



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XE772]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Lubec Harbor Project in Lubec, Maine

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

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an incidental harassment authorization (IHA) to the Maine Department of Transportation (ME DOT) to incidentally harass marine mammals during construction activities associated with the Lubec Harbor project in Lubec, Maine.

DATES: This authorization is effective from April 10, 2025 through April 9, 2026.

ADDRESSES: 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#authorizations-in-process>. In case of problems accessing these documents, please call the contact listed below.

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

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the “take” of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct 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 (referred to in shorthand 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.

Summary of Request

On August 29, 2024, NMFS received a request from ME DOT for an IHA to take marine mammals incidental to construction activities in Johnson Bay in Lubec, Maine. Following NMFS’ review of the application, ME DOT submitted a revised version on December 19, 2024. The application was deemed adequate and complete on December 20, 2024. ME DOT’s request is for take of six species of marine mammals, by Level B harassment and by Level A harassment for 3 of those species. Neither ME DOT nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of the Specified Activity

Overview

The Maine Department of Transportation and the Town of Lubec are planning to construct a boat launch and breakwater structure that would extend into Johnson Bay from the northern coast of Lubec. The town was once one of Maine's most active commercial fishing ports, consisting of several large herring processing operations until the late 1970s. A collapse of the herring fishery led to the closure of those processing canneries; however, there is a rebound of the fishing industry in the area due to lobster fishing, shellfish harvesting, and growth of salmon farming. The project will address the lack of sheltered boat access and safe launch locations. The breakwater is expected to provide a sheltered area that mariners may launch behind and recover and moor their vessels during periods of inclement weather. This project is scheduled in order to provide a safer harbor for the mariners and townspeople of Lubec. This construction project includes installation of a falsework platform, a pile supported platform (PSP), and two floating docks. The falsework platform will be installed using impact and vibratory pile driving, while the PSP and floating docks will require DTH (down the hole) drilling. ME DOT is requesting authorization of take by Level B harassment for five marine mammal species over an estimated 234 days of pile driving/drilling activities.

Table 1 - Number and Types of Piles to be Installed

Project Component	Pile Diameter and Type	Number of Piles	Impact Strikes per Pile	Vibratory Duration per Pile (minutes)	DTH Drilling Duration per Pile (minutes)	Production Rate (piles per day)	Days of Installation
Pile Supported Platform	36" steel pipe pile	72	-	-	780	0.5	144
Floating Docks	24-30" steel pipe pile	32	-	-	780	0.5	64

Falsework Platform	14" steel H pile	65	150	30	-	5	13 Install 13 Removal
Total		169	-	-	-	-	234

A detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed IHA (90 FR 11262, March 5, 2025). Since that time, no changes have been made to the planned activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

Comments and Responses

A notice of NMFS' proposal to issue an IHA to ME DOT was published in the **Federal Register** on March 5, 2025 (90 FR 11262). That notice described, in detail, ME DOT's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. In that notice, we requested public input on the request for authorization described therein, our analyses, the proposed authorization, and any other aspect of the notice of proposed IHA, and requested that interested persons submit relevant information, suggestions, and comments. During the 30-day public comment period, NMFS did not receive any public comments.

Changes from Proposed IHA to Final IHA

NMFS has corrected a typographical error related to the source level values for 14-inch (35.56-centimeter) impact H piles. The proposed IHA specified source levels of 183 dB sound exposure level (SEL) and 170 dB root mean square (RMS) for this pile type. However, these levels were erroneously transposed, and the source levels have been corrected to 170 dB SEL and 183 dB RMS. The correction of these values results in updated estimated harassment isopleths and associated ensonified areas and, as a result,

updated take numbers associated with impact driving of 14-inch piles. Please see the **Estimated Take of Marine Mammals** section for updated isopleth distances, areas, and take numbers.

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 2 lists all species or stocks for which take is 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 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 2 are the most recent available at the time of publication (including from the draft 2024 SARs) and are available online at:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>.

Table 2 – Species Likely Affected by the Specified Activities¹

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ²	Stock abundance (CV, Nmin, most recent abundance survey) ³	PBR	Annual M/SI ⁴
<i>Order Artiodactyla – Cetacea</i> <i>– Mysticeti (baleen whales)</i>						
<i>Family Balaenopteridae (rorquals)</i>						
Minke Whale	<i>Balaenoptera acutorostrata</i>	Canadian Eastern Coastal	-, -, N	21,968 (0.31, 17,002, 2021)	170	9.4
<i>Odontoceti (toothed whales, dolphins, and porpoises)</i>						
<i>Family Delphinidae</i>						
Atlantic White-Sided Dolphin	<i>Lagenorhynchus acutus</i>	Western N Atlantic	-, -, N	93,233 (0.71, 54,443, 2021)	544	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	142
<i>Order Carnivora – Pinnipedia</i>						
<i>Family Phocidae (earless seals)</i>						
Gray Seal	<i>Halichoerus grypus</i>	Western N Atlantic	-, -, N	394,311 (0.20, 376,621, 2021)	12,052	4,491
Harbor Seal	<i>Phoca vitulina</i>	Western N Atlantic	-, -, N	61,336 (0.08, 57,637, 2018)	1,729	339

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, ship strike). Annual M/SI (mortality/serious injury) 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.

A detailed description of the species likely to be affected by the Lubec Harbor project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (90 FR 11262, March 5, 2025); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to NMFS' website (<https://www.fisheries.noaa.gov/find-species>) for generalized species accounts.

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.*). Subsequently, NMFS (2024) updated generalized hearing ranges for these marine mammal hearing groups. 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). Marine mammal hearing groups and their associated hearing ranges are provided in table 3.

Table 3 – Marine Mammal Hearing Groups (NMFS 2024)

Hearing Group	Generalized Hearing Range*
UNDERWATER	

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
IN-AIR	
Phocid pinnipeds (PA) (true seals)	42 Hz to 52 kHz
Otariid pinnipeds (OA) (sea lions and fur seals)	90 Hz to 40 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 <i>et al.</i> 2007; Southall <i>et al.</i> 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

The effects of underwater noise from ME DOT’s construction activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the project area. The notice of proposed IHA (90 FR 11262, March 5, 2025) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from ME DOT’s construction on marine mammals and their habitat. That information and analysis is referenced in this final IHA determination and is not repeated here; please refer to the notice of proposed IHA (90 FR 11262, March 5, 2025).

Estimated Take of Marine Mammals

This section provides an estimate of the number of incidental takes 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 certain construction activities (*i.e.*, pile driving and DTH drilling) have the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for very high frequency cetacean species and phocids because predicted auditory injury zones are larger than for low-frequency and high-frequency cetacean species. Auditory injury is unlikely to occur for low frequency and high frequency cetacean species. The 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 for this activity. Below we describe how the take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic criteria above which NMFS believes the best available science indicates marine mammals will likely be behaviorally harassed or incur some degree of auditory injury; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the

density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the 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 auditory injury (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 discussed 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 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.

ME DOT's activity includes the use of continuous (vibratory pile driving and removal and DTH drilling) and impulsive (impact pile driving and DTH drilling), and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μ Pa are applicable.

Level A harassment – NMFS' 2024 Updated Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0) (Technical Guidance, 2024) identifies dual criteria to assess auditory injury (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). ME DOT's activity includes the use of impulsive (impact pile driving and DTH drilling) 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 4 – Thresholds Identifying the Onset of Auditory Injury

Hearing Group	AUD INJ Onset Acoustic Thresholds* (Received Level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{pk,flat}$: 222 dB $L_{E,LF,24h}$: 183 dB	<i>Cell 2</i> $L_{E,LF,24h}$: 197 dB
High-Frequency (HF) Cetaceans	<i>Cell 3</i> $L_{pk,flat}$: 230 dB $L_{E,HF,24h}$: 193 dB	<i>Cell 4</i> $L_{E,HF,24h}$: 201 dB
Very High-Frequency (VHF) Cetaceans	<i>Cell 5</i> $L_{pk,flat}$: 202 dB $L_{E,VHF,24h}$: 159 dB	<i>Cell 6</i> $L_{E,VHF,24h}$: 181 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{pk,flat}$: 223 dB $L_{E,PW,24h}$: 183 dB	<i>Cell 8</i> $L_{E,PW,24h}$: 195 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{pk,flat}$: 230 dB $L_{E,OW,24h}$: 185 dB	<i>Cell 10</i> $L_{E,OW,24h}$: 199 dB
<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 (ISO) standards (ISO 2017; ISO 2020). 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 Hz to 165 kHz). The subscript associated with cumulative sound exposure level criteria indicates the designated marine mammal auditory weighting function (LF, HF, and VHF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level criteria could be exceeded in a multitude of ways (<i>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 project. Marine mammals are expected to be affected via sound generated by the primary components of the project (*i.e.*, pile driving and removal and DTH drilling). The maximum (underwater) area ensonified above the thresholds for behavioral harassment referenced above is approximately 29 km² (7,166.06 acres) for the total area, and 11 km² (2,718.16 acres) in US waters.

The project includes vibratory pile installation and removal, impact pile driving, and DTH drilling. Source levels for these activities are based on reviews of measurements of the same or similar types and dimensions of piles available in the literature and proxies from similar, previous projects. Source levels for each pile size and activity are presented in table 5. Source levels for vibratory installation and removal of piles of the same diameter are assumed to be the same.

Table 5 – Proxy Sound Source Levels for Pile Installation Activity

Project Component	Pile Type	Installation Method	Proxy	Reference	Distance to Measurement	Source Levels (re 1μPa)		
						Peak	SEL	RMS
PSP	36" Diameter Steel Pipe Piles	DTH Drilling ²	25" to 42" Piles ³	NMFS 2022b, Denes <i>et al.</i> , 2019; Reyff and Heyvaert, 2019; Reyff, 2020	10 m	194	164	174
Floating Docks	24-30" Diameter Steel Pipe Piles ¹							
Falsework Platform	14" Diameter Steel H Piles	Vibratory Pile Driving	14" steel H pile	Caltrans 2015; NMFS 2022a	10 m	-	-	150
		Impact Pile Driving			10 m	200	170	183

1 - For the purpose of this IHA, it is assumed that a 30-inch (76.2-centimeter) pile would be used to install the floating docks.

2 – DTH drilling is considered an impulsive sound source for Level A harassment calculations, and a non-impulsive source for Level B harassment calculations.

3 - As a conservative measure, the same proxy measurements were used for both the PSP and the floating docks due to their pile design and installation method similarities.

NMFS recommends treating DTH systems as both impulsive and continuous, non-impulsive sound source types simultaneously. Thus, impulsive thresholds are used to evaluate Level A harassment, and continuous thresholds are used to evaluate Level B harassment. With regards to DTH mono-hammers, NMFS recommends proxy levels for Level A harassment based on available data regarding DTH systems of similar sized piles and holes (Denes *et al.*, 2019; Reyff and Heyvaert, 2019; Reyff, 2020) (table 1 and table

6 includes number of piles and duration; table 5 includes sound pressure and sound exposure levels for each pile type).

ME DOT will use bubble curtains for all PSP and floating dock construction which will use DTH drilling. We assume here that use of the bubble curtain would result in a reduction of 5 dB from the assumed SPL (rms) and SPL (peak) source levels for these pile sizes, and reduce the applied source levels accordingly.

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

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

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.

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field) environment not limited by depth or water surface, resulting in a 6-dB reduction in sound level for each doubling of distance from the source ($20 \times \log [\text{range}]$). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling

of distance from the source ($10 \cdot \log [\text{range}]$). A practical spreading value of 15 is often used under conditions, such as the project site, where water increases with depth as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions. Practical spreading loss is assumed here.

The intensity of pile driving sounds is greatly influenced by factors such as the type of piles, hammers, and the physical environment in which the activity takes place. In order to calculate the distances to the Level A harassment and the Level B harassment sound thresholds for the methods and piles being used in this project, the applicant and NMFS used acoustic monitoring data from other locations to develop proxy source levels for the various pile types, sizes and methods. The project includes vibratory and impact pile installation of steel H piles and vibratory removal of steel H piles and DTH drilling of 36-inch steel pipe piles and 24 to 30-inch steel pipe piles. NMFS consulted multiple sources to determine valid proxy source levels for the construction planned. This is the best available data for pile source levels, and source levels for each pile size and driving method are presented in table 5.

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

PSP & Floating Docks ^a	24-30" Diameter Steel Pipe Piles	DTH Drilling	Non-Impulsive & Impulsive	5 dB	1,243.6	158.7	1,924.5 (1,817.0)	1,104.8	18,478.5 (6,335.9)
Falsework Platform	14" Diameter Steel Pipe Piles	Vibratory Pile Driving and Removal	Non-Impulsive	0 dB	3.1	1.2	2.6	4.0	1,000
		Impact Pile Driving	Impulsive	0 dB	111.7	14.2	172.8	99.2	341.5

a - The isopleths for PSP & floating dock piles for Level A harassment (VHF cetaceans) and Level B harassment (all marine mammals) extend into Canadian waters. Isopleths in parentheses represent the truncated radii within US waters only.

b - A NAS (noise attenuation system) will be deployed during all phases of PSP/floating dock pile installation. No NAS is planned during falsework platform installation and removal.

Table 8 – The Calculated ZOIs for each Project Component and Installation and Removal Activity

Project Component	Pile Type	Installation Method	Broadband Noise Attenuation ^b	Level A harassment ZOI (km ²)				Level B harassment ZOI (km ²)
				LF Cetaceans	HF Cetaceans	VHF Cetaceans	PW Pinnipeds	All Marine Mammals
PSP & Floating Docks ^a	36" Diameter Steel Pipe Piles	DTH Drilling	5 dB	2.633	0.079	4.485 (4.480)	2.167	29.336 (11.330)
	24-30" Diameter Steel Pipe Piles							

Falsework Platform	14" Diameter Steel H Piles	Vibratory Pile Driving and Removal	0 dB	0.00003	0.000005	0.000021	0.00005	1.833
		Impact Pile Driving		39.197	0.634	93.807	30.915	351.81

a - The ZOIs for PSP & floating dock piles for Level A VHF cetaceans and Level B harassment all marine mammals both extend into Canadian waters. ZOIs in parentheses represent the truncated zones within US waters only.

b - A NAS will be deployed during all phases of PSP/floating dock pile installation. No NAS is planned during falsework platform installation and removal.

Marine Mammal Occurrence

In this section we provide information about the occurrence of marine mammals, including density and other relevant information which will inform the take calculations. Density estimates, scientific literature, local information, and monitoring data from the previous nearby Eastport Breakwater Project (Maine DOT 2015 & 2017) were used to inform take calculations. Density estimates were calculated using the 2023 density models from the Duke University Marine Geospatial Ecological Laboratory (Roberts *et al.*, 2016, 2023). The density models have 5 x 5 km spatial resolution cells with monthly density values for each cell. At the mouth of the Quoddy Narrows Inlet, ME are three density cells which represent the nearest density data to the project location. The maximum monthly density data from these three cells were used to determine density estimates for all cetacean species with regular or common presence in the area, i.e., Atlantic white-sided dolphin, minke whale, common dolphin, and harbor porpoise (table 9). Local and recent monitoring data are available for harbor and gray seals near the project area. For seals, sighting records from nearby monitoring surveys are preferred because the data represent reliable detections of local species and may provide more detail and context to each sighting than what can be inferred from model results. Two nearby monitoring reports have been reviewed, and each contain sufficient detection data to calculate exposure estimates for this project (ME DOT 2015, 2017) (table 10 and table 11). Both monitoring reports contain PSO (protected species observer) detections during

breakwater construction at Eastport, Maine, located in Washington County, in Cobscook Bay and situated approximately 4.83 km (3 mi) from the Lubec Safe Harbor Project Area.

Table 9 – Maximum Estimated Densities (animals/km²) used for Exposure

Estimation

Species	Monthly densities (animals/km ²)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minke whale	0.0001	0.0001	0.0002	0.002	0.005	0.009	0.008	0.007	0.004	0.003	0.0001	0.0001
Harbor seal ^a	0.128	0.162	0.120	0.134	0.228	0.855	1.268	1.037	0.669	0.473	0.043	0.063
Gray seal ^a	0.058	0.074	0.055	0.061	0.104	0.389	0.577	0.472	0.304	0.215	0.019	0.029
Harbor porpoise	0.073	0.102	0.099	0.116	0.101	1.661	2.951	3.205	2.531	1.966	1.743	0.050
Atlantic white- sided dolphin	0.021	0.017	0.013	0.017	0.032	0.049	0.038	0.025	0.037	0.054	0.033	0.033
Common dolphin	0.005	0.001	0.001	0.001	0.003	0.005	0.008	0.014	0.015	0.017	0.019	0.016

Source: Roberts *et al.*, 2016, 2023

Note: Blue cells with **bold** values indicate the highest monthly density for each species.

a - Density was adjusted by their relative abundance.

Table 10 - Individuals Observed per Month at Eastport, Maine Breakwater Project

2015 - 2016 Season

Month	Number of Seals Observed
July 2015	190
August 2015	133
September 2015	139
November 2015	170
December 2015	20
January 2016	42
February 2016	13
March 2016	27
April 2016	22
May 2016	3

June 2016	11
Total	916

**Table 11 - Individuals Observed per Month at Eastport, Maine Breakwater Project
2017 Season**

Month (2017)	Number of Seals Observed
January	0
February	3
March	14
April	12
May	15
Total	44

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 is authorized.

ME DOT estimated the take of marine mammals for the Lubec Safe Harbor Project using two different methods. Take for cetaceans was calculated using the 2023 density models from Duke University Marine Geospatial Ecological Laboratory (Roberts *et al.*, 2016, 2023). Take for seals was calculated based on monitoring data from two construction seasons of the nearby Eastport Breakwater Project in Eastport, Maine which is about 5 km away from Lubec.

As previously noted, NMFS cannot authorize incidental take under the MMPA that may occur within the territorial seas of foreign nations (from 0-12 nmi (nautical miles) (22.2 km) from shore), as the MMPA does not apply in those waters. However, NMFS has still calculated the estimated level of incidental take in the entire activity area (including Canadian territorial waters) as part of the analysis supporting our determination under the MMPA that the activity will have a negligible impact on the

affected species. The total estimated take in U.S. and Canadian waters is presented in table 14 (see **Negligible Impact Analysis and Determination**).

Take calculations for cetaceans used the maximum monthly density and equation 1 below. Take calculations for gray and harbor seals used monitoring data recorded from two construction seasons at the Eastport Breakwater Project and equation 2 below.

(1) Estimated Take = maximum monthly density (table 9) × ZOI for the specific pile-related activity (table 8) × total number of days of specific pile-related activity (table 1)

(2) Estimated Take = average daily number of observed individuals per month (table 12) × total number of days of specific pile-related activity per month (table 13)

Minke Whale

A total of 28 minke whales were observed during the Eastport Breakwater Project, and there is a small potential for them to overlap with the Lubec Project area. Use of the information and equation described above results in an estimated total of 98 minke whale takes, by Level B harassment only. However, NMFS authorizes only the take of minke whales estimated to occur in US waters (65).

The largest Level A harassment zone for minke whales extends 1,244 m (table 7). ME DOT is required to implement shutdown zones for low-frequency cetaceans that exceed the Level A harassment isopleth for all activities. Therefore, when considered in context of the expected low occurrence of minke whales in the area, implementation of the shutdown zones is expected to eliminate the potential for take by Level A harassment of minke whales. Therefore, no take by Level A harassment is authorized for minke whales.

Atlantic White-Sided Dolphin

No Atlantic white-sided dolphins were observed during the Eastport Breakwater Project, and there is a small potential for them to overlap with the Lubec Project area. Use of the information and equation described above results in an estimated total of 581

Atlantic white-sided dolphin takes by Level B harassment only. However, NMFS authorizes only the take of Atlantic white-sided dolphins estimated to occur in US waters (379).

The largest Level A harassment zone for Atlantic white-sided dolphins extends 159 m from the noise source (table 7). ME DOT is required to implement shutdown zones for high-frequency cetaceans that exceed the Level A harassment isopleth for all activities. Therefore, when considered in context of the expected rare occurrence of Atlantic white-sided dolphins in the area, implementation of the shutdown zones is expected to eliminate the potential for take by Level A harassment of Atlantic white-sided dolphins. Therefore, no take by Level A harassment authorized for Atlantic white-sided dolphins.

Common Dolphin

No common dolphins were observed during the Eastport Breakwater Project, and there is a small potential for them to overlap with the Lubec Project area. Use of the information and equation described above results in an estimated total of 204 common dolphin takes by Level B harassment. However, NMFS authorizes only the take of common dolphins estimated to occur in US waters (133).

The largest Level A harassment zone for common dolphins extends 159 m from the noise source (table 7). ME DOT is required to implement shutdown zones for high-frequency cetaceans that exceed the Level A harassment isopleth for all activities. Therefore, when considered in context of the expected rare occurrence of common dolphins in the area, implementation of the shutdown zones is expected to eliminate the potential for take by Level A harassment of common dolphins. Therefore, no take by Level A harassment is authorized for common dolphins.

Harbor Porpoise

A total of 76 harbor porpoises were observed during the Eastport Breakwater

Project, and they are expected to occur within the Lubec Project area. Use of the information and equation described above results in an estimated total of 32,238 harbor porpoise takes by Level B harassment. However, NMFS authorizes only the take of harbor porpoises estimated to occur in US waters (20,131).

To estimate expected take by Level A harassment for species with larger Level A harassment zones and which are expected to occur more frequently (i.e., harbor porpoise and seals), while accounting for implementation of shutdown zones (table 15), exposures within the estimated Level A harassment zones but outside the shutdown zones (where the Level A harassment zones are larger than the shutdown zones) were calculated. Proportions of the total Level A harassment areas that are outside of the shutdown zones are applied to the total Level A harassment estimates to calculate the expected instances of take by Level A harassment that are authorized. Where the estimated Level A harassment zones extend into Canadian waters, the associated estimates of take by Level A harassment are adjusted as described above for Level B harassment to ensure that only takes expected to occur within U.S. waters are authorized. Use of the information and equation described above results in an estimated total of 6,080 harbor porpoise takes by Level A harassment. However, NMFS authorizes only the take of harbor porpoises estimated to occur in US waters (6,031).

Gray Seal

A total of 916 seals were observed during the 2015-2016 Eastport Breakwater Project 2015-2016 season. Seal data were combined as observers had difficulty differentiating in the field between harbor and gray seals. There is potential for gray seals to overlap with the Lubec Project area. Use of the information and equation described above results in an estimated total of 268 gray seal takes. However, NMFS authorizes only the take of gray seals estimated to occur in US waters (132), with 92 (228 including Canadian waters) by Level B harassment and 40 by Level A harassment. Instances of

Level A harassment versus Level B harassment was proportioned out by the number of days per activity and proportion of Level A and B harassment zone size. The number of days of DTH reflects 88.9% of activity while vibratory and impact pile driving represent 5.5% each. Once take was proportioned out into each activity it was further proportioned based on the size of the Level A and Level B harassment zone. DTH has about 10.5% of its Level A harassment zone within the Level B harassment zone, while due to shutdown procedures and zone size vibratory driving will only cause potential take by Level B harassment and impact driving will only cause potential take by Level A harassment.

Harbor Seal

A total of 916 seals were observed during the 2015-2016 Eastport Breakwater Project 2015-2016 season, seal data were combined as observers had difficulty differentiating in the field between harbor and gray seals. However, there were 44 harbor seals observed during the 2017 construction season of the Eastport Project. There is potential for harbor seals to overlap with the Lubec Project area. Use of the information and equation described above results in an estimated total of 548 harbor seal takes. However, NMFS authorizes only the take of gray seals estimated to occur in US waters (301), with 220 (548 including Canadian waters) by Level B harassment and 81 by Level A harassment. Take by Level A versus Level B harassment was proportioned out by the number of days per activity and proportion of Level A and B harassment zone size. The number of days of DTH reflects 88.9% of activity while vibratory and impact pile driving represent 5.5% each. Once take was proportioned out into each activity it was further proportioned based on the size of the Level A and Level B harassment zone. DTH has about 10.5% of its Level A harassment zone within the Level B harassment zone, while due to shutdown procedures and zone size vibratory driving will only cause potential take by Level B harassment and impact driving will only cause potential take by Level A harassment.

Table 12 – Average Daily Observed Individual Animals Detected per Month at Eastport, Maine Breakwater Project

Observation Month	Species Detected at Eastport, Maine	
	Harbor seal	Gray seal
January	0.96	0.88
February	0.84	0.68
March	0.82	0.37
April	0.88	0.34
May	0.85	0.16
June	0.42	0.19
July	6.53	2.97
August	5.08	2.31
September	5.31	2.42
October	5.02	2.28
November	6.87	3.13
December	1.15	0.52

*Source Maine DOT

Table 13 – Monthly Construction Schedule for the Safe Harbor Project.

Year	Month	Number of Piles Installed per Month			Number of Piles Removed per Month	Days of Activity per Month
		PSP Piles	Floating Dock Piles	Falsework Piles	Falsework Piles	
2025	March	6	-	5	5	14
	April	6	-	5	5	14
	May	6	-	5	5	14
	June	6	-	5	5	14
	July	6	-	5	5	14
	August	6	-	5	5	14
	September	6	-	5	5	14
	October	6	-	5	5	14
	November	6	-	5	5	14
	December	6	8	5	5	30

	January	6	8	5	5	30
2026	February	6	8	5	5	30
	March	-	8	5	5	18
Total Piles		72	32	65	65	234
Total Days		144	64	13	13	234

The total take estimates that are authorized for each species for the Lubec Harbor Project can be found below in table 14.

Table 14 – Estimated and Authorized Take by Level A and Level B Harassment by Species

Common Name	Stock	Stock Abundance	Level A harassment ^a	Level B harassment ^a	Total Take- US Waters Authorized Only ^a	Take Percentage of Stock in US Waters
Minke Whale	Canadian Eastern Coast	21,968	0	65 (98)	65 (98)	<1
Atlantic White - Sided Dolphin	Western North Atlantic	31,506	0	379 (581)	379 (581)	1.2
Common Dolphin	Western North Atlantic	93,100	0	133 (204)	133 (204)	<1
Harbor Porpoise	Gulf of Maine/Bay of Fundy	85,765	6,031 (6,080)	20,131 (32,238)	26,162 (38,318)	30.5
Harbor Seal	Western North Atlantic	61,336	81	220 (467)	301 (548)	<1
Gray Seal	Western North Atlantic	394,311	40	92 (228)	132 (268)	<1

a - The parenthetical number represents the total number of takes including those estimated to occur in Canadian waters.

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.

Mitigation for Marine Mammals and their Habitat

Implementation of Shutdown Zones — For all pile driving/removal activities, ME DOT would implement shutdowns within designated zones. The purpose of a shutdown zone is generally to define an area within which shutdown of activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Implementation of shutdowns would be used to avoid or minimize incidental Level A

harassment takes from vibratory, impact pile driving and removal, and DTH drilling (table 15). For all vibratory pile driving/removal activities, a minimum 10-m shutdown zone would be established for marine mammals as outlined in ME DOT's IHA application. Shutdown zones for impact pile driving and DTH drilling are based on the Level A harassment zones and monitoring feasibility and therefore vary by marine mammal hearing group (table 15). The shutdown zones for DTH drilling for low frequency and high frequency cetaceans were rounded up from the estimated Level A harassment zone for each particular activity. The largest Level A harassment zone for low frequency cetaceans from DTH is 1,244 m, and a shutdown zone of 1,245 m is required, given the expected ability to detect those species at that distance. The largest Level A harassment zone from DTH for high frequency cetaceans is 159 m, and a shutdown zone of 160 m is required, given the expected ability to detect those species at that distance. The same methodology was used for impact pile driving for low frequency, high frequency, very high frequency cetaceans, and pinnipeds. The largest Level A harassment zone for low frequency cetaceans is 112 m, so a shutdown zone of 115 m is required, given the expected ability to detect those species at that distance. The largest Level A harassment zone for high frequency cetaceans for impact pile driving is 14 m, so a shutdown zone of 15 m is required, given the expected ability to detect those species at that distance. The largest Level A harassment zone for very high frequency cetaceans is 173 m, so a shutdown zone of 175 m is required, given the expected ability to detect those species at that distance. The largest Level A harassment zone for pinnipeds is 99 m, so a shutdown zone of 100 m is required, given the expected ability to detect those species at that distance. The Level A harassment zones for DTH drilling for very high frequency cetaceans and phocids are considered too large to effectively monitor (Table 7). Therefore a shutdown zone of 500m is required, as we consider that distance to be the largest reasonable zone a PSO can monitor for more cryptic species like harbor porpoises

and seals in this circumstance. The placement of PSOs during all pile driving activities (described in detail in the **Monitoring and Reporting** section) would ensure the full extent of shutdown zones are visible to PSOs.

Table 15 – Shutdown and Clearance Zones (m) for each Project Component

Project Component	Pile Installation Activity	Bubble Curtain Used	Shutdown & Clearance Distances			
			LF Cetaceans	HF Cetaceans	VHF Cetaceans	PW Pinnipeds
PSP	DTH Drilling	Yes	1,245	160	500 ^a	500 ^a
Floating Docks						
Falsework Platform	Vibratory Setting & Removal	No	10	10	10	10
	Impact Hammer	No	115	15	175	100

Note: Mitigation ranges were selected based on the acoustic isopleth results, plus an added buffer of rounding up to the nearest 5 m for PSO clarity.

a - It is NMFS' recommendation for this Project that a 500-m maximum shutdown and clearance zone be assumed for VHF cetaceans and pinnipeds for monitoring feasibility.

Monitoring for Level A and Level B harassment — ME DOT has identified monitoring zones correlated with the Level B harassment zones. Monitoring zones provide utility for observing by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring zones enable observers to be aware of and communicate the presence of marine mammals in the project area outside the shutdown zone and thus prepare for a potential cessation of activity should the animal enter the shutdown zone. PSOs would monitor the entire visible area to maintain the best sense of where animals are moving relative to the zone boundaries defined in table 15. A minimum of two PSOs will be required to be on duty at all times during pile activity. ME DOT will send a Marine Mammal Monitoring Plan 90 days prior to the project's starting date with specific PSO locations.

Bubble Curtain — A bubble curtain would be used for all DTH drilling activities for

construction of the PSP and floating dock. Bubble curtains will not be used for installation or removal of the piles for the falsework platform. Bubble curtains will be used to achieve a broadband noise attenuation which will effectively minimize the extent of the SEL_{cum} isopleths and reduce the sizes of the overall ZOIs. It is anticipated that a 5-dB broadband attenuation level will consistently be achieved; therefore, all exposure estimates and the resulting take request account for all stages of structural pile installation activities associated with this project and are based on 5 dB attenuation (not including falsework pile installation and removal). The bubble curtain must distribute air bubbles around 100 percent of the piling circumference for the full depth of the water column. The lowest bubble ring must be in contact with the substrate for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent substrate contact. No parts of the ring or other objects shall prevent full substrate contact. Air flow to the bubblers must be balanced around the circumference of the pile.

Pre-Activity Monitoring — Prior to the start of daily in-water construction activity, or whenever a break in pile driving/removal of 30 minutes or longer occurs, PSOs would observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone would be considered cleared when a marine mammal has not been observed within the zone for that 30-minute period. If a marine mammal is observed within the shutdown zone, a soft-start cannot proceed until the animal has left the zone or has not been observed for 15 minutes. If the monitoring zone has been observed for 30 minutes and marine mammals are not present within the zone, soft-start procedures can commence and work can continue. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones, indicated in table 15, are clear of marine mammals. When 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 both the

monitoring zone and shutdown zone would commence.

Soft Start — The use of a soft start procedure is believed to provide additional protection to marine mammals by warning marine mammals or providing them with a chance to leave the area prior to the hammer operating at full capacity. ME DOT will utilize soft start techniques for impact pile driving. We require an initial set of three strikes from the impact hammer at reduced energy, followed by a 30-second waiting period, then two subsequent three-strike sets. Soft start will be required at the beginning of each day's impact pile driving work and at any time following a cessation of impact pile driving of 30 minutes or longer; the requirement to implement soft start for impact driving is independent of whether vibratory driving has occurred within the prior 30 minutes. Soft start is not required during vibratory pile driving activities.

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

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.

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

PSOs should have the following additional qualifications:

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

Monitoring will be conducted 30 minutes before, during, and 30 minutes after pile driving/removal activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving/removal 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.

A minimum of two PSO would be on duty during all in-water construction activities. Locations from which PSOs would be able to monitor from will be determined by ME DOT 90 days prior to the start of construction in their NMFS-approved Marine Mammal Monitoring Plan.

PSOs would scan the waters using binoculars or spotting scopes and would use a handheld range-finder device to verify the distance to each sighting from the project site. PSOs would be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator via a radio.

Reporting — A draft marine mammal monitoring report would be submitted to NMFS within 90 days after the completion of pile driving and removal activities. It would include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report must include:

- Dates and times (begin and end) of all marine mammal monitoring.
- Construction activities occurring during each daily observation period, including the number and type of piles driven or removed and by what method (*i.e.*, impact driving) and for each pile or total number of strikes for each pile (impact driving).
- PSO locations during marine mammal monitoring.

- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;

- Upon observation of a marine mammal, the following information: Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting; time of sighting; identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species; distance and bearing of each marine mammal observed relative to the pile being driven for each sighting (if pile driving was occurring at time of sighting); estimated number of animals (min/max/best estimate); estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*); animal's closest point of approach and estimated time spent within the harassment zone; 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 any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any.

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

Reporting Dead or Injured Marine Mammals — In the event that personnel involved in

the construction activities discover an injured or dead marine mammal, the Holder must report the incident to the Office of Protected Resources (OPR), NMFS (*PR.ITP.MonitoringReports@noaa.gov* and *itp.potlock@noaa.gov*), and to the Greater Atlantic Marine Mammal Stranding Network as soon as feasible. If the death or injury was clearly caused by the specified activity, the Holder 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. The Holder 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 animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considers other factors, such as the

likely nature of any impacts or responses (*e.g.*, intensity, duration), the context of any impacts or responses (*e.g.*, critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338, September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the majority of our analysis applies to all the species listed in table 2, given that many of the anticipated effects of this project on different marine mammal stocks are expected to be relatively similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

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

Take by Level A and Level B harassment would be due to potential behavioral disturbance, TTS, and PTS. No serious injury or mortality is authorized given the nature

of the activity and measures designed to minimize the possibility of injury to marine mammals. Take by Level A harassment is only anticipated for harbor porpoises, harbor seals, and gray seals. The potential for harassment is minimized through the construction method (*i.e.* vibratory methods to the extent practical) and the implementation of the mitigation measures (see the **Mitigation** section).

Behavioral responses of marine mammals to pile driving, removal, and drilling at the project site, if any, are expected to be mild and temporary. Marine mammals within the Level B harassment zone may not show any visual cues that they are disturbed by activities or could become alert, avoid the area, leave the area, or display other mild responses that are not observable such as changes in vocalization patterns. However, given the project schedule and appropriate mitigation, any harassment would be temporary.

In addition to the expected effects resulting from Level B harassment, we anticipate that harbor porpoises, harbor seals, and gray seals may sustain some limited Level A harassment in the form of PTS. However, any PTS is expected to be of a small degree (*i.e.*, minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by pile driving (below 2 kHz)) because 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. If hearing impairment occurs, it is most likely that the affected animal would lose a few decibels in its hearing sensitivity, which in most cases is not likely to meaningfully affect its ability to forage and communicate with conspecifics, as it would be minor and not in the region of greatest hearing sensitivity.

Additionally, and as noted previously, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. Because of the small degree anticipated, though, any PTS or TTS

potentially incurred here would not be expected to adversely impact individual fitness, let alone annual rates of recruitment or survival.

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

In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the specified activities will have only minor, short-term effects on individuals that will not have any bearing on those individuals' fitness. Thus the specified activities are not expected to impact rates of recruitment or survival and will therefore have a negligible impact on those species or stocks.

As described above, we authorize only the takes estimated to occur in United States waters (table 14); however, for the purposes of our negligible impact analysis and determination, we consider the total number of takes that are anticipated to occur as a result of the entire project (including the portion of the Level B harassment zone that extends into Canadian waters) (table 14).

In summary and as described above, the following factors primarily support our 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;

- The anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior;
- The potential impacts of Level A harassment on harbor porpoises, harbor seals, and gray seals are not anticipated to increase individual impacts to a point where any population-level impacts might be expected;
- The absence of any significant habitat within the industrialized project areas, including known areas or features of special significance for foraging or reproduction; and
- The presumed efficacy of the mitigation measures in reducing the effects of the specified activity to the level of least practicable adverse impact.
- 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 from the project are very small relative to the overall habitat ranges of all species and stocks, and will not cause more than minor impacts.
- There are no ESA-designated critical habitat, Biologically Important Areas, or any other areas of known biological importance near the project site.

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 monitoring and mitigation measures, NMFS finds that the total marine mammal take from the activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted previously, only take of small numbers of marine mammals may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities

other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is less than one-third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Table 16 – Total Estimated Take, Including Canadian Territorial Waters

Common Name	Stock	Stock Abundance	Level A harassment	Level B harassment	Total Take	Take Percentage of Stock
Minke Whale	Canadian Eastern Coast	21,968	0	98	98	<1
Atlantic-White Sided Dolphin	Western North Atlantic	31,506	0	581	581	1.8
Common Dolphin	Western North Atlantic	93,100	0	204	204	<1
Harbor Porpoise	Gulf of Maine/Bay of Fundy	85,765	6,080	32,238	38,318	44.7
Harbor Seal	Western North Atlantic	61,336	81	467	548	<1
Gray Seal	Western North Atlantic	394,311	40	228	268	<1

Table 16 demonstrates the number of animals that NMFS anticipates could be taken by Level A and Level B harassment for the project. Our analysis shows that, other than harbor porpoise, less than 2 percent of each affected stock could be taken by harassment. The numbers of animals authorized to be taken for these stocks would be considered small relative to the relevant stock's abundances, even if each estimated taking

occurred to a new individual, which is an unlikely scenario. For harbor porpoise, the number is higher. However, because the project is located in a single, localized area (Lubec, ME) relative to the range of the affected stock of harbor porpoise, it is likely that the number of takes authorized for harbor porpoise would represent repeated takes of a significantly smaller number of individuals. In summer, harbor porpoise are most likely to range from the northern Gulf of Maine through the southern Bay of Fundy and around the southern tip of Nova Scotia. This more concentrated range is itself a very large area relative to the area affected by this project, and in the spring and fall porpoise are likely to be dispersed over an even broader range from North Carolina to New Brunswick. On this basis, NMFS finds that the number of individuals likely to be taken for harbor porpoise is likely to be of no more than small numbers.

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS 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 insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA

compliance for the issuance of IHAs, NMFS consults internally whenever we authorize take for endangered or threatened species.

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

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 action (*i.e.*, the issuance of an IHA) and alternatives 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 determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

Authorization

NMFS has issued an IHA to ME DOT for the potential harassment of small numbers of 6 marine mammal species incidental to the Lubec Harbor project in Lubec, Maine, that includes the previously explained mitigation, monitoring and reporting requirements.

Dated: April 23, 2025.

Catherine Marzin,

Acting Director, Office of Protected Resources,

National Marine Fisheries Service.

