FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MB Docket No. 19–310 and 17–105; Report No. 3164; FRS 17301]

Petition for Reconsideration of Action in Proceedings

AGENCY: Federal Communications Commission.

ACTION: Petition for Reconsideration.

SUMMARY: Petition for Reconsideration (Petition) has been filed in the Commission's proceeding by Rachel Stilwell and Samantha Gutierrez, on behalf of REC Networks, musicFIRST Coalition and Future of Music Coalition.

DATES: Oppositions to the Petition must be filed on or before January 5, 2021. Replies to an opposition must be filed on or before January 15, 2021.

ADDRESSES: Federal Communications Commission, 45 L Street NE, Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Jamile Kadre, Industry Analysis Division, Media Bureau, (202) 418–2245.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's document, Report No. 3164, released December 8, 2020. The full text of the Petition can be accessed online via the Commission's Electronic Comment Filing System at: *http://apps.fcc.gov/ecfs/*. The Commission will not send a Congressional Review Act (CRA) submission to Congress or the Government Accountability Office pursuant to the CRA, 5 U.S.C. 801(a)(1)(A), because no rules are being adopted by the Commission.

Subject: Amendment of Section 73.3556 of the Commission's Rules Regarding Duplication of Programming on Commonly Owned Radio Stations; Modernization of Media Initiative, published at 85 FR 67303, October 22, 2020, in MB Docket Nos. 19–310 and 17–105. This document is being published pursuant to 47 CFR 1.429(e). *See also* 47 CFR 1.4(b)(1) and 1.429(f), (g).

Number of Petitions Filed: 1.

Federal Communications Commission.

Marlene Dortch,

Secretary, Office of the Secretary.

[FR Doc. 2020–28024 Filed 12–18–20; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 218

[Docket No. 201207–0329]

RIN 0648–BJ90

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

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 including marine structure maintenance, pile replacement, and select waterfront improvements at Naval Station Norfolk (NAVSTA Norfolk) over the course of five years (2021–2026). 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 January 20, 2021.

ADDRESSES: You may submit comments on this document, identified by NOAA–NMFS–2020–0154, by the following method:

• *Electronic submission:* Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to *www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2020-0154,* click the ''Comment Now!'' 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: Leah Davis, 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-norfolk-norfolk-virginia.* 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 including marine structure maintenance, pile replacement, and select waterfront improvements at NAVSTA Norfolk.

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 B harassment only 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 I 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.
- 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 February 2020, NMFS received a request from the Navy for a proposed rule and LOA to take marine mammals incidental to construction activities including marine structure maintenance, pile replacement, and select waterfront improvements at NAVSTA Norfolk. NMFS reviewed the Navy's application, and the Navy provided an updated version addressing NMFS' questions and comments on May 22, 2020. The application was deemed adequate and complete and published for public review and comment on June 9, 2020 (85 FR 35267). We did not receive substantive comments on the NOR.

The Navy requests authorization to take a small number of five species of marine mammals by Level B harassment only. Neither the Navy nor NMFS expects serious injury or mortality to result from this activity. The proposed regulations would be valid for five years (2021–2026).

Description of Proposed Activity

Overview

The Navy is proposing to conduct construction activities at NAVSTA Norfolk on the Naval Station, and at nearby facilities off of the lower Chesapeake Bay. The Navy's proposed activities include pile replacement at the Morale, Welfare and Recreation Marina, and installation of two new floating docks at the V-area. Both areas are located on the Naval Station. The Navy also proposes to conduct maintenance/repair activities at the Naval Station and neighboring Defense Fuel Supply Point Craney Island and Lambert's Point Deperming Station (see Figure 1). The Navy has indicated specific projects where existing needs have been identified, as well as estimates for expected emergent or emergency repairs. The proposed project will include both vibratory pile driving and removal, and impact pile driving (hereafter, collectively referred to as ''pile driving'') over approximately 574 days over five years.

Dates and Duration

The proposed regulations would be valid for a period of five years (2021–2026). The specified activities may occur at any time during the five-year period of validity of the proposed regulations. The Navy expects pile driving across all sites to occur on approximately 574 days over the five-year duration, with the greatest amount of work occurring during Year 1 (approximately 208 days). The Navy plans to conduct all work during daylight hours.

Specific Geographic Region

NAVSTA Norfolk and the adjacent facilities where the Navy has proposed to conduct construction (Craney Island Fuel Depot and Lambert's Point Deperming Station) are located at the confluence of the Elizabeth River, James River, Nansemond River, LaFayette River, Willoughby Bay, and Chesapeake Bay (Figure 1).

Human-generated sound is a significant contributor to the ambient acoustic environment surrounding NAVSTA Norfolk, as it is located in close proximity to shipping channels as well as several Port of Virginia facilities with frequent, noise-producing vessel traffic. NAVSTA Norfolk is located in close proximity to shipping channels as well as several Port of Virginia facilities that, altogether, have an annual average of 1,459 vessel calls (Port of Virginia,

2019). Other sources of human-generated underwater sound not specific to naval installations include sounds from echo sounders on commercial and recreational vessels, industrial ship noise, and noise from recreational boat engines. Additionally, on average, maintenance dredging of the Navigation Channel occurs every two years (USACE and Port of Virginia, 2018).

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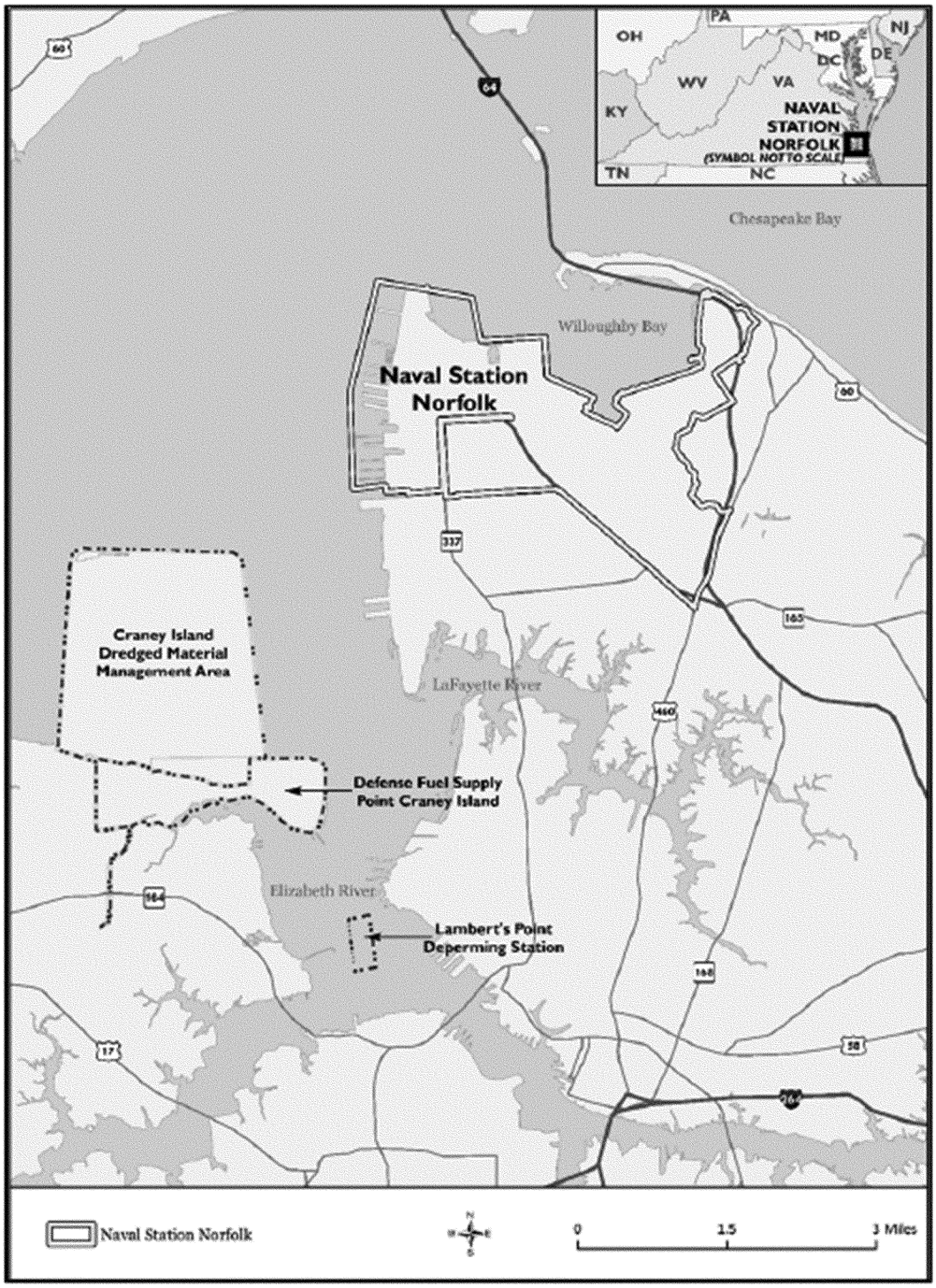

Figure 1-- Project Location

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Detailed Description of Specific Activity

The Navy's existing waterfront inspection program identifies fender pile system deficiencies and prioritizes, designs, and conducts maintenance and repairs. The inspection program also addresses repairs (emergent projects) required due to unforeseen events such as weather and vessel incidents. Because construction details are unknown for all emergent projects, potential numbers of fender piles to be extracted and installed were estimated by Navy waterfront infrastructure engineers based on historic emergent

maintenance pile driving actions and scheduled/forecasted maintenance.

The proposed action includes individual projects (where an existing need has been identified) and estimates for emergent or emergency repairs. The Navy proposes to conduct marine structure maintenance, pile replacement, and upgrades (MPU) activities over a five-year period. The Navy would also upgrade waterfront facilities at two areas.

Fender Pile Replacement: NAVSTA Norfolk Piers, Craney Island, and Lambert's Point

All piles that the Navy plans to replace in the NAVSTA Norfolk Piers, Defense Fuel Supply Point (DFSP) Craney Island and Lambert's Point areas are fender piles. Fender piles (or guide piles) protect in-water structures from direct contact with vessels and are not load-bearing. In-water piles may be treated timber, pre-stressed concrete, high-density polyethylene (HDPE) plastic, or hollow core fiberglass. Existing timber fender piles would be replaced by either composite (HDPE or hollow core fiberglass) or timber fender piles (depending on availability of composite piles). Table 1 includes the number and types of fender piles to be removed and installed at each location during the five years of proposed MPU activities. Please see Figure 1–2 and Figure 1–3 of the Navy's application for the detailed location of each pier. A full list of all pile replacement and removal in each year of the overall MPU project is provided in Appendix A of the Navy's application.

TABLE 1—FENDER PILES TO BE REMOVED (12-INCH [IN] TIMBER PILES) AND INSTALLED (16-IN COMPOSITE PILES) AT NAVSTA NORFOLK PIERS, DFSP CRANEY ISLAND, AND LAMBERT'S POINT

Location	Pile type	2021	2022	2023	2024	2025
NAVSTA Norfolk Piers	12-in Timber	630	555	100	405	948
	16-in Composite	208	196	0	267	845
DFSP Craney Island	12-in Timber	272	0	0	0	0
	16-in Composite	258	0	0	0	0
Lambert's Point Deperming Station.	12-in Timber	29	0	0	0	0
	16-in Composite	29	0	0	0	0

Waterfront Improvements: Morale, Welfare, and Recreation (MWR) Marina and V-Area

The MWR Marina features 200 deep-water slips, a boat ramp, and other recreational boating facilities (see Figure 1–2 of the Navy's application). Upgrades to the MWR Marina would consist of the replacement of timber load-bearing and guide piles with 24-by-24-in (61-by 61-cm) square pre-stressed concrete and composite or timber fender piles, respectively.

The V-Area currently features a bulkhead, a breakwater, two floating piers, and a boat ramp (see Figure 1–2 of the Navy's application). Upgrades to this area would include the construction of two additional floating docks, for a total addition of approximately 4,095 square feet (ft^2) 380.4 square meters of dock space. These docks would be constructed using 24-by-24-in (61-by 61-cm) square pre-stressed concrete for the load-bearing piles and composite or timber fender/guide piles.

For the purposes of this assessment, the Navy assumed these upgrades would occur in Year 1, with maintenance replacements occurring thereafter. Concrete piles are anticipated to be fully impact driven. Composite piles are anticipated to be impact or vibratory driven depending on pile type—hollow core fiberglass piles may be impact or vibratory driven, while HDPE piles would be impact driven.

The number of piles the Navy expects to remove and install are included in Table 2 and Table 3, respectively. The Navy does not plan to drive multiple piles concurrently.

TABLE 2—PILES TO BE REMOVED AT MWR MARINA AND V-AREA

Location	Pile size/type	Number of piles [1]
MWR Marina	12-in timber	100
	16-in composite	40
V-Area	16-in composite	40

[1] Includes piles for initial upgrade/construction as well as maintenance replacements over the five-year project span.

TABLE 3—PILES TO BE INSTALLED AT MWR MARINA AND V-AREA

Location	Pile size/type	Number of piles [1]
MWR Marina	24-by-24-in square concrete [2]	50
	16-in composite [3]	90
V-Area	24-by-24-in square concrete	50
	16-in composite [3]	90

[1] Includes piles for initial upgrade/construction as well as maintenance replacements over the five-year project span.
[2] Concrete piles are anticipated to be fully impact driven.
[3] The Navy may use timber piles if supply or funding issues prohibit the use of composite piles. However, as noted in Table 8, the sound source levels are expected to be the same for both pile types.

In extracting piles, the Navy would primarily use a vibratory hammer. In cases where removal with a vibratory hammer is not possible because piles break or are damaged, a clamshell may be used; a clamshell is a hinged steel apparatus that operates similar to a set of steel jaws, which grasps the pile as the attached crane pulls upward on the pile. Lastly, depending on site conditions, piles may be removed by wrapping the piles with a cable or chain and pulling them directly from the sediment with a crane. In some cases, depending on access and location, piles may be cut at or below the mud-line.

TABLE 4—ESTIMATED NUMBER OF PILE DRIVING DAYS EACH YEAR (574 DAYS TOTAL)

	2021	2022	2023	2024	2025
Pile Driving Days	208	84	18	76	188

In addition to pile driving, the Navy also plans to conduct pile repair, demolition of deck portions, wetwall repair, recoating of piles and mooring fittings, installation of a passive cathodic protection system, repair or replacement of pile caps, concrete spalling repairs, mooring foundation and substructure repair, repair or replacement of structural and non-structural components, rewrapping/replacement of steel cable straps on dolphins, and construction access and project staging.

Pile Repair—Several methods of pile repair may be used, including stubbing, wrapping, pile encapsulation, and welding. Pile stubbing is a process in which an existing, damaged length of timber pile above the ground line is removed and replaced with a new length of timber pile. All of the above repair activities would either occur over water or involve only minor in-water work, not including pile driving. We do not expect these activities to harass marine mammals and do not discuss them further.

Demolition of Deck Portions—A wire saw or other equipment would be used to cut timber or concrete decks that are damaged or need replacement into sections. Sections would be removed with a crane. Debris would be captured using debris curtains/sheeting and removed from the project area. Deck pieces would be hauled to a barge and then to an upland disposal site. Large concrete deck areas requiring repair would be cast-in-place with formwork, and repairs of smaller areas would be performed using hand trowels. We do not expect these activities to harass marine mammals and do not discuss them further.

Wetwall Repair—A wetwall is an above-water, reinforced concrete encasement for a sanitary sewer lift station pump. Repairs would occur by removing failed and delaminated concrete. The reinforced steel substructure would then be repaired and new concrete applied, either using cast-in-place methods or hand trowels. We do not expect wetwall repair to harass marine mammals and do not discuss it further.

Recoat Piles and Mooring Fittings—The Navy is proposing to clean and recoat some piles and mooring fittings. All coatings would be applied to dry surfaces and limited to areas above mean sea level (6.5 ft mean lower low water). We do not expect these activities to harass marine mammals and do not discuss them further.

Passive Cathodic Protection System—The Navy is proposing to install a passive cathodic protection system which is a metallic rod (anode) attached to a metal object to protect it from corrosion. We do not expect installation of the system to harass marine mammals and do not discuss it further.

Repair or Replacement of Pile Caps—The Navy is proposing to repair and/or replace pile caps. Replacement concrete pile caps may be cast-in-place, and the framework may be located below mean higher high water. However, we do not expect repair or replacement of pile caps to harass marine mammals, and we do not discuss it further.

Concrete Spalling Repairs—Concrete spalling occurs when concrete becomes chipped, scaled or flaked. Repair of spalled concrete involves removal of damaged sections and installation of new concrete. We do not expect concrete spalling repairs to harass marine mammals and do not discuss it further.

Mooring Foundation and Substructure Repair—Repairs may involve removal and replacement of concrete mooring foundations and concrete substructure on piers, wharfs, and quay walls. Work may include preservation of rebar and injection of epoxy, as required. We do not expect mooring foundation and substructure repair to harass marine mammals and do not discuss it further.

Repair or Replacement of Components—Structural and non-structural components of waterfront structures would be repaired or replaced as required. Replacement of components would involve removal of existing components and installation of new components. Components may include, but are not limited to the following:

- Timber wave breaks;
- cross bracing members;
- fender components, including but not limited to camels, chocks, and whalers;
- hand rails;
- splash guards;
- safety ladders;
- electrical conduit and wiring;
- light poles;
- guide pile systems for floats (used to secure a floating dock or barge to a pile but allow the floating dock or barge to move up and down with tidal changes); and
- brows (small, movable, bridge-like structures used to board or leave a vessel) or gangways.

We do not expect repair or replacement of these components to harass marine mammals and they are not discussed further.

Rewrap/Replace Steel Cable Straps on Dolphins—The Navy is proposing to rewrap and/or replace steel cable straps that hold dolphin pile groupings together. We do not expect these activities to harass marine mammals and do not discuss them further.

Construction Access and Project Staging—Barges would be used as platforms for conducting in-water work activities and to haul materials and equipment to and from work sites. Barges would be moored with spuds or anchors. Other than barges, no staging sites have been identified. If staging areas for equipment and materials are identified at a future date, they would occur in currently developed lots or managed fields.

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 5 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 (2020). 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's 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's 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.* 2020). All values presented in Table 5 are the most recent available at the time of publication and are available in the 2019 SARs (Hayes *et al.* 2020).

TABLE 5—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]
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)						
Family Balaenopteridae (rorquals):						
Humpback whale	*Megaptera novaeangliae*	Gulf of Maine	-,-; N	1,396 (0; 1,380; see SAR)	22	12.15
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae:						
Bottlenose dolphin	*Tursiops truncatus*	Western North Atlantic (WNA) Coastal, Northern Migratory.	-,-; Y	6,639 (0.41; 4,759; 2011)	48	6.1–13.2
		WNA Coastal, Southern Migratory.	-,-; Y	3,751 (0.06; 2,353; 2011)	23	0–14.3
		Northern North Carolina Estuarine System (NNCES).	-,-; Y	823 (0.06; 782; 2013)	7.8	0.8–18.2
Family Phocoenidae (porpoises):						
Harbor porpoise	*Phocoena phocoena*	Gulf of Maine/Bay of Fundy	-, -; N	95,543 (0.31; 74,034; see SAR).	851	217
Order Carnivora—Superfamily Pinnipedia						
Family Phocidae (earless seals):						
Harbor seal	*Phoca vitulina*	WNA	-; N	75,834 (0.15; 66,884, see SAR).	2,006	350
Gray seal	*Halichoerus grypus*	WNA	-; N	27,131 (0.19, 23,158, see SAR).	1,359	5,410

[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; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable.

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

As indicated above, all five species (with seven managed stocks) in Table 5 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have proposed authorizing take. While North Atlantic right whales (*Eubalaena glacialis*), minke whales (*Balaenoptera acutorostrata acutorostrata*), and fin whales (*Balaenoptera physalus*) have been documented in the area, the temporal and/or spatial occurrence of these whales is such that take is not expected to occur, and they are not discussed further beyond the explanation provided here.

Based on sighting data and passive acoustic studies, the North Atlantic right whale could occur off Virginia year-round (DoN 2009; Salisbury *et al.* 2016). They have also been reported seasonally off Virginia during migrations in the spring, fall, and winter (CeTAP 1981, 1982; Niemeyer *et al.* 2008; Kahn *et al.* 2009; McLellan 2011b, 2013; Mallette *et al.* 2016a, 2016b, 2017, 2018a; Palka *et al.* 2017; Cotter 2019). Right whales are known to frequent the coastal waters of the mouth of the Chesapeake Bay (Knowlton *et al.* 2002) and the area is a seasonal management area (November 1–April 30) mandating reduced ship speeds out to

approximately 20 nautical miles (37 kilometers [km]) for the species; however, the project area is further inside the Bay.

North Atlantic right whales have stranded in Virginia, one each in 2001, 2002, 2004, 2005: Three during winter (February and March) and one in summer (September) (Costidis *et al.* 2017, 2019). In January 2018, a dead, entangled North Atlantic right whale was observed floating over 60 miles (96.6 km) offshore of Virginia Beach (Costidis *et al.* 2019). All North Atlantic right whale strandings in Virginia waters have occurred on ocean-facing beaches along Virginia Beach and the barrier islands seaward of the lower Delmarva Peninsula (Costidis *et al.* 2017). Due to the low occurrence of North Atlantic right whales in the project area, NMFS is not proposing to authorize take of this species.

Fin whales have been sighted off Virginia (Cetacean and Turtle Assessment Program (CeTAP) 1981, 1982; Swingle *et al.* 1993; DoN 2009; Hyrenbach *et al.* 2012; Barco 2013; Mallette *et al.* 2016a, b; Aschettino *et al.* 2018; Engelhaupt *et al.* 2017, 2018; Cotter 2019), and in the Chesapeake Bay (Bailey 1948; CeTAP 1981, 1982; Morgan *et al.* 2002; Barco 2013; Aschettino *et al.* 2018); however, they are not likely to occur in the project area. Sightings have been documented around the Chesapeake Bay Bridge Tunnel (CBBT) during the winter months (CeTAP 1981, 1982; Barco 2013; Aschettino *et al.* 2018).

Eleven fin whale strandings have occurred off Virginia from 1988 to 2016 mostly during the winter months of February and March, followed by a few in the spring and summer months (Costidis *et al.* 2017). Six of the strandings occurred in the Chesapeake Bay (three on eastern shore; three on western shore) with the remaining five occurring on the Atlantic coast (Costidis *et al.* 2017. Documented strandings near the project area have occurred: February 2012, a dead fin whale washed ashore on Oceanview Beach in Norfolk (Swingle *et al.* 2013); December 2017, a live fin whale stranded on a shoal in Newport News and died at the site (Swingle *et al.* 2018); February 2014, a dead fin whale stranded on a sand bar in Pocomoke Sound near Great Fox Island, Accomack (Swingle *et al.* 2015); and, March 2007, a dead fin whale near Craney Island, in the Elizabeth River, in Norfolk (Barco 2013). Only stranded fin whales have been documented in the project area; no free-swimming fin whales have been observed. Due to the low occurrence of fin whales in the project area, NMFS is not proposing to authorize take of this species.

Minke whales have been sighted off Virginia (CeTAP 1981, 1982; Hyrenbach *et al.* 2012; Barco 2013; Mallette *et al.* 2016a, b; McLellan 2017; Engelhaupt *et al.* 2017, 2018; Cotter 2019), near the CBBT (Aschettino *et al.* 2018), but sightings in the project area are from strandings (Jensen and Silber 2004; Barco 2013; DoN 2009). In August 1994, a ship strike incident involved a minke whale in Hampton Roads (Jensen and Silber 2004; Barco 2013). It was reported that the animal was struck offshore and was carried inshore on the bow of a ship (DoN 2009). Twelve strandings of minke whales have occurred in Virginia waters from 1988 to 2016 (Costidis *et al.* 2017). There have been six minke whale stranding from 2017 through 2020 in Virginia waters. Because all known minke whale occurrences in the project area are due to strandings, NMFS is not proposing to authorize take of this species.

Humpback Whale

Humpback whales are distributed worldwide in all major oceans and most seas. Most humpback whale sightings are in nearshore and continental shelf waters; however, humpback whales frequently travel through deep oceanic waters during migration (Calambokidis *et al.* 2001; Clapham, P.J. and Mattila, D.K., 1990). Prior to 2016, humpback whales were listed under the ESA as an endangered species worldwide. Following a 2015 global status review (Bettridge *et al.* 2015), NMFS established 14 DPSs with different listing statuses (81 FR 62259; September 8, 2016) pursuant to the ESA. Humpback whales in the project area are expected to be from the West Indies DPS, which consists of the whales whose breeding range includes the Atlantic margin of the Antilles from Cuba to northern Venezuela, and whose feeding range primarily includes the Gulf of Maine, eastern Canada, and western Greenland, was delisted. Bettridge *et al.* (2003) estimated the size of the West Indies DPS at 12,312 (95% CI 8,688–15,954) whales in 2004–05, which is consistent with previous population estimates of approximately 10,000–11,000 whales (Stevick *et al.* 2003; Smith *et al.* 1999) and the increasing trend for the West Indies DPS (Bettridge *et al.* 2015).

Although humpback whales are migratory between feeding areas and calving areas, individual variability in the timing of migrations may result in the presence of individuals in high-latitude areas throughout the year (Straley, 1990). Records of humpback whales off the U.S. mid-Atlantic coast (New Jersey to North Carolina) from January through March suggest these waters may represent a supplemental winter feeding ground used by juvenile and mature humpback whales of U.S. and Canadian North Atlantic stocks (LaBrecque *et al.* 2015).

Humpback whales are most likely to occur near the mouth of the Chesapeake Bay and coastal waters of Virginia Beach between January and March; however, they could be found in the area year-round, based on shipboard sighting and stranding data (Barco and Swingle, 2014; Aschettino *et al.* 2015; 2016; 2017; 2018). Photo-identification data support the repeated use of the mid-Atlantic region by individual humpback whales. Results of the vessel surveys show site fidelity in the survey area for some individuals and a high level of occurrence within shipping channels—an important high-use area by both the Navy and commercial traffic (Aschettino *et al.* 2015; 2016; 2017; 2018). Nearshore surveys conducted in early 2015 reported 61 individual humpback whale sightings, and 135 individual humpback whale sightings in late 2015 through May 2016 (Aschettino *et al.* 2016). Subsequent surveys confirmed the occurrence of humpback whales in the nearshore survey area: 248 individuals were detected in 2016–2017 surveys (Aschettino *et al.* 2017), 32 individuals were detected in 2017–2018 surveys (Aschettino *et al.* 2018), and 80 individuals were detected in 2019 surveys (Aschettino *et al.* 2019). Sightings in the Hampton Roads area in the vicinity of NAVSTA Norfolk were reported in nearshore surveys and through tracking of satellite-tagged whales in 2016, 2017 and 2019. The numbers of whales detected, most of which were juveniles, reflect the varying level of survey effort and changes in survey objectives from year to year, and do not indicate abundance trends over time.

Bottlenose Dolphin

Along the U.S. East Coast and northern Gulf of Mexico, the bottlenose dolphin stock structure is well studied. There are currently 53 management stocks identified by NMFS in the western North Atlantic and Gulf of Mexico, including oceanic, coastal, and estuarine stocks (Hayes *et al.* 2017; Waring *et al.* 2015, 2016).

There are two morphologically and genetically distinct bottlenose dolphin morphotypes (distinguished by physical differences) described as coastal and offshore forms (Duffield *et al.* 1983; Duffield, 1986). The offshore form is larger in total length and skull length,

and has wider nasal bones than the coastal form. Both inhabit waters in the western North Atlantic Ocean and Gulf of Mexico (Curry and Smith, 1997; Hersh and Duffield, 1990; Mead and Potter, 1995) along the U.S. Atlantic coast. The coastal morphotype of bottlenose dolphin is continuously distributed along the Atlantic coast south of Long Island, New York, around the Florida peninsula, and along the Gulf of Mexico coast. This type typically occurs in waters less than 25 meters deep (Waring *et al.* 2015). The range of the offshore bottlenose dolphin includes waters beyond the continental slope (Kenney R.D., 1990), and offshore bottlenose dolphins may move between the Gulf of Mexico and the Atlantic (Wells *et al.* 1999).

Two coastal stocks are likely to be present in the MPU project area: Western North Atlantic Northern Migratory Coastal stock and Western North Atlantic Southern Migratory Coastal stock. Additionally, the Northern North Carolina Estuarine System stock may occur in the project area.

Bottlenose dolphins are the most abundant marine mammal along the Virginia coast and within the Chesapeake Bay, typically traveling in groups of 2 to 15 individuals, but occasionally in groups of over 100 individuals (Engelhaupt *et al.* 2014; 2015; 2016). Bottlenose dolphins of the Western North Atlantic Northern Migratory Coastal stock winter along the coast of North Carolina and migrate as far north as Long Island, New York, in the summer. They are rarely found north of North Carolina in the winter (NMFS, 2018a). The Western North Atlantic Southern Migratory Coastal stock occurs in waters of southern North Carolina from October to December, moving south during winter months and north to North Carolina during spring months. During July and August, the Western North Atlantic Southern Migratory Coastal stock is presumed to occupy coastal waters north of Cape Lookout, North Carolina, to the eastern shore of Virginia (NMFS, 2018a). It is possible that these animals also occur inside the Chesapeake Bay and in nearshore coastal waters. The North Carolina Estuarine System stock dolphins may also occur in the Chesapeake Bay during July and August (NMFS, 2018a).

Vessel surveys conducted along coastal and offshore transects from NAVSTA Norfolk to Virginia Beach in most months from August 2012 to August 2015 reported bottlenose dolphins throughout the survey area, including the vicinity of NAVSTA Norfolk (Engelhaupt *et al.* 2014; 2015; 2016). The final results from this project confirmed earlier findings that bottlenose dolphins are common in the study area, with highest densities in the coastal waters in summer and fall months. However, bottlenose dolphins do not completely leave this area during colder months, with approximately 200–300 individuals still present in winter and spring months (Engelhaupt *et al.* 2016).

Harbor Porpoise

Harbor porpoises inhabit cool temperate-to-subpolar waters, often where prey aggregations are concentrated (Watts and Gaskin, 1985). Thus, they are frequently found in shallow waters, most often near shore, but they sometimes move into deeper offshore waters. Harbor porpoises are rarely found in waters warmer than 63 degrees Fahrenheit (17 degrees Celsius) (Read 1999) and closely follow the movements of their primary prey, Atlantic herring (Gaskin 1992).

In the western North Atlantic, harbor porpoise range from Cumberland Sound on the east coast of Baffin Island, southeast along the eastern coast of Labrador to Newfoundland and the Gulf of St. Lawrence, then southwest to about 34 degrees North on the coast of North Carolina (Waring *et al.* 2016). During winter (January to March), intermediate densities of harbor porpoises can be found in waters off New Jersey to North Carolina, and lower densities are found in waters off New York to New Brunswick, Canada (Waring *et al.* 2016). Harbor porpoises sighted off the mid-Atlantic during winter include porpoises from other western North Atlantic populations (Rosel *et al.* 1999). There does not appear to be a temporally coordinated migration or a specific migratory route to and from the Bay of Fundy region (Waring *et al.* 2016). During fall (October to December) and spring (April to June), harbor porpoises are widely dispersed from New Jersey to Maine, with lower densities farther north and south (LaBrecque *et al.* 2015).

Based on stranding reports, passive acoustic recorders, and shipboard surveys, harbor porpoise occur in coastal waters primarily in winter and spring months, but there is little information on their presence in the Chesapeake Bay. They do not appear to be abundant in the NAVSTA Norfolk area in most years, but this is confounded by wide variations in stranding occurrences over the past decade.

Harbor Seal

The Western North Atlantic stock of harbor seals occurs in the MPU project area. Harbor seal distribution along the U.S. Atlantic coast has shifted in recent years, with an increased number of seals reported from southern New England to the mid-Atlantic region (DiGiovanni *et al.* 2011; Hayes *et al.* 2017; Kenney R. D. 2019; Waring *et al.* 2016). Regular sightings of seals in Virginia have become a common occurrence in winter and early spring (Costidis *et al.* 2019). Winter haulout sites for harbor seals have been documented in the Chesapeake Bay at the CBBT, on the Virginia Eastern Shore, and near Oregon Inlet, North Carolina (Waring *et al.* 2016; Rees *et al.* 2016; Jones *et al.* 2018).

Harbor seals regularly haul out on rocks around the portal islands of the CBBT and on mud flats on the nearby southern tip of the Eastern Shore from December through April (Rees *et al.* 2016; Jones *et al.* 2018). Seals captured in 2018 on the Eastern Shore and tagged with satellite-tracked tags that lasted from 2 to 5 months spent at least 60 days in Virginia waters before departing the area. All tagged seals returned regularly to the capture site while in Virginia waters, but individuals utilized offshore and Chesapeake Bay waters to different extents (Ampela *et al.* 2019). The area that was utilized most heavily was near the Eastern Shore capture site, but some seals ranged into the Chesapeake Bay.

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). Gray seals range south into the northeastern United States, with strandings and sightings as far south as North Carolina (Hammill *et al.* 1998; Waring *et al.* 2004). Gray seal distribution along the U.S. Atlantic coast has shifted in recent years, with an increased number of seals reported in southern New England (DiGiovanni *et al.* 2011; Kenney R.D., 2019; Waring *et al.* 2016). Recent sightings included a gray seal in the lower Chesapeake Bay during the winter of 2014 to 2015 (Rees *et al.* 2016). Along the coast of the United States, gray seals are known to pup at three or more colonies in Massachusetts and Maine.

Gray seals are uncommon in Virginia and in the Chesapeake Bay. Only 15 gray seal strandings were documented

in Virginia from 1988 through 2013 (Barco and Swingle, 2014). They are rarely found resting on the rocks around the portal islands of the CBBT from December through April alongside harbor seals. Seal observation surveys conducted at the CBBT recorded one gray seal in each of the 2014/2015 and 2015/2016 seasons while no gray seals were reported during the 2016/2017 and 2017/2018 seasons (Rees *et al.* 2016, Jones *et al.* 2018). Sightings have been reported off Virginia and near the project area during the winter and spring (Barco 2013; Rees *et al.* 2016; Jones *et al.* 2018; Ampela *et al.* 2019).

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. Currently, ongoing UME investigations are underway for pinnipeds along the Northeast coast, and humpback whales along the Atlantic coast.

Northeast Pinniped UME

Since July 2018, elevated numbers of harbor seal and gray seal mortalities have occurred across Maine, New Hampshire and Massachusetts. This event has been declared an UME. Additionally, seals showing clinical signs have been stranding as far south as Virginia, although not in elevated numbers; therefore, the UME investigation now encompasses all seal strandings from Maine to Virginia. Lastly, while take is not proposed for these species in this proposed rule, ice seals (harp and hooded seals) have also started stranding with clinical signs, again not in elevated numbers, and those two seal species have also been added to the UME investigation. Additional information is available at *https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-life-distress/2018-2020-pinniped-unusual-mortality-event-along.*

Atlantic Humpback Whale UME

Since January 2016, elevated humpback whale mortalities have occurred along the Atlantic coast from Maine through Florida. This event has been declared an UME. A portion of the whales have shown evidence of pre-mortem vessel strike; however, this finding is not consistent across all whales examined, and additional research is needed. Additional information is available at *https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2020-humpback-whale-unusual-mortality-event-along-atlantic-coast.*

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 6.

TABLE 6—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. Five marine mammal species (three cetacean and two phocid pinniped species) have the reasonable potential to co-occur with the proposed construction activities. Please refer to Table 5. Of the cetacean species that may be present, one is classified as a low-frequency cetacean (*i.e.,* humpback whale) one is classified as a mid-frequency cetacean (*i.e.,* bottlenose dolphin), 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 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'' or ''background'' 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, vibratory pile driving, and vibratory pile removal. 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), likelihood an individual would be exposed for a long enough duration or to a high enough level to induce a TS, the magnitude of the TS, time to recovery (seconds to minutes or hours to days), the frequency range of the exposure (*i.e.,* spectral content), the hearing and vocalization frequency range of the exposed species relative to the signal's frequency spectrum (*i.e.,* how 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, as 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, let alone 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 haul out time, possibly to avoid in-water disturbance (Thorson and Reyff 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.* 1995; Wartzok *et al.* 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 state of distress will last until the animal replenishes its energetic reserves sufficient to restore normal function.

Relationships between these physiological mechanisms, animal behavior, and the costs of stress responses are well studied through controlled experiments and for both laboratory and free-ranging animals (*e.g.,* Holberton *et al.* 1996; Hood *et al.* 1998; Jessop *et al.* 2003; Krausman *et al.* 2004; Lankford *et al.* 2005). 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 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 on man-made objects in the vicinity of some of the potential project sites, 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 we associate 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 (and removed in the case of the temporary piles). 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-meter) 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 and removal is a very small area compared to the vast foraging area available to marine mammals in the project area and lower Chesapeake Bay.

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 and lower Chesapeake Bay.

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 the lower Chesapeake Bay, and there are no areas of particular importance that would be impacted by this project. Any behavioral avoidance by fish of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity. As described in the preceding, the potential for the Navy's construction to affect the availability of prey to marine mammals or to meaningfully impact the quality of physical or acoustic habitat is considered to be insignificant.

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 B harassment only, in the form of disruption of behavioral patterns and potential TTS for individual marine mammals resulting from exposure to pile driving and removal. Based on the nature of the activity and the anticipated effectiveness of the mitigation measures (*i.e.,* shutdown zones) discussed in detail below in Proposed Mitigation section, Level A harassment is neither anticipated nor proposed to be authorized.

As described previously, no 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 for non-explosive sources—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) (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 120 and 160 dB re 1 μPa (rms) are applicable.

Level A harassment for non-explosive sources—NMFS' *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing* (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). The Navy's proposed construction includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving) sources.

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

TABLE 7—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:* $L_{pk,flat}$: 218 dB; $L_{E,PW,24h}$: 185 dB	*Cell 8:* $L_{E,PW,24h}$: 201 dB.
Otariid Pinnipeds (OW) (Underwater)	*Cell 9:* $L_{pk,flat}$: 232 dB; $L_{E,OW,24h}$: 203 dB	*Cell 10:* $L_{E,OW,24h}$: 219 dB.

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

Note: Peak sound pressure (L_{pk}) has a reference value of 1 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.

The sound field in the project area is the existing background noise plus additional construction noise from the proposed project. Marine mammals are expected to be affected via sound generated by the primary components of the project (*i.e.,* impact pile driving and vibratory pile driving). The largest calculated Level B harassment zone extends 7.2 km (4.5 mi) from the source (though truncated by land in some directions), with an area of 4.7 km^2 (1.8 mi^2), as calculated using geographic information system (GIS) data as determined by the transmission loss modeling.

TABLE 8—PROJECT SOUND SOURCE LEVELS

Pile size and type	Installation method	RMS SPL	Peak SPL	SEL	Source
24-in Square Concrete	Impact	176	189	163	Illingworth and Rodkin, 2017.
16-in Composite	Impact	165	177	157	Caltrans, 2015.[1]
	Vibratory	158			Illingworth and Rodkin, 2017.
12-in Timber	Vibratory	[2] 158			Illingworth and Rodkin, 2017.

[1] These source levels are from a 12-inch timber pile (Table 2–2, page 2–16).

[2] NMFS typically recommends a proxy source level of 152dB RMS SPL for installation and removal of 12-in timber piles; however, the Navy's application included specialized modeling (described below) using 158dB RMS SPL. Given that modeling and that 158dB RMS SPL is a more conservative source level, NMFS concurred with the use of 158dB RMS SPL as the proxy source level for 12-in timber piles.

The Navy contracted the University of Washington, Applied Physics Laboratory (APL) to conduct site-specific acoustic transmission loss modeling for the project. The APL's full report is included in Appendix B of the Navy's application. NMFS independently reviewed and concurred with the modeling in the report, and has adopted the resulting isopleths for the project, as included in Table 9.

TABLE 9—LEVEL A AND LEVEL B HARASSMENT ISOPLETHS

Site	Pile size and type	Level A harassment isopleth (m)				Level B harassment isopleth (m) [1]
		LF cetacean	MF cetacean	HF cetacean	Phocid	
Impact Pile Driving						
Pier 3	16-in Composite	18	<10m			27
Pier 12	16-in Composite	18				24
MWR Marina	24-in Concrete	52				59
	16-in Composite	11				18
V-Area	24-in Concrete	42				47
	16-in Composite	11				17
Craney Island	16-in Composite	16				21
Lambert's Point	16-in Composite	19				28
Vibratory Pile Driving						
Pier 3	16-in Composite/12-in Timber	<10m				5,615
Pier 12						4,159
MWR Marina						469
V-Area						382
Craney Island						3,001
Lambert's Point						7,161

[1] Please refer to Tables 6–5 and 6–6 in the Navy's application for the areas of the Level B harassment zones.

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. We describe how the information provided above is brought together to produce a quantitative take estimate.

Humpback Whale

Humpback whales occur in the mouth of the Chesapeake Bay and nearshore waters of Virginia during winter and spring months. Most detections during shipboard surveys were of one or two juveniles per sighting. Although two individuals were detected in the vicinity of MPU project activities, there is no evidence that they linger for multiple days. Because no density estimates are available for the species in this area, the Navy estimated one take for every 60 days of pile driving. However, given the potential group size of two, as indicated by the sightings referenced above, NMFS has estimated that two humpback whales may be taken by Level B harassment for every 60 days of pile driving. Therefore, given the number of project days expected in each year (Table 4), NMFS is proposing to authorize a total of 24 takes by Level B harassment of humpback whale over the five-year authorization, with no more than eight takes by Level B harassment in one year.

The largest Level A harassment zone for low-frequency cetaceans extends approximately 52 m from the source during impact pile driving of 24-in concrete piles at the MWR Marina (Table 9). For most activities, the Level A harassment zone is less than 20 m. The Navy is planning to implement a 50-m shutdown zone for humpback whales during impact pile driving of 24-in concrete piles, and shutdown zones that include the entire Level A harassment isopleth for all activities, as indicated in Table 15. Therefore, the Navy did not request, and NMFS does not propose to authorize Level A harassment take of humpback whale.

Bottlenose Dolphin

The expected number of bottlenose dolphins in the project area was estimated using inshore seasonal densities provided in Engelhaupt *et al.* (2016) from vessel line-transect surveys near NAVSTA Norfolk and adjacent areas near Virginia Beach, Virginia, from August 2012 through August 2015 (Engelhaupt *et al.* 2016). To calculate Level B harassment takes of bottlenose dolphin, NMFS used the Chesapeake Bay density of 1.38 dolphins/km^2 (Engelhaupt *et al.* 2016). This density includes sightings inshore of the Chesapeake Bay from NAVSTA Norfolk west to the Thimble Shoals Bridge, and is the most representative density for the project area. NMFS conservatively multiplied the density of 1.38 dolphins/km^2 by the largest Level B harassment zone for each project location (Table 11) and then by the proportional number of estimated pile driving days at each location for each year (Table 10). For example, to calculate Level B harassment takes associated with work at Pier 3 in 2021, NMFS multiplied the density (1.38 dolphins/km^2) by largest Level B harassment zone for Pier 3 (10.3 km^2) by the proportional number of pile driving days at Pier 3 in 2021 (24.6) for a total of 350 Level B harassment takes at Pier 3 in 2021. Therefore, NMFS proposes to authorize 7,566 takes by Level B harassment of bottlenose dolphin across all five years, with no more than 2,742 in one year.

TABLE 10—ESTIMATED NUMBER OF PILE DRIVING DAYS AT EACH PROJECT LOCATION

Location [1]	Estimated number of pile driving days (all seasons)	Proportional number of pile driving days [3]				
		2021	2022	2023	2024	2025
Pier 3	68	24.6	10.0	2.1	9.0	22.3
Pier 12	352	127.6	51.5	11.0	46.6	115.3
MWR Marina	52	18.8	7.6	1.6	6.9	17.0
V-Area	44	15.9	6.4	1.4	5.8	14.4
Craney Island	52	18.8	7.6	1.6	6.9	17.0
Lambert's Point	8	2.9	1.2	0.3	1.1	2.6

TABLE 10—ESTIMATED NUMBER OF PILE DRIVING DAYS AT EACH PROJECT LOCATION—Continued

Location [1]	Estimated number of pile driving days (all seasons)	Proportional number of pile driving days [3]				
		2021	2022	2023	2024	2025
Estimated Total Pile Driving Days per Year	[2] 574	208	84	18	76	188
Percentage of Total Pile Driving Days		36	15	3	13	33

[1] While the Navy plans to conduct work at additional locations not listed here, these locations are assumed to be representative of the overall project site (ex: all pile driving lumped together at Lambert's Point Deperming Station), as noted in Appendix A of the Navy's application. Pile driving at these additional locations is included in the total number of pile driving days assumed here.

[2] NMFS recognizes that due to rounding, the sum of the estimated number of work days at each location is 576, not 574. However, as mentioned previously, the Navy expects construction to last 574 days across all five years.

[3] The number of pile driving days indicated per year at each location is intended to inform our assessment of both the total and maximum annual taking allowable under the rule. NMFS does not expect that the Navy will conduct exactly the fractional number of days of pile driving indicated for each year in each location.

TABLE 11—ANNUAL LEVEL B HARASSMENT TAKES OF BOTTLENOSE DOLPHIN BY PROJECT LOCATION

Location	Largest Level B harassment zone (km^2)	Level B harassment takes [1]					
		2021	2022	2023	2024	2025	Total
Pier 3	10.3	350.2	141.4	30.3	128.0	316.6	966.6
Pier 12	13.1	2,305.9	931.2	199.6	842.5	2,084.2	6,363.5
MWR Marina	0.2	5.2	2.1	0.5	1.9	4.7	14.4
V-Area	0.2	4.4	1.8	0.4	1.6	4.0	12.1
Craney Island	2.2	57.2	23.1	5.0	20.9	51.7	157.9
Lambert's Point	4.7	18.8	7.6	1.6	6.9	17.0	51.9
Total Level B Harassment Takes per Year		2,742	1,107	237	1,002	2,478	7,566
Annual Takes as Percentage of Five-Year Total		36.2	14.6	3.1	13.2	32.8	

[1] Note actual calculations were not rounded at each step as they are shown in Table 10 and Table 11.

The Level A harassment zones for mid-frequency cetaceans extend less than 10 m from the source during all activities (Table 9). Given the small size of the Level A harassment zones, we do not expect Level A harassment take of bottlenose dolphins. Additionally, the Navy is planning to implement a 10 m shutdown zone for bottlenose dolphins during all pile driving and other in-water activities (Table 15), which includes the entire Level A harassment zone for all pile driving activities. Therefore, the Navy did not request, and NMFS does not propose to authorize Level A harassment take of bottlenose dolphin.

Harbor Porpoise

Harbor porpoises are known to occur in the coastal waters near Virginia Beach (Hayes *et al.* 2019). Density data for this species within the project vicinity do not exist or were not calculated because sample sizes were too small to produce reliable estimates of density. Harbor porpoise sighting data collected by the U.S. Navy near NAVSTA Norfolk and Virginia Beach from 2012 to 2015 (Engelhaupt *et al.* 2014; 2015; 2016) did not produce enough sightings to calculate densities. One group of two harbor porpoises was seen during spring 2015 (Engelhaupt *et al.* 2016). Elsewhere in their range, harbor porpoises typically occur in groups of two to three individuals (Carretta *et al.* 2001; Smultea *et al.* 2017).

Because there are no density estimates for the species in the MPU project area, the Navy conservatively estimated two takes of harbor porpoise by Level B harassment per 60 pile driving days (Table 4), resulting in 20 takes by Level B harassment across the five year rule, and no more than 7 takes by Level B harassment in one year (Table 13). NMFS concurs with this estimate and proposes to authorize 20 takes by Level B harassment of harbor porpoise.

The Level A harassment zones for high-frequency cetaceans extend less than 10 m from the source during all activities (Table 9). Given the small size of the Level A harassment zones, we do not expect take by Level A harassment of harbor porpoise. Additionally, the Navy is planning to implement a 10 m shutdown zone for during pile driving and other in-water activities (Table 15). Therefore, the Navy did not request, and NMFS does not propose to authorize take by Level A harassment of harbor porpoise.

Harbor Seal

The expected number of harbor seals in the project area was estimated using systematic, land- and vessel-based survey data for in-water and hauled-out seals collected by the U.S. Navy at the CBBT rock armor and portal islands from 2014 through 2019 (Jones *et al.* 2020). The average daily seal count from the 2014 through 2019 field seasons ranged from 8 to 23, with an average of 13.6 harbor seals across all the field seasons (Table 12) (rounded up to 14 seals).

TABLE 12—HARBOR SEAL COUNTS AT CHESAPEAKE BAY BRIDGE TUNNEL

Field season	"In season" survey days	Total seal count	Average daily seal count	Max daily seal count
2014–2015	11	113	10	33
2015–2016	14	187	13	39
2016–2017	22	308	14	40
2017–2018	15	340	23	45
2018–2019	10	82	8	17
Average			13.6	34.8

Source: Jones *et al.* 2020.

The Navy expects, and NMFS concurs, that harbor seals are likely to be present from November to April. NMFS calculated take by Level B harassment by multiplying 14 seals by the number of pile driving days expected in each year if fewer than 183 project days (half of the year) were expected. To account for seasonal occurrence (November to April), NMFS calculated take based on 183 project days for years which have more than 183 expected project days (2021, 2025). Therefore, NMFS proposes to authorize 7,616 takes by Level B harassment of harbor seals across the five-year duration of this rule, with no more than 2,562 takes by Level B harassment in one year (Table 13).

The Level A harassment zones for phocids extend less than 10 m from the source during all activities (Table 9). Given the small size of the Level A harassment zones, we do not expect take by Level A harassment of harbor seal. Additionally, the Navy is planning to implement a 10 m shutdown zone for during pile driving and other in-water activities (Table 15), which includes the entire Level A harassment zone for all pile driving activities. Therefore, the Navy did not request, and NMFS does not propose to authorize take by Level A harassment of harbor seal.

Gray Seal

Very little information is available about the occurrence of gray seals in the Chesapeake Bay and coastal waters. Although the population of the United States may be increasing, there are only a few records at known haulout sites in Virginia used by harbor seals, strandings are rare, and they have not been reported in shipboard surveys. Assuming that they may utilize the Chesapeake Bay waters, the Navy conservatively estimates that one gray seal may be exposed to noise levels above the Level B harassment threshold for every 60 days of vibratory pile driving during the six month period when they are most likely to be present. NMFS concurs, and calculated take based on the number of project days for years which have fewer than 183 project days (half of the year). To account for the expected seasonal presence of gray seals, NMFS calculated take based on 183 project days for years which have more than 183 expected project days (2021, 2025). Therefore, NMFS is proposing to authorize nine takes by Level B harassment of gray seals over the five-year duration of the rule, with no more than three takes by Level B harassment in one year (Table 13).

The Level A harassment zones for phocids extend less than 10 m from the source during all activities (Table 9). Given the small size of the Level A harassment zones and the low occurrence of gray seals in the project area, we do not expect Level A harassment take of gray seal. Additionally, the Navy is planning to implement a 10 m shutdown zone for during pile driving and other in-water activities (Table 15), which includes the entire Level A harassment zone for all pile driving activities. Therefore, the Navy did not request, and NMFS does not propose to authorize take by Level A harassment of gray seal.

TABLE 13—ESTIMATED TAKE BY LEVEL B HARASSMENT, BY SPECIES

Species	2021	2022	2023	2024	2025	Total
Humpback whale	6	4	2	4	8	24
Bottlenose dolphin	2,742	1,107	237	1,002	2,478	7,566
Harbor porpoise	7	3	1	3	6	20
Harbor seal	2,562	1,176	252	1,064	2,562	7,616
Gray seal	3	1	1	1	3	9

TABLE 14—ESTIMATED TAKE BY LEVEL B HARASSMENT (GREATEST ANNUAL TAKE EXPECTED), BY SPECIES AND STOCK IN COMPARISON TO STOCK ABUNDANCE

Species	Stock	Stock abundance	Level B harassment take	Percent of stock
Humpback Whale	Gulf of Maine	[b] 12,312	8	0.6
Bottlenose Dolphin	WNA Coastal, Northern Migratory [a]	6,639	1,353	20.4
WNA Coastal, Southern Migratory [a]	3,751	1,353	36.1	
NNCES [a]	823	36	4.4	
Harbor Porpoise	Gulf of Maine/Bay of Fundy	95,543	7	0.007
Harbor Seal	Western North Atlantic	75,834	2,562	3.4
Gray Seal	Western North Atlantic	[d] 27,131	3	0.01

[a] Take estimates are weighted based on calculated percentages of population for each distinct stock, assuming animals present would follow same probability of presence in the project area. Please see the Small Numbers section for additional information.

[b] West Indies DPS.

[c] Assumes multiple repeated takes of same individuals from small portion of each stock as well as repeated takes of Chesapeake Bay resident population (size unknown). Please see the Small Numbers section for additional information.

[d] This stock abundance estimate includes only the U.S. portion of this stock. The actual stock abundance, including the Canadian portion of the population, is estimated to be approximately 451,431 animals.

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

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, 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.

In addition to the measures described later in this section, the Navy will employ the following mitigation measures:

- For in-water heavy machinery work other than pile driving, if a marine mammal comes within 10 m, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions;
- The Navy will conduct briefings between construction supervisors and crews and the marine mammal monitoring team prior to the start of all pile driving activity and when new personnel join the work, to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures;
- For those marine mammals for which Level B harassment take has not been requested, in-water pile installation/removal will shut down immediately if such species are observed within or entering the Level B harassment zone; and
- If take reaches the authorized limit for an authorized species, pile installation/removal will shut down immediately if these species approach the Level B harassment zone to avoid additional take.

The following mitigation measures apply to the Navy's in-water construction activities.

Establishment of Shutdown Zones—The Navy will establish shutdown zones for all pile driving and removal 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 15).

Protected Species Observers (PSOs)—The placement of PSOs during all pile driving and removal activities (described in the Proposed Monitoring and Reporting section) will ensure that the entire shutdown zone is visible during pile driving and removal. Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone would not be visible (*e.g.,* fog, heavy rain), pile driving and removal must be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.

Monitoring for Level B Harassment—The Navy will 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 Level A harassment zones. The Navy will monitor at least a portion of the Level B harassment zone on all pile driving days. Monitoring zones provide utility for observing by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring zones enable observers to be aware of and communicate the presence of marine mammals in the project area outside the shutdown zone and thus prepare for a potential cessation of activity should the animal enter the shutdown zone.

Pre-activity Monitoring—Prior to the start of daily in-water construction activity, or whenever a break in pile driving/removal of 30 minutes or longer occurs, PSOs will observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone will be considered cleared when a marine mammal has not been observed within the zone for that 30-minute period. 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. When a marine mammal for which Level B harassment take is authorized is present in the Level B harassment zone, activities may begin and Level B harassment take will be recorded. If the entire Level B harassment zone is not visible at the start of construction, pile driving activities can begin. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones will 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).

Soft Start—Soft-start procedures are believed to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors will be required to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period. This procedure will be conducted three times before impact pile driving begins. 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.

The Navy does not plan to use a pile driving energy attenuator during construction.

TABLE 15—SHUTDOWN ZONES DURING PILE INSTALLATION AND REMOVAL

Site	Pile size and type	Shutdown Zone			
		LF cetacean	MF cetacean	HF cetacean	Phocid
Pier 3	16-in Composite	20	10m		
Pier 12	16-in Composite	20			
MWR Marina	24-in Concrete	50			
	16-in Composite	20			
V-Area	24-in Concrete	50			
	16-in Composite	20			
Craney Island	16-in Composite	20			
Lambert's Point	16-in Composite	20			
Pier 3 Pier 12. MWR Marina. V-Area. Craney Island. Lambert's Point.	16-in Composite/12-in Timber	10m			

Based on our evaluation of the Navy's proposed measures, as well as other measures considered by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an LOA for an activity, section 101(a)(5)(A) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. NMFS' MMPA implementing regulations further describe the information that an applicant should provide when requesting an authorization (50 CFR 216.104 (a)(13)), including the means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and the level of taking or impacts on populations of marine mammals.

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).
- Mitigation and monitoring effectiveness.

The Navy will submit a Marine Mammal Monitoring Plan to NMFS for approval in advance of the start of construction.

Visual Monitoring

Marine mammal monitoring during pile driving and removal must be conducted by PSOs meeting NMFS' standards and in a manner consistent with the following:

- Independent PSOs (*i.e.,* not construction personnel) who have no other assigned tasks during monitoring periods must be used;
- At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute education (degree in biological science or related field) or training for experience; and
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience working as a marine mammal observer during construction.

PSOs must have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including 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.

At least two PSOs will monitor all pile driving activities. Depending on available resources, and depending on the size of the zone associated with the activity, additional PSOs may be utilized as necessary. PSOs will be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures. (See Figure 13–1 of the Navy's application for example representative monitoring locations.)

Monitoring will be conducted 30 minutes before, during, and 30 minutes after pile driving activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless

of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

Acoustic Monitoring

The Navy intends to conduct a sound source verification (SSV) study for all pile types other than concrete and timber piles 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 45 workdays of the completion of required monitoring for each MPU project. The report will detail the monitoring protocol and summarize the data recorded during monitoring. Specifically, the report must include:

- Dates and times (begin and end) of all marine mammal monitoring.
- Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.,* impact or vibratory).
- 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 (if less than the harassment zone distance).
- The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting.
- Age and sex class, if possible, of all marine mammals observed.
- PSO locations during marine mammal monitoring.
- Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting).
- Description of any marine mammal behavior patterns during observation, including direction of travel and estimated time spent within the Level A and Level B harassment zones while the source was active.
- Number of marine mammals detected within the harassment zones, by species.
- Detailed information about any implementation of any mitigation triggered (*e.g.,* shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any.
- Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals.

If no comments are received from NMFS within 30 days, the draft report will constitute the final report. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments.

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Navy shall report the incident to the Office of Protected Resources (OPR) (301–427–8401), NMFS and to the Greater Atlantic Region New England/Mid-Atlantic Regional 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 is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the authorization. The Navy must not resume their activities until notified by NMFS.

The report must include the following information:

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

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

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

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

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

vi. 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's 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 5, 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, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

Pile driving activities associated with the project, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level B harassment from underwater sounds generated by pile driving. Potential takes could occur if marine mammals are present in zones ensonified above the thresholds for 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. For all species other than humpback whale, no Level A harassment is anticipated given the nature of the activities. For humpback whale, no Level A harassment is anticipated due to the proposed mitigation measures, which we expect the Navy will be able to effectively implement given the small Level A harassment zone sizes and high visibility of humpback whales.

The Navy's proposed pile driving activities and associated impacts will occur within a limited portion of the confluence of the Chesapeake Bay area. Localized noise exposures produced by project activities may cause short-term behavioral modifications in affected cetaceans and pinnipeds. 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, 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). Individual animals, even if taken multiple times, will most likely 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. Furthermore, many projects similar to this one are also believed to result in multiple takes of individual animals without any documented long-term adverse effects. 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 busy waterfront with high amounts of vessel traffic.

As previously described, UMEs have been declared for Northeast pinnipeds (including harbor seal and gray seal) and Atlantic humpback whales. However, we do not expect takes proposed for authorization in this action to exacerbate or compound upon these ongoing UMEs. As noted previously, no injury, serious injury, or mortality is expect or proposed for authorization, and Level B harassment takes of humpback whale, harbor seal and gray seal will be reduced to the level of least practicable adverse impact through the incorporation of the proposed mitigation measures. For the WNA stock of gray seal, the estimated stock abundance is 451,431 animals, including the Canadian portion of the stock (estimated 27,131 animals in the U.S. portion of the stock). Given that only 1 to 3 takes by Level B harassment are proposed for this stock annually, we do not expect this proposed authorization to exacerbate or compound upon the ongoing UME.

With regard to humpback whales, the UME does not yet provide cause for concern regarding population-level impacts. Despite the UME, the relevant population of humpback whales (the West Indies breeding population, or distinct population segment (DPS)) remains healthy. Prior to 2016, humpback whales were listed under the ESA as an endangered species worldwide. Following a 2015 global status review (Bettridge *et al.* 2015), NMFS established 14 DPSs with different listing statuses (81 FR 62259; September 8, 2016) pursuant to the ESA. The West Indies DPS, which consists of the whales whose breeding range includes the Atlantic margin of the Antilles from Cuba to northern Venezuela, and whose feeding range primarily includes the Gulf of Maine, eastern Canada, and western Greenland, was delisted. The status review identified harmful algal blooms, vessel collisions, and fishing gear entanglements as relevant threats for this DPS, but noted that all other threats are considered likely to have no or minor impact on population size or the growth rate of this DPS (Bettridge *et al.* 2015). As described in Bettridge *et al.* (2015), the West Indies DPS has a substantial population size (*i.e.,* 12,312 (95% CI 8,688–15,954) whales in 2004–05 (Bettridge *et al.* 2003)), and appears to be experiencing consistent growth. Further, NMFS is proposing to authorize no more than eight takes by Level B harassment annually of humpback whale.

For the WNA stock of harbor seals, the estimated abundance is 75,834 individuals. The estimated M/SI for this stock (350) is well below the PBR (2,006). As such, the proposed Level B harassment takes of harbor seal are not expected to exacerbate or compound upon the ongoing UMEs.

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

In 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;
- The intensity of anticipated takes by Level B harassment is relatively low for all stocks;
- The number of anticipated takes is very low for humpback whale, harbor porpoise, and gray seal;
- The specified activity and associated ensonifed areas are very small relative to the overall habitat ranges of all species and do not include habitat areas of special significance (Biologically Important Areas or ESA-designated critical habitat);
- The lack of anticipated significant or long-term negative effects to marine mammal habitat; and
- The presumed efficacy of the mitigation measures in reducing the effects of the specified activity.

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

Small Numbers

As noted 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 and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such

as the temporal or spatial scale of the activities.

The authorized instances of take of humpback whale, harbor porpoise, harbor seal, and gray seal comprises less than one-third of the best available stock abundance (Table 14). 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 taking occurred to a new individual, which is an unlikely scenario.

Three bottlenose dolphin stocks could occur in the project area: WNA Coastal Northern Migratory, WNA Coastal Southern Migratory, and NNCES stocks. Therefore, the estimated takes of bottlenose dolphin by Level B harassment would likely be portioned among these stocks. Based on the stocks' respective occurrence in the area, NMFS estimated that there would be 100 takes from the NNCES stock over the five-year period (no more than 36 in one year), with the remaining takes evenly split between the northern and southern migratory coastal stocks. Based on consideration of various factors described below, we have determined the numbers of individuals taken would likely comprise less than one-third of the best available population abundance estimate of either coastal migratory stock.

Both the WNA Coastal Northern Migratory and WNA Coastal Southern Migratory stocks have expansive ranges and they are the only dolphin stocks thought to make broad-scale, seasonal migrations in coastal waters of the western North Atlantic. Given the large ranges associated with these stocks it is unlikely that large segments of either stock would approach the project area and enter into the Chesapeake Bay. The majority of both stocks are likely to be found widely dispersed across their respective habitat ranges and unlikely to be concentrated in or near the Chesapeake Bay.

Furthermore, the Chesapeake Bay and nearby offshore waters represent the boundaries of the ranges of each of the two coastal stocks during migration. The WNA Coastal Northern Migratory stock occurs during warm water months from coastal Virginia, including the Chesapeake Bay and Long Island, New York. The stock migrates south in late summer and fall. During cold-water months, dolphins may occur in coastal waters from Cape Lookout, North Carolina, to the North Carolina/Virginia. During January-March, the WNA Coastal Southern Migratory stock appears to move as far south as northern Florida. From April to June, the stock moves back north to North Carolina. During the warm water months of July-August, the stock is presumed to occupy coastal waters north of Cape Lookout, North Carolina, to Assateague, Virginia, including the Chesapeake Bay. There is likely some overlap between the northern and southern migratory stocks during spring and fall migrations, but the extent of overlap is unknown.

The Chesapeake Bay and waters offshore of its mouth are located on the periphery of the migratory ranges of both coastal stocks (although during different seasons). Additionally, each of the migratory coastal stocks are likely to be located in the vicinity of the Chesapeake Bay for relatively short timeframes. Given the limited number of animals from each migratory coastal stock likely to be found at the seasonal migratory boundaries of their respective ranges, in combination with the short time periods (~two months) animals might remain at these boundaries, it is reasonable to assume that takes are likely to occur to only a small portion of either of the migratory coastal stocks.

Both migratory coastal stocks likely overlap with the NNCES stock at various times during their seasonal migrations. The NNCES stock is defined as animals that primarily occupy waters of the Pamlico Sound estuarine system (which also includes Core, Roanoke, and Albemarle sounds, and the Neuse River) during warm water months (July-August). Animals from this stock also use coastal waters (≤1 km from shore) of North Carolina from Beaufort north to Virginia Beach, Virginia, including the lower Chesapeake Bay. Comparison of dolphin photo-identification data confirmed that limited numbers of individual dolphins observed in Roanoke Sound have also been sighted in the Chesapeake Bay (Young, 2018). Like the migratory coastal dolphin stocks, the NNCES stock covers a large range. The spatial extent of most small and resident bottlenose dolphin populations is on the order of 500 km^2, while the NNCES stock occupies over 8,000 km^2 (LeBrecque *et al.* 2015). Given this large range, it is again unlikely that a preponderance of animals from the NNCES stock would depart the North Carolina estuarine system and travel to the northern extent of the stock's range. However, recent evidence suggests that there is likely a small resident community of NNCES dolphins of indeterminate size that inhabits the Chesapeake Bay year-round (E. Patterson, NMFS, pers. comm.).

Many of the dolphin observations in the Chesapeake Bay are likely repeated sightings of the same individuals. The Potomac-Chesapeake Dolphin Project has observed over 1,200 unique animals since observations began in 2015. Re-sightings of the same individual can be highly variable. Some dolphins are observed once per year, while others are highly regular with greater than 10 sightings per year (J. Mann, Potomac-Chesapeake Dolphin Project, pers. comm.). Similarly, using available photo-identification data, Engelhaupt *et al.* (2016) determined that specific individuals were often observed in close proximity to their original sighting locations and were observed multiple times in the same season or same year. Ninety-one percent of re-sighted individuals (100 of 110) in the study area were recorded less than 30 km from the initial sighting location. Multiple sightings of the same individual would considerably reduce the number of individual animals that are taken by Level B harassment. Furthermore, the existence of a resident dolphin population in the Bay would increase the percentage of dolphin takes that are actually re-sightings of the same individuals.

In summary and as described above, the following factors primarily support our determination regarding the incidental take of small numbers of the affected stocks of bottlenose dolphin:

- Potential bottlenose dolphin takes in the project area are likely to be allocated among three distinct stocks;
- Bottlenose dolphin stocks in the project area have extensive ranges and it would be unlikely to find a high percentage of any one stock concentrated in a relatively small area such as the project area or the Chesapeake Bay;
- The Chesapeake Bay represents the migratory boundary for each of the specified dolphin stocks and it would be unlikely to find a high percentage of any stock concentrated at such boundaries; and
- Many of the takes would likely be repeats of the same animals and likely from a resident population of the Chesapeake Bay.

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 maintenance construction activities would contain an adaptive management component.

The reporting requirements associated with this proposed 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 insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of 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 U.S. 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. Notwithstanding any other provision of law, no person is required to respond to nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the PRA unless that collection of information displays a currently valid OMB control number. These requirements have been approved by OMB under control number 0648–0151 and include applications for regulations, subsequent LOAs, and reports.

List of Subjects in 50 CFR Part 218

Exports, Fish, Imports, Indians, Labeling, Marine mammals, Penalties, Reporting and recordkeeping requirements, Seafood, Transportation.

Dated: December 8, 2020.

Samuel D. Rauch, III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For reasons set forth in the preamble, 50 CFR part 218 is proposed to be amended as follows:

PART 218—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

■ 1. The authority citation for part 218 continues to read as follows:

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

■ 2. Add subpart A to part 218 to read as follows:

Subpart A—Taking and Importing Marine Mammals Incidental to U.S. Navy Construction at Naval Station Norfolk in Norfolk, Virginia

Sec.

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Subpart A—Taking and Importing Marine Mammals Incidental to U.S. Navy Construction at Naval Station Norfolk in Norfolk, Virginia

§ 218.1 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 marine structure maintenance, pile replacement, and select waterfront improvements at Naval Station (NAVSTA) Norfolk.

(b) The taking of marine mammals by the Navy may be authorized in a Letter of Authorization (LOA) only if it occurs at NAVSTA Norfolk and adjacent Navy facilities.

§ 218.2 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].

§ 218.3 Permissible methods of taking.

Under an LOA issued pursuant to § 216.106 of this chapter and § 218.7, the Holder of the LOA (hereinafter ''Navy'') may incidentally, but not intentionally, take marine mammals within the area described in § 218.1(b) by Level B 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.

§ 218.4 Prohibitions.

(a) Except for the takings contemplated in § 218.3 and authorized by a LOA issued under § 216.106 of this chapter and § 218.7, it is unlawful for any person to do any of the following in connection with the activities described in § 218.1 may:

(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 § 218.7;

(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]

§ 218.5 Mitigation requirements.

(a) When conducting the activities identified in § 218.20(a), the mitigation measures contained in any LOA issued under § 216.106 of this chapter and § 218.7 must be implemented. These mitigation measures shall 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 shall conduct briefings for construction supervisors and crews, the monitoring team, and Navy staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures.

(3) For in-water heavy machinery work other than pile driving, if a marine mammal comes within 10 m, the Navy shall cease operations and reduce vessel speed to the minimum level required to maintain steerage and safe working conditions.

(4) For all pile driving activity, the Navy shall implement a minimum shutdown zone of a 10 m radius around the pile. If a marine mammal comes within or approaches the shutdown zone, such operations shall cease.

(5) For all pile driving activity, the Navy shall implement shutdown zones with radial distances as identified in a LOA issued under § 216.106 of this chapter and § 218.7. If a marine mammal comes within or approaches the shutdown zone, such operations shall cease.

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

(7) For all pile driving activities, a minimum of two observers shall be stationed at the best vantage points practicable to monitor for marine mammals and implement shutdown/delay procedures.

(8) Monitoring shall take place from 30 minutes prior to initiation of pile driving activity through 30 minutes post-completion of pile driving activity. Pre-activity monitoring shall 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 shall be allowed to remain in the shutdown zone (*i.e.,* must leave of their own volition) and their behavior shall 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 shall 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).

(9) If a marine mammal approaches or enters the shutdown zone, all pile driving activities at that location shall 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.

(10) Pile driving activity must be halted upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the harassment zone.

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

(12) Monitoring shall be conducted by trained observers, who shall have no other assigned tasks during monitoring periods. Trained observers shall 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 shall 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 shall be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer.

(v) Personnel who are engaged in construction activities may not serve as observers.

(13) The Navy shall use soft start techniques for impact pile driving. Soft start for impact drivers requires the Navy and those persons it authorizes or funds to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced energy three-strike sets. Soft start shall 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 thirty minutes or longer.

(b) [Reserved]

§ 218.6 Requirements for monitoring and reporting.

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

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

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

(d) For all pile driving activities, a minimum of two observers shall be

stationed at the active pile driving site or in reasonable proximity in order to monitor the shutdown zone.

(e) The Navy shall 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. The Navy shall monitor at least a portion of the Level B harassment zone on all pile driving days.

(f) The Navy shall 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 shall submit a draft monitoring report to NMFS within 45 work days of the completion of required monitoring for each marine structure maintenance, pile replacement, and upgrades project. The report must detail the monitoring protocol and summarize the data recorded during monitoring. If no comments are received from NMFS within 30 days, the draft report will constitute the final report. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments. Specifically, the report must include:

(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).

(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) The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting.

(5) Age and sex class, if possible, of all marine mammals observed.

(6) Observer locations during marine mammal monitoring.

(7) Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting).

(8) Description of any marine mammal behavior patterns during observation, including direction of travel and estimated time spent within the Level A and Level B harassment zones while the source was active.

(9) Number of marine mammals detected within the harassment zones, by species.

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

(11) Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals.

(h) The Navy shall report the hydroacoustic data collected as required by a LOA issued under § 216.106 of this chapter and § 218.7.

(i) In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Navy shall report the incident to the Office of Protected Resources (OPR) (301–427–8401), NMFS and to the Greater Atlantic Region New England/Mid-Atlantic Regional 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 is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the authorization. The Navy must not resume their activities until notified by NMFS.

(1) The report must include the following information:

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

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

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

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

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

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

(2) [Reserved]

§ 218.7 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 § 218.8.

(e) The LOA shall 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 shall 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 shall be published in the **Federal Register** within 30 days of a determination.

§ 218.8 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under § 216.106 of this chapter and § 218.7 for the activity identified in § 218.1(a) shall 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) An LOA issued under § 216.106 of this chapter and § 218.7 for the activity identified in § 218.1(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.

(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.

(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 § 218.7, a LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within 30 days of the action.

§ 218.9 [Reserved]

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