

M. I understand that agents of the importer, such as brokers, are not permitted to make this certification;

N. This certification was completed and signed on, or prior to, the date of the entry summary if the entry date is after September 3, 2025. If the entry date is on or before September 3, 2025, this certification was completed and signed by no later than October 3, 2025, and the importer and exporter certifications, the commercial invoice, and the bill of lading were uploaded to DIS in ACE by no later than October 3, 2025.

O. I am aware that U.S. law (including, but not limited to, 18 U.S.C. 1001) imposes criminal sanctions on individuals who knowingly and willfully make material false statements to the U.S. government.

Signature

{NAME OF COMPANY OFFICIAL}

{TITLE OF COMPANY OFFICIAL}

{DATE}

Exporter Certification

The party that made the sale to the United States should fill out the exporter certification.

I hereby certify that:

A. My name is {COMPANY OFFICIAL'S NAME} and I am an official of {NAME OF FOREIGN COMPANY THAT MADE THE SALE TO THE UNITED STATES}; located at {ADDRESS OF FOREIGN COMPANY THAT MADE THE SALE TO THE UNITED STATES};

B. I have direct personal knowledge of the facts regarding the production and exportation of the seamless oil country tubular goods (OCTG) from Thailand for which sales are identified below. "Direct personal knowledge" refers to facts the certifying party is expected to have in its own records. For example, an exporter should have direct personal knowledge of the producer's identity and location;

C. The seamless OCTG covered by this certification was shipped to {NAME OF PARTY IN THE UNITED STATES TO WHOM MERCHANDISE WAS FIRST SHIPPED}, located at {U.S. ADDRESS TO WHICH MERCHANDISE WAS SHIPPED};

D. The seamless OCTG covered by this certification does not contain steel billets produced in the People's Republic of China (China);

E. This certification applies to the following sales to {NAME OF U.S. CUSTOMER}, located at {ADDRESS OF U.S. CUSTOMER} (repeat this block as many times as necessary):

Foreign Seller's Invoice # to U.S. Customer:

Foreign Seller's Invoice to U.S. Customer

Line item #:

Producer Name:

Producer's Address:

Producer's Invoice # to Foreign Seller: (*If the foreign seller and the producer are the same party, put NA here.*)

Name of Producer of steel billets:¹⁶

Location (Country) of Producer of steel billets:¹⁷

F. The seamless OCTG covered by this certification was shipped to {NAME OF U.S. PARTY TO WHOM MERCHANDISE WAS SHIPPED}, located at {U.S. ADDRESS TO WHICH MERCHANDISE WAS SHIPPED};

G. I understand that {NAME OF FOREIGN COMPANY THAT MADE THE SALE TO THE UNITED STATES} is required to maintain a copy of this certification and sufficient documentation supporting this certification (*i.e.*, documents maintained in the normal course of business, or documents obtained by the certifying party, for example, product data sheets, mill test reports, productions records, invoices, *etc.*) until the later of: (1) the date that is five years after the latest date of the entries covered by the certification; or (2) the date that is three years after the conclusion of any litigation in the United States courts regarding such entries;

H. I understand that {NAME OF FOREIGN COMPANY THAT MADE THE SALE TO THE UNITED STATES} is required to provide the U.S. importer with a copy of this certification and is required to provide U.S. Customs and Border Protection (CBP) and/or the U.S. Department of Commerce (Commerce) with this certification, and any supporting documents, upon request of either agency;

I. I understand that the claims made herein, and the substantiating documentation, are subject to verification by CBP and/or Commerce;

J. I understand that failure to maintain the required certification and supporting documentation, or failure to substantiate the claims made herein, or not allowing CBP and/or Commerce to verify the claims made herein, may result in a *de facto* determination that all sales to which this certification applies are within the scope of the antidumping duty and countervailing duty orders on OCTG from China. I understand that such a finding will result in:

(i) suspension of all unliquidated entries (and entries for which liquidation has not become final) for which these requirements were not met;

(ii) the importer being required to post the antidumping duty and countervailing duty cash deposits determined by Commerce; and

(iii) the seller/exporter no longer being allowed to participate in the certification process.

K. I understand that agents of the seller/exporter, such as freight forwarding companies or brokers, are not permitted to make this certification.

L. This certification was completed and signed, and a copy of the certification was provided to the importer, on, or prior to, the date of shipment if the shipment date is after September 3, 2025. If the shipment date is on or before September 3, 2025, this certification was completed and signed, and a copy of the certification was provided to the importer, by no later than October 3, 2025; and

M. I am aware that U.S. law (including, but not limited to, 18 U.S.C. 1001) imposes criminal sanctions on individuals who knowingly and willfully make material false statements to the U.S. government.

Signature

{NAME OF COMPANY OFFICIAL}

{TITLE OF COMPANY OFFICIAL}

{DATE}

[FR Doc. 2026-03972 Filed 2-26-26; 8:45 am]

BILLING CODE 3510-DS-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XF531]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Hampton Roads Bridge-Tunnel Expansion Project, Norfolk, Virginia

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

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

SUMMARY: NMFS has received a request from the Hampton Roads Connector Partners (HRCP) for authorization to take marine mammals incidental to Hampton Roads Bridge-Tunnel Expansion Project (HRBT) in Norfolk, Virginia. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-time, 1-year renewal that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorization and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than March 30, 2026.

ADDRESSES: Comments should be addressed to Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service and should be submitted via email to ITP.pauline@noaa.gov. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>. In case of problems accessing these documents, please call the contact listed below.

¹⁶ Put "N/A" if the producer did not use steel billets in the production of seamless OCTG.

¹⁷ Put "N/A" if the producer did not use steel billets in the production of seamless OCTG.

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

FOR FURTHER INFORMATION CONTACT: Robert Pauline, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

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

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

National Environmental Policy Act

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

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

Summary of Request

On August 8, 2025, NMFS received a request from HRCF for an IHA to take marine mammals incidental to construction of the HRBT in Norfolk, Virginia. The application was deemed adequate and complete on February 13, 2026. HRCF’s request is for take of five species of marine mammals by Level B harassment and, for a subset of these species, Level A harassment. Neither HRCF nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

NMFS initially issued an IHA to HRCF on August 10, 2020 (85 FR 48153) then promulgated regulations and issued a five-year Letter of Authorization to HRCF for similar work (86 FR 17458, April 2, 2021). HRCF complied with all the requirements (e.g., mitigation, monitoring, and reporting) of the previous Letter of Authorization (LOA), and information regarding their monitoring results may be found in the Estimated Take of Marine Mammals section.

This proposed IHA would cover 1 year of a larger project for which HRCF was issued the LOA. Barring any delays, the sixth year project should result in the complete construction of the bridge-tunnel project.

Description of Proposed Activity

Overview

HRCF is proposing to continue ongoing construction activities

associated with the HRBT project. This is a major road transport infrastructure project along the existing I-64 highway in Virginia, consisting of roadway improvements, trestle bridges, and bored tunnels crossing Hampton Roads between Norfolk and Hampton. The Project will address severe traffic congestion at the existing HRBT crossing by increasing capacity. Due to unforeseen schedule delays, all in-water pile installation which began in December 2020 under an IHA (85 FR 48153) will not be completed by the existing LOA’s (86 FR 17458) expiration (March 31, 2026) and therefore, HRCF has requested a 1-year (IHA) to complete the outstanding construction components.

Given the proposed use of vibratory and impact pile driving and vibratory pile removal, there is potential of the take of marine mammals by Level B harassment and, for a subset of the species, Level A harassment. No serious injury and/or mortality is expected or proposed for this project.

Dates and Duration

The proposed IHA would be valid for the statutory maximum of 1 year from the date of effectiveness. The IHA effective period would begin on April 1, 2026 and end on March 31, 2027. The overall number of anticipated days of pile installation and removal is 312 per year, based on a 6-day work week for 1 year.

Specific Geographic Region

The Project is located in the waterway of Hampton Roads adjacent to the existing bridge and island structures of the HRBT in Virginia (figure 1). Hampton Roads is located at the confluence of the James River, the Elizabeth River, the Nansemond River, Willoughby Bay, and the Chesapeake Bay. Hampton Roads, one of the world’s largest natural harbors, is a wide marine channel that provides access to the Port of Virginia and several other deep-water anchorages upstream of the Project area. The Port of Virginia, located along the Elizabeth River, is a naturally deep harbor. Navigational channels are maintained by the U.S. Army Corps of Engineers (USACE) within Hampton Roads to provide transit to the many ports in the region.

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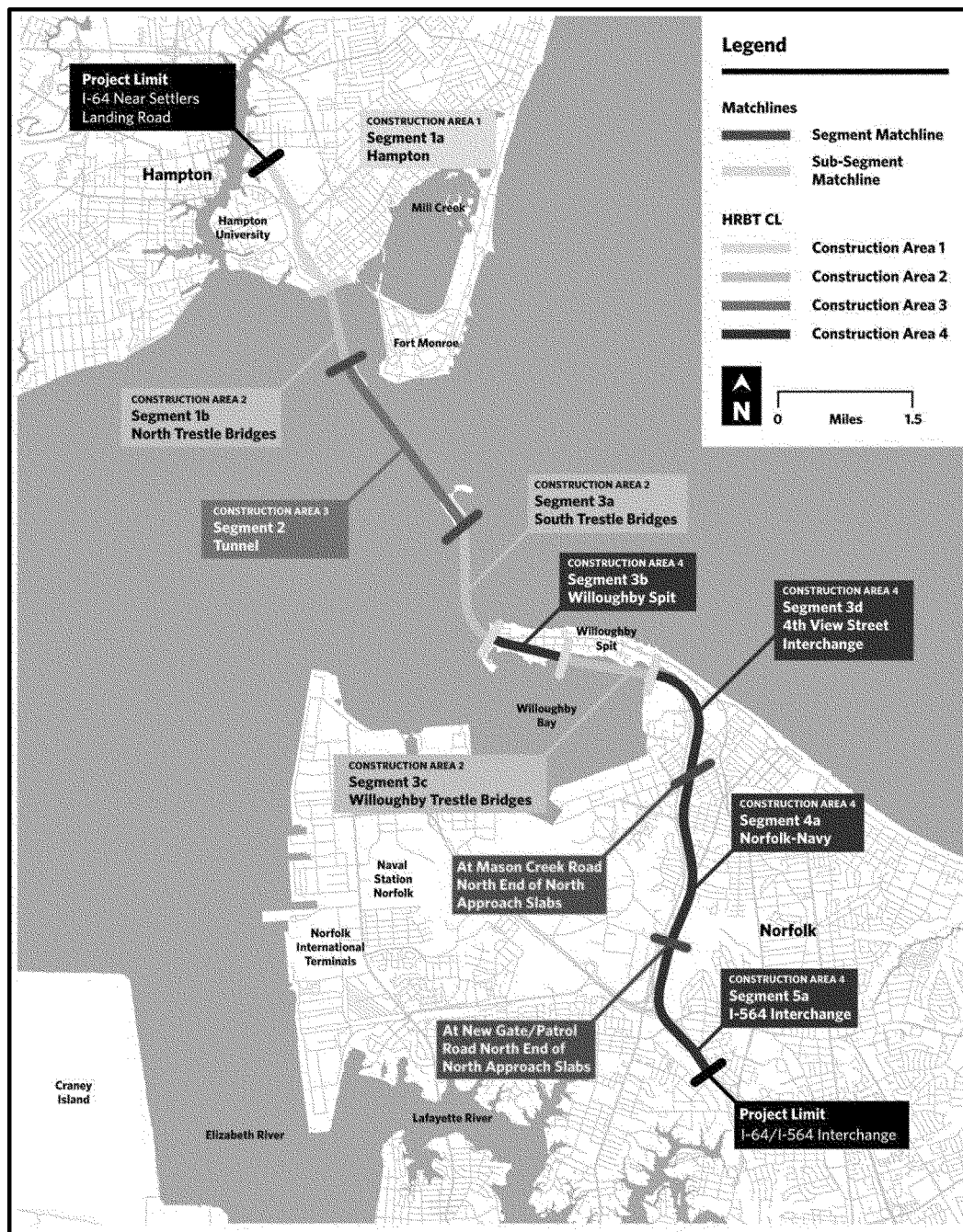


Figure 1 – Project Location

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Detailed Description of the Specified Activity

The HRBT project will widen I-64 for approximately 9.9 miles along I-64 from Settlers Landing Road in Hampton, Virginia, to the I-64/I-564 interchange in Norfolk, Virginia and will create an eight-lane facility with six consistent use lanes. The Project will include full replacement of the North and South Trestle-Bridges, two new parallel tunnels constructed using a Tunnel

Boring Machine (TBM), expansion of the existing portal islands, and widening of the Willoughby Bay Trestle-Bridges, Bay Avenue Bridges, and Oastes Creek Bridges. Also, upland portions of I-64 will be widened to accommodate the additional lanes, the Mallory Street Bridge will be replaced, and the I-64 overpass bridges will be improved.

Two methods of pile installation are anticipated: vibratory hammer and impact hammer. More than one

installation method could be used within a day and at each location. Most steel pipe piles will be installed using a combination of vibratory (ICE 416L or similar) and impact hammers (S35 or similar). Steel pipe piles will be installed using the vibratory hammer approximately 80 percent of the time and impact hammer approximately 20 percent of the time. Depending on the location, the pile will be advanced using vibratory methods and then impact driven to final tip elevation. Where

bearing layer sediments are deep, driving will be conducted using an impact hammer so that the structural capacity of the pile embedment can be verified.

Permanent piles will be set using temporary steel templates. Templates will be positioned and held in place using 36-inch steel pipe piles, generally one at each corner of the template. As

templates are temporary and largely do not bear significant vertical loads, installation (*i.e.*, driving) and removal of template requires minimal driving time, approximately 5 minutes per pile. Permanent concrete piles will be installed using an impact hammer. Temporary steel sheet piles and steel pipe piles will be removed using a vibratory hammer or cut to

approximately 2–3 feet (60.9–91.4 cm) below the mudline.

The HRBT project design is divided into five segments as shown in table 1 and figure 1. Only the segments that have the potential to affect marine mammals will be discussed further and are identified in table 1. Table 2 shows the piles proposed for installation under the proposed IHA.

TABLE 1—HRBT EXPANSION PROJECT DESIGN SEGMENTS

Project design segment No. and name	Construction area	In-water activities that could result in take
Segment 1a (Hampton)	Area 1.	
Segment 1b (North Trestle-Bridges)	Area 2	X.
Segment 2a (Tunnel)	Area 3	X.
Segment 3a (South Trestle-Bridge)	Area 2	X.
Segment 3b (Willoughby Spit)	Area 4	X.
Segment 3c (Willoughby Bay Trestle-Bridges)	Area 2	X.
Segment 3d (4th View Street Interchange)	Area 4.	
Segment 4a (Norfolk-Navy)	Area 4.	

TABLE 2—PILES TO BE INSTALLED/REMOVED UNDER PROPOSED IHA

Pile size/type and material	Total number of piles to be installed	Total number of piles to be removed
AZ–19 Steel Sheet	95	95
36-inch Steel Pipe	642	1,074
36-inch Steel Pipe (Template Piles)	112	112
54-inch, Concrete Cylinder Pipe	130	0
12-inch Composite Pile	42	42

Segment 1b (North Trestle-Bridges)

Several temporary work trestles will support construction of the permanent eastbound and westbound North Trestle-Bridges. The temporary North Shore Work Trestle will support construction of the permanent eastbound North Trestle-Bridge in the shallow water (<4 to 6 feet (1.2 to 1.8 m) Mean Low Water (MLW)) closer to the North Shore, avoiding the need to dredge or deepen this area and minimizing potential impacts to the adjacent submerged aquatic vegetation. The temporary North Shore Work Trestle was installed under a separate IHA (85 FR 48153, August 10, 2020).

Additional temporary work trestles will support construction of the permanent westbound North Trestle-Bridge in the shallow water near the North Island. These work trestles will be the same or like the North Shore Work Trestle, steel structures founded on 36-inch diameter steel pipe piles with 30 to 40 feet (9.1 to 12.2 m) spans sized to accommodate a 300-ton crane. One hundred and eighty-three 36-inch steel piles will be installed to support these trestles using a combination of vibratory and impact hammers.

Once that portion of the permanent eastbound and westbound North Trestle-Bridge is complete, the temporary pile foundations will be removed using a vibratory hammer and the work trestle reused for similar purposes at a different location on the Project.

Jump Trestles at the North Trestle temporary heavy-duty platforms used to support cranes and other equipment, will be used for constructing trestle bridges (new permanent maintenance of traffic (MOT) bridges). Jump trestles are built with a maximum of three spans which are progressively removed and reinstalled one span at a time, moving forward with the construction of the adjacent structure. Each span is supported by six temporary 36-inch steel pipe piles. The steel pipe piles will be installed, removed, and reinstalled as the spans move forward using a combination of vibratory and impact hammers for installation and vibratory hammers for removal. Approximately 140 individual pile installations and 140 removals will be needed to support the Jump Trestle movement for construction of the permanent westbound North Trestle-Bridge.

Temporary template piles will be used to guide installation of the permanent concrete piles used to support the new North Trestle-Bridge. The templates will be supported by four temporary steel piles up to 36-inch in diameter, generally one at each corner of the template. A two-tier template will be used to account for the batter of the permanent piles. Each template will allow installation of multiple permanent concrete piles. A vibratory hammer will be used to install and remove the 30 temporary 36-inch steel piles supporting the template. Of the 562 permanent 54-inch concrete cylinder piles on the project, 30 remain for installation on the North Trestle under this IHA request. These piles are installed using an impact hammer and will remain in place at the end of construction.

Steel sheet piles will be installed at the North Shore shoreline to support excavation and construction of the North Shore Abutment. Approximately 30 panels of AZ–700–19 sheet piles remain to be temporarily installed using a vibratory hammer to form a continuous. Sheet piles will be removed using a vibratory hammer.

A temporary dock consisting of 24 36-inch steel piles was constructed on the

West side of the North Island to allow the circulation of equipment and material around the Cell 1 and Cell 2 Shafts located in North Island. The piles will be removed using a vibratory hammer or cut to approximately 3 feet (91.4 cm) below the mudline.

Segment 2a

HRCF constructed the temporary TBM Platform or “quay” at the South Island to allow for the delivery, unloading, and assembly of the TBM components from barges to the Island. The installation of the TBM platform was performed under a separate IHA (85 FR 48153, August 10, 2020).

The TBM Platform is a steel structure founded on 136 36-inch diameter steel piles. At the conclusion of the Project, the TBM Platform piles will be removed using a vibratory hammer or cut to approximately 2–3 feet (60.9–91.4 cm) below the mudline.

Tunnel boring spoils and other related materials were moved between the South Island and barges via a conveyor belt and other equipment inside the tunnel boring machine. The Conveyor Trestle was also be used for maintenance and mooring of barges and vessels carrying TBM materials and other Project-related materials. The Conveyor Trestle is a steel structure founded on 10 36-inch diameter steel piles. The installation of the Conveyor Trestle was performed under the previous LOA. At the conclusion of the Project, the Conveyor Trestle piles will be removed using a vibratory hammer or cut to approximately 3 feet (91.4 cm) below the mudline.

Temporary moorings have been installed along the perimeter of the South Island Expansion to support the construction of the island expansion. Thirty-four 36-inch steel pipe piles remain to be removed once the barges and vessels are no longer needed. They will be removed using a vibratory hammer at the conclusion of the Project.

Segment 3a

Temporary template piles will be used to guide installation of the permanent concrete piles used to support the new South Trestle-Bridge. The templates will use four temporary steel piles 36-inch in diameter as supports, generally one at each corner of the template. A two-tier template will be used to account for the possible batter of the piles. Each template will allow installation of multiple permanent concrete piles. A vibratory hammer will be used to install and remove the remaining 100 temporary 36-inch steel piles supporting the template.

Of the 810 permanent 54-inch concrete cylinder piles needed on the South Trestle, only 100 piles will remain to be installed under the requested IHA. These piles will be installed using an impact hammer and will remain in place at the end of construction.

Temporary heavy duty moving platforms (Jump Trestles) will be used for constructing trestle bridges (both new permanent and temporary MOT bridges) at the South Trestle. A combination of jump trestles and working from the existing trestles will be used to build the new trestle bridges. Jump trestles are built with a maximum of three spans which are progressively uninstalled and reinstalled one span at a time, moving forward with the construction of the adjacent structure.

The 36-inch steel pipe piles will be installed, removed, and reinstalled as the spans move forward using a combination of vibratory and impact hammers for installation and vibratory hammers for removal. To minimize hydroacoustic impacts caused by the impact hammer, a bubble curtain will be used for installation of steel pipe piles in water depths greater than 20 feet (6.1 m). Portions of the South Trestle Jump Trestle in water depths less than 20 feet (6.1 m) will be installed without a bubble curtain. Approximately 189 individual

pile installations and 189 removals will still be needed to support the jump trestle movement for construction of the permanent westbound South Trestle-Bridge.

Segment 3c

There are 40 remaining temporary moorings to be removed in Willoughby Bay to support the construction of temporary work trestles and permanent trestle bridges, and to provide a safe haven (harbor of safe refuge) for vessels in the event of severe weather. The piles will be removed using a vibratory hammer.

The existing fender was previously removed under the previous 5-year LOA. The proposed fender will require 42 12-inch composite piles that will be installed over a 4-month period. These will be permanent piles that will not require removal.

There is currently an existing 36-inch stormwater outfall in this location that will be replaced with a 42-inch pipe to increase the capacity. This will require the installation of 65 PZ–19 sheet piles to create coffer dams in order to protect the excavation, removal, installation and backfill operations associated with replacing the bulkhead. These piles will be installed and removed with a vibratory hammer.

Segment 3b

HRCF was granted use of property on Willoughby Spit next to the South Trestle-Bridge to be used for laydown areas and as a base for marine operations. Two temporary piers were constructed to allow barge access. At the conclusion of the project, under this IHA, there will be the remaining six 36-inch steel piles that will need to be removed. The temporary steel piles will be removed using a vibratory hammer.

Table 3 shows summary of all piles planned to be installed or removed and their specific attributes.

TABLE 3—NUMBERS AND TYPES OF PILES TO BE INSTALLED AND REMOVED UNDER IHA
[April 2026 through April 2027]

Pile location	Pile function	Pile type	Installation/removal method	Bubble curtain yes/no	Number of piles below MHW	Number of days per activity (total) **	Number of days per activity (per hammer type)	Anticipated installation date
North Trestle	Jump Trestle	36-inch Diameter Hollow Steel Pipe Pile.	Impact (Install) Vibratory (Removal)	Yes No	140	140	70 Days (2 piles/Day). 70 Days (2 piles/Day).	4/10–12/31/2026.
North Trestle	Template Piles	36-inch Diameter Hollow Steel Pipe Pile.	Vibratory (Install & Removal).	No	30	20	10Days (3Piles/Day). 10 Days (3 Piles/Day).	4/16–8/1/2026.
North Trestle	Permanent Piles	54-inch, Concrete Cylinder Pipe.	Impact (Install Only).	No	30	30	30 Days (1 Pile/Day).	4/16–8/1/2026.

TABLE 3—NUMBERS AND TYPES OF PILES TO BE INSTALLED AND REMOVED UNDER IHA—Continued
[April 2026 through April 2027]

Pile location	Pile function	Pile type	Installation/removal method	Bubble curtain yes/no	Number of piles below MHW	Number of days per activity (total) **	Number of days per activity (per hammer type)	Anticipated installation date
North Trestle	Sheet Pile Installation for Shore Stabilization.	PZ 19-Sheet	Vibratory Install & Removal).	No	30	10	5 Days 6 Piles/Day)	4/1/2026–3/30/2027.
North Trestle	Temporary Trestle	36-inch Diameter Hollow Steel Pipe Piles.	Impact (Install) Vibratory (Removal)	Yes No	183	184	92 Days (2Piles/Day). 92 Days (2 Piles/Day).	4/1–8/30/2026.
North Island	Circulation Dock	36-inch Diameter Hollow Steel Pipe Piles.	Vibratory (Removal Only).	No	24	12	12 Days (2 Piles/Day).	3/01–3/30/2027.
South Trestle	Temp MOT Trestle	36-inch Diameter Hollow Steel Pipe Piles.	Vibratory (Removal Only).	No	182	61	61 Days (3 Piles/Day).	4/1/2026–1/8/2027.
South Trestle	Permanent Piles	54-inch, Concrete Cylinder Pipe.	Impact (Install Only).	No	100	100	100 Days (1 Pile/Day).	4/16–8/1/2026.
South Island	Template Piles	36-inch Diameter Hollow Steel Pipe Piles.	Vibratory (Install & Removal).	No	100	56	28Days (3Piles/Day). 28 Days (3 Piles/Day).	4/1–3/30/2027.
South Island	Temp/Jump Trestle	36-inch Diameter Hollow Steel Pipe Piles.	Impact (Install) Vibratory (Removal)	No Yes	189	126	63Days (3Piles/Day). 63Days (3Piles/Day).	4/1–3/30/2027.
South Island	TBM Mooring Piles	36-inch Diameter Hollow Steel Pipe Piles.	Vibratory (Removal Only).	No	34	17	17 Days (2 Piles/Day).	11/1–12/31/2026.
South Island	TBM Platform (Quay).	36-inch Diameter Hollow Steel Pipe Piles.	Vibratory (Removal Only).	No	136	68	68 Days (2 Piles/Day).	1/1–3/30/2027.
South Island	TBM Conveyor	36-inch Diameter Hollow Steel Pipe Piles.	Vibratory (Removal Only).	No	10	5	5 Days (2 Piles/Day).	4/15–5/15/2026.
Willoughby Spit	Temp Dock/Finger Piers.	36-inch Diameter Hollow Steel Pipe Piles.	Vibratory (Removal Only).	No	6	2	2Days (3 Piles/Day)	11/1–12/31/2026.
Willoughby Bay	Moorings (Safe Haven).	36-inch Diameter Hollow Steel Pipe Piles.	Vibratory (Install & Removal).	No	40	10	10 Days (4Piles/Day). 10 Days (4 Piles/Day).	11/1–12/31/2026.
Willoughby Bay	Fender	12-inch Diameter Composite Piles.	Vibratory (Install) ...	No	42	42	42 Days (1Pile/Day).	4/1–12/31/2027.
Willoughby Bay	Sheet Pile Installation for Bulkhead Replacement.	PZ 19-Sheet	Vibratory (Install & Removal).	No	65	22	11 Days (6Piles/Day). 11 Days (6Piles/Day).	4/1–5/1/2026.

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 application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. NMFS fully considered all of this information, and we refer the reader to these descriptions, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs); <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>)

and more general information about these species (e.g., physical and behavioral descriptions) may be found on NMFS' website (<https://www.fisheries.noaa.gov/find-species>).

Table 4 lists all species or stocks for which take is expected and proposed to be authorized for this activity and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or proposed to be authorized here, PBR

and annual mortality and serious injury (M/SI) from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2023 (Hayes *et al.* 2024). All values presented in table 3 are the most recent available at the time of

publication (including from the draft 2024 SARs) and are available online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>.

TABLE 4—SPECIES ^a WITH ESTIMATED TAKE FROM THE SPECIFIED ACTIVITIES

Common name	Scientific name	Stock	ESA/ MMPA status; strategic (Y/N) ^b	Stock abundance (CV, N _{min} , most recent abundance survey) ^c	PBR	Annual M/SI ^d
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)						
Family Balaenopteridae (rorquals): Humpback Whale	<i>Megaptera novaeangliae</i> .	Gulf of Maine	-, -; N	1,396 (0, 1,380; 2019)	22	12.15
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae: Bottlenose dolphin	<i>Tursiops truncatus</i>	WNA Coastal, Northern Migratory WNA Coastal, Southern Migratory Northern North Carolina Estuarine System.	-, -; Y -, -; Y -, -; Y	6,639 (0.41; 4,759; 2020) .. 3,751 (0.6; 2,353; 2020) 823 (0.06; 782; 2020)	48 24 7.8	12.2–21.5 0–18.3 7.2–30
Family Phocoenidae (porpoises): Harbor porpoise	<i>Phocoena phocoena</i>	Gulf of Maine/Bay of Fundy	-, -; N	85,765 (0.53; 56,420; 2021)	649	145
Order Carnivora—Superfamily Pinnipedia						
Family Phocidae (earless seals): Harbor seal	<i>Phoca vitulina</i>	WNA	-, -; N	61,336 (0.08; 57,637 2021) ^e .	1,729	339
Gray seal	<i>Halichoerus grypus</i>	WNA	-, -; N	27,911 (0.20, 23,624, 2021)	1,512	4,570

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

^b 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 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.

^c NMFS marine mammal stock assessment reports online at <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>. CV is the coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, a CV is not applicable. N/A indicates data are unknown. UND (undetermined) PBR indicates data are available to calculate a PBR level, but a determination has been made that calculating a PBR level using those data is inappropriate (see the SAR for details).

^d 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 strikes). Annual M/SI often cannot be determined precisely and is sometimes presented as a minimum value or range.

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

As indicated above, all five species (with eight managed stocks) in table 4 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur.

Humpback Whale

In the winter months, humpback whales from waters off New England, Canada, Greenland, Iceland, and Norway, migrate to mate and calve primarily in the West Indies, where spatial and genetic mixing among these groups occurs. NMFS defines a humpback whale stock on the basis of feeding location (i.e., Gulf of Maine). However, our reference to humpback whales in this document refers to any individual of the species that are found in the species geographic region. These individuals may be from the same breeding population (e.g., West Indies breeding population of humpback whales) but visit different feeding areas.

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 Distinct

Population Segments (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. This DPS is not ESA listed. Bettridge *et al.*, (2003) estimated the size of the West Indies DPS at 12,312 (95 percent confidence interval 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).

Since January 2016, elevated humpback whale mortalities have occurred along the Atlantic coast from Maine through Florida. This event was declared an unusual mortality event (UME) in 2017. 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. Since early 2026, over 240 mortalities have been subject to the active UME. Additional information is available at: <https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2026-humpback-whale-unusual-mortality-event-along-atlantic-coast>.

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. Recent monitoring reports from the Hampton Roads Bridge-Tunnel Expansion Project and the Pier 3 Navy Construction Project did not observe any humpback whales near the project sites. Monitoring for the Hampton Roads Bridge-Tunnel Expansion Project spanned from September 2020 through July 2021 (over a 197-day period) and monitoring for the Pier 3 Navy Construction Project spanned from August 2022 to December 2022 (*i.e.*, over a 45-day period) (WF Magann 2023)

Bottlenose Dolphin

Along the U.S. East Coast and northern Gulf of Mexico, the bottlenose dolphin stock structure is well studied. There are currently 54 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).

Bottlenose dolphins inhabiting nearshore coastal and estuarine waters between New York and Florida may be a separate species from their offshore counterparts (Costa *et al.*, 2022). 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 (Hersh and Duffield, 1990; Mead and Potter, 1995) along the U.S. Atlantic coast. The coastal species 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, 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 Project Area: (1) the Western North Atlantic Northern Migratory Coastal stock; and (2) the Western North Atlantic Southern Migratory Coastal stock. Additionally, the Northern North Carolina Estuarine System (NNCES) 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 2–15 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. 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, 2018). 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, 2018).

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, which is commonly referred to as the Chesapeake Bay resident dolphin population (Engelhaupt *et al.*, 2016). During monitoring of Pier 3 Navy Construction Project, 18 bottlenose dolphins were observed over 45 days of construction

(W.F. Magann Corporation 2023). Over the 197 days of construction a total of 94 bottlenose dolphins were observed during the Hampton Roads Bridge-Tunnel Expansion Project (Hampton Roads Connector Partners 2023). For both projects bottlenose dolphins were the only marine mammal observed while conducting monitoring activities.

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) 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 the fall (October to December) and the 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. There were no harbor porpoise observed during construction activities for the Pier 3 Navy Construction Project or the Hampton Roads Bridge-Tunnel Expansion Project (Hampton Roads

Connector Partners 2023; W.F. Magann Corporation 2023).

Harbor Seal

The Western North Atlantic stock of harbor seals occurs in the 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.*, 2021). 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 Chesapeake Bay Bridge Tunnel (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. To supplement this information, there were no harbor seals observed during construction activities for the Pier 3 Navy Construction Project or the Hampton Roads Bridge-Tunnel Expansion Project (Hampton Roads Connector Partners 2023; W.F. Magann Corporation 2023).

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.*, 2021). Gray seals range south into the northeastern United States, with strandings and sightings as far south as North Carolina (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 (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.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007; 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from composite audiograms, previous analyses in NMFS (2018), and/or data from Southall *et al.* (2007) and Southall *et al.* (2019). We note that the names of two hearing groups and the generalized hearing ranges of all marine mammal hearing groups have been recently updated (NMFS, 2024) as reflected below in table 5.

TABLE 5—MARINE MAMMAL HEARING GROUPS
[NMFS, 2024]

Hearing group	Generalized hearing range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 36 kHz.
High-frequency (HF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
Very High-frequency (VHF) cetaceans (true porpoises, <i>Kogia</i> , river dolphins, Cephalorhynchid, <i>Lagenorhynchus cruciger</i> & <i>L. australis</i>).	200 Hz to 165 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	40 Hz to 90 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 68 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.*, all species within the group), where individual species' hearing ranges may not be as broad. Generalized hearing range chosen based on approximately 65 dB threshold from composite audiogram, previous analysis in NMFS (2018), and/or data from Southall *et al.* (2007) and Southall *et al.* (2019). Additionally, animals are able to detect very loud sounds above and below that "generalized" hearing range.

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

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section provides a discussion of the ways in which components of the specified activity may impact marine mammals and their habitat. The Estimated Take of Marine Mammals section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken

by this activity. The Negligible Impact Analysis and Determination section considers the content of this section, the Estimated Take of Marine Mammals section, and the Proposed Mitigation section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and whether those impacts are reasonably expected to, or reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

Acoustic effects on marine mammals during the specified activity are

expected to potentially occur from impact and vibratory pile installation and removal. The effects of underwater noise from HRCP's proposed activities have the potential to result in Level B harassment of marine mammals in the action area and, for some species as a result of certain activities, Level A harassment.

Below we provide a brief description of the types of sound sources that would be generated by the project, the general impacts from these types of activities, and an analysis of the anticipated impacts on marine mammals from the

project, with consideration of the proposed mitigation measures.

Description of Sound Sources for the Specified Activities

Activities associated with the project that have the potential to incidentally take marine mammals through exposure to sound would include impact pile driving for installation, and vibratory pile driving for installation and removal. Impact hammers typically operate by repeatedly dropping and/or pushing a heavy piston onto a pile to drive the pile into the substrate. Sound generated by impact hammers is impulsive, characterized by rapid rise times and high peak levels, a potentially injurious combination (Hastings and Popper, 2005). Vibratory hammers install piles by vibrating them and allowing the weight of the hammer to push them into the substrate. Vibratory hammers typically produce less sound (*i.e.*, lower levels) than impact hammers. Peak sound pressure levels (SPLs) may be 180 dB or greater but are generally 10 to 20 dB lower than SPLs generated during impact pile driving of the same-sized pile (Oestman *et al.*, 2009; California Department of Transportation (CALTRANS), 2015, 2020). Sounds produced by vibratory hammers are non-impulsive; compared to sounds produced by impact hammers, the rise time is slower, reducing the probability and severity of injury, and the sound energy is distributed over more time (Nedwell and Edwards, 2002; Carlson *et al.*, 2005).

The likely or possible impacts of HRCP's proposed activities on marine mammals could involve both non-acoustic and acoustic stressors. Potential non-acoustic stressors could result from the physical presence of the equipment and personnel. However, given there are no known pinniped haulout sites in the vicinity of the project site, visual and other non-acoustic stressors would be limited, and any impacts to marine mammals are expected to primarily be acoustic in nature.

Potential Effects of Underwater Sound on Marine Mammals

The introduction of anthropogenic noise into the aquatic environment from impact and vibratory pile driving is the primary means by which marine mammals may be harassed from HRCP's specified activity. Anthropogenic sounds cover a broad range of frequencies and sound levels and can have a range of highly variable impacts on marine life from none or minor to potentially severe responses depending

on received levels, duration of exposure, behavioral context, and various other factors. Broadly, underwater sound from active acoustic sources, such as those in the project, can potentially result in one or more of the following: temporary or permanent hearing impairment, non-auditory physical or physiological effects, behavioral disturbance, stress, and masking (Richardson *et al.*, 1995; Gordon *et al.*, 2003; Nowacek *et al.*, 2007; Southall *et al.*, 2007).

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

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, 2019). Exposure to anthropogenic 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). It can also lead to non-observable physiological responses, such as an increase in stress hormones. Additional noise in a marine mammal's habitat can mask acoustic cues used by marine mammals to carry out daily functions, such as communication and predator and prey detection.

The degree of effect of an acoustic exposure on marine mammals is dependent on several factors, including, but not limited to, sound type (*e.g.*, impulsive vs. non-impulsive), signal characteristics, the species, age and sex class (*e.g.*, adult male vs. mom with calf), duration of exposure, the distance

between the noise source and the animal, received levels, behavioral state at time of exposure, and previous history with exposure (Wartzok *et al.*, 2004; Southall *et al.*, 2007). In general, sudden, high-intensity sounds can cause hearing loss, as can longer exposures to lower-intensity sounds. Moreover, any temporary or permanent loss of hearing, if it occurs at all, would occur almost exclusively for noise within an animal's hearing range. We describe below the specific manifestations of acoustic effects that may occur based on the activities proposed by HRCP.

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

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

Hearing Threshold Shifts—NMFS defines a noise-induced threshold shift (TS) as a change, usually an increase, in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018, 2024). The amount of threshold shift is customarily expressed in dB. TS can be permanent or temporary. As described in NMFS (2018, 2024) there are numerous factors to consider when examining the consequence of TS, including, but not limited to, the signal temporal pattern (*e.g.*, impulsive or non-impulsive), likelihood an individual would be exposed for a long enough duration or to a high enough level to

induce a TS, the magnitude of the TS, time to recovery (seconds to minutes or hours to days), the frequency range of the exposure (*i.e.*, spectral content), the hearing frequency range of the exposed species relative to the signal's frequency spectrum (*i.e.*, how animal uses sound within the frequency band of the signal; *e.g.*, Kastelein *et al.*, 2014), and the overlap between the animal and the source (*e.g.*, spatial, temporal, and spectral).

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

Temporary Threshold Shift (TTS)—TTS is a temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2024), and is not considered an AUD INJ. Based on data from marine mammal TTS measurements (see Southall *et al.*, 2007, 2019), 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 (Finneran *et al.*, 2000, 2002; Schlundt *et al.*, 2000). As described in Finneran (2015), marine mammal studies have shown the amount of TTS

increases with the 24-hour cumulative sound exposure level (SEL₂₄) in an accelerating fashion: at low exposures with lower SEL₂₄, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SEL₂₄, the growth curves become steeper and approach linear relationships with the sound exposure level (SEL).

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

Many studies have examined noise-induced hearing loss in marine mammals (see Finneran (2015) and Southall *et al.* (2019) for summaries). TTS is the mildest form of hearing impairment that can occur during exposure to sound (Kryter, 2013). While experiencing TTS, the hearing threshold rises, and a sound must be at a higher level in order to be heard. In terrestrial and marine mammals, TTS can last from minutes or hours to days (in cases of strong TTS). In many cases, hearing sensitivity recovers rapidly after exposure to the sound ends. For cetaceans, published data on the onset of TTS are limited to captive bottlenose dolphin (*Tursiops truncatus*), beluga whale (*Delphinapterus leucas*), harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiakororientalis*) (Southall *et al.*, 2019). For pinnipeds in water, measurements of TTS are limited to harbor seals, elephant seals (*Mirounga angustirostris*), bearded seals (*Erignathus barbatus*) and California sea lions (*Zalophus californianus*) (Kastak *et al.*, 1999, 2007; Kastelein *et al.*, 2019b, 2019c, 2022a, 2022b; Reichmuth *et al.*, 2019; Sills *et al.*, 2020). TTS was

not observed in spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to single airgun impulse sounds at levels matching previous predictions of TTS onset (Reichmuth *et al.*, 2016). These studies examine hearing thresholds measured in marine mammals before and after exposure to intense or long-duration sound exposures. The difference between the pre-exposure and post-exposure thresholds can be used to determine the amount of threshold shift at various post-exposure times.

The amount and onset of TTS depends on the exposure frequency. Sounds below the region of best sensitivity for a species or hearing group are less hazardous than those near the region of best sensitivity (Finneran and Schlundt, 2013). At low frequencies, onset-TTS exposure levels are higher compared to those in the region of best sensitivity (*i.e.*, a low frequency noise would need to be louder to cause TTS onset when TTS exposure level is higher), as shown for harbor porpoises and harbor seals (Kastelein *et al.*, 2019a, 2019c). Note that in general, harbor seals and harbor porpoises have a lower TTS onset than other measured pinniped or cetacean species (Finneran, 2015). In addition, TTS can accumulate across multiple exposures, but the resulting TTS would be less than the TTS from a single, continuous exposure with the same SEL (Mooney *et al.*, 2009; Finneran *et al.*, 2010; Kastelein *et al.*, 2015). This means that TTS predictions based on the total, SEL₂₄ would overestimate the amount of TTS from intermittent exposures, such as sonars and impulsive sources. Nachtigall *et al.* (2018) describe measurements of hearing sensitivity of multiple odontocete species (bottlenose dolphin, harbor porpoise, beluga, and false killer whale (*Pseudorca crassidens*)) when a relatively loud sound was preceded by a warning sound. These captive animals were shown to reduce hearing sensitivity when warned of an impending intense sound. Based on these experimental observations of captive animals, the authors suggest that wild animals may dampen their hearing during prolonged exposures or if conditioned to anticipate intense sounds. Another study showed that echolocating animals (including odontocetes) might have anatomical specializations that might allow for conditioned hearing reduction and filtering of low-frequency ambient noise, including increased stiffness and control of middle ear structures and placement of inner ear structures (Ketten *et al.*, 2021). Data available on

noise-induced hearing loss for mysticetes are currently lacking (NMFS, 2024). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species.

Relationships between TTS and AUD INJ thresholds have not been studied in marine mammals, and there are no measured PTS data for cetaceans, but such relationships are assumed to be similar to those in humans and other terrestrial mammals. AUD INJ typically occurs at exposure levels at least several dB above that inducing mild TTS (e.g., a 40-dB threshold shift approximates AUD INJ onset (Kryter *et al.*, 1966; Miller, 1974), while a 6-dB threshold shift approximates TTS onset (Southall *et al.*, 2007, 2019). Based on data from terrestrial mammals, a precautionary assumption is that the AUD INJ thresholds for impulsive sounds (such as impact pile driving pulses as received close to the source) are at least 6 dB higher than the TTS threshold on a peak-pressure basis and AUD INJ cumulative sound exposure level thresholds are 15 to 20 dB higher than TTS cumulative sound exposure level thresholds (Southall *et al.*, 2007, 2019). Given the higher level of sound or longer exposure duration necessary to cause AUD INJ as compared with TTS, it is considerably less likely that AUD INJ could occur. Given the stationary nature of the construction activities, the fact that HRBT is relatively sheltered (i.e., not located in the open ocean), and the fact that many marine mammals are likely moving through the project areas and not remaining in ensonified areas for extended periods of time, the potential for threshold shift is low for most species.

Behavioral Effects—Exposure to noise also has the potential to behaviorally disturb marine mammal response—in other words, not every response qualifies as behavioral disturbance, and for responses that do, those of a higher level, or accrued across a longer duration, have the potential to affect foraging, reproduction, or survival. Behavioral disturbance may include a variety of effects, including subtle changes in behavior (e.g., minor or brief avoidance of an area or changes in vocalizations), more conspicuous changes in similar behavioral activities, and more sustained and/or potentially severe reactions, such as displacement from or abandonment of high-quality habitat. Behavioral responses may include changing durations of surfacing and dives, changing direction and/or speed; reducing/increasing vocal activities; changing/cessation of certain behavioral activities (such as socializing

or feeding); eliciting a visible startle response or aggressive behavior (such as tail/fin slapping or jaw clapping); and avoidance of areas where sound sources are located. In addition, pinnipeds may increase their haul out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006).

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

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

As noted above, behavioral state may affect the type of response. For example, animals that are resting may show greater behavioral change in response to disturbing sound levels than animals that are highly motivated to remain in an area for feeding (Richardson *et al.*, 1995; Wartzok *et al.*, 2004; National Research Council (NRC), 2005). Controlled experiments with captive

marine mammals have shown pronounced behavioral reactions, including avoidance of loud sound sources (Ridgway *et al.*, 1997; Finneran *et al.*, 2003). Observed responses of wild marine mammals to loud-pulsed sound sources (e.g., seismic airguns) have been varied but often consist of avoidance behavior or other behavioral changes (Richardson *et al.*, 1995; Morton and Symonds, 2002; Nowacek *et al.*, 2007).

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

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

Disruption of feeding behavior can be difficult to correlate with anthropogenic sound exposure, so it is usually inferred by observed displacement from known foraging areas, the appearance of secondary indicators (e.g., bubble nets or sediment plumes), or changes in dive behavior. Acoustic and movement biologging tools also have been used in some cases to infer responses to anthropogenic noise. For example, Blair *et al.* (2015) reported significant effects on humpback whale foraging behavior in Stellwagen Bank in response to ship

noise including slower descent rates, and fewer side-rolling events per dive with increasing ship noise. In addition, Wisniewska *et al.* (2018) reported that tagged harbor porpoises demonstrated fewer prey capture attempts when encountering occasional high-noise levels resulting from vessel noise as well as more vigorous fluking, interrupted foraging, and cessation of echolocation signals observed in response to some high-noise vessel passes. As for other types of behavioral response, the frequency, duration, and temporal pattern of signal presentation, as well as differences in species sensitivity, are likely contributing factors to differences in response in any given circumstance (*e.g.*, Croll *et al.*, 2001; Nowacek *et al.*, 2004; Madsen *et al.*, 2006; Yazvenko *et al.*, 2007). A determination of whether foraging disruptions incur fitness consequences would require information on or estimates of the energetic requirements of the affected individuals and the relationship between prey availability, foraging effort and success, and the life history stage of the animal.

Respiration rates vary naturally with different behaviors and alterations to breathing rate as a function of acoustic exposure can be expected to co-occur with other behavioral reactions, such as a flight response or an alteration in diving. However, respiration rates in and of themselves may be representative of annoyance or an acute stress response. Various studies have shown that respiration rates may either be unaffected or could increase, depending on the species and signal characteristics, again highlighting the importance in understanding species differences in the tolerance of underwater noise when determining the potential for impacts resulting from anthropogenic sound exposure (*e.g.*, Kastelein *et al.*, 2001; 2005; 2006; Gailey *et al.*, 2007). For example, harbor porpoise respiration rates increased in response to pile driving sounds at and above a received broadband SPL of 136 dB (zero-peak SPL: 151 dB re 1 μ Pa; SEL of a single strike (SEL_{ss}): 127 dB re 1 μ Pa²-s) (Kastelein *et al.*, 2013).

Avoidance is the displacement of an individual from an area or migration path as a result of the presence of a sound or other stressors, and is one of the most obvious manifestations of disturbance in marine mammals (Richardson *et al.*, 1995). For example, gray whales are known to change direction—deflecting from customary migratory paths—in order to avoid noise from seismic surveys (Malme *et al.*, 1984). Harbor porpoises, Atlantic white-sided dolphins (*Lagenorhynchus*

actusus), and minke whales (*Balaenoptera acutorostrata*) have demonstrated avoidance in response to vessels during line transect surveys (Palka and Hammond, 2001). In addition, beluga whales in the St. Lawrence Estuary in Canada have been reported to increase levels of avoidance with increased boat presence by way of increased dive durations and swim speeds, decreased surfacing intervals, and by bunching together into groups (Blane and Jaakson, 1994). Avoidance may be short-term, with animals returning to the area once the noise has ceased (*e.g.*, Bowles *et al.*, 1994; Goold, 1996; Stone *et al.*, 2000; Morton and Symonds, 2002; Gailey *et al.*, 2007). Longer-term displacement is possible, however, which may lead to changes in abundance or distribution patterns of the affected species in the affected region if habituation to the presence of the sound does not occur (*e.g.*, Bejder *et al.*, 2006).

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

Behavioral disturbance can also impact marine mammals in more subtle ways. Increased vigilance may result in costs related to diversion of focus and attention (*i.e.*, when a response consists of increased vigilance, it may come at the cost of decreased attention to other critical behaviors such as foraging or resting). These effects have generally not been demonstrated for marine mammals, but studies involving fishes and terrestrial animals have shown that increased vigilance may substantially reduce feeding rates (*e.g.*, Beauchamp and Livoreil, 1997; Fritz *et al.*, 2002; Purser and Radford, 2011). In addition, chronic disturbance can cause population declines through reduction of fitness (*e.g.*, decline in body

condition) and subsequent reduction in reproductive success, survival, or both (*e.g.*, Harrington and Veitch, 1992; Daan *et al.*, 1996; Bradshaw *et al.*, 1998). However, Ridgway *et al.* (2006) reported that increased vigilance in bottlenose dolphins exposed to sound over a 5-day period did not cause any sleep deprivation or stress effects.

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

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

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

glucocorticoids are also equated with stress (Romano *et al.*, 2004).

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

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

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

Marine mammals vocalize for different purposes and across multiple modes, such as whistling, echolocation click production, calling, and singing. Changes in vocalization behavior in response to anthropogenic noise can occur for any of these modes and may result from a need to compete with an increase in background noise or may reflect increased vigilance or a startle response. For example, in the presence of potentially masking signals, humpback whales and killer whales have been observed to increase the length of their songs (Miller *et al.*, 2000; Frstrup *et al.*, 2003) or vocalizations (Foote *et al.*, 2004), respectively, while North Atlantic right whales (*Eubalaena glacialis*) have been observed to shift the frequency content of their calls upward while reducing the rate of calling in areas of increased anthropogenic noise (Parks *et al.*, 2007). Fin whales (*Balaenoptera physalus*) have also been

documented lowering the bandwidth, peak frequency, and center frequency of their vocalizations under increased levels of background noise from large vessels (Castellote *et al.* 2012). Other alterations to communication signals have also been observed. For example, gray whales, in response to playback experiments exposing them to vessel noise, have been observed increasing their vocalization rate and producing louder signals at times of increased outboard engine noise (Dahlheim and Castellote, 2016). Alternatively, in some cases, animals may cease sound production during production of aversive signals (Bowles *et al.*, 1994, Wisniewska *et al.*, 2018).

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

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

wild populations it must be either modeled or inferred from evidence of masking compensation. There are few studies addressing real-world masking sounds likely to be experienced by marine mammals in the wild (e.g., Branstetter *et al.*, 2013).

Masking occurs in the frequency band that the animals utilize and is more likely to occur in the presence of broadband, relatively continuous noise sources such as vibratory pile driving. Energy distribution of vibratory pile driving sound covers a broad frequency spectrum and is anticipated to be within the audible range of marine mammals present in the proposed action area. Since noises generated from the proposed construction activities are mostly concentrated at low frequencies (<2 kHz (kilohertz)), these activities likely have less effect on mid-frequency echolocation sounds produced by odontocetes (toothed whales). However, lower frequency noises are more likely to affect detection of communication calls and other potentially important natural sounds such as surf and prey noise. Low-frequency noise may also affect communication signals when they occur near the frequency band for noise and thus reduce the communication space of animals (e.g., Clark *et al.*, 2009) and cause increased stress levels (e.g., Holt *et al.*, 2009). Unlike TS, masking, which can occur over large temporal and spatial scales, can potentially affect the species at population, community, or even ecosystem levels, in addition to individual levels. Masking affects both senders and receivers of the signals, and at higher levels for longer durations, could have long-term chronic effects on marine mammal species and populations. However, the noise generated by HRCF's proposed activities would only occur intermittently, across an estimated 231 (not necessarily consecutive) days during the proposed authorization period in a relatively small area focused around the proposed construction site. Thus, while the HRCF's proposed activities may mask some acoustic signals that are relevant to the daily behavior of marine mammals, the short-term duration and limited areas affected make it very unlikely that the fitness of individual marine mammals would be impacted.

While in some cases marine mammals have exhibited little to no obviously detectable response to certain common or routine industrialized activities (Cornick *et al.*, 2011; Horsley and Larson, 2023), it is possible some animals may at times be exposed to received levels of sound above the AUD INJ and Level B harassment thresholds during the proposed project. This

potential exposure in combination with the nature of planned activity (e.g., vibratory pile driving, impact pile driving) means it is possible that take by Level A and Level B harassment could occur over the total estimated period of activities; therefore, NMFS, in response to HRCF's IHA application, proposes to authorize take by Level A and Level B harassment from HRCF's proposed construction activities.

Airborne Acoustic Effects—Pinnipeds that occur near the project site could be exposed to airborne sounds associated with construction activities that have the potential to cause behavioral harassment, depending on their distance from these activities. Airborne noise would primarily be an issue for pinnipeds that are swimming or hauled out near the project site within the range of noise levels elevated above airborne acoustic harassment criteria. As described above in *Description of Sound Sources for the Specified Activities*, although pinnipeds are known to haul out regularly on man-made objects, we believe that incidents of take resulting solely from airborne sound are unlikely due to the distance between the proposed project area and the known haulout sites. Cetaceans are not expected to be exposed to airborne sounds that would result in harassment as defined under the MMPA.

We recognize that pinnipeds in the water could be exposed to airborne sound that may result in behavioral harassment when looking with their heads above water. Most likely, airborne sound would cause behavioral responses similar to those discussed above in relation to underwater sound. For instance, anthropogenic sound could cause hauled out pinnipeds to exhibit changes in their normal behavior, such as reduction in vocalizations, or cause them to flush from haulouts, temporarily abandon the area, and/or move further from the source. However, these animals would previously have been “taken” because of exposure to underwater sound above the behavioral harassment thresholds, which are in all cases larger than those associated with airborne sound. Thus, the behavioral harassment of these animals is already accounted for in these estimates of potential take. Therefore, we do not believe that authorization of incidental take resulting from airborne sound for pinnipeds is warranted, and airborne sound is not discussed further here.

Potential Effects on Marine Mammal Habitat

HRCF's proposed activities could have localized, temporary impacts on

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

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

The proposed project would occur within the same general footprint as the existing marine infrastructure. The nearshore and intertidal habitat where the proposed project would occur is an area of relatively high marine vessel traffic. Most marine mammals do not generally use the area within the footprint of the project area. Temporary, intermittent, and short-term habitat alteration may result from increased noise levels during the proposed construction activities. Effects on marine mammals would be limited to temporary displacement from pile installation and removal noise, and effects on prey species would be similarly limited in time and space.

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

few hours. Studies of the effects of turbid water on fish (marine mammal prey) suggest that concentrations of suspended sediment can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton, 1993).

Effects to turbidity and sedimentation are expected to be short-term, minor, and localized. Turbidity within the water column has the potential to reduce the level of oxygen in the water and irritate the gills of prey fish species in the proposed project area. However, turbidity plumes associated with the project would be temporary and localized, and fish in the proposed project area would be able to move away from and avoid the areas where plumes may occur. Therefore, it is expected that the impacts on prey fish species from turbidity, and therefore on marine mammals, would be minimal and temporary. In general, the area likely impacted by the proposed construction activities is relatively small compared to the available marine mammal habitat in the Chesapeake Bay and Atlantic Ocean.

Potential Effects on Prey—Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (e.g., crustaceans, cephalopods, fishes, zooplankton). Marine mammal prey varies by species, season, and location and, for some, is not well documented. Studies regarding the effects of noise on known marine mammal prey are described here.

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

Fish react to sounds that are especially strong and/or intermittent low-frequency sounds, and behavioral responses such as flight or avoidance are the most likely effects. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. The reaction of fish to

noise depends on the physiological state of the fish, past exposures, motivation (e.g., feeding, spawning, migration), and other environmental factors. (Hastings and Popper, 2005) identified several studies that suggest fish may relocate to avoid certain areas of sound energy. Additional studies have documented effects of pile driving on fishes (e.g., Scholik and Yan, 2001, 2002; Popper and Hastings, 2009). Several studies have demonstrated that impulse sounds might affect the distribution and behavior of some fishes, potentially impacting foraging opportunities or increasing energetic costs (e.g., Fewtrell and McCauley, 2012; Pearson *et al.*, 1992; Skalski *et al.*, 1992; Santulli *et al.*, 1999; Paxton *et al.*, 2017). However, some studies have shown no or slight reaction to impulse sounds (e.g., Peña *et al.*, 2013; Wardle *et al.*, 2001; Jorgenson and Gyselman, 2009; Cott *et al.*, 2012). More commonly, though, the impacts of noise on fishes are temporary. For example, during the Port of Alaska's Marine Terminal Redevelopment Project, the effects of impact and vibratory installation of 30-inch (76-cm (centimeter)) steel sheet piles at the POA on 133 caged juvenile coho salmon (*Oncorhynchus kisutch*) in Knik Arm were studied (Hart Crowser Incorporated *et al.*, 2009; Houghton *et al.*, 2010). Acute or delayed mortalities, or behavioral abnormalities were not observed in any of the coho salmon. Furthermore, results indicated that the pile driving had no adverse effect on feeding ability or the ability of the fish to respond normally to threatening stimuli (Hart Crowser Incorporated *et al.*, 2009; Houghton *et al.*, 2010).

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

Fish populations in the proposed project area that serve as marine mammal prey could be temporarily affected by noise from pile installation and removal. The frequency range in

which fishes generally perceive underwater sounds is 50 to 2,000 Hz, with peak sensitivities below 800 Hz (Popper and Hastings, 2009). Fish behavior or distribution may change, especially with strong and/or intermittent sounds that could harm fishes. High underwater SPLs have been documented to alter behavior, cause hearing loss, and injure or kill individual fish by causing serious internal injury (Hastings and Popper, 2005).

Zooplankton is a food source for several marine mammal species, as well as a food source for fish that are then preyed upon by marine mammals. Population effects on zooplankton could have indirect effects on marine mammals. Data are limited on the effects of underwater sound on zooplankton species, particularly sound from construction (Erbe *et al.*, 2019). Popper and Hastings (2009) reviewed information on the effects of human-generated sound and concluded that no substantive data are available on whether the sound levels from pile driving, seismic activity, or any human-made sound would have physiological effects on invertebrates. Any such effects would be limited to the area very near (1 to 5 meters (m) (3.28 to 16.4 feet (ft))) to the sound source and would result in no population effects because of the relatively small area affected at any one time and the reproductive strategy of most zooplankton species (short generation, high fecundity, and very high natural mortality). No adverse impact on zooplankton populations is expected to occur from the specified activity due in part to large reproductive capacities and naturally high levels of predation and mortality of these populations. Any mortalities or impacts that might occur would be negligible.

The greatest potential impact to marine mammal prey during construction would occur during impact pile driving. However, in most cases, the duration of impact pile driving would be limited to the final stage of installation (proofing) after the pile has been driven as close as practicable to the design depth with a vibratory driver. In-water construction activities would only occur during daylight hours, allowing fish to forage and transit the project area in the evening. Vibratory pile driving could possibly elicit behavioral reactions from fishes, such as temporary avoidance of the area, but is unlikely to cause injuries to fishes or have persistent effects on local fish populations. Construction also would have minimal permanent and temporary impacts on benthic invertebrate species, a marine mammal prey source. In

addition, it should be noted that the area in question is low-quality habitat since it is already highly developed and experiences a high level of anthropogenic noise from normal operations and other vessel traffic.

Potential Effects on Foraging Habitat

The proposed project is not expected to result in any habitat related effects that could cause significant or long-term negative consequences for individual marine mammals or their populations, since installation and removal of in-water piles would be temporary and intermittent. 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 outside this project area. For marine mammals, while the area is commonly used or traversed by some species, the proposed project area does not contain any particularly high-value habitat and is not usually important to any of the other species potentially affected by HRCF's proposed activities. While opportunistic foraging could occur, more foraging habitat is available outside the Bay, in more open ocean waters. Overall, the area impacted by the project is relatively small compared to the available habitat just outside the project area, and there are no areas of particular importance that would be impacted by this project during the period planned for activities to occur. 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 HRCF's construction to affect the availability of prey to marine mammals or to meaningfully impact the quality of physical or acoustic habitat is considered insignificant. Therefore, impacts of the project are not likely to have adverse effects on marine mammal foraging habitat in the proposed project area.

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

than short-term adverse effects on any prey habitat or populations of prey species. Further, any impacts to marine mammal habitat are not expected to result in significant or long-term consequences for individual marine mammals, or to contribute to adverse impacts on their populations.

Estimated Take of Marine Mammals

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

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would primarily be by Level B harassment, as use of the acoustic source's (*i.e.*, impact pile driving, vibratory pile driving) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (AUD INJ) (Level A harassment) to result, primarily for very high frequency species, high frequency species and/or phocids. The large number of dolphins that are proposed for take increases the likelihood that some could enter in the Level A harassment zone. The cryptic nature of porpoises and seals means that some animals could enter into the Level A harassment zone unseen by observers. AUD INJ is unlikely to occur for low-frequency cetaceans since they are likely to be uncommon and unlikely to remain in the AUD INJ zone long enough to experience injury. The proposed mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no serious injury or mortality is anticipated or proposed to be authorized for this activity. Below we describe how the proposed take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic criteria above which NMFS believes there is some

reasonable potential for marine mammals to be behaviorally harassed or incur some degree of AUD INJ; (2) the area or volume of water that will be ensounded above these levels in a day; (3) the density or occurrence of marine mammals within these ensounded areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the proposed take estimates.

Acoustic Criteria

NMFS recommends the use of acoustic criteria that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur AUD INJ of some degree (equated to Level A harassment). We note that the criteria for AUD INJ, as well as the names of two hearing groups, have been recently updated (NMFS, 2024) as reflected below in the Level A harassment section.

Level B Harassment—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.*, frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.*, Southall *et al.*, 2007; Southall *et al.*, 2021; Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared sound pressure levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1 μ Pa)) for continuous (*e.g.*, vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μ Pa for non-

explosive impulsive (e.g., seismic airguns) or intermittent (e.g., scientific sonar) sources. Generally speaking, Level B harassment take estimates based on these behavioral harassment thresholds are expected to include any likely takes by TTS as, in most cases, the likelihood of TTS occurs at distances from the source less than those at which behavioral harassment is likely. TTS of a sufficient degree can manifest as behavioral harassment, as reduced hearing sensitivity and the potential reduced opportunities to detect important signals (conspecific communication, predators, prey) may result in changes in behavior patterns that would not otherwise occur.

HRCP's proposed pile driving includes the use of continuous (vibratory hammer) and impulsive (impact hammer) sources, and therefore the RMS SPL thresholds of 120 AND/OR 160 dB re 1 μ Pa are applicable.

Level A harassment—NMFS' Updated Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0) (Updated Technical Guidance, 2024) identifies dual criteria to assess AUD INJ (Level A harassment) to five different underwater marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). HRCP's proposed pile

driving includes the use of impulsive (impact hammer) and non-impulsive (vibratory hammer) sources.

The 2024 Updated Technical Guidance criteria include both updated thresholds and updated weighting functions for each hearing group (table 6). The thresholds are provided in the table below. The references, analysis, and methodology used in the development of the criteria are described in NMFS' 2024 Updated Technical Guidance, which may be accessed at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance-other-acoustic-tools>.

TABLE 6—THRESHOLDS IDENTIFYING THE ONSET OF AUDITORY INJURY

Hearing group	AUD INJ onset acoustic thresholds* (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1:</i> $L_{pk,flat}$: 222 dB; $L_{E,LF,24h}$: 183 dB	<i>Cell 2:</i> $L_{E,LF,24h}$: 197 dB.
High-Frequency (HF) Cetaceans	<i>Cell 3:</i> $L_{pk,flat}$: 230 dB; $L_{E,HF,24h}$: 193 dB	<i>Cell 4:</i> $L_{E,HF,24h}$: 201 dB.
Very High-Frequency (VHF) Cetaceans	<i>Cell 5:</i> $L_{pk,flat}$: 202 dB; $L_{E,VHF,24h}$: 159 dB	<i>Cell 6:</i> $L_{E,VHF,24h}$: 181 dB.
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7:</i> $L_{pk,flat}$: 223 dB; $L_{E,PW,24h}$: 183 dB	<i>Cell 8:</i> $L_{E,PW,24h}$: 195 dB.
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9:</i> $L_{pk,flat}$: 230 dB; $L_{E,OW,24h}$: 185 dB	<i>Cell 10:</i> $L_{E,OW,24h}$: 199 dB.

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

Note: Peak sound pressure level ($L_{p,0-pk}$) has a reference value of 1 μ Pa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1 μ Pa²s. In this table, criteria are abbreviated to be more reflective of International Organization for Standardization standards (ISO, 2017). The subscript “flat” is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals underwater (i.e., 7 Hz to 165 kHz). The subscript associated with cumulative sound exposure level criteria indicates the designated marine mammal auditory weighting function (LF, HF, and VHF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level criteria could be exceeded in a multitude of ways (i.e., varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these criteria will be exceeded.

Ensonified Area

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

The sound field in the project area is the existing background noise plus additional construction noise from the

proposed project. Marine mammals are expected to be affected via sound generated by the primary components of the project (i.e., impact pile driving and vibratory pile driving). The source levels assumed for both removal and installation activities are based on reviews of measurements of the same or similar types and dimensions of piles available in the scientific literature and from similar coastal construction

projects. Derived by the applicant using Geographic Information System software, the source levels for the piles and activities (i.e., installation and/or removal), and the information and literature used to determine appropriate proxy sources, where applicable, are presented in table 7. The source levels for vibratory removal and installation of piles of the same material and diameter are assumed to be the same.

TABLE 7—ESTIMATES OF UNDERWATER SOUND SOURCE LEVELS GENERATED DURING VIBRATORY AND IMPACT PILE INSTALLATION AND VIBRATORY REMOVAL

Pile type	rms	SEL	dB peak	Reference
Vibratory Hammer				
36-inch steel pile	170	.....	180	Caltrans 2015.
AZ 700 steel sheet pile	160	.....	175	Caltrans 2020.
Impact Hammer				
12-inch Composite pile*	153	143	177	Caltrans 2015.
36-inch steel pile	193	183	210	Caltrans 2020.
36-inch steel pile, attenuated**	188	178	205	Caltrans 2020.

TABLE 7—ESTIMATES OF UNDERWATER SOUND SOURCE LEVELS GENERATED DURING VIBRATORY AND IMPACT PILE INSTALLATION AND VIBRATORY REMOVAL—Continued

Pile type	rms	SEL	dB peak	Reference
54-inch concrete cylinder pile ***	183	170	192	MacGillivray <i>et al.</i> 2007.

Note: It is assumed that noise levels during pile installation and removal are similar. dB = decibel; SEL = sound exposure level; dB peak = peak sound level; rms = root mean square; DoN = Department of the Navy; CCA = Chromated Copper Arsenate, Caltrans = California Department of Transportation.

* SSL taken from 16-inch composite.

** SSLs taken from 36-inch concrete square piles, no project specific information provided.

Level B Harassment

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

$$TL = B \times \log_{10}(R1/R2),$$

Where:

TL = transmission loss in dB,

B = transmission loss coefficient,

R1 = the distance of the modeled SPL from the driven pile, and

R2 = the distance from the driven pile of the initial measurement.

This formula neglects loss due to scattering and absorption, which is assumed to be zero in this case. The degree to which underwater sound propagates away from a sound source depends on various factors, most notably the water bathymetry and the presence or absence of reflective or absorptive conditions, including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field)

environment not limited by depth or water surface, resulting in a 6 dB reduction in sound level for each doubling of distance from the source ($20 \times \log_{10}[\text{range}]$). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling of distance from the source ($10 \times \log_{10}[\text{range}]$). A practical spreading value of 15 is often used under conditions where water increases with depth as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions. Absent site-specific acoustic monitoring with differing measured *TL*, practical spreading is used. Site-specific *TL* data for HRB is not available; therefore, the default coefficient of 15 is used to determine the distances to the Level A harassment and Level B harassment thresholds.

Level A Harassment

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need

to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the 2024 Updated Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers a practical, alternative way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources[such as pile driving, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur AUD INJ. Inputs used in the optional User Spreadsheet tool (table 8), and the resulting estimated isopleths (table 9, table 10) are reported below.

TABLE 8—USER SPREADSHEET INPUTS

Model parameter	Steel sheet	12-in comp	36-in steel pipe						54-in concrete
	Vib	Vib	Vib	Vib	Vib	Imp	Imp—Bubble	Imp—Bubble	Imp
Spreadsheet Tab	A.1	A.1	A.1	A.1	A.1	E.1	E.1	E.1	E.1
Weighting Factor Adjustment (kHz)	2.5	2.5	2.5	2.5	2.5	2	2	2	2
Sound Pressure Level (SPLrms)	160	153	170	170	170	193	188	188	183
SELss (LE, p, single strike) at 10 meters .....	.....	.....	.....	.....	.....	183	178	178	170
Lp, 0-pk at 10 meters .....	.....	.....	.....	.....	.....	210	205	205	192
Number of piles within 24-hour period	6	4	4	3	2	.....	2	3	1
Estimated Duration to drive a single pile (min)	30	30	30	30	30	.....	.....	.....	.....
Duration to drive a single pile (min)	30	30	30	30	30	.....	.....	.....	.....
Transmission loss coefficient	15	15	15	15	15	15	15	15	15
Distance from sound pressure level (SPLrms) measurement (m)	10	10	10	10	10	10	10	10	10
Strikes per pile .....	.....	.....	.....	.....	.....	40	40	40	2,100
Estimated Strikes per pile .....	.....	.....	.....	.....	.....	40	40	40	2,100

TABLE 9—CALCULATED DISTANCES TO LEVEL A AND LEVEL B HARASSMENT ISOPLETHS DURING VIBRATORY PILE INSTALLATION AND REMOVAL WITH NO ATTENUATION

Project component	Size/type	Minutes per pile	Piles per day	LF *	HF *	VHF *	PW *	Level B isopleth (m)	Level B area (km ²)
North Trestle									
Template Piles	36-inch Pipe, Steel	30	3	48	19	40	62	21,544	390
North Shore Work & Jump Trestle	36-inch Pipe, Steel	30	3	48	19	40	62	21,544	390
North Shore abutment Island	Steel sheet	30	6	17	7	14	22	4,642	39
North Island									
Circulation Dock	36-inch Pipe, Steel	15	2	37	15	30	48	21,544	399
South Island									
TBM Platform & Conveyor	36-inch Pipe, Steel	30	3	48	19	40	62	21,544	504
Moorings	36-inch Pipe, Steel	30	4	59	23	48	75	21,544	504
South Trestle									
Template Piles	36-inch Pipe, Steel	30	3	48	19	40	62	21,544	408
Work Trestle, Jump Trestle, Demolition Trestle, Temporary MOT Trestle.	36-inch Pipe, Steel	30	2	37	15	30	48	21,544	408
Moorings	36-inch Pipe, Steel	30	4	59	23	48	75	21,544	408
Willoughby Bay									
Moorings (Safe Haven)	36-inch Pipe, Steel	30	4	59	23	48	75	21,544	32
Fender	12-inch Composite	30	4	5	2	4	6	1,585	7
Bulkhead Replacement	Steel sheet	30	6	17	7	14	22	4,642	5
Willoughby Split Laydown area									
Temp Dock/Finger Piers	36-inch Pipe, Steel	30	3	48	19	40	62	21,544	156

* All ensonified areas are ≤ 0.02 km².

TABLE 10—CALCULATED DISTANCES TO LEVEL A AND LEVEL B HARASSMENT ISOPLETHS (m) AND AREAS (km²) DURING IMPACT INSTALLATION WITH ATTENUATION (5 dB) FROM BUBBLE CURTAIN

Project component	Size/type	Strikes per pile	Piles per day	Level A harassment isopleth (area)				Level B harassment isopleth (area)
				LF	HF	VHF	PW	
North Trestle								
Permanent piles	54-inch Pipe, Concrete ...	2,100	1	222 (0.2)	28 (<0.01)	343 (0.4)	197 (0.12)	342 (0.4)
Work Trestle, Jump Trestle, Demolition Trestle.	36-inch Pipe, Steel	40	2	86 (0.02)	11 (<0.01)	133 (0.06)	77 (0.02)	736 (1.6)
South Island								
TBM Platform	36-inch Pipe, Steel	40	3	113 (0.04)	15 (<0.01)	174 (0.1)	100 (0.03)	736 (1.6)
South Trestle								
Work Trestle, Jump Trestle, Demolition Trestle, Temporary MOT Trestle.	36-inch Pipe, Steel	40	3	522 (0.9)	67 (0.02)	808 (2)	464 (0.69)	736 (1.6)
Permanent Piles	54-inch Pipe, Concrete ...	2,100	1	222 (0.2)	28 (<0.01)	343 (0.4)	197 (0.12)	342 (0.4)

Note that to minimize hydroacoustic impacts caused by the impact hammer, a bubble curtain will be used for installation of steel pipe piles in water depths greater than 20 feet. Portions of the South Trestle Jump Trestle in water depths less than 20 feet will be installed without a bubble curtain. Additionally, HRCF may employ more than one hammer operating simultaneously. However, separate pile driving actions will not be conducted in close proximity to each other. Therefore, there is no need to apply decibel addition

when calculating isopleths given that the sources will be well separated.

Marine Mammal Occurrence and Take Estimation

In this section, we provide information about the occurrence of marine mammals, including density or other relevant information, which will inform the take calculations. Then, we describe how all of the information detailed above is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and proposed for authorization.

In the preceding LOA, NMFS and HRCF estimated potential exposure using daily sighting data for areas west of the HRBT area and within the Core Monitoring Area (CMA). The CMA encompasses the area south of the HRBT and north of the Hampton Roads Monitor-Merrimac Memorial Bridge-Tunnel (Interstate 664). This is the area that will be ensonified during most of the pile installation and removal activities.

Humpback Whale

Humpback whales are relatively rare in the Project area and 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. Humpback whale sighting data collected by the U.S. Navy near Naval Station Norfolk and Virginia Beach from 2012 to 2022 (Engelhaupt *et al.* 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022) and in the mid-Atlantic

(including the Chesapeake Bay) from 2012 to 2022. Based on these data, and the known movement of humpback whales from November through April at the mouth of the Chesapeake Bay, HRCP is requesting two takes every month from May to October and three to four each month from November through April for the duration of in-water pile installation and removal as shown in

table 11. A total of 37 takes of humpback whale by Level B harassment is proposed. Take by Level A is not proposed since there were zero takes of humpback whale according to the HRBT marine mammal monitoring reports from 2021 through 2024. This is the same total number of takes requested under the previous LOA.

TABLE 11—ESTIMATED NUMBERS OF HUMPBACK WHALES POTENTIALLY EXPOSED TO LEVEL A AND LEVEL B HARASSMENT SOUND LEVELS PER MONTH

Yr	April	M	J	J	A	S	O	N	D	J	F	Mar	Total
26–27	3	2	2	2	2	2	2	4	4	4	4	2	37

Bottlenose Dolphin

Estimated take of bottlenose dolphins was derived using daily sighting rates within the CMA from 2012 through 2016 by Engelhaupt *et al.* (2016). Seasonal density data was also used to establish estimated take for areas northeast of the HRBT Project and outside the CMA. However, the incorporation of the density data outside of the CMA produced take estimates that were unrealistically high, based on the monitoring results of the project, as shown in reports submitted by HRCP (and available online at: <https://www.fisheries.noaa.gov/action/incidental-take-authorization-hampton-roads-bridge-tunnel-expansion-project-hampton-0>). Therefore, NMFS has not used these data for estimating take for this proposed IHA.

To estimate potential exposure west of the Project site and within the CMA,

sighting rates (numbers of dolphins per day) were determined for each of the four seasons from sightings located in the inshore Chesapeake Bay zone (the Chesapeake Bay waters near Naval Station Norfolk). Sighting data were used to calculate the number of dolphins/day that could be anticipated to occur in the Project area for each of the four seasons. The number of anticipated days of in-water pile installation and removal for each activity was multiplied by the average daily sighting rate (table 12) to estimate the number of dolphins per month that could be exposed to Project noise. For most piles, the ensounded area is contained within the surrounding land features and cannot extend out into Chesapeake Bay. Therefore, this method is sufficient to calculate potential exposure. Table 13 shows the total annual proposed takes. HRCP and NMFS will assume that 1 percent of the

total takes would be by Level A harassment since Level A harassment takes were recorded in monitoring reports submitted under the previous LOA. According to the HRBT marine mammal monitoring reports from 2021 through 2024 annual dolphin takes ranged from 0 to 2 by Level A harassment and 9 to 92 by Level B harassment per year.

TABLE 12—AVERAGE DAILY SIGHTING RATES WITHIN CORE MONITORING AREA

Season	Average sighted per day
Spring, March–May	17.33
Summer, June–August	16.43
Fall, Sept–Nov	27.22
Winter, Dec–Feb	0

TABLE 13—TOTAL ESTIMATED TAKES SHOWN BY MONTH

Month	Apr	M	J	J	A	S	O	N	D	J	F	M	
Daily avg.	17.33	17.33	16.43	16.43	16.43	27.22	27.22	27.22	0	0	0	17.33	.....
Total	519.9	537.23	492.9	509.33	509.33	816.6	843.82	816.6	0	0	0	537.23	5,583

The total number of bottlenose dolphin takes by Level A and Level B harassment is expected to be split between three bottlenose dolphin stocks: Western North Atlantic Southern Migratory Coastal; Western North Atlantic Northern Migratory Coastal; and NNCES. There is insufficient data available to apportion the requested takes precisely to each of these three stocks present in the project area. Given that most of the NNCES stock are found in the Pamlico Sound Estuarine System, HRCP and NMFS will assume that no more than 200 of the requested takes will be from this stock. Since members of the Western North Atlantic Northern Migratory Coastal and Western North

Atlantic Southern Migratory Coastal stocks are thought to occur in or near the Project area in greater numbers, HRCP and NMFS will conservatively assume that half of the remaining animals will belong to either of these stocks. The breakout of Level A and Level B harassment by dolphin stock is shown in table 16.

Harbor Porpoise

Harbor porpoises are rarely seen in the project area although they are known to occur in the coastal waters near Virginia Beach (Hayes *et al.* 2020). They have been sighted on rare occasions in the Chesapeake Bay closer to Norfolk. Density data does not exist

for this species within the project area and sighting data collected by the U.S. Navy near Naval Station Norfolk and Virginia Beach from 2012 to 2015 (Engelhaupt *et al.* 2014, 2015, 2016) did not produce high enough sample sizes to calculate densities. One group of two harbor porpoises was seen during spring 2015 (Engelhaupt *et al.* 2016). There were no recorded take of harbor porpoise reported in the HRBT annual marine mammal monitoring reports from 2021 through 2024.

HRCP estimated that one group of two harbor porpoises could be exposed to project-related underwater noise each month during the spring (March-May) for a total of six harbor porpoises takes

(i.e., one group of two individuals per month × 3 months per year = six harbor porpoises). Given that porpoises are known to be cryptic animals it is possible, if unlikely, that porpoises could enter into the Level A harassment zone. HRCP has requested limited take by Level A harassment. While NMFS does not agree that take by Level A harassment is likely, due to the duration of time a harbor porpoise would be required to remain within the Level A zone to accumulate enough energy to experience AUD INJ, we nevertheless propose to authorize limited take. It is anticipated that no more than two individuals may enter the Level A harassment zone during pile installation and removal. Therefore, NMFS is authorizing four takes by Level B

harassment and two Level A harassment takes.

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 Chesapeake Bay Bridge Tunnel (CBBT) rock armor and portal islands from November 2014 through April 2024 (Rees *et al.* 2016; Jones *et al.* 2018; Jones and Rees 2020,2024). The number of harbor seals sighted by month from 2014 through 2024, in the Chesapeake Bay waters, in the vicinity (lower Chesapeake Bay along the CBBT) of the Project, ranged from 0 to 170 individuals.

The estimated total number of harbor seals potentially exposed during the

Project to in-water noise is 11.8 per day (the average of the 10-year average daily harbor seal count) (table 14) for 156 days based on a 6-day work week from mid-November to mid-May. Seals are not expected to be present in the Chesapeake Bay from June through October. In the event that unanticipated Level A take does occur, HRCP assumed it would not exceed 10 percent of total takes. Therefore, NMFS is proposing to authorize 187 Level A harassment takes of harbor seals and 1,685 Level B harassment takes of harbor seal (1,872 total takes – 187 Level A harassment takes = 1,685 Level B harassment takes). Note that no harbor seals takes were reported in HRBT annual marine mammal monitoring reports from 2021 through 2024.

TABLE 14—HARBOR SEAL SURVEY EFFORT, TOTAL COUNT, MAX COUNT, AND THE AVERAGE NUMBER OF SEALS OBSERVED PER SURVEY DAY AT THE CHESAPEAKE BAY BRIDGE TUNNEL SURVEY AREA

Year	Number survey days	Total seal count	Average 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
2019–2020	6	29	5	6
2020–2021	11	137	12	32
2021–2022	10	98	10	25
2022–2023	11	110	10	31
2023–2024	7	92	13	38
Average	11.7	149.6	11.8	30.6

Gray Seal

The expected number of gray 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 (Rees *et al.* 2016; Jones *et al.* 2018; Jones and Rees 2020). Seasonal numbers of gray seals in the Chesapeake Bay waters in the vicinity of the Project area in previous

years have been low as shown in table 15. Gray seals are not expected to be present in the Chesapeake Bay during the months of June through October. There were zero takes of gray seal reported in HRBT annual marine mammal monitoring reports from 2021 through 2024.

Gray seals are expected to be very uncommon in the Project area. It was assumed that three gray seals could be exposed to Level B harassment during each of the winter months (December

through February). Therefore, HRCP conservatively requested and NMFS proposes that nine gray seals could be exposed to harassment (three gray seals per month × 3 months per year = nine gray seals). Given their cryptic nature, a small number of Level A harassment takes (two) were also requested by HRCP and are proposed by NMFS resulting in seven takes by Level B harassment and two takes by Level A harassment.

TABLE 15—AVERAGE NUMBER OF INDIVIDUAL GRAY SEAL SIGHTINGS SUMMARIZED BY SEASON [2014–2019]

Spring (March–May)	0
Summer (June–August)	0
Fall (September–November)	0
Winter (December–February)	1

Table 16 summarizes proposed take by Level A and/or Level B harassment by stock, harassment type, and total

proposed takes and as a percentage of stock abundance.

TABLE 16—PROPOSED TAKE BY STOCK, HARASSMENT TYPE, AND AS A PERCENTAGE OF STOCK ABUNDANCE

Species	Stock	Stock abundance	Level A harassment take	Level B harassment take	Percentage
Humpback whale	Gulf of Maine	1,396	0	37	2.6
Bottlenose Dolphin	Western North Atlantic Southern Migratory Coastal	3,751	27	2,664	71.7
	Western North Atlantic Northern Migratory Coastal	6,639	27	2,665	40.5
	Northern North Carolina Estuarine System	823	2	198	24.3
Harbor porpoises	Gulf of Maine- Bay of Fundy	85,765	2	4	<0.01
Harbor seals	Western North Atlantic	61,336	184	1,647	0.30
Gray seals	Western North Atlantic	27,911	2	7	0.03

Proposed Mitigation

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

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

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned); and

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations,

The mitigation requirements described in the following were proposed by HRCF in its adequate and complete application or are the result of subsequent coordination between NMFS

and HRCF. HRCF has agreed that all of the mitigation measures are practicable. NMFS has fully reviewed the specified activities and the mitigation measures to determine if the mitigation measures would result in the least practicable adverse impact on marine mammals and their habitat, as required by the MMPA, and has determined the proposed measures are appropriate. NMFS describes these below as proposed mitigation requirements and has included them in the proposed IHA.

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

- Takes proposed for authorization, by Level A harassment and Level B harassment only, would be limited to the species and numbers listed in table 16. Construction activities would be required to be halted upon observation of either a species for which incidental take was not authorized or for a species for which incidental take has been authorized but the number of takes has been met, entering or is within the harassment zone, if the IHA is issued.
- The taking by serious injury or death of any of the species listed in table 16 or any taking of any other species of marine mammal would be prohibited and would result in the modification, suspension, or revocation of the IHA, if issued. Any taking exceeding the amounts proposed for authorization listed in table 16 would be prohibited and would result in the modification, suspension, or revocation of the IHA, if issued;
- Ensure that construction supervisors and crews, the marine mammal monitoring team, and relevant HRCF staff are trained prior to the start of all construction activities, so that responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work;
- HRCF, construction supervisors and crews, protected species observers PSOs, and relevant HRCF staff must avoid direct physical interaction with

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

- Employ PSOs and establish monitoring locations as described in the Marine Mammal Monitoring and Mitigation Plan (MMMMP) (see NMFS' website). HRCF must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions.

Additionally, the following mitigation measures apply to HRCF's in-water construction activities.

Pre- and Post-Activity Monitoring

HRCF would be required to establish pre- and post-monitoring zones with radial distances (based on the distances to the Level B harassment threshold and feasibility for PSOs in the field) for all construction activities. Monitoring would take place from 30 minutes prior to initiation of any pile driving activity (*i.e.*, pre-start clearance monitoring) through 30 minutes post-completion of pile driving activity. In addition, monitoring for 30 minutes would take place whenever a break in the specified activity (*i.e.*, impact pile driving, vibratory pile driving) of 30 minutes or longer occurs. Pre-start clearance monitoring would be conducted during periods of visibility sufficient for the Lead PSO to determine that the shutdown zones (indicated further below) are clear of marine mammals. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals.

Soft-Start

HRCF would use soft start techniques when impact pile driving. Soft-start requires contractors to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy

strike sets. A soft-start would be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer. Soft-start procedures are used to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity.

Establishment of Shutdown Zones

HRCP would be required to establish shutdown zones with radial distances, as identified in table 17 and table 18 for all construction 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). Additionally, HRCP would be required to shutdown in the event an unauthorized species is present, to avoid take of that unauthorized species. Shutdown zones would vary based on the activity type and marine mammal hearing group.

If a marine mammal is observed entering or within the shutdown zones indicated in table 17 or table 18, pile driving activities must be delayed or halted. If pile driving is delayed or halted due to the presence of a marine mammal, the activity may not

commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zones or a specific time period has passed without re-detection of the animal (*i.e.*, 15 minutes). If a marine mammal comes within or approaches the shutdown zone indicated in table 16 or table 17 such operations must cease. Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone would not be visible (*e.g.*, fog, heavy rain), HRCP shall delay pile driving and removal until observers are confident marine mammals within the shutdown zone could be detected.

TABLE 17—SHUTDOWN AND MONITORING ZONES DURING VIBRATORY PILE INSTALLATION AND REMOVAL

Project component	Size/type	Piles per day	LF	HF	VHF	PW	Level B isopleth (m) monitoring zone
North Trestle							
Template Piles	36-inch Pipe, Steel	3	50	20	40	65	21,544
North Shore Work & Jump Trestle	36-inch Pipe, Steel	3	50	20	40	65	21,544
North Shore abutment Island	Steel sheet	6	20	20	20	25	4,642
North Island							
Circulation Dock	36-inch Pipe, Steel	2	40	20	30	50	21,544
South Island							
TBM Platform & Conveyor	36-inch Pipe, Steel	3	50	20	40	65	21,544
Moorings	36-inch Pipe, Steel	4	60	25	50	75	21,544
South Trestle							
Template Piles	36-inch Pipe, Steel	3	50	20	40	65	21,544
Work Trestle, Jump Trestle, Demolition Trestle, Temporary MOT Trestle.	36-inch Pipe, Steel	2	40	20	30	50	21,544
Moorings	36-inch Pipe, Steel	4	60	25	50	75	21,544
Willoughby Bay							
Moorings (Safe Haven)	36-inch Pipe, Steel	4	60	25	50	75	21,544
Fender	12-inch Comp.	4	20	20	20	20	1,585
Bulkhead Replacement	Steel sheet	6	20	20	20	25	4,642
Willoughby Split Laydown area							
Temp Dock/Finger Piers	36-inch Pipe, Steel	3	50	20	40	65	21,544

TABLE 18—SHUTDOWN AND MONITORING ZONES DURING IMPACT INSTALLATION WITH ATTENUATION

Project component	Size/type	Piles per day	LF	HF	VHF	PW	Level B isopleth (m) monitoring zone
North trestle							
Permanent piles	54-inch Pipe, Concrete Cylinder.	1	225	30	350	200	158
Work Trestle, Jump Trestle, Demolition Trestle.	36-inch Pipe, Steel	2	90	20	140	80	736

TABLE 18—SHUTDOWN AND MONITORING ZONES DURING IMPACT INSTALLATION WITH ATTENUATION—Continued

Project component	Size/type	Piles per day	LF	HF	VHF	PW	Level B isopleth (m) monitoring zone
South Island							
TBM Platform	36-inch Pipe, Steel	3	120	20	175	100	736
South Trestle							
Work Trestle, Jump Trestle, Demolition Trestle, Temporary MOT Trestle.	36-inch Pipe, Steel	3	120	20	175	100	736
Permanent Piles	54-inch Pipe, Concrete Cylinder.	1	225	30	350	200	158

Bubble Curtain

A bubble curtain must be employed during all impact pile driving. A noise attenuation device would not be required during vibratory pile driving. The bubble curtain must distribute air bubbles around 100 percent of the piling circumference for the full depth of the water column. The lowest bubble ring must be in contact with the mudline for the full circumference of the ring. The weights attached to the bottom ring must ensure 100 percent substrate contact. No parts of the ring or other objects may prevent full substrate contact. Air flow to the bubblers must be balanced around the circumference of the pile.

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present while conducting the activities. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential

stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the activity; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);

- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

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

Visual Monitoring

All PSOs must be NMFS-approved. PSOs would be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods. At least one PSO would have prior experience performing the duties of a PSO during an activity pursuant to a NMFS-issued ITA. Other PSOs may substitute other relevant

experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued ITA.

Additionally, PSOs would be required to meet the following qualifications:

- The ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to:
 - (1) Number and species of marine mammals observed;
 - (2) Dates and times when in-water construction activities were conducted;
 - (3) Dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and
 - (4) Marine mammal behavior.

• The ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

HRCF must establish monitoring locations, as described in MMMMP (see NMFS' website). Where a team of three or more PSOs is required, a lead observer ("*Lead PSO*") or monitoring coordinator would be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued ITA.

For all pile driving activities, a minimum of two PSOs must be assigned. PSOs will be positioned at the best practical vantage point(s). The position(s) may vary based on construction activity and location of

piles or equipment. At least one of the monitoring locations will have an unobstructed view of the pile being driven and unobstructed view of the CMA, Level A harassment shutdown zone, and Level B harassment shutdown. Given the maximum effective observation distance, PSOs would be required to continuously monitor the entirety of the shutdown zones and as much as possible of the Level B harassment zones given visibility constraints, using binoculars and other resources to aid in observation. PSOs would be required to record all observations of marine mammals, regardless of distance from the pile being driven.

Proposed Reporting

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

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

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

- Name of PSO who sighted the animal(s) and PSO location and activity at the time of the sighting;
- Time of the sighting;
- Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the

composition of the group if there is a mix of species;

- Distance and bearing of each observed marine mammal relative to the pile being driven or removed for each sighting;
- Estimated number of animals (min/max/best estimate);
- Estimated number of animals by cohort (*e.g.*, adults, juveniles, neonates, group composition, *etc.*);
- Animal's closest point of approach and estimated time spent within the estimated harassment zone(s);
- Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- Description of any actions implemented in response to the sighting (*e.g.*, delays, shutdown) and time and location of the action.

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

Reporting Injured or Dead Marine Mammals

In the event that personnel involved in HRCP activities discover an injured or dead marine mammal, HRCP would report the incident to the NMFS Office of Protected Resources (OPR) (PR.ITP.MonitoringReports@noaa.gov, ITP.Pauline@noaa.gov) and to the Greater Atlantic Region New England/Mid-Atlantic Regional Stranding Coordinator (978–282–8478 or 978–281–9291) as soon as feasible. If the death or injury was clearly caused by the specified activity, HRCP would immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the IHA. HRCP would not resume their activities until notified by NMFS. The report would include the following information:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;

- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

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

To avoid repetition, the discussion of our analysis applies to all the species listed in table 15, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar. There is little information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for this activity.

Impact pile driving for installation and vibratory pile driving for installation and/or removal activities associated with the proposed project, as outlined previously, have the potential

to disturb or displace marine mammals. Specifically, the specified activities may result in take in the form of Level A harassment and/or Level B harassment from underwater sounds generated from pile driving installation and removal. Potential takes could occur if individuals of these species are present in zones ensounded above the thresholds for Level A harassment or Level B harassment identified above when these activities are underway.

Given the nature of the proposed activities, NMFS does not anticipate serious injury or mortality due to HRCP's proposed project, even in the absence of required mitigation. The Level A harassment zones are based upon an animal exposed to vibratory pile driving and/or impact pile driving for periods ranging from 30 to 180 minutes for in-water pile driving per day. Overall, construction activities are not expected to exceed 12 hours per day (likely ranging between 10–12 hours but not all of that would be spent actively pile driving). Exposures of this length are, however, unlikely for vibratory driving for installation and/or removal, given marine mammal movement throughout the area. Even during impact driving scenarios, an animal exposed to the accumulated sound energy would likely only experience limited AUD INJ at the lower frequencies where pile driving energy is concentrated.

As stated in the Proposed Mitigation section, HRCP would implement shutdown zones that equal or exceed many of the Level A harassment isopleths shown in table 16 and table 17. Take by Level A harassment is proposed for four marine mammal species/stocks. This is precautionary to account for the potential that an animal could enter and remain within the area between a Level A harassment zone and the shutdown zone for long enough to be taken by Level A harassment. Additionally, in some cases, this precaution would account for the possibility that an animal could enter a shutdown zone without detection and remain in the Level A harassment zone for a duration long enough to be taken by Level A harassment before being observed and a shutdown occurring. That said, any take by Level A harassment is expected to arise from, at most, a small degree of AUD INJ because animals would need to be exposed to higher levels and/or longer duration than are expected to occur here to incur any more than a small degree of AUD INJ. Additionally, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. Because of the

small degree anticipated, any AUD INJ or TTS potentially incurred here is not expected to adversely affect an animal's individual fitness, let alone annual rates of recruitment or survival.

For all species and stocks, take is expected to occur within a limited, confined area (adjacent to the project site) of the stock's range. The intensity and duration of take by Level A harassment and Level B harassment would be expected to be minimized through the proposed mitigation measures described herein.

Behavioral responses of marine mammals to pile driving for pile installation and/or pile removal at the project site, if any, are expected to be mild, short-term, and temporary. Marine mammals within the Level B harassment zones may not show any visual cues if they are disturbed by activities or they could become alert, avoid the area, leave the area, or display other mild responses that are not observable, such as changes in vocalization patterns. Additionally, many of the species present in this region would only be present temporarily based on seasonal patterns or during active transit between other habitats. Most likely, during pile driving, individuals would be expected to move away from the sound source and be temporarily displaced from the areas of pile driving throughout the duration of pile driving activities. However, this reaction has been observed primarily associated with impact pile driving. While vibratory driving associated with the proposed project may produce sound at distances of many kilometers across the Chesapeake Bay from the site, the majority of sound fields produced by the specified activities are constrained by land masses to the north, south, and east of the site.

The potential for harassment is minimized by implementing the proposed mitigation measures. During all impact driving, implementation of soft-start procedures, use of bubble curtains, and monitoring of established shutdown zones by trained and qualified PSOs shall be required, significantly reducing any possibility of injury. Given sufficient notice through soft-start (for impact driving), marine mammals are expected to move away from an irritating sound source before it becomes potentially injurious.

Any impacts on marine mammal prey that would occur during HRCP's proposed activities would have, at most, short-term effects on foraging of individual marine mammals, and likely no effect on the populations of marine mammals as a whole. Indirect effects on

marine mammal prey during the construction are expected to be minor, and these effects are unlikely to cause substantial effects on marine mammals at the individual level, with no expected effect on annual rates of recruitment or survival.

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. 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 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. Furthermore, there are no known biologically important areas (BIAs), or ESA-designated critical habitat.

With regard to the humpback whale UME, there is currently no 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. Although NMFS is proposing to authorize limited take by Level B harassment (37) since the whales have been observed in the Chesapeake Bay, there have been no reported takes of humpback whales in the HRBT monitoring reports from 2021 through 2024.

HRCP's proposed pile driving activities and associated impacts will occur within a limited portion of the confluence of the Chesapeake Bay area. It is unlikely that minor noise effects in a small, localized area of habitat would have any effect on the reproduction or survival of any individuals, much less the stocks' annual rates of recruitment or survival.

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

- No serious injury or mortality is anticipated or proposed for authorization;
- Any Level A harassment exposures are anticipated to result in slight AUD INJ (*i.e.*, of a few decibels) within the lower frequencies associated with pile driving;
- The anticipated incidents of Level B harassment would consist of, at worst,

temporary modifications in behavior that would not result in fitness impacts to individuals;

- The area affected by the specified activity is very small relative to the overall habitat ranges of all species and does not include (BIAs) or ESA-designated critical habitat.

- Effects on species that serve as prey for marine mammals are expected to be short-term and, therefore, any associated impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue to adverse impacts on their populations; and

- The proposed mitigation measures, such as employing vibratory driving to the maximum extent practicable, soft-starts, bubble curtains, and shutdowns, are expected to reduce the effects of the specified activity to the least practicable adverse impact level.

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

Small Numbers

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

The maximum annual take of all species proposed for authorized take is less than one-third of the best available stock abundance estimate, with the exception of two stocks of bottlenose dolphin (table 3). Three bottlenose dolphin stocks could occur in the project area: WNA Coastal Northern Migratory (40.5 percent of stock

abundance), WNA Coastal Southern Migratory (71.7 percent) and NNCES (24.3 percent) stocks. The estimated takes of bottlenose dolphin would likely be portioned among these stocks. Based on the stocks' respective occurrence in the area, NMFS estimated that there would be no more than 200 takes from the NNCES stock, with the remaining takes evenly split between the northern and southern migratory coastal stocks.

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 enter into the Chesapeake Bay and approach the project area. 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, to 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 border. 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 (~2 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 km², while the NNCES stock occupies over 8,000 km² (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.

Many of the dolphin observations in the 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, there is a resident dolphin population in the Bay which would likely increase the percentage of dolphin takes that are actually re-sightings of the same individuals in any given year.

In consideration of various factors described above, we have determined

the maximum number of individuals taken per year would likely comprise less than one-third of the best available population abundance estimate of either bottlenose dolphin coastal migratory stock.

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

Unmitigable Adverse Impact Analysis and Determination

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

Endangered Species Act

Section 7(a)(2) of the ESA of 1973 (16 U.S.C. 1531 *et seq.*) requires that each Federal agency ensures that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of incidental take authorizations, NMFS consults internally whenever we propose to authorize take for ESA-listed species.

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

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to HRCP for construction activities associated with the Hampton Roads Bridge-Tunnel Expansion Project in Norfolk, Virginia, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>.

Request for Public Comments

We request comment on our analyses, the proposed authorization, and any

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

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

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

- The request for renewal must include the following:

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

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

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

Dated: February 24, 2026.

Kimberly Damon-Randall,

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

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COMMODITY FUTURES TRADING COMMISSION

Agency Information Collection Activities Under OMB Review

AGENCY: Commodity Futures Trading Commission.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995 (PRA), this notice announces that the Information Collection Request (ICR) abstracted below has been forwarded to the Office of Information and Regulatory Affairs (OIRA), of the Office of Management and Budget (OMB), for review and comment. The ICR describes the nature of the information collection and its expected costs and burden.

DATES: Comments must be submitted on or before March 30, 2026.

ADDRESSES: Written comments and recommendations for the proposed information collection should be submitted within 30 days of this notice's publication to OIRA, at <https://www.reginfo.gov/public/do/PRAMain>. Please find this particular information collection by selecting "Currently under 30-day Review—Open for Public Comments" or by using the website's search function. Comments can be entered electronically by clicking on the "comment" button next to the information collection on the "OIRA Information Collections Under Review" page, or the "View ICR—Agency Submission" page. A copy of the supporting statement for the collection of information discussed herein may be obtained by visiting <https://www.reginfo.gov/public/do/PRAMain>.

In addition to the submission of comments to <https://Reginfo.gov> as indicated above, a copy of all comments submitted to OIRA may also be submitted to the Commodity Futures Trading Commission (the "Commission" or "CFTC") by clicking on the "Submit Comment" box next to the descriptive entry for OMB Control No. 3038-0025, at <https://comments.cftc.gov/FederalRegister/PublicInfo.aspx>.

Or by either of the following methods:

- **Mail:** Christopher Kirkpatrick, Secretary of the Commission, Commodity Futures Trading Commission, Three Lafayette Centre, 1155 21st Street NW, Washington, DC 20581.

- **Hand Delivery/Courier:** Same as Mail above.

All comments must be submitted in English, or if not, accompanied by an English translation. Comments submitted to the Commission should