



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XF001]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Northeast Supply Enhancement Project in Raritan Bay, Lower New York Bay and the Atlantic Ocean

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 Transcontinental Gas Pipe Line Company, LLC (Transco), a subsidiary of Williams Partners L.P., for authorization to take marine mammals incidental to the Northeast Supply Enhancement Project in Raritan Bay, Lower New York Bay, and the Atlantic Ocean. 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 *[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]*.

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.Fleming@noaa.gov*. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>. In case of problems accessing these documents, please call the contact listed below.

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

FOR FURTHER INFORMATION CONTACT: Kate Fleming, 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 and 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 (collectively 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 and can be found in section 3 of the MMPA (16 U.S.C. 1362) and NMFS regulations at 50 CFR 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 May 30, 2025, NMFS received a request from Transco for an IHA to take marine mammals incidental to Northeast Supply Enhancement Project in Raritan Bay, Lower New York Bay and the Atlantic Ocean (in the New York Bight). During NMFS' application review, Transco indicated that two hammers at the same location may operate at the same time and provided scenarios for simultaneous pile driving on July 11, 2025, which necessitated additional analysis. Following NMFS' review of the application and subsequent discussions between NMFS and Transco, the application was deemed adequate and complete on July 29, 2025. Transco's initial request was for authorization of take of 14 species of marine mammals, by Level B harassment and, for a subset of 4 of these species, Level A harassment. Following analysis, NMFS is proposing to authorize take of 15 species of marine mammals, by Level B harassment and, for a subset of 7 of these species, Level A harassment. Neither Transco nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

NMFS previously issued an IHA to Transco for the same project (85 FR 15125, March 17, 2020) as updated in the 2025 application. No work was conducted under the 2020 IHA. NMFS also previously issued a separate IHA to Transco for its Lower New York Bay Lateral Maintenance (LNYBL) that occurred in the same region (89 FR 20170, March 21, 2024).and). Transco conducted all required monitoring and reporting under the 2024 IHA, and information regarding Transco's monitoring results may be found in the **Potential Effects of the Specified Activity on Marine Mammals and their Habitat** section.

Description of Proposed Activity

Overview

Transco is proposing to expand its existing interstate natural gas transmission system in Pennsylvania and New Jersey and its existing offshore natural gas transmission system in New Jersey and New York waters. The offshore pipeline facilities would

include the installation of the Raritan Bay Loop, which would be located primarily in Raritan Bay, as well as parts of the Lower New York Bay and the Atlantic Ocean.

Construction of the Raritan Bay Loop pipeline would require vibratory and impact installation and vibratory removal of 163 temporary piles, ranging in size from 10 to 60-inches (in) (0.3 to 1.5 meters (m)) in diameter, which may result in the incidental take of marine mammals.

Dates and Duration

The proposed IHA would be valid for the statutory maximum of 1 year from the date of effectiveness. It will become effective upon written notification from the applicant to NMFS, but not beginning later than 1 year from the date of issuance or extending beyond 2 years from the date of issuance. In-water construction is anticipated to occur between the 2nd and 4th quarter of 2026, with pile installation and removal activities planned for June through August 2026. Removal activities may shift into fall 2026. However, project delays may occur due to a number of factors including project funding, permitting requirements, availability of equipment and/or materials, weather-related delays, equipment maintenance and/or repair, and other contingencies etc.

All in-water construction and removal activities would be conducted during daylight hours only. Pile installation and removal activities are anticipated to take a total of 69 days.

Specific Geographic Region

Transco's proposed activity would occur in the waters of Raritan Bay, the Lower New York Bay, and the Atlantic Ocean, off the coast of New Jersey and New York, in a portion of the New York Bight sometimes referred to as the New York Bight Apex (Brown *et al.*, 2022). Leading to the Port of New York and New Jersey, one of the busiest ports on the East Coast and the third busiest port in the United States, this area experiences significant commercial and recreational vessel activity. Depths at the pile

driving sites range from 4 to 13 m. The ensonified areas associated with the planned activities extend to very shallow areas to depths of 68 m.

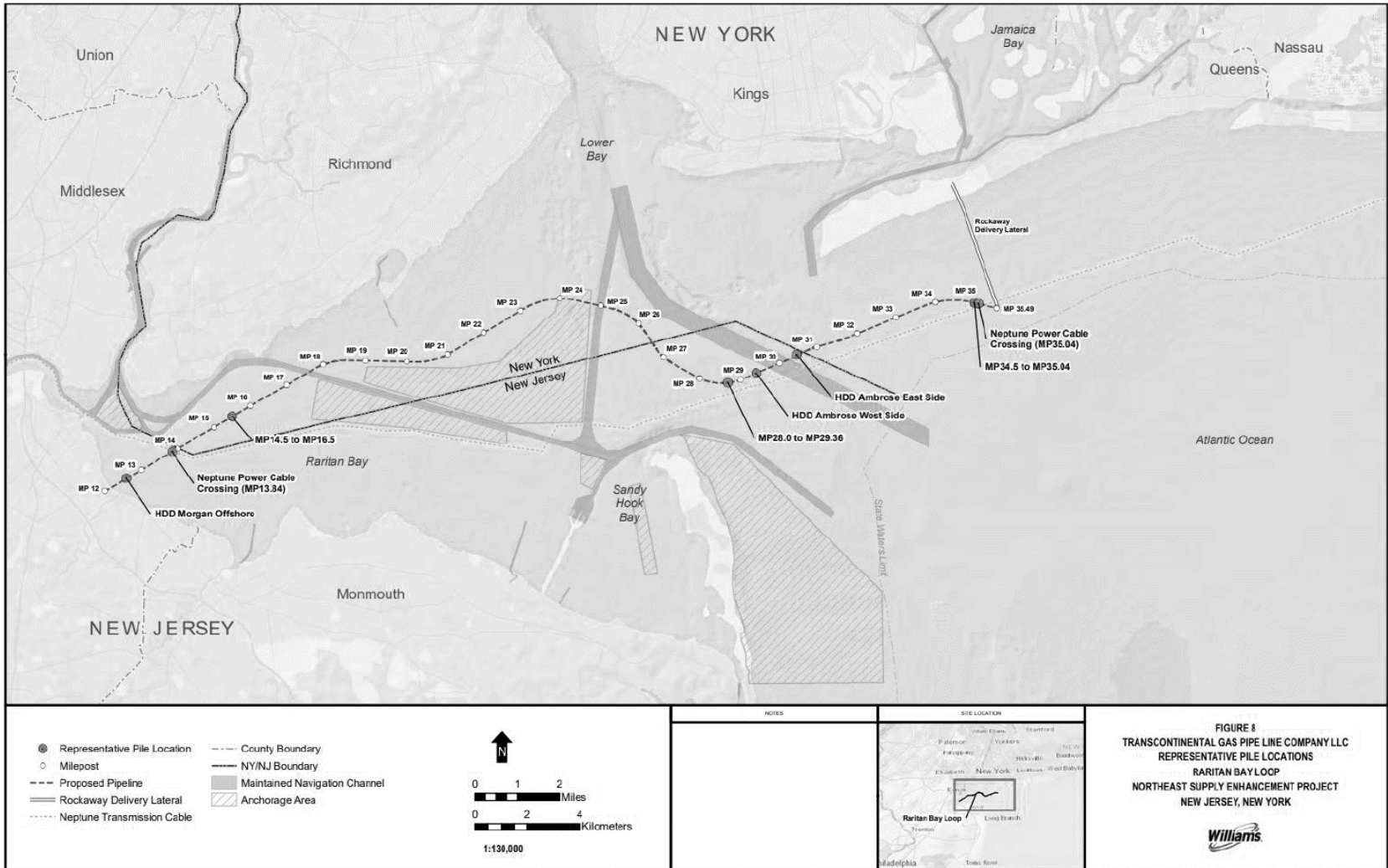


Figure 1 -- Representative locations for planned pile driving along the Raritan Bay Loop in Raritan Bay and Lower New York Bay and the Atlantic Ocean

Detailed Description of the Specified Activity

Transco is proposing to expand its existing interstate natural gas pipeline system in Pennsylvania and New Jersey and its existing offshore natural gas pipeline system in New Jersey and New York waters with the goal of providing an additional 400,000 dekatherms per day transportation capacity to support its customers. To provide this additional capacity, Transco proposes to expand portions of its system from an existing compressor station in York County, Pennsylvania, to the Rockaway Delivery Point in New York State waters, which represents the interconnection point between Transco's existing LNYBL and the existing offshore Rockaway Delivery Lateral. The proposed project would consist of several components, including onshore pipeline facilities in Pennsylvania and New Jersey and offshore pipeline facilities in New Jersey and New York. Only the offshore pipeline components of the project have the potential to result in the incidental take of marine mammals, thus the onshore components of the project are not analyzed further.

Transco's proposed offshore pipeline facilities include the Raritan Bay Loop pipeline, which would be located primarily in Raritan Bay as well as parts of Lower New York Bay and the Atlantic Ocean. The Raritan Bay Loop would begin at the onshore connection with the Madison Loop in Middlesex, New Jersey (see figure 2 in the IHA application). The offshore portion of the Raritan Bay Loop would extend from the Sayreville shoreline approximately 37.6 kilometers (km) across Raritan Bay and Lower New York Bay to the Rockaway Transfer Point, which is the interconnection point with the Rockaway Delivery Lateral in New York state waters in the Atlantic Ocean, approximately 4.8 km seaward of Rockaway, New York. Approximately 9.6 km of the offshore portion of the Raritan Bay Loop route would cross New Jersey waters, while the remaining 28 km would cross New York waters. The Raritan Bay Loop would cross a continuous expanse of open marine and estuarine waters in New Jersey and New York,

which consists of three major contiguous waterbodies, including Raritan Bay, Lower New York Bay, and the Atlantic Ocean (See figures 1 and 2 in the application). This area is included in the eastern-most portion of a larger coastal area known as the New York Bight.

Construction of the Raritan Bay Loop pipeline would require the installation of 163 piles, ranging in size from 10 to 60-in (0.3 to 1.5-m) in diameter, using vibratory and impact pile driving and vibratory removal. Impact pile drivers are piston-type drivers that use various means to lift a piston to a desired height and drop the piston against the head of the pile in order to drive it into the substrate (Caltrans, 2015). Diesel impact hammers would be used to install approximately 34 steel piles (table 1). A vibratory device uses spinning counterweights, causing the pile to vibrate at high speed. The vibrating pile causes the soil underneath it to “liquefy” and allow the pile to move easily into or out of the sediment. Vibratory devices would be used to install and remove approximately 163 steel pipe piles (table 1). Note that some piles would require both impact and vibratory installation.

The total time to install a pile is dependent on the installation method (vibratory or impact), diameter of the pile, substrate composition, and depth the pile needs to penetrate through the substrate. For pile installation of 34 to 60-in (0.9 to 1.5-m) piles using a diesel impact hammer, the estimated time is 38 to 62 minutes per pile. For pile installation of 10 to 60-in (0.3 to 1.5-m) piles using a vibratory hammer, the estimated time is 15 minutes per pile. For pile removal of 10 to 60-in (0.3 to 1.5-m) piles using a vibratory hammer, the estimated time is 5 to 30 minutes per pile. The minimum handling time (*i.e.*, periods during which the pile is being positioned, steadied, *etc.*, and no in-water construction noise is anticipated) is dependent on activity type and pile size. For vibratory hammer periods for 10 to 48-in (0.3 to 1.2-m) piles, the handling time ranges from 15 to 45 minutes. For vibratory hammer periods for 60-in (1.5-m) piles, the

minimum handling time is 1 hour and 45 minutes. For impact hammer periods, the minimum handling time is 30 minutes. The total duration of pile installation (including both vibratory and impact pile driving) is estimated at 43 days (of which impact pile driving would occur on up to 14 days and vibratory pile driving would occur on 43 days). The piles would remain in the offshore environment only for the duration of each related offshore construction activity. Once offshore construction is complete, all piles would be removed using a vibratory hammer, which is expected to occur over an estimated 26 days. Thus, the total duration of pile installation and removal is 69 days (*i.e.*, 43 days for pile installation and 26 days for pile removal).

All piles would be installed along a string of locations within Raritan Bay (see figure 2 in the IHA application). Transco would complete construction of the various components of the offshore pipeline in several stages with overlapping schedules. An overview of these stages and their general sequence (*i.e.*, temporary fixed platform, pre-trenching, cable crossings and initial pipelay, Hydraulic Directional Drilling (HDD) crossings, additional pipelay and backfill, and subsea manifold tie-in, hydrostatic testing, and commissioning) are described in Transco's application.

The various components of the proposed construction of the Raritan Bay Loop pipeline, including pile type, size and quantity, installation method (*i.e.*, impact or vibratory), pile driving or removal duration, are shown in table 1 and are described in greater detail in the IHA application. At locations where more than one pile type is planned for installation, Transco plans to install and remove two piles simultaneously. The combination of piles that would create the largest cumulative sound exposure level at a given location are presented in table 2.

Table 1 -- Pile driving summary for Raritan Bay Loop pipeline, including pile types and driving durations

Mile	Construction Site	Pile Type	Pile Size (inches)	Number of piles	Installation				Removal		
					Driving Method	Duration (minutes); Strikes per pile	Piles per day	Duration (days)	Removal time/pile	Piles per day	Duration (days)
12.59	Morgan Shore Approach HDD	Platform	36	18	Vibratory, Impact	15; 1,920 - 2,500 ¹	4	4.5	30	8	3
		Platform Reaction	36	4	Vibratory, Impact	15; 1,920 - 2,500 ¹	2	2	30		
		Support barge fender	36-48	4	Vibratory	15	4	2	15	3	3
		Water barge fender	36-48	4	Vibratory	15			15		
		HDD sting goal post	24	10	Vibratory	15	4	3	5	4	3
13.84	Neptune Power Cable Crossing	Sleeper vertical	10	8	Vibratory	15	4	2	15	4	1.5
14.5 to 16.5	Milepost (MP) 14.5 to MP 16.5	Morgan shore pull vertical guide	24	22	Vibratory	15	5	5	15	11	1.5
28.0 to 29.36	MP 28.0 to MP 29.36	Pipelay barge mooring	34	12	Vibratory	15	4	3	30	6	2
29.4	Ambrose Channel HDD West	W750	36	3	Vibratory	15	2	1.5	15	3	0.5
		Reaction frame	36-60	8	Vibratory; Impact	15; 3,382	2	4	30	8	0.5
		Support barge fender	36-48	4	Vibratory	15	4	1.5	15	8	1
		Water barge fender	36-48	4	Vibratory	15			15		
		HDD string goal posts	24	12	Vibratory	15	6	1.5	5	6	2
30.48	Ambrose Channel HDD East Side	Vertical stabilization	24	22	Vibratory	15	5	5	15	22	0.5
		W751 side piles	36	3	Vibratory	15	3	0.5	15	3	0.5
		Support barge fender	36-48	4	Vibratory	15	8	1	15	8	1
		Water barge fender	36-48	4	Vibratory	15			15		
		HDD drill sting goal posts	24	10	Vibratory	15	5	1.5	5	5	2
		Pipelay barge mooring pile	60	1	Vibratory	15	1	0.5	15	1	1
34.5 to 35.04	MP 34.5 to MP 35.04	Pipelay barge mooring pile	34	4	Vibratory; Impact	15; 1,920 - 2,500	2	3	15	2	2

35.04	Neptune Power Cable Crossing MP 35.04	Crossing pile	10	2	Vibratory	15	2	1	15	2	1
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¹Maximum strikes per pile per day (*i.e.*, 2,500) were used to calculate distances to Level A harassment isopleths.

Table 2 -- Simultaneous pile driving scenarios that result in the largest cumulative sound exposure level at each location

Scenario	Construction Site	Pile Size (inches)	Activity	Total number of Piles	Duration (minutes); strikes per pile	Installation/Removal Duration (days)	Average number of piles per day	Number of days for concurrent activities
Installation								
1	Morgan Shore Approach HDD (MP 12.59)	36	Impact	18	2,500 strikes	4.5	4	6.5
		36	Impact	4	2,500 strikes	2	2	
2	Ambrose Channel HDD West Side (MP 29.40)	60	Impact	8	3,382 strikes	4	2	4
		48	Vibratory	4	15 minutes	1.5	3	
3	Ambrose Channel HDD East Side (MP 30.48)	48	Vibratory	4	15 minutes	1	4	1
		48	Vibratory	4	15 minutes	1	4	
Removal								
4	Morgan Shore Approach HDD (MP 12.59)	36	Vibratory	18	30 minutes	3*	6	3
		36	Vibratory	4	30 minutes	3*	1	
5	Ambrose Channel HDD West Side (MP 29.4)	36	Vibratory	8	30 minutes	0.5	8	1
		48	Vibratory	4	15 minutes	1	4	
6	Ambrose Channel HDD East Side (MP 30.48)	48	Vibratory	4	15 minutes	1	4	1
		48	Vibratory	4	15 minutes	1	4	

*There are a total of 22 36-inch piles planned at Morgan Shore Approach HDD, 18 of which are platform piles (for temporary fixed platform); while the other 4 are platform reaction piles; The overall extraction rate for 36-inch piles at Morgan Shore Approach HDD is 8 per day, but for purposes of this concurrent pile extraction worst-case analysis, a more detailed extraction rate of 1.33 piles per day for the 4 platform reaction piles is used. As such, production rates here do not match those presented in table 1.

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 3 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 serious injury and mortality (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 SARs. 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 3 -- Species¹ with Estimated Take from the Specified Activities

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ²	Stock abundance (CV, Nmin, most recent abundance survey) ³	PBR	Annual M/SI4
Order Artiodactyla – Cetacea – Mysticeti (baleen whales)						
<i>Family Balaenidae</i>						
N Atlantic Right Whale ⁵	<i>Eubalaena glacialis</i>	Western Atlantic	E, D, Y	372 (0, 367, 2023)	0.73	14.8
<i>Family Balaenopteridae (rorquals)</i>						
Fin Whale	<i>Balaenoptera physalus</i>	Western N Atlantic	E, D, Y	6,802 (0.24, 5,573, 2021)	11	2.05
Humpback Whale	<i>Megaptera novaeangliae</i>	Gulf of Maine	-, -, N	1,396 (0, 1380, 2016)	22	12.15
Minke Whale	<i>Balaenoptera acutorostrata</i>	Canadian Eastern Coastal	-, -, N	21,968 (0.31, 17,002, 2021)	170	9.4
Sei Whale	<i>Balaenoptera borealis</i>	Nova Scotia	E, D, Y	6,292 (1.02, 3,098, 2021)	6.2	0.6
Odontoceti (toothed whales, dolphins, and porpoises)						
<i>Family Delphinidae</i>						
Long-Finned Pilot Whale ⁶	<i>Globicephala melas</i>	Western N Atlantic	-, -, N	39,215 (0.30, 30,627, 2021)	306	5.7
Short-Finned Pilot Whale ⁷	<i>Globicephala macrorhynchus</i>	Western N Atlantic	-, -, Y	18,726 (0.33, 14,292, 2021)	143	218
Atlantic Spotted Dolphin	<i>Stenella frontalis</i>	Western N Atlantic	-, -, N	31,506 (0.28, 25,042, 2021)	250	0
Atlantic White-Sided Dolphin	<i>Lagenorhynchus acutus</i>	Western N Atlantic	-, -, N	93,233 (0.71, 54,443, 2021)	544	28
Bottlenose Dolphin	<i>Tursiops truncatus</i>	Northern Migratory Coastal	-, -, Y	6,639 (0.41, 4,759, 2016)	48	12.2-21.5
		Western N Atlantic Offshore ⁸	-, -, N	64,587 (0.24, 52,801, 2021)	507	28
Common Dolphin	<i>Delphinus delphis</i>	Western N Atlantic	-, -, N	93,100 (0.56, 59,897, 2021)	1,452	414
<i>Family Phocoenidae (porpoises)</i>						
Harbor Porpoise	<i>Phocoena phocoena</i>	Gulf of Maine/ Bay of Fundy	-, -, N	85,765 (0.53, 56,420, 2021)	649	145
Order Carnivora – Pinnipedia						
<i>Family Phocidae (earless seals)</i>						
Gray Seal ⁹	<i>Halichoerus grypus</i>	Western N Atlantic	-, -, N	27,911 (0.20, 23,624, 2021)	1,512	4,570
Harbor Seal	<i>Phoca vitulina</i>	Western N Atlantic	-, -, N	61,336 (0.08, 57,637, 2018)	1,729	339
Harp Seal	<i>Pagophilus groenlandicus</i>	Western N Atlantic	-, -, N	7.6M (UNK, 7.1M, 2019)	426,000	178,573

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

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

3 - NMFS marine mammal stock assessment reports online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region>. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

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

5 - The current SAR includes an estimated population (N_{est} 372) based on sighting history through November 2023. In October 2024, NMFS released a technical report identifying that the North Atlantic right whale population size based on sighting history through 2023 was 372 whales, with a 95 percent credible interval ranging from 360 to 383 (Linden, 2024). Total annual average observed North Atlantic right whale mortality during the period 2018–2022 was 5.45 animals and annual average observed fishery mortality was 3.95 animals. Numbers presented in this table (14.8 total mortality and 10.8 fishery mortality) are 2018–2022 estimated annual means, accounting for undetected mortality and serious injury.

6 - Key uncertainties exist in the population size estimate for this species, including uncertain separation between short-finned and long-finned pilot whales, small negative bias due to lack of abundance estimate in the region between US and the Newfoundland/Labrador survey area, and uncertainty due to unknown precision and accuracy of the availability bias correction factor that was applied.

7 - A key uncertainty exists in the population size estimate for this species based upon the assumption that the logistic regression model accurately represents the relative distribution of short-finned vs. long-finned pilot whales.

8 - Estimates may include sightings of the coastal form.

9 - NMFS' stock abundance estimate (and associated PBR 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 15 number species (with 16 number managed stocks) in table 3 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. While sperm whale could potentially occur in the project area, the spatial occurrence of these species is such that take is not expected to occur, and they are not discussed further beyond the explanation provided here. Sperm whales typically occur in deeper waters than what are included in the project area (Zoidis *et al.* 2021).

In addition to what is included in sections 3 and 4 of the IHA application, and NMFS' website, further detail informing the regional occurrence for select species of particularly or unique vulnerability (*i.e.*, information regarding ESA listed or MMPA depleted species, information regarding current Unusual Mortality Events (UME) and known important habitat areas such as Biologically Important Areas (BIAs)) (Van Parijs, 2015) is provided below. There is no ESA-designated critical habitat for any species within the project area.

North Atlantic Right Whale

In December 2024, NMFS finalized the 2023 SARs, which updated the North Atlantic right whale population estimate (N_{est}) to 372 individuals, which is equal to the population estimate included in the North Atlantic right whale Consortium's 2023 Report Card (Pettis *et al.*, 2024); between the final 2022 SAR and the final 2023 SAR, the estimated annual mortality and serious injury (M/SI) value decreased from 31.2 to 14.8. We note that beginning in the 2022 SARs, the M/SI for North Atlantic right whale included the addition of estimated undetected mortality and serious injury. There are no revisions to N_{est} or M/SI in the draft 2024 SAR.

Elevated North Atlantic right whale mortalities have occurred since June 7, 2017, along the U.S. and Canadian coast, with the leading category for the cause of death for this UME to be "human interaction: through entanglement and vessel strikes. As of July 30, 2025, there have been 41 confirmed dead stranded whales, and 39 seriously injured

free-swimming whales for a total of 80 whales. The UME also considers animals with sub-lethal injury or illness (called “morbidity”; $n = x$) bringing the total number of whales in the UME to 157. More information about the North Atlantic right whale UME is available online at: <https://www.fisheries.noaa.gov/national/marine-life-distress/active-and-closed-unusual-mortality-events>.

The eastern portion of the proposed project area spatially overlaps with a BIA for migrating North Atlantic right whales, which is active in March and April (northward migration to feeding areas), and November and December (southern migration to calving grounds) (LaBrecque *et al.*, 2015; Van Parijs *et al.*, 2015). It is during this time (November through April) that North Atlantic right whales are most likely to be found in the vicinity of the proposed project area, and seasonal management areas (SMAs) are in effect within a 37-kilometer (19-statute-mile) radius of several major ports along the U.S. East Coast (73 FR 60173, October 10, 2008). A portion of the project area overlaps with an SMA associated with the Port of New York and New Jersey. While North Atlantic right whales are occasionally observed in nearshore waters near the project site, their calls are most frequently detected in the shelf zone of the New York Bight (between 25 m to 200 m water depth) (Zoidis *et al.*, 2021). Within the last 10 years, 12 sightings of 19 right whales have been observed within the project area, off of Long Island, New Jersey, and at the mouth of Upper Bay (between Brooklyn and Staten Island) (Morrison and Taggart, 2021, accessed July 25, 2025). Dynamic Management Areas (DMAs) that overlap with the project area have been established on 18 occasions (including extensions) between January 2023 and June 2025. All DMAs occurred in the months of November through March. DMAs are a voluntary program that NMFS uses to notify vessel operators to slow down to avoid right whales. NMFS establishes DMAs based on visual sightings of three or more right whales within a distinct area. For a period of 15

days after whales are detected, mariners are encouraged to avoid these areas or reduce speeds to 10 knots or less while transiting through these areas.

Recent research indicates our understanding of North Atlantic right whale movement patterns remains incomplete (Davis *et al.*, 2017). A review of passive acoustic monitoring data from 2004 to 2014 throughout the western North Atlantic demonstrated nearly continuous year-round right whale presence across their entire habitat range (for at least some individuals), including in locations previously thought of as migratory corridors, suggesting that not all of the population undergoes a consistent annual migration (Davis *et al.*, 2017). However, most of the north Atlantic right whales observed in the New York Bight outside of the migration period are detected in deeper waters of the continental shelf, much further offshore (Morrison and Taggart, 2021, accessed July 25, 2025). Of the 11 sightings of North Atlantic right whale observed in the project area (referenced above), just four sightings of four individuals were reported within project waters outside the migration period, in June and October 2020, and August 2021 (Morrison and Taggart, 2021, accessed July 25, 2025).

North Atlantic right whale foraging behavior has not been documented near the coast of Long Island. The closest foraging sighting to the project area was reported by the New England Aquarium in 2024, in which over 82 unique individuals were observed during a series of flights between the end of July into August 2024 about 40-70 miles south and offshore of Long Island, between Hudson and Block Canyons (New England Aquarium, 2024). Zoidis *et al.*, 2021 also observed a right whale skim feeding at the shelf break, further offshore than is typical, in May 2019. Therefore, any right whales in the vicinity of the project area are expected to be transient, either migrating through the area from late fall until late April or spending short amounts of time within the waters southeast of Long Island.

During Transco's LNYBL Maintenance Project, which was located in Raritan Bay and Lower New York Bay, Protected Species Observers (PSOs) monitored for marine mammals on 59 days between mid-July and late October 2024, and reported no sightings of North Atlantic right whales. Two sightings of five unidentified whales were reported, but PSOs deduced they were not right whales based on the shapes of the dorsal fins.

The project area does not overlap with designated critical habitat for North Atlantic right whales.

Fin Whale

In the New York Bight, fin whales are most common in deeper waters of the continental shelf (Estabrook *et al.*, 2025, Lomack-Macnair *et al.*, 2022), particularly in the summer (Zoidis *et al.*, 2021), though they have been observed in nearshore waters off of long island in all seasons (Sadove and Cardinale, 1993; Zoidis *et al.*, 2021). During monthly 36-line transect aerial surveys, fin whales were observed closer to the project area primarily in the spring (Zoidis *et al.*, 2021).

During Transco's LNYBL Maintenance Project, PSOs reported no sightings of fin whales during project monitoring described above. However, two sighting of five unidentified whales were reported.

The project area does not overlap with any BIAs or other known important areas for fin whales.

Humpback whale

Humpback whales are one of the most frequently detected baleen whale species throughout the New York Bight (Zoidis *et al.*, 2021; Estabrook *et al.*, 2025). While it is unclear how long individual humpback whales remain in the New York Bight, detections occur year-round (Brown *et al.*, 2022; Estabrook *et al.*, 2025; Zoidis *et al.*, 2021). There is increasing evidence to suggest that the New York Bight provides a supplemental

foraging area for this species (Lomac-MacNair *et al.*, 2022; Estabrook *et al.*, 2025), including in the project area (Smith *et al.*, 2022). The majority of sightings from whale watch trips or public observations in the New York Bight Apex were reported between July and September (Brown *et al.*, 2022), though it is important to recognize reduced observer effort in the winter months (*i.e.*, there were no whale watch trips during this time, only public reports). Estabrook *et al.* (2025) noted that humpback whale calls were more frequently detected near New York Harbor between November and March, and at sites near the shelf edge between July and September.

During Transco's LNYBL Maintenance Project, PSOs reported eight sightings of 10 humpback whales during project monitoring described above. Additionally, two sightings of five unidentified whales were reported.

Since January 2016, elevated humpback whale mortalities along the Atlantic coast from Maine to Florida led to the declaration of a UME. As of July 30, 2025, 257 humpback whales have stranded as part of the UME. Partial or full necropsy examinations have been conducted on approximately 90 of the known cases. Of the whales examined, about 40 percent had evidence of human interaction, either vessel strike or entanglement. While a portion of the whales shown evidence of pre-mortem vessel strike, this finding is not consistent across all whales examined and more research is needed. Nearly a third of documented strandings have occurred off New York and New Jersey. More information is available at: <https://www.fisheries.noaa.gov/national/marine-life-distress/active-and-closed-unusual-mortality-events>.

The project area does not overlap with any BIAs for humpback whales.

Minke Whale

North Atlantic minke whales migrate seasonally between high latitude summer feeding grounds and low latitude winter breeding grounds. While they have been sighted in all months of the year in the New York Bight (Sadove and Cardinale, 1993), the

occurrence of minke whale in the mid-Atlantic increases during the spring and summer (Risch *et al.*, 2024, Lomac-MacNair *et al.*, 2022); acoustic array data analyzed by Rich *et al.*, 2014 detected minke whales off of NY in deep offshore waters, primarily in March through May and reported few detections in autumn and winter (note that summer data were not available at this NY site for this study). Lomac-Macnair *et al.*, 2022 observed minke whales may be using the New York Bight region as supplementary feeding habitat in the spring and summer.

Since January 2017, elevated minke whale mortalities have occurred along the Atlantic coast from Main through Georgia. As of July 30, 2025, a total of 201 minke whales have stranded as part of the UME. Partial or full necropsy examinations have been conducted on approximately 60 percent of the known cases. Preliminary findings in several of the whales have shown evidence of human interactions or infectious diseases. These findings are not consistent across all of the whales examined, so more research is needed. Nearly a quarter of documented strandings have occurred off New York and New Jersey. More information is available at: <https://www.fisheries.noaa.gov/national/marine-life-distress/active-and-closed-unusual-mortality-events>.

During Transco's LNYBL Maintenance Project, PSOs reported no sightings of minke whales during project monitoring described above. However, two sighting of five unidentified whales were reported.

The project area does not overlap with any BIAs or other known important areas for minke whales.

Sei Whale

Sei whales have been detected acoustically along the Atlantic Continental Shelf and Slope from south of Cape Hatteras, North Carolina to the Davis Strait, and acoustic occurrence has been increasing in the mid-Atlantic region since 2010 (Davis *et al.*, 2020). Although their migratory movements are not well understood, sei whales are believed to

migrate between feeding grounds in temperate and subpolar regions to wintering grounds in lower latitudes (Kenney and Vigness-Raposa, 2010; Hayes *et al.*, 2020). Sei whales generally occur offshore and in deeper waters (deeper waters of the continental shelf edge of the eastern United States and northeastward to south of Newfoundland (Mitchell, 1975; Hain *et al.*, 1985; Hayes *et al.*, 2022); however, individuals may also move into shallower, more inshore waters (Payne *et al.*, 1990; Halpin *et al.*, 2009; Hayes *et al.*, 2022).

During Transco's LNYBL Maintenance Project, PSOs reported no sightings of sei whales during project monitoring described above. However, two sightings of five unidentified whales were reported.

The project area does not overlap with any BIAs or other known important areas for sei whales.

Phocid Seals

Harbor and gray seals have experienced two UMEs since 2018, although one was closed in 2022 (pinniped UME in Maine) and closure of the second, described here, is pending. Beginning in July 2018, elevated numbers of harbor seal and gray seal mortalities occurred across Maine, New Hampshire, and Massachusetts. Additionally, stranded seals have shown clinical signs as far south as Virginia, although not in elevated numbers, therefore the UME investigations encompassed all seal strandings from Maine to Virginia. A total of 3,152 reported strandings (of all species) occurred from July 1, 2018, through March 13, 2020. Full or partial necropsy examinations were conducted on some of the seals and samples were collected for testing. Based on tests conducted thus far, the main pathogen found in seals is phocine distemper virus. NMFS is performing additional testing to identify any other factors that may be involved in this UME, which is pending closure. Information on this UME is available online at:

<https://www.fisheries.noaa.gov/national/marine-life-distress/active-and-closed-unusual-mortality-events>.

Harbor seal, gray seal, and harp seal are most likely to occur within the project area during the winter and early spring (September to May), with harbor seals primarily present between October to March. Sandy Hook Beach is the closest known haulout to the project area. It is approximately 2.9 km (1.8 mi) southwest of the project site, and is used by both harbor seals and gray seals (Reynolds, 2024). The average maximum daily count of pinnipeds reported by volunteers during winter surveys between 2005 and 2024 is 68 (Reynolds, 2024). The Coastal Research and Education Society of Long Island also implements volunteer-based monitoring of pinnipeds at Cupsogue Beach, approximately 72 km (45 mi) northeast of the Project Area. Additional gray seal haulout sites are likely Little Gull Island and Great Gull Island in Long Island Sound.

Pinnipeds were not detected during Transco's NYBL maintenance project monitoring, described above.

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 ~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 4.

Table 4 -- 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>i.e.</i> , all species within the group), where individual species' hearing ranges may not be as broad. Generalized hearing range chosen based on ~65 dB threshold from composite audiogram, previous analysis in NMFS 2018, and/or data from Southall et al. 2007; Southall et al. 2019. Additionally, animals are able to detect very loud sounds above and below that "generalized" hearing range.	

For more detail concerning these groups and associated 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.

Description of Sound Sources

The marine soundscape is comprised of both ambient and anthropogenic sounds. Ambient sound is defined as the all-encompassing sound in a given place and is usually a composite of sound from many sources both near and far (American National Standards Institute (ANSI), 1995). The sound level of an area is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.*, waves, wind, precipitation, earthquakes, ice, atmospheric sound), biological (*e.g.*, sounds produced by marine mammals, fish, and invertebrates), and anthropogenic sound (*e.g.*, vessels, dredging, aircraft, construction).

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

In-water construction activities associated with the project would include impact and vibratory pile driving, and vibratory pile removal. The sounds produced by these activities fall into one of two general sound types: impulsive and non-impulsive. Impulsive sounds (*e.g.*, explosions, gunshots, sonic booms, impact pile driving) are typically transient, brief (less than 1 second), broadband, and consist of high peak sound

pressure with rapid rise time and rapid decay (ANSI, 1986; National Institute of Occupational Safety and Health (NIOSH), 1998; NMFS, 2018). Non-impulsive sounds (e.g., aircraft, machinery operations such as drilling or dredging, vibratory pile driving, and active sonar systems) can be broadband, narrowband or tonal, brief or prolonged (continuous or intermittent), and typically do not have the high peak sound pressure with rapid rise/decay time that impulsive sounds do (ANSI, 1995; NIOSH, 1998; NMFS, 2018). The distinction between these two sound types is important because they have differing potential to cause physical effects, particularly with regard to hearing (e.g., Ward, 1997, in Southall *et al.*, 2007).

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

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

Acoustic Effects

The introduction of anthropogenic noise into the aquatic environment from pile driving is the means by which marine mammals may be harassed from Transco's specified activity. In general, animals exposed to natural or anthropogenic sound may experience behavioral, physiological, and/or physical effects, ranging in magnitude from none to severe (Southall *et al.*, 2007, 2019). In general, exposure to pile driving noise has the potential to result in behavioral reactions (*e.g.*, avoidance, temporary cessation of foraging and vocalizing, changes in dive behavior) and, in limited cases, an auditory threshold shift (TS). Exposure to anthropogenic noise can also lead to non-observable physiological responses such as an increase in stress hormones. Additional noise in a marine mammal's habitat can mask acoustic cues used by marine mammals to carry out daily functions such as communication and predator and prey detection. The effects of pile driving on marine mammals are dependent on several factors, including, but not limited to, sound type (*e.g.*, impulsive vs. non-impulsive), the species, age and sex class (*e.g.*, adult male vs. mom with calf), duration of exposure, the distance between the sampling site and the animal, received levels, behavior at time of exposure, and previous history with exposure (Wartzok *et al.*, 2004; Southall *et al.*, 2007). Here we discuss physical auditory effects (TSs) followed by behavioral effects and potential impacts on habitat.

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

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

Auditory injury and permanent threshold shift (PTS)—NMFS defines auditory injury (AUD INJ) as “damage to the inner ear that can result in destruction of tissue...which may or may not result in PTS” (NMFS, 2024). NMFS defines PTS as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2024). Available data from humans and other terrestrial mammals indicate that a 40-dB TS approximates PTS onset (Ward *et al.*, 1958, 1959; Ward 1960; Kryter *et al.*, 1966; Miller, 1974; Ahroon *et al.*, 1996; Henderson *et al.*, 2008). PTS levels for marine mammals are estimates, as with the exception of a single study unintentionally inducing PTS in a harbor seal (Reichmuth 2019), there are no empirical data measuring PTS in marine mammals largely due to the fact that, for various ethical reasons, experiments involving anthropogenic noise exposure at levels inducing PTS are not typically pursued or authorized (NMFS, 2018).

Temporary threshold shift (TTS)—A temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). Based on data from cetacean TTS measurements (Southall *et al.*, 2007, 2019), a TTS of 6 dB is considered the minimum TS clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.*, 2000; Finneran *et al.*, 2000, 2002). As described in Finneran (2015), marine mammal studies have shown the amount of TTS increases with cumulative sound exposure level (SEL_{cum}) in an accelerating fashion: At

low exposures with lower SEL_{cum}, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SEL_{cum}, the growth curves become steeper and approach linear relationships with the noise SEL.

Depending on the degree (elevation of threshold in dB), duration (*i.e.*, recovery time), and frequency range of TTS, and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to serious (similar to those discussed in *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 serious impacts. We note that reduced hearing sensitivity as a simple function of aging has been observed in marine mammals, as well as humans and other taxa (Southall *et al.*, 2007), so we can infer that strategies exist for coping with this condition to some degree, though likely not without cost.

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. 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, beluga whale, harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaorientalis*) (Southall *et al.*, 2019). For pinnipeds in water, measurements of TTS are limited to harbor seals, elephant seals (*Mirounga*

angustirostris), bearded seals (*Erignathus barbatus*) and California sea lions (*Zalophus californianus*) (Kastak *et al.*, 1999, 2007; Kastelein *et al.*, 2019b, 2019c, 2021, 2022a, 2022b; Reichmuth *et al.*, 2019; Sills *et al.*, 2020). TTS was not observed in spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to single airgun impulse sounds at levels matching previous predictions of TTS onset (Reichmuth *et al.*, 2016). These studies examine hearing thresholds measured in marine mammals before and after exposure to intense or long-duration sound exposures. The difference between the pre-exposure and post-exposure thresholds can be used to determine the amount of threshold shift at various post-exposure times.

The amount and onset of TTS depends on the exposure frequency. Sounds at low frequencies, well below the region of best sensitivity for a species or hearing group, are less hazardous than those at higher frequencies, near the region of best sensitivity (Finneran and Schlundt, 2013). At low frequencies, onset-TTS exposure levels are higher compared to those in the region of best sensitivity (*i.e.*, a low frequency noise would need to be louder to cause TTS onset when TTS exposure level is higher), as shown for harbor porpoises and harbor seals (Kastelein *et al.*, 2019a, 2019c). Note that in general, harbor seals and harbor porpoises have a lower TTS onset than other measured pinniped or cetacean species (Finneran, 2015). In addition, TTS can accumulate across multiple exposures, but the resulting TTS will be less than the TTS from a single, continuous exposure with the same SEL (Mooney *et al.*, 2009; Finneran *et al.*, 2010; Kastelein *et al.*, 2014, 2015). This means that TTS predictions based on the total, cumulative SEL will overestimate the amount of TTS from intermittent exposures, such as sonars and impulsive sources. Nachtigall *et al.*, (2018) describe measurements of hearing sensitivity of multiple odontocete species (bottlenose dolphin, harbor porpoise, beluga, and false killer whale (*Pseudorca crassidens*)) when a relatively loud sound was preceded by a warning sound. These captive animals were shown to reduce hearing sensitivity when

warned of an impending intense sound. Based on these experimental observations of captive animals, the authors suggest that wild animals may dampen their hearing during prolonged exposures or if conditioned to anticipate intense sounds. Another study showed that echolocating animals (including odontocetes) might have anatomical specializations that might allow for conditioned hearing reduction and filtering of low-frequency ambient noise, including increased stiffness and control of middle ear structures and placement of inner ear structures (Ketten *et al.*, 2021). Data available on noise-induced hearing loss for mysticetes are currently lacking (NMFS, 2018). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species.

Relationships between TTS and PTS thresholds have not been studied in marine mammals, and there is no PTS data for cetaceans, but such relationships are assumed to be similar to those in humans and other terrestrial mammals. PTS typically occurs at exposure levels at least several decibels above that inducing mild TTS (*e.g.*, a 40-dB threshold shift approximates PTS 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 PTS 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 PTS 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 PTS as compared with TTS, it is considerably less likely that PTS could occur.

Activities for this project include impact and vibratory pile driving and removal. For the proposed project, these activities could occur at the same time at three out of eight locations, but there would likely be pauses in activities producing the sound during

each day. Given these pauses and the fact that many marine mammals are likely moving through the project areas and not remaining for extended periods of time, the potential for TS declines.

Behavioral Harassment—Exposure to noise from pile driving and removal also has the potential to behaviorally disturb marine mammals. Generally speaking, NMFS considers a behavioral disturbance that rises to the level of harassment under the MMPA a non-minor response – in other words, not every response qualifies as behavioral disturbance, and for responses that do, those of a higher level, or accrued across a longer duration, have the potential to affect foraging, reproduction, or survival. Behavioral disturbance may include a variety of effects, including subtle changes in behavior (*e.g.*, minor or brief avoidance of an area or changes in vocalizations), more conspicuous changes in similar behavioral activities, and more sustained and/or potentially severe reactions, such as displacement from or abandonment of high-quality habitat. Behavioral responses may include changing durations of surfacing and dives, changing direction and/or speed; reducing/increasing vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); eliciting a visible startle response or aggressive behavior (such as tail/fin slapping or jaw clapping); avoidance of areas where sound sources are located. Pinnipeds may increase their haul out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.*, species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.*, Richardson *et al.*, 1995; Wartzok *et al.*, 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 showed 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. If a marine mammal does react briefly to an underwater sound by changing its behavior or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the stock or population. However, if a sound source displaces marine mammals from an important feeding or breeding area for a prolonged period, impacts on individuals and populations could be significant (*e.g.*, Lusseau and Bejder, 2007; Weilgart, 2007; NRC, 2005). 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.

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). 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. 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.

Variations in respiration naturally vary 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 rate increased in response to pile driving sounds at and above a received broadband SPL of 136 dB (zero-peak SPL: 151 dB re 1 micropascal (μPa); SEL of a single strike: 127 dB re 1 $\mu\text{Pa}^2\text{-s}$) (Kastelein *et al.*, 2013).

Marine mammals vocalize for different purposes and across multiple modes, such as whistling, echolocation click production, calling, and singing. Changes in vocalization behavior in response to anthropogenic noise can occur for any of these modes and may result from a need to compete with an increase in background noise or may reflect increased vigilance or a startle response. For example, in the presence of potentially masking signals, humpback whales and killer whales have been observed to increase the length of their songs (Miller *et al.*, 2000; Fristrup *et al.*, 2003) or vocalizations (Foote *et al.*, 2004), respectively, while North Atlantic right whales (*Eubalaena glacialis*) have been observed to shift the frequency content of their calls upward while reducing the rate of calling in areas of increased anthropogenic noise (Parks *et al.*, 2007). In some cases, animals may cease sound production during production of aversive signals (Bowles *et al.*, 1994).

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). Avoidance may be short-term, with animals returning to the area once the noise has ceased (*e.g.*, Bowles *et al.*, 1994; Goold, 1996; Stone *et al.*, 2000; Morton and Symonds, 2002; Gailey *et al.*, 2007). Longer-term displacement is possible, however, which may lead to changes in abundance or distribution patterns of the affected species in the affected region if habituation to the presence of the sound does not occur (*e.g.*, Blackwell *et al.*, 2004; Bejder *et al.*, 2006; Teilmann *et al.*, 2006).

A flight response is a dramatic change in normal movement to a directed and rapid movement away from the perceived location of a sound source. The flight response differs from other avoidance responses in the intensity of the response (*e.g.*, directed movement, rate of travel). Relatively little information on flight responses of marine mammals to anthropogenic signals exist, although observations of flight responses to the presence of predators have occurred (Connor and Heithaus, 1996; Bowers *et al.*, 2018). The result of a flight response could range from brief, temporary exertion and displacement from the area where the signal provokes flight to, in extreme cases, marine mammal strandings (Evans and 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.

Across 59 monitoring days between mid-July and late October 2024, Transco documented observations of marine mammals during construction activities at a project site occurring in Raritan Bay and Lower New York Bay (LNYBL Maintenance Project) (see 89 FR 20170, March 21, 2024). PSOs reported 8 sightings of 10 humpback whales and 35 sightings of 370 bottlenose dolphins in the project area. An additional 2 sightings

of 5 unidentified cetaceans and 31 sightings of 262 unidentified dolphins were also reported. During pile driving activities, a total of 6 humpback whales, 113 bottlenose dolphins, and 166 unidentified dolphins were observed within the estimated Level B harassment zone. The humpback whales were observed breaching, surfacing, blowing, and feeding while the bottlenose dolphins were observed diving, porpoising, surfacing, blowing and milling. The unidentified dolphins were primarily surfacing but were also observed traveling, blowing, diving, milling and breaching. No changes in behavior in response to the activity were reported for any species.

Given the similarities in activities and habitat and the fact the same species are involved, we expect similar behavioral responses of marine mammals to Transco's specified activity. That is, disturbance, if any, is likely to be temporary and localized.

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

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

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

Relationships between these physiological mechanisms, animal behavior, and the costs of stress responses are well-studied through controlled experiments and for both laboratory and free-ranging animals (*e.g.*, Holberton *et al.*, 1996; Hood *et al.*, 1998; Jessop *et al.*, 2003; Krausman *et al.*, 2004; Lankford *et al.*, 2005). Stress responses due to exposure to anthropogenic sounds or other stressors and their effects on marine mammals have also been reviewed (Fair and Becker, 2000; Romano *et al.*, 2002b) and, more rarely, studied in wild populations (*e.g.*, Romano *et al.*, 2002a). For example, Rolland *et al.* (2012) found that noise reduction from reduced ship traffic in the Bay of Fundy was associated with decreased stress in North Atlantic right whales. These and other studies lead to a reasonable expectation that some marine mammals will experience physiological stress responses upon exposure to acoustic stressors and that it is possible that some of these would be classified as “distress.” In addition, any animal experiencing TTS would likely also experience stress responses (NRC, 2003), however distress is an unlikely result of this project based on observations of marine mammals during previous, similar projects in the area.

Auditory Masking—Sound can disrupt behavior through masking, or interfering with, an animal’s ability to detect, recognize, or discriminate between acoustic signals of interest (*e.g.*, those used for intraspecific communication and social interactions, prey

detection, predator avoidance, navigation) (Richardson *et al.*, 1995). Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher intensity, and may occur whether the sound is natural (*e.g.*, snapping shrimp, wind, waves, precipitation) or anthropogenic (*e.g.*, signal-to-noise ratio, temporal variability, direction), in relation to each other and to an animal's hearing abilities (*e.g.*, sensitivity, frequency range, critical ratios, frequency discrimination, directional discrimination, age or TTS hearing loss), and existing ambient noise and propagation conditions. Masking of natural sounds can result when human activities produce high levels of background sound at frequencies important to marine mammals. Conversely, if the background level of underwater sound is high (*e.g.*, on a day with strong wind and high waves), an anthropogenic sound source would not be detectable as far away as would be possible under quieter conditions and would itself be masked. Raritan Bay, Lower New York Bay and the Atlantic Ocean where the project area is located experiences significant commercial and recreational vessel activity, and background sound levels are already elevated.

Airborne Acoustic Effects—Airborne noise would primarily be an issue for pinnipeds that are swimming or hauled out near the project site within the range of noise levels elevated above the acoustic criteria. We recognize that pinnipeds in the water could be exposed to airborne sound that may result in behavioral harassment when looking with their heads above water. Most likely, airborne sound would cause behavioral responses similar to those discussed above in relation to underwater sound. For instance, anthropogenic sound could cause hauled-out pinnipeds to exhibit changes in their normal behavior, such as reduction in vocalizations, or cause them to temporarily abandon the area and move further from the source. However, these animals would 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. Cetaceans are not expected to be exposed to airborne sounds that would result in harassment as defined under the MMPA.

Marine Mammal Habitat Effects

The proposed activities would not result in permanent impacts to habitats used directly by marine mammals, but may have potential short-term impacts to food sources such as forage fish. The proposed activities could also affect acoustic habitat (see masking discussion above), but meaningful impacts are unlikely. There are no known foraging hotspots, or other ocean bottom structures of significant biological importance to marine mammals present in the project area. Therefore, the main impact issue associated with the proposed activity would be temporarily elevated sound levels and the associated direct effects on marine mammals, as discussed previously. The most likely impact to marine mammal habitat occurs from pile driving effects on likely marine mammal prey (e.g., fish). Impacts to the immediate substrate during installation and removal of piles are anticipated, but these would be limited to minor, temporary suspension of sediments, which could impact water quality and visibility for a short amount of time, without any expected effects on individual marine mammals. Impacts to substrate are therefore not discussed further.

In-water Construction Effects on Potential Prey—Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (e.g., crustaceans, cephalopods, fish, zooplankton). Marine mammal prey varies by species, season, and location and, for some, is not well documented. Here, we describe studies regarding the effects of noise on known marine mammal prey.

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

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

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

The greatest potential impact to fishes during construction would occur during impact pile driving which is estimated to occur on up to 14 days across the proposed project, with 7 days of impact pile driving estimated at Morgan Shore Approach HDD (MP 12.59) (with a maximum of 15,000 strikes per day), 4 days of impact pile driving planned at Ambrose Channel HDD West Side (with a maximum of 6,764 strikes per day), and 3 days of impact pile driving planned at MP 34.5 to MP 35.04 (with a maximum of 5,000 strikes per day). There would 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 and removal would possibly elicit behavioral reactions from fishes such as temporary avoidance of the area but is unlikely to cause injuries to fishes or have persistent effects on local fish populations.

The most likely impact to fishes from pile driving and removal activities in the project area would be temporary behavioral avoidance of the area. The duration of fish avoidance of the area after pile driving stops is unknown but a rapid return to normal recruitment, distribution, and behavior is anticipated. In general, impacts to marine mammal prey species are expected to be minor and temporary. Further, it is anticipated that preparation activities for pile driving and removal (*i.e.*, positioning of the hammer)

and upon initial startup of devices would cause fish to move away from the affected area where injuries may occur. Therefore, relatively small portions of the proposed project area would be affected for short periods of time, and the potential for effects to fish would be temporary and limited to the duration of sound-generating activities.

In summary, given the short daily duration of sound associated with individual pile driving and removal, and the relatively small areas being affected, pile driving and removal activities associated with the proposed action are not likely to have a permanent adverse effect on any fish habitat, or populations of fish species. 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 conclude that impacts of the specified activity 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 and vibratory pile driving and removal) 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 for all hearing groups. However, the proposed mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

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

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic criteria above which NMFS believes there is some reasonable potential for marine mammals to be behaviorally harassed or incur some degree of AUD INJ; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the proposed take estimates.

Acoustic Criteria

NMFS recommends the use of acoustic criteria that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur AUD INJ of some degree (equated to Level A harassment). 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, 2021, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 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.

Transco's proposed activity includes the use of continuous (vibratory pile driving and removal) and impulsive (impact pile driving) sources, and therefore the RMS SPL thresholds of 120 and 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). Transco’s proposed activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving and removal) sources.

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

Table 5 -- Thresholds Identifying the Onset of Auditory Injury

	AUD INJ Onset Acoustic Thresholds* (Received Level)	
Hearing Group	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
<p>*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.</p> <p>Note: Peak sound pressure level ($L_{p,0-pk}$) has a reference value of 1 μPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1 μPa²s. 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>i.e.</i>, 7 Hertz (Hz) to 165 Kilohertz (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>i.e.</i>, 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.</p>		

Ensonified Area

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

The sound field in the project area is the existing background noise plus additional construction noise from the proposed project. Marine mammals are expected to be affected via sound generated by the primary components of the project (*i.e.*, vibratory pile driving and removal, and impact pile driving).

The project includes vibratory pile installation and removal, and impact pile driving. Since there would be many piles at each of the eight construction sites within close proximity to one another, Transco found, and NMFS agreed, that it was not practical to estimate harassment zones for each individual pile at specific locations and results would have been nearly identical for all similarly sized piles at each construction location. In order to simplify calculations, a representative pile site was selected for the eight separate pile locations (figure 1). For strings where only a single pile type would be installed or removed (*i.e.*, Neptune Power Cable Crossing MP 13.84 and MP 35.04, MP 14.5 to MP 16.5, MP 28 to MP 29.36, and MP 34.5 to MP 35.04), Transco selected a representative location in the middle of the string. For the Morgan Shore Approach HDD string site, Transco selected the location closest to the platform installation as the representative pile location because it represents the area with the largest pile sizes. At the HDD Ambrose West Side and HDD Ambrose East Side locations, Transco's representative pile locations were selected based on the entry and exit pits. The HDD Ambrose East Side is the entry pit and the HDD Ambrose West Side is the exit pit. This would also represent the outer limit of the HDD Ambrose string, and is therefore the most conservative modeling option.

In its application, Transco indicated that it identified source levels for installation and removal of each pile type and size using the compendium compiled by Caltrans 2015, but also referenced Caltrans, 2020 and Illingworth & Rodkin, 2017. Transco did not specify which sound levels were based on which reference. NMFS revised source levels for these activities based on reviews of measurements of the same or similar types and dimensions of piles available in the literature (table 6). NMFS and Transco assumed that the representative sound source levels were based on the largest pile expected to be driven/removed at each potential in-water construction site. For example, where Transco may use a range of pile sizes (*i.e.*, 36 to 48-in piles), the largest potential pile size (48-in)

was used in modeling. Source levels for vibratory installation and removal are assumed to be the same.

Additionally, while not included in its application, Transco indicated that two hammers, including a combination of vibratory and impact hammers, may operate simultaneously at three out of eight locations. As such, source levels for the combination of piles that would create the largest cumulative sound exposure level at location are also presented in table 6.

The methods for how the source levels for these concurrent activities are derived are described here: When two noise sources have overlapping sound fields, the sources are considered additive and combined using the rules of dB addition. For addition of two simultaneous sources, the difference between the two sound source levels is calculated, and if that difference is between 0 and 1 dB, 3 dB are added to the higher sound source levels; if the difference is between 2 and 3 dB, 2 dB are added to the highest sound source levels; if the difference is between 4 and 9 dB, 1 dB is added to the highest sound source levels; and with differences of 10 or more dB, there is no addition. For two simultaneous sources of different type (*i.e.*, impact and vibratory driving), there is no sound source addition. In such cases, the isopleth associated with the individual source which results in the largest isopleths is conservatively used for both sources to account for periods of overlapping activities.

Table 6 -- Estimates of Mean Underwater Sound Levels¹ Generated During Vibratory and Impact Pile Driving and Vibratory Removal of temporary steel piles

Method	Pile Size (inches)	dB RMS	dB Peak	dB SEL	References
Vibratory	10	155	N/A	N/A	Caltrans 2015
	24	157	N/A	N/A	Caltrans 2020
	34	170	N/A	N/A	Caltrans 2015
	36	170	N/A	N/A	Caltrans 2015
	48	170	N/A	N/A	NMFS 2024 ²
	60	170	N/A	N/A	NMFS 2024 ²
Impact	34	193	210	183	Caltrans 2015, Caltrans 2020
	36	193	210	183	Caltrans 2015, Caltrans 2020
	60	193	210	185	Caltrans 2020
Impact, Impact ³	36, 36	196	213	183	Caltrans 2015

Impact, Vibratory	60, 48	170	210	185	Caltrans 2020
Vibratory, Vibratory ³	48, 48	173	N/A	N/A	NMFS 2024 ²
	36, 36	173	N/A	N/A	
	36, 48	173	N/A	N/A	

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

¹All sound levels are referenced at 10 m.

²Refers to a NMFS compendium of recommended source level proxies

³Source levels adjusted following rules of dB addition described above

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

$$TL = B \times \text{Log}_{10} (R_1/R_2), \text{ where}$$

TL = transmission loss in dB

B = transmission loss coefficient

*R*₁ = the distance of the modeled SPL from the driven pile, and

*R*₂ = the distance from the driven pile of the initial measurement

Absent site-specific acoustical monitoring with differing measured *TL*, a practical spreading value of 15 is used as the *TL* coefficient in the above formula. Site-specific *TL* data for the New York Bight are not available; therefore, the default coefficient of 15 is used to determine the distances to the Level A harassment and Level B harassment thresholds.

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the 2024 Updated Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate

of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources pile driving and removal, 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, and the resulting estimated isopleths, are reported in tables 7 and 8.

To calculate Level A harassment isopleths for two impact hammers operating simultaneously, the NMFS User Spreadsheet calculator was used with modified inputs to account for the total estimated number of strikes for all piles. For simultaneous impact pile driving of two 36-in steel piles (the most conservative scenario identified at Morgan Shore Approach HDD MP 12.59), the total estimated number of strikes per day was summed to estimate total sound exposure during simultaneous installation, and the number of piles per day was reduced to one. The source level for two simultaneous impact hammers was not adjusted because for identical sources the accumulation of energy depends only on the total number of strikes, whether or not they overlap fully in time.

To calculate the Level A harassment isopleths for one impact and one vibratory hammer operating simultaneously, sources were treated as though they were non-overlapping. The isopleths associated with the individual source which results in the largest Level A harassment isopleths were conservatively used for both sources to account for periods of overlapping activities.

To calculate Level A harassment isopleths for two simultaneous vibratory hammers, the NMFS User Spreadsheet was used with modified inputs to account for accumulation, weighting, and source overlap in space and time. Using the rules of dB addition described above (*i.e.*, if the difference between the two source levels is between

0 and 1 dB, 3 dB are added to the higher sound source level), the combined sound source level for the simultaneous vibratory installation of two 48-in steel piles, or two 36-in steel piles, or a 36-in and a 48-in steel pile is 173 dB RMS in all cases.

Table 7 -- User Spreadsheet Inputs: Single pile driving scenarios

Location	Pile size	Spreadsheet tab used	Weighting factor adjustment (kHz)	Piles per day	Duration to drive a single pile (minutes)	Strikes
Installation						
Morgan Shore Approach HDD (MP 12.59)	24	A.1 Vibratory pile driving	2.5	4	15	N/A
	36			4		
	48			4		
	36	E.1 Impact pile driving	2	4	N/A	2,500
Neptune Power Cable Crossing (MP 13.84)	10	A.1 Vibratory pile driving	2.5	4	15	N/A
MP 14.5 to MP 16.5	24	A.1 Vibratory pile driving	2.5	5	15	N/A
MP 28.0 to MP 29.36	34	A.1 Vibratory pile driving	2.5	4	15	N/A
HDD Ambrose West Side (MP 29.4)	24	A.1 Vibratory pile driving	2.5	6	15	N/A
	36			2		
	48			4		
	60	E.1 Impact pile driving	2	2	N/A	3,382
HDD Ambrose East Side (MP 30.48)	24	A.1 Vibratory pile driving	2.5	5	15	N/A
	36			3		
	48			8		
	60			1		
MP 34.5 to MP 35.04	34	A.1 Vibratory pile driving	2.5	2	15	N/A
		E.1 Impact pile driving	2	2	15	2,500
Neptune PC Crossing (MP 35.04)	10	A.1 Vibratory pile driving	2.5	2	15	N/A
Removal						
Morgan Shore Approach HDD (MP 12.59)	24	A.1 Vibratory pile driving	2.5	5	4	N/A
	36			30	8	
	48			15	3	
Neptune PC Crossing (MP 13.84)	10	A.1 Vibratory pile driving	2.5	15	4	N/A
MP 14.5 to MP 16.5	24	A.1 Vibratory pile driving	2.5	15	11	N/A
MP 28.0 to MP 29.36	34	A.1 Vibratory pile driving	2.5	30	6	N/A
HDD Ambrose West Side (MP 29.4)	24	A.1 Vibratory pile driving	2.5	5	6	N/A
	36			15	3	
	48			15	8	

	60			30	8	
HDD Ambrose East Side (MP 30.48)	24	A.1 Vibratory pile driving	2.5	15	22	N/A
	36				3	
	48				8	
	60				1	
MP 34.5 to MP 35.04	34	A.1 Vibratory pile driving	2.5	15	2	N/A
Neptune PC Crossing (35.04)	10	A.1 Vibratory pile driving	2.5	15	2	N/A

Table 8 -- User Spreadsheet Inputs: Simultaneous Pile Driving Scenarios

Location	Pile sizes (inches) and Methods	Spreadsheet tab used	Weighting factor adjustment (kHz)	Piles per day	Duration to drive a single pile (minutes)	Strikes
Installation						
Morgan Shore Approach HDD (MP 12.59)	36 impact, 36 impact	E.1 Impact pile driving	2	1	N/A	15,000
HDD Ambrose West Side (MP 29.4)	60 impact, 48 vibratory	E.1 Impact pile driving	2	2	N/A	3,382
HDD Ambrose East Side (MP 30.48)	48 vibratory, 48 vibratory	A.1 Vibratory pile driving	2.5	1	60	N/A
Removal						
Morgan Shore Approach HDD (MP 12.59)	36 vibratory, 36 vibratory	A.1 Vibratory pile driving	2.5	1	40	N/A
HDD Ambrose West Side (MP 29.4)	36 vibratory, 48 vibratory	A.1 Vibratory pile driving	2.5	1	60	N/A
HDD Ambrose East Side (MP 30.48)	48 vibratory, 48 vibratory	A.1 Vibratory pile driving	2.5	1	60	N/A

NMFS has established Level B harassment thresholds of 160 dB re1 μ Pa (rms) for impulsive sounds (*e.g.*, impact pile driving) and 120 dB re1 μ Pa (rms) for non-impulsive sounds (*e.g.*, vibratory driving and removal). Based on the predicted source levels associated with various pile sizes (table 6) the distances from the pile driving/removal equipment to the Level B harassment thresholds were calculated, using the distance to the 160 dB threshold for the impact hammer and the distance to the 120 dB threshold for the vibratory device, at the representative pile locations (table 9). It should be noted that while sound levels associated with the Level B harassment threshold for vibratory driving/removal were estimated to propagate as far as 34,146 m from pile installation and

removal activities based on modeling, it is likely that the noise produced from vibratory activities associated with the project would be masked by background noise before reaching this distance, as the Port of New York and New Jersey, which represents the busiest port on the east coast of the United States and the third busiest port in the United States, is located near the project area and sounds from the port and from vessel traffic propagate throughout the project area. However, take estimates conservatively assume propagation of project-related noise to the full extent of the modeled isopleth distance to the Level B harassment threshold. The modeled distances to isopleths associated with Level B harassment thresholds for impact and vibratory driving are shown in table 9.

Table 9 -- Projected Distances to Level A and Level B Harassment Isopleths (m) (and Associated Areas¹ (km²) by Marine Mammal Hearing Group

Location	Pile size (inches)	Hammer Type	Level A harassment zones (m) (areas km ²)				Level B harassment Zone
			LF	HF	VHF	PW	
Installation							
Morgan Shore Approach HDD (MP 12.59)	24	Vibratory	5	1.9	4.1	6.4	2,929
	36		36.7	14.1	30.0	47.3	21,544
	48		36.7	14.1	30.0	47.3	1,584
	36	Impact	4,618.4	589.3	7,147.0	4,102.8	2,512
	36 and 36	Impact and Impact	6,052 (34.20)	772 (1.72)	9,365 (59.13)	5,376 (29.19)	21,544
Neptune PC Crossing (MP 13.84)	10	Vibratory	3.7	1.4	3.0	4.7	2,154
MP 14.5 to MP 16.5	24	Vibratory	5.8	2.2	4.7	7.5	2,929
MP 28.0 to MP 29.36	34	Vibratory	36.7	14.1	30.0	47.3	21,544
HDD Ambrose West Side (MP 29.4)	24	Vibratory	6.5	2.5	5.3	8.4	2,929
	36		23.1	8.9	18.9	29.8	21,544
	48		36.7	14.1	30.0	47.3	21,544
	60		23.1	8.9	18.9	29.8	21,544
	60 and 48	Impact and Vibratory	4,837.6 (72.22)	617.2 (1.20)	7,486.1 (159.37)	4,297.5 (57.63)	2,154
HDD Ambrose East Side (MP 30.48)	24	Vibratory	5.8	2.2	4.7	7.5	2,929
	36		30.3	11.6	24.8	39.0	21,544
	48		58.3	22.4	47.6	75.0	21,544
	60		14.6	5.6	11.9	18.8	21,544
	48 and 48	Vibratory and Vibratory	58.3	22.4	47.6	75.0	34,146 (1502)
	34	Vibratory	23.1	8.9	18.9	29.8	21,544

MP 34.5 to MP 35.04		Impact	2,909.4 (62.49)	371.2 (0.43)	4,502.3 (62.49)	2,584.6 (20.99)	1,585
Neptune PC Crossing (MP 35.04)	10	Vibratory	2.3	0.9	1.9	3.0	2,154 (14.58)
Removal							
Morgan Shore Approach HDD (MP 12.59)	24	Vibratory	2.4	0.9	2.0	3.1	2,929
	36		92.5	35.5	75.6	119.1	21,544
	48		30.3	11.6	24.8	39.0	21,544
	36 and 36	Vibratory and Vibratory	44.4	17.1	36.3	57.2	34,146 (1539)
Neptune PC Crossing (MP 13.84)	10	Vibratory	3.7	1.4	3.0	4.7	2,154
MP 14.5 to MP 16.5	24	Vibratory	9.8	3.8	8.0	12.6	2,929
MP 28.0 to MP 29.36	34	Vibratory	76.4	29.8	62.4	98.3	21,544
HDD Ambrose West Side (MP 29.4)	24	Vibratory	3.1	1.2	2.6	4.0	2,929
	36		30.3	11.6	24.8	39.0	21,544
	48		58.3	22.4	47.6	75.0	21,544
	60		92.5	35.5	75.6	119.1	21,544
	36 and 48	Vibratory and Vibratory	58.3	22.4	47.6	75.0	34,146
HDD Ambrose East Side (MP 30.48)	24	Vibratory	15.6	6.0	12.7	20.0	2,929
	36		30.3	11.6	24.8	39.0	21,544
	48		58.3	22.4	47.6	75.0	21,544
	60		14.6	5.6	11.9	18.8	21,544
	48 and 48	Vibratory and Vibratory	58.3	22.4	47.6	75.0	34,146
MP 34.5 to MP 35.04	34	Vibratory	23.1	8.9	18.9	29.8	21,544
Neptune PC Crossing (35.04)	10	Vibratory	2.3	0.9	1.9	3.0	2,154

¹Only areas relevant for take estimates (the largest Level B harassment zones at each location, and the largest Level A harassment zones associated with impact pile driving at each location) are presented.

Level A harassment zones are typically smaller than Level B harassment zones.

However, during impact pile driving, the calculated Level A harassment isopleth is greater than the calculated Level B harassment isopleth for low frequency cetaceans, very high-frequency cetaceans and phocids (however, because all activities are assumed as potentially occurring on the same day, we functionally reference the largest Level A and Level B harassment zones for purposes of estimating take). Calculation of Level A

harassment isopleths includes a duration component, which in the case of impact pile driving, is estimated through the total number of daily strikes and the associated pulse duration. For a stationary sound source such as impact pile driving, we assume here that an animal is exposed to all of the strikes expected within a 24-hour period. Calculation of a Level B harassment zone does not include a duration component.

Marine Mammal Occurrence

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

To estimate take during impact and vibratory pile driving and removal, Transco first generated an annual average density estimate for each noise-producing scenario, for each species, using Duke University Marine Geospatial Ecology Laboratory marine mammal habitat-based density data (<https://seamap.env.duke.edu/models/Duke/EC/>) (Roberts *et al.*, 2016; Roberts *et al.*, 2023, Roberts *et al.*, 2024). Instead of generating average annual density estimates for each species for each noise producing scenario, NMFS subsequently created a single project area that encompassed the largest Level B harassment zones across each of the eight project locations. This project area was used as the basis for generating an annual average density estimate and an average density estimate between June and November, which corresponds to the planned project period, for each species. Specifically, in a Geographic Information System, for each month and each species, the density rasters were clipped to the polygon representing the above referenced project area. To generate the annual average density estimate for each species, the density estimates for each clipped density raster (January through December) were summed and divided by 12 (table 10). To generate the average density across June through November, the density values for each clipped density raster (June through November) were summed and divided by 6. In both cases, the mean density values for each species were selected to use as a basis for take estimates.

Table 10 -- Marine Mammal density estimates generated for the Transco Northeast Supply Enhancement Project Area

Marine Mammal Species	Mean Densities (January - December) animals/100 km ²	Mean Densities (June - November) animals/100 km ²
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North Atlantic Right Whale	0.021304616299007	0.0030074206269121
Fin Whale	0.034273800129881	0.019738282989868
Humpback Whale	0.057397781000022	0.032971508482719
Minke Whale	0.094349173218718	0.027476606940787
Sei Whale	0.013016774291886	0.0056379703117625
Pilot Whale spp guild ²	0.0010383579896433	0.0010383579896433
Atlantic Spotted Dolphin	0.012827813937997	0.025403273029717
Atlantic White-Sided Dolphin	0.1092249846683	0.068747673449369
Bottlenose Dolphin ¹	5.2491380360819	8.0931224515361
Common Dolphin	0.9122067405692	0.63518957481269
Harbor Porpoise	0.8396537609158	0.022988098221005
Seal guild ³	8.6582116388505	8.0272698748496

¹ The Duke University density data treats all bottlenose dolphins as a single group and as such are not subset between the Migratory Coastal stocks and the Offshore stocks by the 20-meter isobath.

² The Duke University density data for pilot whale *spp.* is not broken up for each species and only a single density file is available. The density here represents the entire guild and will be the same for the annual mean or the June to November analysis.

³ The Duke University data for pinnipeds is not broken up for each species that could occur and represents the density for the guild.

In addition to consulting the output of marine mammal habitat-based density models, NMFS also consulted the following data sets: 1) Monitoring data associated with Transco’s LNYBL Maintenance Project in Sandy Hook Channel, New Jersey, in which PSO’s monitored for marine mammals on 59 days between mid-July and late October 2024 in Raritan and Lower New York Bays; and, 2) group sizes derived from NOAA Atlantic Marine Assessment Program for Protected Species data from 2010-2019 shipboard distance sampling surveys (Palka *et al.*, 2021).

Take Estimation

Here we describe how the information provided above is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and proposed for authorization. Generally, take estimates are the product of density, ensonified area, and number of days of pile driving work. Specifically, take estimates are calculated by multiplying the expected densities of marine mammals in the activity area(s) by the area of water likely to be ensonified above the NMFS defined threshold levels in a single day

(24-hr period) and the number of construction days planned. A summary of this method is illustrated in the following formula:

$$\text{Estimated Take} = D \times \text{ZOI} \times \# \text{ of construction days}$$

Where:

D = density estimate for each species (individuals/km²) within the ZOI. (Note that since densities in Roberts *et al.* (2023, 2024) are provided in individuals per 100 square km, they were converted to individuals per square km for ease of use in generating take estimates).

ZOI = maximum daily ensonified area to relevant thresholds (km²)

To estimate take, Transco initially proposed to multiply location-specific annual average density estimates for each species by the ZOI associated with each noise-producing activity, by the number of construction days estimated for each noise-producing activity (based on pile size and location). Activity-specific take estimates were then summed to generate an overall take estimate for each species across the project.

Because any activity could occur on any construction day, NMFS instead multiplied the density estimate generated for the entire project area by the largest ZOI associated with each of the eight project locations by the total number of construction days planned at each location. The resulting location-specific take estimates were summed to generate an overall take estimate for each species across the project. To be conservative, NMFS compared the results using the annual average density estimate for each species and the average density estimate for June through November and selected the largest result to use as the basis for its proposed take authorization.

NMFS used the same equation to calculate take by Level A harassment, with the ZOIs referring to the largest hearing group specific Level A harassment zones at each location, during impact pile driving activities only. Because Transco plans to shut down

at distances greater than the Level A harassment zones during vibratory activities, only impact pile driving activities were included in estimates of take by Level A harassment.

The ZOI's and total construction days used in density-based take analyses are presented in the tables 11 and 12.

Table 11 -- The ZOI's and total construction days used in density-based estimates of take by Level B harassment

Location	ZOIs at each representative pile driving location (km ²) (and associated isopleths (m))	Total construction days associated with vibratory pile driving (installation and removal) ¹ at each representative pile driving location (and associated isopleths (m))
Morgan Shore Approach HDD (MP 12.59)	373 km ² (34,146 m)	21
Neptune Power Cable Crossing (MP 13.84)	15 km ² (2,154 m)	4
MP 14.5 to MP 16.5	24 km ² (2,929 m)	7
MP 28.0 to MP 29.36	761 km ² (21,544 m)	5
HDD Ambrose West Side (MP 29.4)	1502 km ² (34,146 m)	13
HDD Ambrose East Side (MP 30.48)	1502 km ² (34,146 m)	14
MP 34.5 to MP 35.04	857 km ² (21,544 m)	5
Neptune Power Cable Crossing (MP 35.04)	15 km ² (2,154 m)	2

¹ Total construction days have been rounded up.

Table 12 -- The ZOI's and total construction days used in density-based estimates of take by Level A harassment

Location	ZOI representing the largest hearing group specific Level A harassment zones (km ²) at each location during impact pile driving (and associated isopleths (m))				Total construction days associated with impact pile driving ¹
	LF	HF	VHF	PW	
Morgan Shore Approach HDD (MP 12.59)	34.2 km ² (6,052 m)	1.72 km ² (722 m)	59.13 km ² (9,365 m)	29.19 km ² (5,376 m)	7
HDD Ambrose West Side (MP 29.4)	72.23 km ² (4,838 m)	1.20 km ² (617 m)	159.37 km ² (7,486 m)	57.63 km ² (4,298 m)	4
MP 34.5 to MP 35.04	26.59 km ² (2,909 m)	0.43 km ² (371 m)	62.49 km ² (4,502 m)	20.99 km ² (2,585 m)	3

¹ Total construction days have been rounded up.

Monitoring data reported by PSO's during Transco's LNYBL Maintenance project in Raritan Bay, Lower New York Bay, and the Atlantic Ocean, in which PSOs monitored for marine mammals on 59 days between July and October 2024, were also consulted to inform estimates of take by Level A harassment.

A total of eight sightings of 10 humpback whales were observed within 4,000 m of the pile driving source, translating to approximately one sighting of humpback whales per week. The maximum group size reported during this project was two humpback whales. As such, NMFS proposes to authorize take by Level A harassment of one group of two humpback whales each week that impact pile driving activities are planned (two weeks). Therefore, NMFS proposes to authorize four takes by Level A harassment of humpback whale (1 group x 2 humpback whales x 2 weeks of impact pile driving).

During Transco's LNYBL project, PSOs also reported an average of 6 bottlenose or unidentified dolphins each day occurring within 770 m of the pile driving source, which represents the largest Level A harassment zones associated with impact pile driving proposed for this project. As such, NMFS proposed to authorize six takes by Level A harassment for each construction day that impact pile driving is planned (14 days). Therefore, NMFS proposes to authorize 84 takes by Level A harassment of bottlenose dolphins (6 takes of bottlenose dolphins x 14 construction days = 84 takes by Level A harassment of bottlenose dolphin).

Additional data regarding average group sizes from survey effort in the region was considered to ensure adequate take estimates are evaluated. Take estimates for several species were adjusted based on average group sizes derived from NOAA Atlantic Marine Assessment Program for Protected Species data from 2010-2019 shipboard distance sampling surveys (Palka *et al.*, 2021). This is particularly true for uncommon or

rare species with very low densities in the models. The calculated take estimates were adjusted for species as follows:

- Pilot whales (long-finned and short-finned): Only one take by Level B harassment was estimated. Takes proposed for authorization were increased to the average number of pilot whales in a group reported in Palka *et al.*, 2021 (n = 14) and applied to both stocks; and

- Atlantic spotted dolphin: Only 14 takes by Level B harassment were estimated. Takes proposed for authorization were increased to the average number of dolphins in a group reported in Palka *et al.*, 2021 (n = 25).

For bottlenose dolphins, the density data presented by Roberts *et al.*, (2023, 2024) does not differentiate between stocks. Thus, the take estimate for bottlenose dolphins calculated by the method described above resulted in an estimate of the total number of bottlenose dolphins expected to be taken, from all stocks. However, as described above, both the Western North Atlantic Northern Migratory Coastal stock and the Western North Atlantic Offshore stock have the potential to occur in the project area. Because approximately 50 percent of the project area occurs in waters shallower than 20 m, the isobaths at which we expect segregation of these stocks (Garrison *et al.*, 2017), we assign take to each stock accordingly. Thus, we assume that 50 percent of the total proposed authorized bottlenose dolphin takes would accrue to the Western North Atlantic Offshore stock, and 50 percent to the Western North Atlantic Northern Migratory Coastal stock (table 13).

Finally, takes by Level B harassment are modified to deduct the proposed amount of take by Level A harassment in order to avoid double-counting in the estimate of total takes for each species or stock.

Table 13 -- Take by Stock and Harassment Type and as a Percentage of Stock Abundance

Species	Stock	Level B Take Proposed for Authorization	Level A Take Proposed for Authorization	Total Take Proposed for Authorization	% Stock
North Atlantic Right Whale	Western Atlantic	12	0	12	<3.2%
Fin Whale	Western North Atlantic	19	0	19	<1%
Humpback Whale	Gulf of Maine	29	4	33	<1%
Minke Whale	Canadian East Coast	53	1	54	<1%
Sei Whale	Nova Scotia	7	0	7	<1%
Pilot Whale, Long-finned	Western N Atlantic	14 ¹	0	14	<1%
Pilot Whale, Short-finned	Western N Atlantic				
Atlantic Spotted Dolphin	Western N Atlantic	25 ¹	0	25	<1%
Atlantic White-sided Dolphin	Western N Atlantic	62	0	62	<1%
Bottlenose Dolphin	Western N Atlantic Migratory Coastal	2,295	42	2,253	35%
	Western N Atlantic Offshore	2,296	42	2,254	3.5%
Common Dolphin	Western N Atlantic	518	0	518	<1%
Harbor Porpoise	Gulf of Maine/Bay of Fundy	465	11	465	<1%
Gray Seal	Western N Atlantic	4,868	44	4,912	17.6%
Harbor Seal	Western N Atlantic				8%
Harp Seal	Western N Atlantic				<1%

Proposed Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on

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

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

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

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

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

Vessel Strike Avoidance Measures

In addition to complying with existing vessel speed restrictions for North Atlantic right whales, Transco intends to comply with voluntary programs NMFS uses to notify vessel operators to slow down to avoid right whales. All project related vessels, regardless of size, will operate at 10 knots (18.5 km/hr) or less when traveling in an SMA (active in portions of the project area between November 1 and April 30). Additionally, at all times and locations, vessel operators and crews would use the following protocols:

- Maintain a vigilant watch for right whales and slow down or stop the vessel to avoid striking the animal(s);
- Conform to the regulations prohibiting approach of right whales closer than 500 yards (460 m) (50 CFR 224.103 (c));
- Adhere to rules for DMAs if they are designated by NMFS in the project area during the project.

Shutdown Zones

For all pile driving and removal activities, Transco would implement shutdowns within designated zones. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones vary based on the activity type and marine mammal hearing group (tables 14 and 15).

In cases where it would be challenging to detect marine mammals at the Level A harassment isopleth, (*e.g.*, all hearing groups during impact pile driving activities), and where shutting down at the Level A harassment zone would create practicability concerns due to the distances at which species would need to be detected (*e.g.*, high frequency cetaceans during impact pile driving), smaller shutdown zones have been proposed (table 15)).

Construction supervisors and crews, PSOs, and relevant Transco staff must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 m of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction. If an activity is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone indicated in tables 14 and 15, or 15 minutes have passed without re-detection of the animal.

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

Table 14 -- Proposed Shutdown Zones during vibratory pile driving and removal

Site	Pile Size (inches)	Installation or Removal Method	Shutdown for all hearing groups, install and removal (m)
Morgan Shore Approach HDD (MP 12.59)	24	Vibratory	10
	36	Vibratory	120
	36, 36	Vibratory, Vibratory	60
	48	Vibratory	50
Neptune PC Crossing (MP 13.84)	10	Vibratory	10
MP 14.5 to MP 16.5	24	Vibratory	20

MP 28.0 to MP 29.36	34	Vibratory	100
HDD Ambrose West Side (MP 29.4)	24	Vibratory	10
	36	Vibratory	40
	48	Vibratory	80
	36, 48	Vibratory, Vibratory	80
	60	Vibratory	120
HDD Ambrose East Side (MP 30.48)	24	Vibratory	20
	36	Vibratory	40
	48	Vibratory	80
	48, 48	Vibratory, Vibratory	80
	60	Vibratory	20
MP 34.5 to MP 35.04	34	Vibratory	30
Neptune PC Crossing (MP 35.04)	10	Vibratory	10

Table 15 -- Proposed Shutdown Zones during impact pile driving (m)

Location	Pile Types	Activity	Hearing group-specific shutdown zones (m)			
			LF	HF	VHF	PW
HDD Morgan Offshore (MP 12.59)	36-inch	Impact	2000	200	200	150
	36, 36	Impact, Impact				
HDD Ambrose West Side (MP 29.4)	60	Impact				
	60, 48	Impact, Vibratory				
MP 34.5 to MP 35.04	34	Impact				

PSOs

The number and placement of PSOs during all construction activities (described in the **Proposed Monitoring and Reporting** section) would ensure that the shutdown zones are generally visible, such that PSOs are reasonably confident of their ability to

observe species at relevant distances. Transco would employ at least two PSOs at each active pile driving site during all pile driving activities.

Monitoring for Level A and Level B Harassment

PSOs would monitor the shutdown zones and beyond to the extent that PSOs can see. Monitoring beyond the shutdown zones enables observers to be aware of and communicate the presence of marine mammals in the project areas outside the shutdown zones and thus prepare for a potential cessation of activity should the animal enter the shutdown zone. Transco also plans to take measures beyond visual observations to ensure that they are aware of marine mammal locations by monitoring media throughout the day including, but not limited to, Whale Alert, Whale Map, Right Whale Sightings Advisory System (RWSAS), and U.S. Coast Guard very high frequency (VHF) Channel 16 (see **Monitoring and Reporting** section).

Pre-and-Post-Activity Monitoring

Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 minutes or longer occurs, PSOs would observe the shutdown zones and as much of the harassment zones as possible for a period of 30 minutes. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones are clear of marine mammals for which take is authorized. If the shutdown zone for which take is authorized is obscured by fog or poor lighting conditions, in-water construction activity will not be initiated until the entire shutdown zone is visible. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals. If a marine mammal is observed entering or within shutdown zones, pile driving activity must be delayed or halted. If pile driving is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or

15 minutes have passed without re-detection of the animal. If a marine mammal for which take by Level B harassment is authorized is present in the Level B harassment zone, activities may begin. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones would commence.

Soft Start

The use of soft-start procedures during impact pile driving are believed to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors would be required to provide an initial set of three strikes from the hammer at reduced energy, with each strike followed by a 30-second waiting period. This procedure would be conducted a total of three times before impact pile driving begins. Soft start would be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer. Soft start is not required during vibratory pile driving activities.

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

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected

to be present while conducting the activities. Effective reporting is critical 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 Transco in its adequate and complete application or are the result of subsequent coordination between NMFS and Transco. Transco has agreed that all of the monitoring and reporting measures are practicable. NMFS describes those below as proposed requirements, and has included them in the proposed IHA.

Visual Monitoring

Marine mammal monitoring during pile driving activities must be conducted by NMFS-approved PSOs in a manner consistent with the following:

- PSOs must 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 must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute other relevant experience, education (degree in biological science or related field) or training for experience performing the duties of a PSO during construction activities pursuant to NMFS-issued take authorization;
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator will be designated. The lead observer will be required to have prior experience working as a marine mammal observer during construction activity pursuant to a NMFS-issued incidental take authorization; and,
- PSOs must be approved by NMFS prior to beginning any activity subject to this IHA.

PSOs should also have the following qualifications:

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

- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

- Writing skills sufficient to prepare a report of observations including, but not limited to, the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and,

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

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

Transco would place at least two PSOs at each active pile driving site during all pile driving and removal activities. PSOs would be stationed either on the construction barge or a separate support vessel. PSOs would monitor for marine mammals 360 degrees around their respective vessels.

Monitoring would be conducted 30 minutes before, during, and 30 minutes after all in water construction activities. In addition, PSOs will record all incidents of marine mammal occurrence, regardless of distance from activity, and will document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

North Atlantic Right Whale and other Marine Mammal Awareness

Throughout each day, Transco plans to use available sources of information on North Atlantic right whale and other marine mammals, including but not limited to Whale Alert, Whale Map, RWSAS, and U.S. Coast Guard very high frequency (VHF)

Channel 16, to receive notifications of any marine mammal sightings and information associated with any DMAs. Maintaining frequent daily awareness of North Atlantic right whale presence in the area, through Transco's ongoing visual monitoring efforts and opportunistic data sources (outside of Transco's efforts), and subsequent coordination for disseminating that information across project personnel affords increased protection of North Atlantic right whales and other marine mammals by alerting project personnel and the marine mammal monitoring team to a higher likelihood of encountering these species, potentially increasing the efficacy of mitigation efforts.

Reporting

Transco would submit a draft marine mammal monitoring report to NMFS within 90 days after the completion of pile driving activities, or 60 days prior to a requested date of issuance of any future IHAs for the project, or other projects at the same location, whichever comes first. The marine mammal monitoring report will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report will include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including: (1) the number and type of piles that were driven and the method (*e.g.*, impact or vibratory); and (2) total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring;
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;

- Upon observation of a marine mammal, the following information: (1) name of PSO who sighted the animal(s) and PSO location and activity at time of sighting; (2) time of sighting; (3) identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species; (4) distance and location of each observed marine mammal relative to the pile being driven for each sighting; (5) estimated number of animals (min/max/best estimate); (6) estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*); (7) animal's closest point of approach and estimated time spent within the harassment zone; (8) description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);

- Number of marine mammals detected within the harassment zones, by species; and,

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

A final report must be prepared and submitted within 30 calendar days following receipt of any NMFS comments on the draft report. If no comments are received from NMFS within 30 calendar days of receipt of the draft report, the report shall be considered final. All PSO data would be submitted electronically in a format that can be queried such as a spreadsheet or database and would be submitted with the draft marine mammal report.

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Transco must report the incident to the NMFS

Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.gov* and *itp.fleming@noaa.gov*) and Greater Atlantic Regional Fisheries Office (GARFO)

Stranding Coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, the Transco must immediately cease the activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this IHA. Transco must not resume their activities until notified by NMFS. The report must include the following information:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animals(s), if alive;
- 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 majority of our analysis applies to all the species listed in table 3, given that many of the anticipated effects of this project on different marine mammal stocks are expected to be relatively similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

Pile driving and removal associated with this project, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level B harassment and, for some species, Level A harassment from underwater sounds generated by pile driving and removal. Potential takes could occur if individuals are present in the ensonified zone when these activities are underway.

No serious injury or mortality is expected, even in the absence of required mitigation measures, given the nature of the activities. Further, for eight species of marine mammals, no take by Level A harassment is anticipated, due to the rarity of the species near the project area. The likelihood of take by Level A harassment occurring is further reduced by Transco's plans to implement mitigation measures such as shutdown

zones that encompass all or a portion of the Level A harassment zones (see **Proposed Mitigation** section)

Level A harassment is proposed to be authorized for humpback whale, minke whale, bottlenose dolphin, harbor porpoise, and pinnipeds that may occur in the project area (gray seal, harbor seal, and harp seal). Any take by Level A harassment is expected to arise from, at most, a small degree of AUD INJ (*i.e.*, minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by impact pile driving such as the low-frequency region below 2 kHz), not severe hearing impairment or impairment within the ranges of greatest hearing sensitivity. Animals would need to be exposed to higher levels and/or longer duration than are expected to occur here in order to incur any more than a small degree of PTS.

Additionally, the amount of take by Level A harassment proposed for authorization is very low. NMFS expects no more than 4 takes by Level A harassment for humpback whale; 1 take by Level A harassment for minke whale; and 11 takes by Level A harassment for harbor porpoise. The proposed amount of take by Level A harassment for bottlenose dolphin and the guild of pinnipeds that may occur in the project area are a bit larger – 42 takes and 44 takes, respectively. However, for all hearing groups, if hearing impairment occurs, it is most likely that the affected animal would lose only a few dB in its hearing sensitivity. Due to the small degree anticipated, any AUD INJ potentially incurred would not be expected to affect the reproductive success or survival of any individuals, much less result in adverse impacts on the species or stock.

Additionally, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. However, since the hearing sensitivity of individuals that incur TTS is expected to recover completely within minutes to hours, it is unlikely that the brief hearing impairment would affect the individual's long-term ability to forage and communicate

with conspecifics, and would therefore not likely impact reproduction or survival of any individual marine mammal, let alone adversely affect rates of recruitment or survival of the species or stock.

Effects on individuals that are taken by Level B harassment in the form of behavioral disruption, on the basis of reports in the literature as well as monitoring from other similar activities, would likely be limited to reactions such as avoidance, increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.*, Thorson and Reyff, 2006). Most likely, individuals would simply move away from the sound source and temporarily avoid the area where pile driving is occurring. If sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activities are occurring. We expect that any avoidance of the project areas by marine mammals would be temporary in nature and that any marine mammals that avoid the project areas during construction would not be permanently displaced. Short-term avoidance of the project areas and energetic impacts of interrupted foraging or other important behaviors is unlikely to affect the reproduction or survival of individual marine mammals, and the effects of behavioral disturbance on individuals is not likely to accrue in a manner that would affect the rates of recruitment or survival of any affected stock.

Some individual marine mammals in the project area, such as harbor seals or bottlenose dolphins, may be present and be subject to repeated exposure to sound from pile driving activities on multiple days. However, pile driving and extraction is not expected to occur on every day, and these individuals would likely return to normal behavior during gaps in pile driving activity within each day of construction and in between work days. As discussed above, individuals could temporarily relocate during construction activities to reduce exposure to elevated sound levels from the project. Thus,

even repeated Level B harassment of some small subset of an overall stock is unlikely to result in any effects on rates of reproduction and survival of the stock.

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

There is a BIA for migrating right whales that intersects with the offshore portion of the project area (LaBrecque *et al.*, 2015; Van Parijs *et al.*, 2015), but it is active between March and April and November and December, when most of the project activities are not planned to occur. This suggests that impacts from the project would have minimal to no impact on important right whale habitat and would therefore not affect reproduction and survival. While there are plans for project activities to occur in November, and Transco has also accounted for the potential that the project schedule could shift into any time of year, most of the North Atlantic right whales observed in the New York Bight, when present, are detected in deeper waters of the continental shelf, much further offshore (Zoidis *et al.*, 2021; Morrison and Taggart, 2021, accessed July 25, 2025). Given the nature of migratory behavior (*e.g.*, continuous path), as well as the low number of total takes, we anticipate that few, if any, of the instances of take would represent repeat takes of any individual.

As described above, North Atlantic right, humpback, and minke whales are experiencing ongoing UMEs, and an ongoing UME for gray and harbor seals is pending closure. However, we do not expect authorized takes to exacerbate or compound upon these ongoing and closure pending UMEs. As discussed above, very little injury, serious injury or mortality is expected or authorized, and the impact of Level A and Level B harassment takes of these species will be minimized through the incorporation of mitigation measures. The UMEs do not provide cause for concern regarding population-level impacts. Despite the UMEs, the relevant population of humpback whales (the West Indies breeding population, or DPS), minke whales, and relevant pinniped species (gray and harbor seals) remain healthy.

For North Atlantic right whales, no injury as a result of the proposed project is expected or proposed for authorization, and Level B harassment takes of right whales are expected to be in the form of avoidance of the immediate area of construction. In addition, the number of exposures above the Level B harassment threshold are minimal (*i.e.*, 12). As no injury or mortality is expected or proposed for authorization, the proposed authorized takes of right whales would not exacerbate or compound the ongoing UME in any way.

Finally, it is unlikely that minor noise effects in a small, localized area of habitat would have any effect on the reproduction or survival of any individuals, much less these stocks' annual rates of recruitment or survival. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activities would have only minor, short-term effects on individuals. The specified activities are not expected to impact rates of recruitment or survival and would therefore not result in population-level impacts.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from this activity are not expected to

adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or authorized;
- No take by Level A harassment is proposed for 7 species;
- Take by Level A harassment would be in very small amounts for most species

and of low severity;

- Proposed takes by Level B harassment are relatively low for most stocks. Level B harassment would primarily be in the form of behavioral disturbance, resulting in avoidance of the project areas around where impact or vibratory pile driving is occurring, with some low-level TTS that may limit the detection of acoustic cues for relatively brief amounts of time in relatively confined footprints on their populations;

- The lack of anticipated significant or long-term negative effects to marine mammal habitat;

- Effects on species that serve as prey for marine mammals from the activities 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 from either project;

- The ensonified areas are small relative to the overall habitat ranges of all species and stocks, and overlap with known areas of important habitat is minimal;

- Transco would implement mitigation measures including visual monitoring and shutdown zones to minimize the numbers of marine mammals exposed to injurious levels of sound.

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.

For all stocks, except for the Western North Atlantic Migratory Coastal stock of bottlenose dolphin, the proposed number of takes is less than one-third of the best available population abundance estimate (*i.e.*, less than 1 percent for 12 stocks, and less than 3.5 percent for 3 stocks, and less than 18 percent for 2 stocks) (table 13).

The total number of authorized takes for bottlenose dolphins, if assumed to accrue solely to new individuals of the northern migratory coastal stock, is 35 percent of the total stock abundance, which is currently estimated as 6,639. However, these numbers represent the estimated incidents of take, not the number of individuals taken. That is, it is highly likely that a relatively small subset of these bottlenose dolphins, given their range extends well beyond the project area, will be harassed by project activities.

Given that the specified activity will be stationary within an area not recognized as being of any special significance that would serve to attract or aggregate dolphins, we therefore believe that the estimated numbers of takes, were they to occur, likely represent

repeated exposures of a much smaller number of bottlenose dolphins and that these estimated incidents of take represent small numbers of bottlenose dolphins.

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 IHAs, NMFS OPR consults internally whenever we propose to authorize take for endangered or threatened species, in this case with NMFS' GARFO. NMFS OPR is proposing to authorize take of North Atlantic right whale, fin whale, and sei whale, which are listed under the ESA.

The Permits and Conservation Division has requested initiation of section 7 consultation with NMFS GARFO for the issuance of this IHA. NMFS will conclude the ESA consultation prior to reaching a determination regarding the proposed issuance of the authorization.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to Transco for conducting Transco's Northeast Supply Enhancement Project in Raritan Bay, Lower New York Bay, and the Atlantic Ocean (New York Bight region), provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>.

Request for Public Comments

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

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

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

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

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

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

Dated: August 5, 2025.

Kimberly Damon-Randall,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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