	10	8	2	4
Propagation (xLogR)	15	15	15	15
Distance of source level measurement (m)	10	10	10	10

TABLE 9—NMFS TECHNICAL GUIDANCE (2020) USER SPREADSHEET OUTPUTS TO CALCULATE LEVEL A HARASSMENT PTS ISOPLETHS

[User spreadsheet output]

Activity	Sound source level at 10 m	PTS isopleths (m)				
		Level A harassment				
		Low-frequency cetaceans	Mid-frequency cetaceans	High-frequency cetaceans	Phocid	Otariid
Vibratory Pile Driving/Removal						
14-inch H-pile	158 SPL	6.8	0.6	10.1	4.2	0.3
22.5-in Z-shaped sheet piles	163 SPL	15.5	1.4	23.0	9.4	0.7
31.5-in Z-shaped sheet piles	163 SPL	13.4	1.2	19.8	8.1	0.6
Impact Pile Driving						
22.5-in Z-shaped sheet piles	180 SEL/190 SPL	1,915.4	68.1	2,281.5	1,025.0	74.6
31.5-in Z-shaped sheet piles	181 SEL/196 SPL	1,942.5	68.4	2,292.4	1,029.9	75.0
30-in pile	181 SEL/196 SPL	763.7	27.2	909.7	408.7	29.8
42-in pile	181 SEL/196 SPL	1,212	43.1	1,444.1	648.8	47.2

Level B Harassment

Utilizing the practical spreading model, NMFS determined underwater noise will fall below the behavioral effects threshold of 120 dB rms for marine mammals at the distances shown in Table 10 for vibratory pile driving. With these radial distances, the largest Level B harassment zone calculated was 7,356 m for sheet piles. However, this distance would be truncated due to the presence of intersecting land masses. For calculating the Level B harassment zone for impact driving, the practical spreading loss model was used with a behavioral threshold of 160 dB rms. The maximum radial distance of the Level B harassment zone for impact piling equaled 2,512 m for 30-in piles, 42-in piles and 31.5-in sheet piles. Table 10 below provides all Level B harassment radial distances (m) and ensonified areas (km^2) during the Navy's proposed activities.

TABLE 10—DISTANCES TO RELEVANT BEHAVIORAL ISOPLETHS AND ENSONIFIED AREAS

Year (section)	Activity	Received level at 10 m	Level B harassment zone (m/km^2) *
Vibratory Pile Driving			
Year 1 (S45)	14-in H-piles	158 SPL	3,415 m/5.6 km^2
Year 2 (S366), Year 2 (Pier 1)	14-in H-piles	158 SPL	3,415 m/5.8 km^2
Year 3 (LNG)	14-in H-piles	158 SPL	3,415 m/5.8 km^2
Year 4 (S499/Pier 2)	14-in H-piles	158 SPL	3,415 m/5.7 km^2
Year 1 (S45)	22.5-in Z-shaped sheet piles	163 SPL	7,356 m/7.9 km^2
Year 2 (S366), Year 2 (Pier 1)	22.5-in Z-shaped sheet piles	163 SPL	7,356 m/8.3 km^2
Year 3 (LNG)	22.5-in Z-shaped sheet piles	163 SPL	7,356 m/7.5 km^2
Year 4 (S499/Pier 2)	22.5-in Z-shaped sheet piles	163 SPL	7,356 m/7.5 km^2
Year 4 (S499/Pier 2)	31.5-in Z-shaped sheet piles	163 SPL	7,356 m/9.5.km^2
Impact Pile Driving			
Year 1 (S45)	22.5-in Z-shaped sheet piles	180 SEL/190 SPL	1,000 m/1.1 km^2
Year 2 (S366), Year 2 (Pier 1)	22.5-in Z-shaped sheet piles	180 SEL/190 SPL	1,000 m/1.3 km^2
Year 3 (LNG)	22.5-in Z-shaped sheet piles	180 SEL/190 SPL	1,000 m/0.7 km^2
Year 4 (S499/Pier 2)	31.5-in Z-shaped sheet piles	181 SEL/196 SPL	2,512 m/3.8 km^2
Year 1 (S45)	30-in piles	181 SEL/196 SPL	2,512 m/3.8 km^2
Year 2 (S366)	30-in piles	181 SEL/196 SPL	2,512 m/4.0 km^2
Year 4 (S499/Pier 2)	42-in piles	181 SEL/196 SPL	2,512 m/3.8 km^2

* **Note:** Distances to the Level B harassment zone may vary slightly of the same pile size, due to the section of work being conducted and how the produced sound would be directed (see Figures 6–1 through 6–4 of the Navy's application).

Marine Mammal Occurrence and Take Calculation and Estimation

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations. Potential exposures to impact pile and vibratory pile driving noise for each acoustic threshold were estimated using marine mammal density estimates (N) from the Navy Marine Species Density Database NMSDD (Navy 2017) for which data of monthly densities of species were evaluated in terms of minimum, maximum, and average annual densities within Narragansett Bay and multiplied by the zone of influence (ZOI) and the maximum days of pile driving (take estimate = N × ZOI × days of pile driving). The pile type, size, and installation method that produce the largest ZOI were used to estimate exposure of marine mammals to noise impacts. We describe how the information provided above is brought together to produce a quantitative take estimate in the species sections below.

Atlantic White-Sided Dolphins

Atlantic white-sided dolphins occur seasonally, occurring primarily along the continental shelf with occasional unconfirmed opportunistic sightings in Narragansett Bay in fall and winter. The most recent observation of a pod of dolphins in Narragansett Bay was in October 2007 (NUWC Division, 2011). Construction activity could occur at any time of year and would be short-term and intermittent. Therefore, the average species density was determined to be appropriate for estimating takes of Atlantic white-sided dolphin. Based on density data for Narragansett Bay (Navy 2017), the average density of Atlantic white-sided dolphin was determined to be 0.003/km^2. This density was used to estimate abundance of animals that could be present in the area for exposure. Using this information, 1 take was calculated for Years 1, 3, and 4 and 0 takes in Year 2 (Table 11). However, the annual take by Level B harassment proposed for Atlantic white-sided dolphins has been increased to the average group size (16) (NAVSEA NUWC 2017) for Years 1, 3, and 4, because the calculated annual take is below the average group size. Therefore, the Navy requested and NMFS proposes 16 takes annually in Years 1, 3, and 4 (0 in Year 2) for a total of 48 takes by Level B harassment of Atlantic white-sided dolphin (Table 11). No takes by Level A harassment of Atlantic white-sided dolphin are anticipated. Because this species' regular occurrence is in much deeper waters than the extent of the ZOI (Hayes *et al.,* 2019), expected takes of this species are extremely low.

TABLE 11—PROPOSED TAKE FOR ATLANTIC WHITE-SIDED DOLPHIN

Construction year	Calculated Level B harassment	Proposed Level B harassment
Year 1 (S45)	1	16
Year 2 (S366 and Pier 01)	0	0
Year 3 (LNG)	1	16
Year 4 (S499/Pier 2)	1	16
Total	3	48

Common Dolphin

Common dolphins are the most likely dolphin species to be spotted in Narragansett Bay, and usually occur in late fall or winter (Kenney, 2013). The most recent sighting of a common dolphin recorded in Narragansett Bay was in October of 2016 (Hayes *et al.,* 2019). Construction activity could occur at any time of year and would be short-term and intermittent. Based on density data for Narragansett Bay (NMSDD, Navy, 2017), the average density of common dolphin was determined to be 0.011/km^2. Using this information, 3 takes by Level B harassment were calculated for Years 1 and 4, 2 takes for Year 2 and 6 takes for Year 3 (Table 12). Because the calculated annual take is below the average group size, the annual take by Level B harassment proposed for common dolphin has been increased to the average group size (28) (NAVSEA NUWC 2017). Therefore, the Navy requested and NMFS proposes 28 takes annually (with the exception of Year 2, for which it was doubled to 56 takes as a conservative approach to account for more vibratory and impact pile driving activities that occur during that year in two sections (S366 and Pier 1)) for a total of 140 takes by Level B harassment of common dolphin (Table 12). No takes by Level A harassment of common dolphin are anticipated. Because this species' regular occurrence is in much deeper waters than the extent of the ZOI (Hayes *et al.,* 2019), takes of this species are expected to be extremely low.

TABLE 12—PROPOSED TAKE FOR COMMON DOLPHIN

Construction year	Calculated Level B harassment	Proposed Level B harassment
Year 1 (S45)	3	28
Year 2 (S366 and Pier 01)	2	56
Year 3 (LNG)	6	28
Year 4 (S499/Pier 2)	3	28
Total	14	140

Harbor Porpoise

Harbor porpoise are not common to Narragansett Bay but may occur, especially in winter and spring months (Kinney 2013). Harbor porpoise is the most stranded cetacean in Rhode Island, with a strong seasonal occurrence in the spring. Construction activity could occur at any time of year and would be short-term and intermittent. Therefore, the average species density was determined to be appropriate for estimating takes of harbor porpoise. Based on density data for Narragansett Bay (NMSDD, Navy 2017), the average density of harbor porpoise was determined to be 0.012/km^2. Using this information, 4 takes by Level B harassment were calculated for Years 1 and 4, 2 takes for Year 2, and 7 takes for Year 3 (Table 13). Because the calculated take in Year 2 was less than the group size, the annual take by Level B harassment proposed for harbor porpoise has been increased to the average group size (3) and multiplied by two for 6 takes (NAVSEA NUWC 2017) as a conservative approach to account for more vibratory and impact pile driving activities that occur during that year in two sections (S366 and Pier 1)). Therefore, the Navy requested and NMFS proposes 4 takes in Years 1 and 4, 6 takes in Year 2, and 7 takes in Year 3, and a total of 21 takes by Level B harassment of harbor porpoise (Table 13). Level A harassment could occur during years 1, 3 and 4 (Table 13).

TABLE 13—PROPOSED TAKE FOR HARBOR PORPOISE

Construction year	Proposed Level A harassment	Calculated Level B harassment	Proposed Level B harassment
Year 1 (S45)	1	4	4
Year 2 (S366 and Pier 01)	0	2	6
Year 3 (LNG)	2	7	7
Year 4 (S499/Pier 2)	1	4	4
Total	4	17	21

Harbor Seal

Harbor seals are the most common seal in Narragansett Bay, which is a well-known winter feeding ground for the species (Moll *et al.,* 2017). Seals are commonly observed from late September through April (Moll *et. al.,* 2017; DeAngelis, 2020). Of the 22 known haulouts within Narragansett Bay, The Sisters is the nearest haulout to the project area (0.9 mi). Harbor seals are rarely observed at The Sisters haulout in the early fall (September–October) but consistent numbers are regularly observed in mid-November (0–10 animals). These numbers gradually increase with peak numbers in the upper 40s occurring in March, typically at low tide (DeAngelis, 2020). The NMSDD (Navy, 2017a) models harbor and gray seals as a guild due to the difficulty in distinguishing these species at sea. Harbor seal is expected to be the most common pinniped in Narragansett Bay with year-round occurrence (Kenney and Vigness-Raposa, 2010). Therefore, the maximum species density for the harbor-gray seal guild was determined to be appropriate for estimating takes of harbor seal. Based on density data for Narragansett Bay (Navy, 2017a), the maximum density of seals was determined to be 0.623/km^2. This density value is for all seals (harbor and gray seals as a guild); therefore, this density value results in some degree of overestimation when applied to harbor seals only. The Navy requested and NMFS proposes a high of 25 takes by Level A harassment and 353 takes by Level B harassment during Year 3, and a low of 13 takes by Level A harassment

and 138 takes by Level B harassment during Year 2 (Table 14).

TABLE 14—PROPOSED TAKE FOR HARBOR SEAL

Construction year	Proposed Level A harassment	Calculated/ proposed Level B harassment
Year 1 (S45)	15	188
Year 2 (S366 and Pier 01)	13	138
Year 3 (LNG)	25	353
Year 4 (S499/Pier 2)	25	221
Total	78	900

Gray Seal

Based on stranding records, gray seals are seasonally present in Rhode Island with the largest populations occurring from February through June with a sharp peak in March and April. The NMSDD (Navy, 2017a) provides combined densities for harbor seal and gray seal (as discussed above). Gray seals are the second most likely seal to be observed in Rhode Island waters, next to harbor seals, and more of an occasional visitor (Kenney, 2020); therefore, the average species density for the harbor-gray seal guild was determined to be appropriate for determining takes of gray seal. Based on density data for Narragansett Bay (Navy, 2017a), the average density of seals was determined to be 0.131/km^2. This density value is for all seals (harbor and gray seals as a guild); therefore, it results in some degree of overestimation when applied to gray seals only. Calculated takes by Level A harassment and Level B harassment may occur each construction year with up to 5 takes by Level A harassment and 74 takes by Level B harassment during Year 3. Fewer annual takes were calculated for Year 2 and 3 by Level A harassment and 28 takes by Level B (Table 15). Because the calculated annual take is below the average group size, the annual take by Level B harassment proposed for gray seal has been increased to the average group size (50 gray seals) (NAVSEA NUWC 2017) and conservatively doubled for Year 1, 2, and 4, during which years calculated takes were less than group size. Therefore, the Navy requested and NMFS proposes 100 takes of gray seals in Years 1, 2 and 4, and 74 takes in Year 3, and a total of 374 takes by Level B harassment of gray seals. A total of 17 takes of gray seals by Level A harassment is also proposed.

TABLE 15—PROPOSED TAKE FOR GRAY SEAL

Construction year	Proposed Level A harassment	Calculated Level B harassment	Proposed Level B harassment
Year 1 (S45)	3	40	100
Year 2 (S366 and Pier 01)	3	28	100
Year 3 (LNG)	5	74	74
Year 4 (S499/Pier 2)	6	41	100
Total	17	183	374

Harp Seal

Harp seals may be present in the project vicinity January through May. In general, harp seals are much rarer than the harbor seal and gray seal in Narragansett Bay and are rarely observed in the bay (Kenney, 2015). Therefore, the minimum species density was determined to be appropriate for determining takes of harp seal. Based on density data for Narragansett Bay obtained from the NMSDD (Navy 2017), the minimum density of harp seal was determined to be 0.050/km^2. The Navy requested and NMFS proposes that 2 takes by Level A harassment could occur in Year 3, and 1 take by Level A harassment in Years 1, 2, and 4, for a total of 5 takes (Table 16). Calculated takes by Level B harassment range from 11 to 29 and total 72 takes over the project (Table 16).

TABLE 16—PROPOSED TAKE FOR HARP SEAL

Construction year	Proposed Level A harassment	Calculated/ proposed Level B harassment
Year 1 (S45)	1	16
Year 2 (S366 and Pier 1)	1	11
Year 3 (LNG)	2	29
Year 4 (S499/Pier 2)	2	18
Total	6	74

Hooded Seal

Hooded seals may be present in the project vicinity from January through May, although their exact seasonal densities are unknown. In general, hooded seals are much rarer than the harbor seal and gray seal in Narragansett Bay and are rarely observed in the Bay (Kenney, 2005). Based on density data for Narragansett Bay obtained from the NMSDD, the minimum density of hooded seal was determined to be 0.001/km^2. Hooded seals have the potential to occur but are considered the least likely seal to be present in Narragansett Bay. No Level A (PTS onset) or Level B (behavioral) takes are anticipated during any construction year. However, in order to guard against unauthorized take, the Navy is requesting and NMFS is proposing 1 Level B (behavioral) take of hooded seal per month of construction when this species may occur (Jan through May) for each construction year for a total of 20 takes by Level B harassment (Table 17). No take by Level A harassment is anticipated or proposed for authorization for this species.

TABLE 17—PROPOSED TAKE FOR HOODED SEAL

Construction year	Proposed Level B harassment
Year 1 (S45)	5
Year 2 (S366 and Pier 1)	5
Year 3 (LNG)	5
Year 4 (S499/Pier 2)	5
Total	20

Table 18 below summarizes the proposed authorized take for all the species described above as a percentage of stock abundance.

TABLE 18—TAKE ESTIMATES AS A PERCENTAGE OF STOCK ABUNDANCE

Species	Stock (N_{EST})	Level A harassment	Level B harassment	Percent of stock
Atlantic White-sided Dolphin	Western North Atlantic (93,233)	0	48	Less than 1 percent.
Common Dolphin	Western North Atlantic (172,974)	0	140	Less than 1 percent.
Harbor Porpoise	Gulf of Maine/Bay of Fundy (95,543)	4	21	Less than 1 percent.
Harbor Seal	Western North Atlantic (75,834)	78	900	Less than 2 percent.
Gray Seal	Western North Atlantic (451,131)	17	374	Less than 1 percent.
Harp Seal	Western North Atlantic (unknown)	6	74	Less than 1 percent.
Hooded Seal	Western North Atlantic (unknown)	0	20	Less than 1 percent.

Proposed Mitigation

Under section 101(a)(5)(A) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable adverse impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, we carefully consider 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, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The following mitigation measures are proposed for the Navy's in-water construction activities.

General

The Navy will follow mitigation procedures as described below. In general, if poor environmental conditions restrict full visibility of the shutdown zone, pile driving activities would be delayed.

Training

The Navy will ensure that construction supervisors and crews, the monitoring team, and relevant Navy staff are trained and prior to the start of construction activity subject to this rule, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project will be trained prior to commencing work.

Avoiding Direct Physical Interaction

The Navy will avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 m of such activity, operations will cease and vessels will reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction.

Shutdown Zones

The Navy will establish shutdown zones for all pile driving activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones will vary based on the activity type and marine mammal hearing group (Table 19). For those activities with larger Level A (PTS onset) harassment zones, the shutdown zone would be limited to 150 m from the point of noise generation to ensure adequate monitoring for each bulkhead section and the remaining area would be considered part of the ''disturbance zone.'' A take will be recorded if a marine mammal enters the disturbance zone but does not approach or enter the shutdown zone. The disturbance zone is the Level B harassment zone and, where

present, the Level A harassment zone (PTS onset) beyond 150 m from the point of noise generation (see Figures 6–1 through 6–4 of the Navy's application). For activities where the Level A (PTS onset) harassment zones are smaller, the disturbance zone would include the entire region of influence (ROI) and is the full extent of potential underwater noise impact (Level A and Level B calculated harassment zones). Work will be allowed to proceed without cessation while marine mammals are in the disturbance zone and marine mammal behavior within the disturbance zone will be monitored and documented.

TABLE 19—PILE DRIVING SHUTDOWN ZONE AND DISTURBANCE ZONES DURING PROJECT ACTIVITIES

Pile type	Installation method	Pile diameter	Shut down zone for cetaceans	Shut down zone for pinnipeds	Disturbance zone
Steel pipe	Impact	30-in	150 m	150 m	2,500 m
	Impact	42-in	150 m	50 m	2,500 m
Steel H	Vibratory	14-in	10 m	10 m	ROI
	Vibratory	22.5-in	30 m	10 m	ROI
Z-Shaped Steel Sheet	Impact	22.5-in	150 m	150 m	2,500 m
	Vibratory	31.5-in	20 m	10 m	ROI
	Impact	31.5-in	150 m	150 m	2,500 m

* ROI = region of influence and is the full extent of potential underwater noise impact (Level A and Level B calculated harassment zones).

Soft Start

The Navy will use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period. Then two subsequent reduced-energy strike sets would occur. A soft start will be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer. Soft start is not required during vibratory pile driving activities.

Based on our evaluation of the applicant's proposed measures, NMFS has preliminarily determined that the proposed mitigation measures provide the 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.

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 in the action area. Effective reporting is critical both to compliance as well as for 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 action; 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 Navy will submit a Marine Mammal Monitoring Plan to NMFS for approval in advance of the start of construction.

Monitoring Zones

The Navy will conduct monitoring to include the area within the Level B harassment zones (areas where SPLs are equal to or exceed the 160 dB rms threshold for impact driving and the 120 dB rms threshold during vibratory pile driving) (see Disturbance Zones in Table 19). These disturbance zones provide utility for monitoring conducted for mitigation purposes (*i.e.,* shutdown zone monitoring) by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring of the disturbance zones enables observers to be aware of and communicate the presence of marine mammals in the project area, but outside the shutdown zone, and thus prepare for potential shutdowns of activity.

Visual Monitoring

Monitoring must take place from 30 minutes (min) prior to initiation of pile driving activity (*i.e.,* pre-start clearance monitoring) through 30 min post-completion of pile driving activity. If a marine mammal is observed entering or within the shutdown zones, pile driving will be delayed or halted. If pile driving is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or 15 min have passed without re-detection of the animal. Pile driving activity will 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 within the disturbance zone.

PSO Monitoring Requirements and Locations

PSOs will be responsible for monitoring, the shutdown zones, the disturbance zones and the pre-clearance zones, as well as effectively documenting Level A and B harassment take. As described in more detail in the Reporting section below, they will also (1) document the frequency at which marine mammals are present in the project area, (2) document behavior and group composition, (3) record all construction activities, and (4) document observed reactions (changes in behavior or movement) of marine mammals during each sighting. The PSOs will monitor for marine mammals during all in-water pile activities associated with the project. The Navy will monitor the project area to the extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions. Visual monitoring will be conducted by, at a minimum, by two PSOs. It is assumed that two to three PSOs would be sufficient to monitor the respective ROIs given the abundance of suitable vantage points. Any activity that would result in threshold exceedance at or more than 1,000 m would require a minimum of three PSOs to effectively monitor the entire ROI. However, additional monitors may be added if warranted by site conditions and/or the level of marine mammal activity in the area. Trained PSOs will be placed at the best vantage point(s) practicable such as on nearby breakwaters, Gould Island, Coddington Point, or Taylor Point (see Figure 11–1 of the Navy's application) to monitor for marine mammals and implement shutdown/delay procedures when applicable. The PSOs must record all observations of marine mammals, regardless of distance from the pile being driven.

In addition, PSOs will work in shifts lasting no longer than 4 hrs with at least a 1-hr break between shifts, and will not perform duties as a PSO for more than 12 hrs in a 24-hr period (to reduce PSO fatigue).

Monitoring of pile driving will be conducted by qualified, NMFS-approved PSOs. The Navy shall adhere to the following conditions when selecting PSOs:

- PSOs must be independent (*i.e.,* not construction personnel) and have no other assigned tasks during monitoring periods;
- At least one PSO must have prior experience performing the duties of a PSO during construction activities pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training;
- Where a team of three PSOs are required, a lead observer or monitoring coordinator shall be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization; and
- PSOs must be approved by NMFS prior to beginning any activity subject to this proposed rule.

The Navy will ensure that the PSOs have the following additional qualifications:

- Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;
- Experience and ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

Acoustic Monitoring

The Navy intends to conduct a sound source verification (SSV) study for all pile types and will follow accepted methodological standards to achieve their objectives. The Navy will submit an acoustic monitoring plan to NMFS for approval prior to the start of construction.

Reporting

The Navy would submit a draft report to NMFS within 90 workdays of the completion of required monitoring for each portion of the project as well as a comprehensive summary report at the end of the project. The report will detail the monitoring protocol and summarize the data recorded during monitoring. Final annual reports (each portion of the project and comprehensive) must be prepared and submitted within 30 days following resolution of any NMFS comments on the draft report. If no comments are received from NMFS within 30 days of receipt of the draft report, the report shall be considered final. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments. All draft and final marine mammal monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *ITP.Egger@noaa.gov*. The reports must contain the following informational elements, at minimum, (and be included in the Marine Mammal Monitoring Plan), including:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including:
  - How many and what type of piles were driven and by what method (*e.g.,* impact or vibratory); and
  - Total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring;
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;
- Upon observation of a marine mammal, the following information:
  - PSO who sighted the animal and PSO location and activity at time of sighting;
  - Time of sighting;
  - Identification of the animal (*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 marine mammal observed to the pile being driven for each sighting (if pile driving was occurring at time of sighting);
  - Estimated number of animals (minimum/maximum/best);
  - Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.;

○ Animal's closest point of approach and estimated time spent within the harassment zone; and

○ Description of any marine mammal behavioral observations (*e.g.,* observed behaviors such as feeding or traveling), including an assessment of behavioral responses to the activity (*e.g.,* no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);

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

▪ All PSO datasheets and/or raw sightings data.

Reporting of Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Navy must report the incident to NMFS Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.gov*), NMFS (301–427–8401) and to the Greater Atlantic Region New England/Mid-Atlantic Stranding Coordinator (866–755–6622) as soon as feasible. If the death or injury was clearly caused by the specified activity, the Navy must immediately cease the specified activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this rule. The Navy will not resume their activities until notified by NMFS. The report must include the following information:

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

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

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

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

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

▪ General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be taken through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.,* intensity, duration), the context of any responses (*e.g.,* critical reproductive time or location, migration), 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 environmental 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, this introductory discussion of our analyses applies to all of the species listed in Table 3, 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 in anticipated individual responses to activities, impacts of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

Pile driving activities associated with the project, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level A and Level B harassment from underwater sounds generated by pile driving. Potential takes could occur if marine mammals are present in zones ensonified above the thresholds for Level A and Level B harassment, identified above, while activities are underway.

No serious injury or mortality would be expected even in the absence of the proposed mitigation measures. During all impact driving, implementation of soft start procedures and monitoring of established shutdown zones will be required, significantly reducing the possibility of injury. Given sufficient notice through use of soft start (for impact driving), marine mammals are expected to move away from an irritating sound source prior to it becoming potentially injurious. In addition, PSOs will be stationed within the action area whenever pile driving activities are underway. Depending on the activity, the Navy will employ the use of at least two and up to three PSOs to ensure all monitoring and shutdown zones are properly observed. For Atlantic white-sided dolphins, common dolphins and hooded seals, no Level A harassment is anticipated. Atlantic white-sided dolphin and common dolphin are both species in which regular occurrence is in much deeper waters than the project area, and, given the small Level A harassment zone sizes for mid-frequency cetaceans, we do not anticipate take by Level A harassment. For hooded seals, with the absence of any major rookeries and only one pinniped haulout (The Sisters) within the project area, and being a rare species in Narragansett Bay, we do not anticipate any take by Level A harassment.

The Navy's proposed pile driving activities and associated impacts will occur within a limited portion of the confluence of the Narraganset Bay area. Exposures to elevated sound levels produced during pile driving activities may cause behavioral disturbance of some individuals, but they are expected to be mild and temporary. However, as described previously, the mitigation and monitoring measures are expected to further reduce the likelihood of injury as well as reduce behavioral disturbances.

Effects on individuals that are taken by Level B harassment, as enumerated in the Estimated Take section, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.,* Thorson and Reyff 2006). Most likely, individual animals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. The pile driving activities analyzed here are similar to, or less impactful than, numerous other construction activities conducted along both Atlantic and Pacific coasts, which have taken place with no known long-term adverse consequences from behavioral harassment. These reactions and behavioral changes are expected to subside quickly when the exposures cease. Level B harassment will be

minimized through use of mitigation measures described herein, and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activity is occurring, particularly as the project is located on a waterfront with vessel traffic from both Navy and non-Navy activities.

The project is also not expected to have significant adverse effects on any marine mammal habitat. The project activities will not modify existing marine mammal habitat since the project will occur within the same footprint as existing marine infrastructure. Impacts to the immediate substrate during installation and removal of piles are anticipated, but these would be limited to minor, temporary suspension of sediments, which could impact water quality and visibility for a short amount of time, but which would not be expected to have any effects on individual marine mammals. The nearshore and intertidal habitat where the project will occur is an area of consistent vessel traffic from Navy and non-Navy vessels, and some local individuals would likely be somewhat habituated to the level of activity in the area, further reducing the likelihood of more severe impacts. The closest pinniped haulout, The Sisters, is used by harbor seals and is less than a mile from the project area; however, for the reasons described immediately above (including the nature of expected responses and the duration of the project), impacts to reproduction or survival of individuals is not anticipated, much less effects on the species or stock. There are no other biologically important areas for marine mammals near the project area.

In addition, impacts to marine mammal prey species are expected to be minor and temporary. Overall, the area impacted by the project is very small compared to the available habitat in Narragansett Bay. The most likely impact to prey will be temporary behavioral avoidance of the immediate area. During pile driving activities, it is expected that some fish and marine mammals would temporarily leave the area of disturbance, thus 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, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

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 the species or stock through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized;
- No Level A harassment is anticipated or authorized for Atlantic white-sided dolphins, Short-beaked common dolphins, and hooded seals;
- Anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior;
- The required mitigation measures (*i.e.,* shutdown zones) are expected to be effective in reducing the effects of the specified activity;
- Minimal impacts to marine mammal habitat/prey are expected;
- The action area is located within an active marine waterfront area, and
- There are no known biologically important areas in the vicinity of the project, with the exception of one harbor seal haulout (The Sisters)—however, as described above, exposure to the work conducted in the vicinity of the haulout is not expected to impact the reproduction or survival of any individual seals.

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

Small Numbers

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

Take of five of the marine mammal stocks authorized will comprise at most approximately 2 percent or less of the stock abundance (Table 18). There are no official stock abundance for harp seals or hooded seals; however, we believe for the abundance information that is available for Canada (N = 7+million for harp seals and N = 593,500 for hooded seals) combined with the fact they are highly migratory species and would be rare in the project area, the estimated takes are likely very small percentages of the stock abundance. The number of animals authorized to be taken from these stocks would be considered small relative to the relevant stock's abundances even if each estimated take occurred to a new individual, which is an unlikely scenario.

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

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Adaptive Management

The regulations governing the take of marine mammals incidental to Navy construction activities would contain an adaptive management component. The reporting requirements associated with this rule are designed to provide NMFS with monitoring data from completed projects to allow consideration of whether any changes are appropriate. The use of adaptive management allows NMFS to consider new information from different sources to determine (with input from the Navy regarding practicability) on an annual or biennial basis if mitigation or monitoring measures should be modified (including additions or deletions). Mitigation measures could be modified if new data suggests that such modifications would have a reasonable likelihood of reducing adverse effects to marine mammals and if the measures are practicable.

The following are some of the possible sources of applicable data to be considered through the adaptive management process: (1) Results from monitoring reports, as required by MMPA authorizations; (2) results from general marine mammal and sound

research; and (3) any information which reveals that marine mammals may have been taken in a manner, extent, or number not authorized by these regulations or subsequent LOAs.

Endangered Species Act

Section 7(a)(2) of the ESA (16 U.S.C. 1531 *et seq.*) requires that each Federal agency ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of incidental take authorizations, NMFS consults internally whenever we propose to authorize take for 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.

Request for Information

NMFS requests interested persons to submit comments, information, and suggestions concerning the Navy request and the proposed regulations (see **ADDRESSES**). All comments will be reviewed and evaluated as we prepare a final rule and make final determinations on whether to issue the requested authorization. This proposed rule and referenced documents provide all environmental information relating to our proposed action for public review.

Classification

Pursuant to the procedures established to implement Executive Order 12866, the Office of Management and Budget has determined that this proposed rule is not significant.

Pursuant to section 605(b) of the Regulatory Flexibility Act (RFA), the Chief Counsel for Regulation of the Department of Commerce has certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities. The Navy is the sole entity that would be subject to the requirements in these proposed regulations, and the Navy is not a small governmental jurisdiction, small organization, or small business, as defined by the RFA. Because of this certification, a regulatory flexibility analysis is not required and none has been prepared.

This proposed rule does not contain a collection-of-information requirement subject to the provisions of the Paperwork Reduction Act (PRA) because the applicant is a federal agency.

List of Subjects in 50 CFR Part 217

Administrative practice and procedure, Alaska, Endangered and threatened species, Exports, Fish, Imports, Indians, Labeling, Marine mammals, Oil and gas exploration, Penalties, Reporting and recordkeeping requirements, Seafood, Transportation, Wildlife.

Dated: September 28, 2021.

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For reasons set forth in the preamble, 50 CFR part 217 is proposed to be amended as follows:

PART 217—REGULATIONS GOVERNING THE TAKE OF MARINE MAMMALS INCIDENTAL TO SPECIFIED ACTIVITIES

■ 1. The authority citation for part 217 continues to read as follows:

Authority: 16 U.S.C. 1361 *et seq.,* unless otherwise noted.

■ 2. Add subpart R to part 217 to read as follows:

Subpart R—Taking and Importing Marine Mammals Incidental to U.S. Navy Construction at Naval Station Newport in Newport, Rhode Island

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Subpart R—Taking and Importing Marine Mammals Incidental to U.S. Navy Construction at Naval Station Newport in Newport, Rhode Island

§ 217.70 Specified activity and geographical region.

(a) Regulations in this subpart apply only to the U.S. Navy (Navy) and those persons it authorizes or funds to conduct activities on its behalf for the taking of marine mammals that occurs in the areas outlined in paragraph (b) of this section and that occurs incidental to construction activities including for bulkhead replacement and repairs at Naval Station (NAVSTA) Newport, Rhode Island.

(b) The taking of marine mammals by the Navy may be authorized in a Letter of Authorization (LOA) only if it occurs at NAVSTA Newport, Rhode Island.

§ 217.71 Effective dates.

Regulations in this subpart are effective from [EFFECTIVE DATE OF THE FINAL RULE] to [DATE 5 YEARS AFTER EFFECTIVE DATE OF THE FINAL RULE].

§ 217.72 Permissible methods of taking.

Under an LOA issued pursuant to §§ 216.106 of this chapter and 217.76, the Holder of the LOA (hereinafter ''Navy'') may incidentally, but not intentionally, take marine mammals within the area described in § 217.70 (b) by harassment associated with construction activities, provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the applicable LOA.

§ 217.73 Prohibitions.

(a) Except for the takings contemplated in § 217.72 and authorized by a LOA issued under §§ 216.106 of this chapter and 217.76, it is unlawful for any person to do any of the following in connection with the activities described in § 217.70:

(1) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or a LOA issued under §§ 216.106 of this chapter and 217.76;

(2) Take any marine mammal not specified in such LOA;

(3) Take any marine mammal specified in such LOA in any manner other than as specified;

(4) Take a marine mammal specified in such LOA if NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal; or

(5) Take a marine mammal specified in such LOA if NMFS determines such taking results in an unmitigable adverse impact on the species or stock of such marine mammal for taking for subsistence uses.

(b) [Reserved]

§ 217.74 Mitigation requirements.

(a) When conducting the activities identified in § 217.71(a), the mitigation measures contained in any LOA issued under §§ 216.106 of this chapter and 217.76 must be implemented. These mitigation measures must include but are not limited to:

(1) A copy of any issued LOA must be in the possession of the Navy, its designees, and work crew personnel operating under the authority of the issued LOA.

(2) The Navy will follow mitigation procedures as described in this section. In general, if poor environmental conditions restrict full visibility of the shutdown zone, pile driving activities would be delayed.

(3) The Navy will ensure that construction supervisors and crews, the monitoring team, and relevant Navy staff are trained prior to the start of construction activity subject to this rule, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project will be trained prior to commencing work.

(4) The Navy will avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 m of such activity, operations will cease and vessels will reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary, to avoid direct physical interaction.

(5) For all pile driving activity, the Navy must implement shutdown zones with radial distances as identified in a LOA issued under §§ 216.106 of this chapter and 217.76. If a marine mammal comes within or approaches the shutdown zone, such operations must cease.

(6) The Navy will use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period. Then two subsequent reduced-energy strike sets would occur. A soft start will be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer. Soft start is not required during vibratory pile driving activities.

(7) The Navy must deploy protected species observers (observers) as indicated in its Marine Mammal Monitoring Plan approved by NMFS.

(8) For all pile driving activities, a minimum of two protected species observers (observers) must be stationed at the best vantage points practicable to monitor for marine mammals and implement shutdown/delay procedures. However, additional monitors will be added if warranted by site conditions and/or the level of marine mammal activity in the area. Any activity that would result in threshold exceedance at or more than 1,000 m would require a minimum of three PSOs to effectively monitor the entire region of influence (the full extent of potential underwater noise impact (Level A and Level B calculated harassment zones)).

(9) Monitoring must 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. Pre-activity monitoring must be conducted for 30 minutes to ensure that the shutdown zone is clear of marine mammals, and pile driving may commence when observers have declared the shutdown zone clear of marine mammals. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, animals must be allowed to remain in the shutdown zone (*i.e.,* must leave of their own volition) and their behavior must be monitored and documented. If a marine mammal is observed within the shutdown zone, a soft-start cannot proceed until the animal has left the zone or has not been observed for 15 minutes. Monitoring must occur throughout the time required to drive a pile. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones must commence. A determination that the shutdown zone is clear must be made during a period of good visibility (*i.e.,* the entire shutdown zone and surrounding waters must be visible to the naked eye).

(10) If a marine mammal approaches or enters the shutdown zone, all pile driving activities at that location must be halted. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or fifteen minutes have passed without re-detection of the animal.

(11) Pile driving activity must be halted upon observation of either a species entering or within the harassment zone, 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.

(12) Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone would not be visible (*e.g.,* fog, heavy rain), the Navy must delay pile driving and pile removal until observers are confident marine mammals within the shutdown zone could be detected.

(13) Monitoring must be conducted by trained observers, who must have no other assigned tasks during monitoring periods. Trained observers must be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator. The Navy must adhere to the following additional observer qualifications:

(i) Independent observers are required;

(ii) At least one observer must have prior experience working as an observer;

(iii) Other observers may substitute education (degree in biological science or related field) or training for experience;

(iv) Where a team of three or more observers are required, one observer must be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer; and

(v) PSOs must be approved by NMFS prior to beginning any activity subject to this proposed rule.

(b) [Reserved]

§ 217.75 Requirements for monitoring and reporting.

(a) The Navy must submit a Marine Mammal Monitoring Plan to NMFS for approval in advance of construction.

(b) The Navy must deploy observers as indicated in its approved Marine Mammal Monitoring Plan.

(c) Observers must be trained in marine mammal identification and behaviors. Observers must have no other construction-related tasks while conducting monitoring.

(d) For all pile driving activities, a minimum of two observers must be stationed at the active pile driving site or in reasonable proximity in order to monitor the shutdown zone.

(e) The Navy must monitor the Level B harassment zones (areas where SPLs are equal to or exceed the 160 dB rms threshold for impact driving and the 120 dB rms threshold during vibratory pile driving) to the extent practicable and the shutdown zones. For those activities with larger Level A (PTS onset) harassment zones, the shutdown zone would be limited to 150 m from the point of noise generation to ensure adequate monitoring for each bulkhead section and the remaining area would be considered part of the disturbance zone. The Navy must monitor the disturbance zone, which is the Level B harassment zone and, where present, the Level A harassment zone (PTS onset) beyond 150 m from the point of noise generation. The Navy must monitor at least a portion of the Level B harassment zone on all pile driving days.

(f) The Navy must conduct hydroacoustic data collection (sound source verification and propagation loss) in accordance with a hydroacoustic monitoring plan that

must be approved by NMFS in advance of construction.

(g) The Navy must submit a draft monitoring report to NMFS within 90 work days of the completion of required monitoring for each portion of the project as well as a comprehensive summary report at the end of the project. The report will detail the monitoring protocol and summarize the data recorded during monitoring. Final annual reports (each portion of the project and comprehensive) must be prepared and submitted within 30 days following resolution of any NMFS comments on the draft report. If no comments are received from NMFS within 30 days of receipt of the draft report, the report must be considered final. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments. The reports must contain the informational elements described at minimum below (and be included in the Marine Mammal Monitoring Plan), including:

(1) Dates and times (begin and end) of all marine mammal monitoring;

(2) Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.,* impact or vibratory) and the total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving);

(3) Environmental conditions during monitoring periods (at beginning and end of observer 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 (if less than the harassment zone distance);

(4) Upon observation of a marine mammal, the following information should be collected:

(i) Observer who sighted the animal and observer location and activity at time of sighting;

(ii) Time of sighting;

(iii) Identification of the animal (*e.g.,* genus/species, lowest possible taxonomic level, or unidentified), observer confidence in identification, and the composition of the group if there is a mix of species;

(iv) Distances and bearings of each marine mammal observed in relation to the pile being driven for each sighting (if pile driving was occurring at time of sighting);

(v) Estimated number of animals (min/max/best);

(vi) Estimated number of animals by cohort (adults, juveniles, neonates, group composition etc.);

(vii) Animal's closest point of approach and estimated time spent within the harassment zone; and

(viii) Description of any marine mammal behavioral observations (*e.g.,* observed behaviors such as feeding or traveling), including an assessment of behavioral responses to the activity (*e.g.,* no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);

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

(6) All observer datasheets and/or raw sightings data.

(h) The Navy must report the hydroacoustic data collected as required by a LOA issued under §§ 216.106 of this chapter and 217.76.

(i) In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Navy must report the incident to NMFS Office of Protected Resources (OPR), and to the Greater Atlantic Region New England/Mid-Atlantic Stranding Coordinator, as soon as feasible. If the death or injury was clearly caused by the specified activity, the Navy must immediately cease the specified activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this rule *and the LOA issued under §§ 216.106 of this chapter and 217.76.* The Navy will not resume their activities until notified by NMFS. The report must include the following information:

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

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

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

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

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

(6) General circumstances under which the animal was discovered.

§ 217.76 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to these regulations, the Navy must apply for and obtain an LOA.

(b) An LOA, unless suspended or revoked, may be effective for a period of time not to exceed the expiration date of these regulations.

(c) If an LOA expires prior to the expiration date of these regulations, the Navy may apply for and obtain a renewal of the LOA.

(d) In the event of projected changes to the activity or to mitigation and monitoring measures required by an LOA, the Navy must apply for and obtain a modification of the LOA as described in § 217.77.

(e) The LOA will set forth the following information:

(1) Permissible methods of incidental taking;

(2) Means of effecting the least practicable adverse impact (*i.e.,* mitigation) on the species, its habitat, and on the availability of the species for subsistence uses; and

(3) Requirements for monitoring and reporting.

(f) Issuance of the LOA will be based on a determination that the level of taking will be consistent with the findings made for the total taking allowable under these regulations.

(g) Notice of issuance or denial of an LOA will be published in the **Federal Register** within 30 days of a determination.

§ 217.77 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 of this chapter and 217.76 for the activity identified in § 217.70(a) may be renewed or modified upon request by the applicant, provided that:

(1) The proposed specified activity and mitigation, monitoring, and reporting measures, as well as the anticipated impacts, are the same as those described and analyzed for these regulations; and

(2) NMFS determines that the mitigation, monitoring, and reporting measures required by the previous LOA under these regulations were implemented.

(b) For LOA modification or renewal requests by the applicant that include changes to the activity or the mitigation, monitoring, or reporting that do not change the findings made for the regulations or result in no more than a minor change in the total estimated number of takes (or distribution by species or years), NMFS may publish a notice of proposed LOA in the **Federal Register**, including the associated analysis of the change, and solicit public comment before issuing the LOA.

(c) A LOA issued under §§ 216.106 of this chapter and 217.76 for the activity identified in § 217.70 (a) may be

modified by NMFS under the following circumstances:

(1) NMFS may modify (including augment) the existing mitigation, monitoring, or reporting measures (after consulting with Navy regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring set forth in the preamble for these regulations;

(i) Possible sources of data that could contribute to the decision to modify the mitigation, monitoring, or reporting measures in a LOA:

(A) Results from Navy's monitoring from previous years;

(B) Results from other marine mammal and/or sound research or studies; and

(C) Any information that reveals marine mammals may have been taken in a manner, extent or number not authorized by these regulations or subsequent LOAs; and

(ii) If, through adaptive management, the modifications to the mitigation, monitoring, or reporting measures are substantial, NMFS will publish a notice of proposed LOA in the **Federal Register** and solicit public comment;

(2) If NMFS determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in a LOA issued pursuant to §§ 216.106 of this chapter and 217.76, a LOA may be modified without prior notice or opportunity for public comment. Notification would be published in the **Federal Register** within 30 days of the action.

§§ 217.78—217.79 [Reserved]

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