



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XE184]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to U. S. Coast Guard Fast Response Cutter Homeporting in Seward and Sitka, Alaska

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

ACTION: Notice; issuance of incidental harassment authorizations.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued two incidental harassment authorizations (IHAs) to the United States Coast Guard (USCG) to incidentally harass marine mammals during construction activities associated with fast response cutter (FRC) homeporting in Seward and Sitka, Alaska.

DATES: These authorizations are effective from September 1, 2026, through August 31, 2027, and from March 1, 2027, through February 29, 2028.

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>. In case of problems accessing these documents, please call the contact listed below.

FOR FURTHER INFORMATION CONTACT: Alyssa Clevestine, 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 cited above are included in the relevant sections below.

Summary of Request

On January 19, 2024, NMFS received a request from the USCG for two IHAs to take marine mammals incidental to pile driving (installation and removal) associated with construction of two FRC homeporting docks in Seward and Sitka, Alaska. Following NMFS’ review of the application, the USCG submitted revised versions on April 3, 2024, June 6, 2024, and June 11, 2024. The application was deemed adequate and complete on

June 11, 2024. The USCG's request is for take of 11 species (18 stocks) of marine mammals by Level B harassment and, for a subset of 5 of these species, Level A harassment. Neither the USCG nor NMFS expect serious injury or mortality to result from this activity and, therefore, IHAs are appropriate.

Description of the Specified Activity

Overview

The USCG plans to construct shore-side facilities and associated infrastructure at Moorings Seward to homeport one FRC located in the Seward Marine Industrial Center (SMIC) boat basin, and demolishing and constructing shore-side facilities at Moorings Sitka in Sitka Harbor to support a second FRC. The shore-side facilities and associated infrastructure for Moorings Seward will be constructed parallel to the existing SMIC dock. Construction of a new floating dock at Moorings Sitka will be attached to the existing pier. The projects are needed to provide adequate vessel berthing capability to support modern USCG cutters and ultimately, readiness as part of the USCG's overall mission. The USCG plans to use a variety of methods, including impact, down-the-hole (DTH), and vibratory pile driving, to install and remove piles, including concrete, steel, plastic, and timber piles. These methods of pile driving will introduce underwater sounds that may result in take, by Level A and Level B harassment, of marine mammals. Pile removal may occur by vibratory, cutting, or clipping methods. Cutting and clipping are not anticipated to have the potential to result in incidental take of marine mammals because they are either above water, do not last for sufficient duration to present the reasonable potential for disruption of behavioral patterns, do not produce sound levels with likely potential to result in marine mammal harassment, or some combination of the above.

Each IHA will be effective for 1 year from the date of issuance. Pile extraction and installation activities at Moorings Seward will occur for a total of 22 non-consecutive

days, of which pile removal is anticipated to take 2 days and pile installation is anticipated to take a maximum of 20 days (15 days to complete installation plus 5 additional days to account for potential weather-related delays). Pile removal and installation activities at Moorings Sitka will occur for a total of 117 non-consecutive days, of which pile removal is anticipated to take 3 days and pile installation is anticipated to take a maximum of 114 days (89 days to complete installation plus 25 additional days to account for potential weather-related delays).

A detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed IHA (89 FR 60359, July 25, 2024). 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.

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

Comments and Responses

A notice of NMFS' proposal to issue two IHAs to the USCG was published in the **Federal Register** on July 25, 2024 (89 FR 60359). That notice described, in detail, the USCG'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 authorizations described therein, our analyses, the proposed authorizations, and any other aspect of the notice of proposed IHAs, and requested that interested persons submit relevant information, suggestions, and comments.

During the 30-day public comment period, NMFS did not receive any substantive comments on the proposed IHAs.

Changes from the Proposed IHA to Final IHA

There were two changes from the proposed IHAs: the dates for planned work at both locations and the estimated take at both locations (four species (four stocks) at Moorings Seward, four species (five stocks) at Moorings Sitka). The former was made upon the applicant's request and resulted in changes to the dates planned for in-water work at Moorings Seward to occur from March 1, 2027, through February 29, 2028, and at Moorings Sitka to occur from September 1, 2026, through August 31, 2027.

Changes to estimated take were made as a result of NMFS' incorporation of the 2024 Updated Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Updated Technical Guidance; NMFS, 2024). On May 3, 2024, NMFS published and solicited public comment on its draft Updated Technical Guidance (89 FR 36762), which included updated thresholds and weighting functions to inform auditory injury (AUD INJ) estimates. The 2024 Updated Technical Guidance was finalized on October 24, 2024 (89 FR 84872) and represents the best available science, replacing the 2018 Technical Guidance (NMFS, 2018). To best ensure we have considered an appropriate estimate of take by Level A harassment, in consideration of the best available science, we conducted basic comparative calculations using the 2024 Updated Technical Guidance for the purposes of understanding the number of takes by Level A harassment (AUD INJ) that would be predicted. The relevant updated thresholds and weighting functions may be found in the executive summary of the 2024 Updated Technical Guidance, on pages 3 through 6. We also considered whether modifications to mitigation zones would be appropriate in light of the 2024 Updated Technical Guidance. Based on the outcome of these comparisons using the 2024 Updated Technical Guidance, updated take numbers are presented in tables 11 and 12 of this notice (see **Estimated Take of Marine Mammals** section). For the purposes of the negligible impact analyses for a given species or stock, the higher of any two Level A harassment estimates is

considered. No updates were made to planned mitigation zones in consideration of the 2024 Updated Technical Guidance (see **Mitigation** section).

The use of the 2024 Updated Technical Guidance resulted in an increase in the size of the Level A harassment isopleth(s) for certain species groups, which therefore increased take by Level A harassment for the following species, for which we relied on density data and the estimated ensonified areas: harbor porpoise at Moorings Seward and Dall's porpoise at Moorings Sitka. It also resulted in an increase in the size of the Level A harassment isopleth and resulting take by Level A harassment of Steller sea lions at both locations, for which we relied on occurrence data. Take by Level A harassment of low-frequency cetaceans was not expected under the 2018 Technical Guidance and is not expected under the 2024 Updated Technical Guidance; the Level A harassment isopleth during DTH activities for this group decreased.

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 1 lists all species or stocks for which take is expected and authorized for the specified activities at Seward and Sitka, 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 authorized here, PBR and annual serious injury and mortality 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 either NMFS' U.S. Alaska SARs or U.S. Pacific SARs. All values presented in table 1 are the most recent available at the time of publication (including from the draft 2023 SARs) and are available online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>.

Table 1 – Marine Mammal Species¹ Likely Impacted by the Specified Activities

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ²	Stock abundance (CV, N _{min} , most recent abundance survey) ³	PBR	Annual M/SI ⁴
<i>Family Eschrichtiidae</i>						
Gray Whale	<i>Eschrichtius robustus</i>	Eastern North Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	131
<i>Family Balaenopteridae (rorquals)</i>						
Fin Whale	<i>Balaenoptera physalus</i>	Northeast Pacific	E, D, Y	UND (UND, UND, 2013)	UND	0.6
Humpback Whale	<i>Megaptera novaeangliae</i>	Hawai'i	-, -, N	11,278 (0.56, 7,265, 2020)	127	27.09
Humpback Whale	<i>Megaptera novaeangliae</i>	Mexico-North Pacific	T, D, Y	N/A (N/A, N/A, 2006)	UND	0.57
Minke Whale ⁵	<i>Balaenoptera acutorostrata</i>	Alaska	-, -, N	N/A (N/A, N/A, N/A)	UND	0
<i>Family Delphinidae</i>						
Killer Whale	<i>Orcinus orca</i>	Eastern North Pacific Alaska Resident	-, -, N	1,920 (N/A, 1,920, 2019)	19	1.3
Killer Whale	<i>Orcinus orca</i>	Eastern North Pacific Gulf of Alaska, Aleutian Islands and Bering Sea Transient	-, -, N	587 (N/A, 587, 2012)	5.9	0.8
Killer Whale	<i>Orcinus orca</i>	Eastern Northern Pacific Northern Resident	-, -, N	302 (N/A, 302, 2018)	2.2	0.2
Killer Whale	<i>Orcinus orca</i>	West Coast Transient	-, -, N	349 (N/A, 349, 2018)	3.5	0.4

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ²	Stock abundance (CV, N _{min} , most recent abundance survey) ³	PBR	Annual M/SI ⁴
Pacific White-Sided Dolphin	<i>Lagenorhynchus obliquidens</i>	North Pacific	-, -, N	26,880 (N/A, N/A, 1990)	UND	0
<i>Family Phocoenidae (porpoises)</i>						
Dall's Porpoise ⁶	<i>Phocoenoides dalli</i>	Alaska	-, -, N	UND (UND, UND, 2015)	UND	37
Harbor Porpoise	<i>Phocoena phocoena</i>	Gulf of Alaska	-, -, Y	31,046 (0.21, N/A, 1998)	UND	72
Harbor Porpoise ⁷	<i>Phocoena phocoena</i>	Yakutat/Southeast Alaska Offshore Waters	-, -, N	N/A (N/A, N/A, 1997)	UND	22.2
<i>Family Otariidae (eared seals and sea lions)</i>						
Northern Fur Seal	<i>Callorhinus ursinus</i>	Eastern Pacific	-, D, Y	626,618 (0.2, 530, 376, 2019)	11,403	373
Steller Sea Lion	<i>Eumetopias jubatus</i>	Western	E, D, Y	49,837 (N/A, 49,837, 2022)	299	267
Steller Sea Lion	<i>Eumetopias jubatus</i>	Eastern	-, -, N	36,308 (N/A, 36,308, 2022)	2,178	93.2
<i>Family Phocidae (earless seals)</i>						
Harbor Seal	<i>Phoca vitulina</i>	Prince William Sound	-, -, N	44,756 (N/A, 41,776, 2015)	1,253	413
Harbor Seal	<i>Phoca vitulina</i>	Sitka/Chatham Strait	-, -, N	13,289 (N/A, 11,883, 2015)	356	77

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 - 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 SARs online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region>. CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance.

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 - No population estimates have been made for the number of minke whales in the entire North Pacific. Some information is available on the numbers of minke whales in some areas of Alaska, but in the 2009, 2013, and 2015 offshore surveys, so few minke whales were seen during the surveys that a population estimate for the species in this area could not be determined (Rone *et al.*, 2017). Therefore, this information is N/A (not available).

6 - Previous abundance estimates covering the entire stock's range are no longer considered reliable and the current estimates presented in the SARs and reported here only cover a portion of the stock's range. Therefore, the calculated N_{min} and PBR is based on the 2015 survey of only a small portion of the stock's range. PBR is considered to be biased low since it is based on the whole stock whereas the estimate of mortality and serious injury is for the entire stock's range.

7 - Abundance estimates assumed that detection probability on the trackline was perfect; work is underway on a corrected estimate. Additionally, preliminary data results based on environmental DNA analysis show genetic differentiation between harbor porpoise in the northern and southern regions on the inland waters of southeast Alaska. Geographic delineation is not yet known. Data to evaluate population structure for harbor porpoise in Southeast Alaska have been collected and are currently being analyzed. Should the analysis identify different population structure than is currently reflected in the Alaska SARs, NMFS will consider how to best revise stock designations in the future.

As indicated above, all 11 species (with 18 managed stocks) in table 1 temporally and spatially co-occur with the activities to the degree that take is reasonably likely to occur at either location. All species that could potentially occur in the project areas are included in section 4 and tables 3-1 and 3-2 of the USCG's IHA application.

A detailed description of the species likely to be affected by the USCG 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 (89 FR 60359, July 25, 2024); 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 auditory or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups and, in 2024, updated the hearing group terminology (NMFS, 2024). Generalized hearing ranges were chosen based on the approximately 65-decibel (dB) threshold from the composite audiograms, previous analysis 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 based on the Updated Technical Guidance are provided in table 2.

Table 2 – 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

[^] Southall *et al.* (2019) indicates that as more data become available there may be separate hearing group designations for Very Low-Frequency cetaceans (blue, fin, right, and bowhead whales) and Mid-Frequency cetaceans (sperm, killer, and beaked whales). However, at this point, all baleen whales are part of the LF cetacean hearing group, and sperm, killer, and beaked whales are part of the HF cetacean hearing group. Additionally, recent data indicates that as more data become available for Monachinae seals, separate hearing group designations may be appropriate for the two phocid subfamilies (Ruscher *et al.*, 2021; Sills *et al.*, 2021).

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

** NMFS is aware that the National Marine Mammal Foundation successfully collected preliminary hearing data on two minke whales during their third field season (2023) in Norway. These data have implications for not only the generalized hearing range for low-frequency cetaceans but also on their weighting function. However, at this time, no official results have been published. Furthermore, a fourth field season (2024) has concluded, where more data were collected. Thus, it is premature for us to propose any changes to our current Updated Technical Guidance. However, mysticete hearing data is identified as a special circumstance that could merit reevaluating the acoustic criteria in this document. Therefore, we anticipate that once the data from both field seasons are published, it will likely necessitate updating this document (*i.e.*, likely after the data gathered in the summer 2024 field season and associated analysis are published).

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 the USCG’s construction activities have the potential to result in harassment of marine mammals in the vicinity of the project areas.

The notice of proposed IHA (89 FR 60359, July 25, 2024) included a discussion of the

effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from the USCG's construction activities 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 (89 FR 60359, July 25, 2024).

Estimated Take of Marine Mammals

This section provides an estimate of the number of incidental takes authorized through the IHAs, which informed 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 sources (*i.e.*, vibratory and impact pile driving, DTH) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for AUD INJ (Level A harassment) to result, primarily for high-frequency species and phocids, because predicted AUD INJ zones are large and these species could enter the Level A harassment zones and remain undetected for a sufficient duration to incur AUD INJ due to their small size and inconspicuous nature. Although AUD INJ could occur for low-frequency species due to large predicted AUD INJ zones associated with DTH, due to their large size, conspicuous nature, and planned mitigation (*i.e.*, large shutdown zones, boat-based protected species observers (PSOs)), it is assumed that all

low-frequency species would be visually detected and, therefore, taking by Level A harassment would be eliminated. The planned 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 authorized for this activity. Below we describe how the authorized take numbers are estimated.

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

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur AUD INJ (which includes, but is not limited to, permanent threshold shift (PTS)) of some degree (equated to Level A harassment).

Level B Harassment – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.*, frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area),

and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.*, Southall *et al.*, 2007; Southall *et al.*, 2021; Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared 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 temporary threshold shift (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.

The USCG's planned activity includes the use of continuous (vibratory and DTH) and impulsive (impact driving and DTH) sources, and therefore the 120 and 160 dB re 1 μ Pa (RMS) thresholds, respectively, are applicable.

Level A harassment – NMFS' 2024 Updated Technical Guidance (NMFS, 2024) identifies dual criteria to assess AUD INJ (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). The USCG's planned activity

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

These criteria are provided in table 3 below. The references, analysis, and methodology used in the development of the thresholds are described in the 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 3 – Summary of Marine Mammal AUD INJ Onset Criteria (NMFS, 2024)

Hearing Group	AUD INJ Onset Criteria* (Received Level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{p,0-pk,flat}$: 222 dB $L_{E,p,LF,24h}$: 183 dB	<i>Cell 2</i> $L_{E,p,LF,24h}$: 197 dB
High-Frequency (HF) Cetaceans	<i>Cell 3</i> $L_{p,0-pk,flat}$: 230 dB $L_{E,p,HF,24h}$: 193 dB	<i>Cell 4</i> $L_{E,p,HF,24h}$: 201 dB
Very High-Frequency (VHF) Cetaceans	<i>Cell 5</i> $L_{p,0-pk,flat}$: 202 dB $L_{E,p,VHF,24h}$: 159 dB	<i>Cell 6</i> $L_{E,p,VHF,24h}$: 181 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{p,0-pk,flat}$: 223 dB $L_{E,p,PW,24h}$: 183 dB	<i>Cell 8</i> $L_{E,p,PW,24h}$: 195 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{p,0-pk,flat}$: 230 dB $L_{E,p,OW,24h}$: 185 dB	<i>Cell 10</i> $L_{E,p,OW,24h}$: 199 dB

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

Note: Peak sound pressure level ($L_{p,0-pk}$) has a reference value of 1 μ Pa (underwater) and 20 μ Pa (in air), and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1 μ Pa²s (underwater) and 20 μ Pa²s (in air). In this table, criteria are abbreviated to be more reflective of International Organization for Standardization 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.e.*, 7 Hz to 165 kHz) or in air (*i.e.*, 42 Hz to 52 kHz). The subscript associated with cumulative sound exposure level criteria indicates the designated marine mammal auditory weighting function (LF, HF, and VHF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level criteria could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these criteria will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that are used in estimating the area ensounded above the acoustic thresholds, including source levels and transmission loss (*TL*) 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.*, impact pile driving, vibratory pile driving, vibratory pile removal, and DTH).

In order to calculate distances to the Level A harassment and Level B harassment thresholds for the methods and piles planned for this project, NMFS used acoustic monitoring data from other locations to develop source levels for the various pile types, sizes, and methods (tables 4-7).

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; Guan and Miner, 2020; Heyvaert and Reyff, 2021; Reyff, 2020; Reyff and Heyvaert, 2019).

Table 4 – Observed Non-Impulsive Sound Levels and Durations for In-Water Activities Likely to Occur at Moorings Seward

In-Water Activity	Pile Size and Type	RMS SPL (dB re 1 μ Pa) at 10 m	Average Duration per Pile (seconds)	Piles per Day
Vibratory Pile Extraction ^a	14-inch steel guide pile	160	1,800	5
Vibratory Pile Settling ^a	30-inch concrete guide pile	163	600	2
Rock socket drill ^b (non-impulsive component)	30-inch concrete guide pile	174	10,800 ^c	2

Note: Abbreviations: dB re 1 μ Pa = decibels referenced to a pressure of 1 microPascal, m = meters.

^a NMFS, 2024.

^b NMFS, 2022.

^c Rock socket drilling is a DTH activity with multiple strikes per second. DTH activities produce sounds that simultaneously contain both non-impulsive and impulsive components.

Table 5 – Observed Impulsive Sound Levels and Durations for Pile Installation Activities Likely to Occur at Moorings Seward

Installation Method	Pile Size and Type	Peak (dB re 1 μ Pa) at 10 m	RMS (dB re 1 μ Pa) at 10 m	SEL _{single-strike} (dB re 1 μ Pa ² s) at 10 m	Strikes per Day	Maximum Strikes per Pile	Piles per Day
Rock socket drill ^a	30-inch concrete guide pile	194	174	164	216,000 ^c	108,000	2
Impact hammer proofing ^b	30-inch concrete guide pile	198	186	173	10	5	2

Note: Abbreviations: dB re 1 μ Pa = decibels referenced to a pressure of 1 microPascal, m = meters.

^a NMFS, 2022.

^b NMFS, 2024.

^c Rock socket drilling is a DTH activity with multiple strikes per second. DTH activities produce sounds that simultaneously contain both non-impulsive and impulsive components.

Table 6 – Observed Non-Impulsive Sound Levels and Durations for In-Water Activities Likely to Occur at Moorings Sitka

In-Water Activity	Pile Size and Type	RMS SPL (dB re 1 μ Pa) at 10 m	Average Duration per Pile (seconds)	Piles per Day
Vibratory Pile Extraction ^a	12-inch timber piles	162	1,800	5
Vibratory Pile Settling ^b	30-inch concrete guide and structure pile	163	600	2
Rock socket drill ^c (non-impulsive component)	30-inch concrete guide and structure pile	174	10,800	2

Note: Abbreviations: dB re 1 μ Pa = decibels referenced to a pressure of 1 microPascal, m = meters.

^a NMFS, 2024.

^b NMFS, 2022.

^c Rock socket drilling is a DTH activity with multiple strikes per second. DTH activities produce sounds that simultaneously contain both non-impulsive and impulsive components.

Table 7 – Observed Impulsive Sound Levels and Durations for Pile Installation Activities Likely to Occur at Moorings Sitka

Installation Method	Pile Size and Type	Peak (re 1 μ Pa) at 10 m	RMS (dB re 1 μ Pa) at 10 m	SEL _{single-strike} (dB re 1 μ Pa ² s) at 10 m	Strikes per Day	Maximum Strikes per Pile	Piles per Day
Impact drive ^a	13-inch plastic fender pile	177	153	NA	200	100	2
Impact drive ^a	14-inch timber guide pile	180	170	160	320	160	2
Rock socket drill ^b	30-inch concrete guide pile	194	174	164	216,000 ^d	108,000	2
Impact hammer proofing ^c	30-inch concrete guide pile	198	186	173	10	5	2

Note: Abbreviations: dB re 1 μ Pa = decibels referenced to a pressure of 1 microPascal, m = meters.

^a Caltrans, 2020.

^b NMFS, 2022.

^c NMFS, 2024.

^d Rock socket drilling is a DTH activity with multiple strikes per second. DTH activities produce sounds that simultaneously contain both non-impulsive and impulsive components.

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

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

Where:

TL = transmission loss in dB

B = transmission loss coefficient; for practical spreading equals 15

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

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

The recommended *TL* coefficient for most nearshore environments is the practical spreading value of 15 (-4.5 dB per doubling of distance). This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, which is the most appropriate assumption for the USCG's planned activities. This analysis uses practical spreading loss, a standard assumption regarding sound propagation for similar environments, to estimate transmission of sound through water. The Level B harassment zones and approximate amount of area ensonified for the planned underwater activities are shown in tables 8 and 9.

Level A Harassment Zones – 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 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. A weighting adjustment factor of 2.5 or 2, a standard default value for vibratory pile driving and removal or impact driving and DTH respectively, was used to calculate Level A harassment areas. 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 such as pile driving and DTH, the optional Updated 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 Updated User Spreadsheet tool (e.g., number of piles per day, duration and/or strikes per pile) are

presented in tables 4-7, and the resulting estimated isopleths and total ensonified areas are reported below in tables 8 and 9.

Table 8 – Projected Distances to Level A Harassment Isopleths Using 2018 and 2024 Technical Guidance and Level B Harassment Isopleths by Marine Mammal Hearing Group at Moorings Seward

Activity	Distance to Level A for LF	Distance to Level A for HF	Distance to Level A for VHF	Distance to Level A for PW	Distance to Level A for OW	Level B Distance	Total Ensonified Area
Vibratory pile extraction	10.8 m <i>(14.6 m)</i>	1 m <i>(5.6 m)</i>	16 m <i>(11.9 m)</i>	6.6 m <i>(18.8 m)</i>	0.5 m <i>(6.3 m)</i>	4,641.6 m	1.94 km ²
DTH (Impulsive component) concrete	1,945.5 m <i>(1,938.5 m)</i>	69.2 m <i>(247.3 m)</i>	2,317.4 m <i>(2,999.8 m)</i>	1,041.2 m <i>(1,722.1 m)</i>	75.8 m <i>(641.9 m)</i>	39,810.7 m	2.26 km ² *
Vibratory settling concrete	4.5 m <i>(6 m)</i>	0.4 m <i>(2.3 m)</i>	6.6 m <i>(4.9 m)</i>	2.7 m <i>(7.8 m)</i>	0.2 m <i>(2.6 m)</i>	7,356.4 m	2.26 km ² *
Impact driver proofing concrete	10 m	0.4 m <i>(1.3 m)</i>	11.9 m <i>(15.4 m)</i>	5.3 m <i>(8.8 m)</i>	0.4 m <i>(3.3 m)</i>	541.2 m	0.11 km ²

Note 1: Abbreviations: LF = low-frequency cetaceans, HF = high-frequency cetaceans, VHF = very high-frequency cetaceans, PW = phocid pinnipeds in water, OW = otariid pinnipeds in water.

Note 2: Isopleths based on NMFS (2018) are shown above updated isopleths from NMFS (2024), which are italicized in parentheses below the original isopleths.
* Total harassment areas are the same despite having varying radii because the maximum distance intersects with the other side of Resurrection Bay near Seward resulting in the same areal extent.

Table 9 – Projected Distances to Level A Harassment Isopleths Using 2018 and 2024 Technical Guidance and Level B Harassment Isopleths by Marine Mammal Hearing Group at Moorings Sitka

Activity	Distance to Level A for LF	Distance to Level A for HF	Distance to Level A for VHF	Distance to Level A for PW	Distance to Level A for OW	Level B Distance	Total Ensonified Area
Vibratory pile extraction	14.7 m <i>(19.8 m)</i>	1.3 m <i>(7.6 m)</i>	21.7 m <i>(16.2 m)</i>	6.9 m <i>(25.5 m)</i>	0.6 m <i>(8.6 m)</i>	6,309.6 m	4.17 km ²
Impact drive plastic	13.6 m <i>(13.5 m)</i>	0.5 m <i>(1.7 m)</i>	16.2 m <i>(21 m)</i>	7.3 m <i>(12 m)</i>	0.5 m <i>(4.5 m)</i>	3.4 m	0 km ²
Impact drive timber	13.7 m <i>(13.6 m)</i>	0.5 m <i>(1.7 m)</i>	16.3 m <i>(21.1 m)</i>	7.3 m <i>(12.1 m)</i>	0.5 m <i>(4.5 m)</i>	46.4 m	0.01 km ²
DTH (Impulsive component)	1,945.5 m <i>(1,938.5 m)</i>	69.2 m <i>(247.3 m)</i>	2,317.4 m <i>(2,999.8 m)</i>	1,041.2 m <i>(1,722.1 m)</i>	75.8 m <i>(641.9 m)</i>	39,810.7 m	6.31 km ²
Vibratory settling concrete	4.5 m <i>(6 m)</i>	0.4 m <i>(2.3 m)</i>	6.6 m <i>(4.9 m)</i>	2.7 m <i>(7.8 m)</i>	0.2 m <i>(2.6 m)</i>	7,356.4 m	4.89 km ²
Impact driver proofing concrete	10 m	0.4 m <i>(1.3 m)</i>	11.9 m <i>(15.4 m)</i>	5.3 m <i>(8.8 m)</i>	0.4 m <i>(3.3 m)</i>	541.2 m	0.33 km ²

Note 1: Abbreviations: LF = low-frequency cetaceans, HF = high-frequency cetaceans, VHF = very high-frequency cetaceans, PW = phocid pinnipeds in water, OW = otariid pinnipeds in water.

Note 2: Isopleths based on NMFS (2018) are shown with updated isopleths from NMFS (2024) are italicized in parentheses.

Marine Mammal Occurrence

In this section we provide information about the occurrence of marine mammals, including density or other relevant information which informed the take calculations.

Available information regarding marine mammal occurrence and density in the project areas includes monitoring data, prior incidental take authorizations, and ESA consultations on previous projects. When local density information was not available, data aggregated in the Navy's Marine Mammal Species Density Database (Navy, 2019; Navy, 2020) for the Northwest or Gulf of Alaska Testing and Training areas or nearby proxies from the monitoring data were used. Daily occurrence probability of each marine mammal species is based on consultation with previous monitoring reports, local researchers and marine professionals. Occurrence probability estimates at Moorings Sitka are based on conservative density approximations for each species and factor in historic data of occurrence, seasonality, and group size in Sitka Sound and Sitka Channel. A summary of occurrence is shown in table 10. Group size is based on the best available published research for these species and their presence in the project areas.

Table 10 – Estimated Species Occurrence or Density Values

Species	Stock	Moorings Seward	Moorings Sitka
Steller sea lion ^{a, b}	Western	2 individuals/day	2 groups of 2 individuals/day of either stock
Steller sea lion ^{a, b}	Eastern	0	2 groups of 2 individuals/day of either stock
Northern fur seal	Eastern Pacific	0	1 individual/month
Harbor seal	Prince William Sound	48.95 individuals/day	0
Harbor seal ^a	Sitka/Chatham Strait	0	2 groups of 2.1 individuals/day
Killer whale	Alaska Resident	1 group of 7 individuals/week of either stock	1 group of 6.6 individuals/week of any stock
Killer whale	Gulf of Alaska, Aleutian Islands, and Bering Sea Transient	1 group of 7 individuals/week of either stock	1 group of 6.6 individuals/week of any stock

Species	Stock	Moorings Seward	Moorings Sitka
Killer whale	Northern Resident	0	1 group of 6.6 individuals/week of any stock
Killer whale	West Coast Transient	0	1 group of 6.6 individuals/week of any stock
Pacific white-sided dolphin	North Pacific	3 individuals/day	0
Harbor porpoise	Gulf of Alaska	0.4547 individuals/km ²	0
Harbor porpoise	Yakutat/Southeast Alaska Offshore Waters	0	1 group of 5 individuals/week
Dall's porpoise	Alaska	0.25 individuals/day	0.121 individuals/km ²
Sperm whale	North Pacific	0	0.002 individuals/km ²
Humpback whale ^c	Hawai'i	1 individual/day of either stock	1 group of 3.4 individuals/week of either stock
Humpback whale ^c	Mexico-North Pacific	1 individual/day of either stock	1 group of 3.4 individuals/week of either stock
Gray whale	Eastern North Pacific	0.0155 individuals/km ²	1 group of 3.5 individuals/2 weeks
Fin whale	Northeast Pacific	0.068 individuals/km ²	0.0001 individuals/km ²
Minke whale	Alaska	0.006 individuals/km ²	1 group of 3.5 individuals/2 weeks

Note: Occurrence value presented as individuals per unit time; density value presented as individuals per square kilometer.

^a Likelihood of one group per day in the Level A harassment zone and likelihood of two groups per day in the Level B harassment zone.

^b Steller sea lion stock attribution is 100 percent Western DPS at Moorings Seward; 97.8 percent Eastern DPS and 2.2 percent Western DPS at Moorings Sitka.

^c Humpback whale stock attribution is 89 percent Hawai'i and 11 percent Mexico-North Pacific at Moorings Seward; 98 percent Hawai'i and 2 percent Mexico-North Pacific at Moorings Sitka.

Gray whale – Members of the ENP stock have a small chance to occur at the northern end of Resurrection Bay near Moorings Seward, with an estimated density of 0.0155 individuals/km².

During 190 hours of observation from 1994 to 2002 from Sitka's Whale Park, only three gray whales were observed (Straley *et al.*, 2017). However, Straley and Wild (unpublished data) note that since 2014, the number of gray whale sightings in Sitka Sound has increased to an estimated 150-200 individuals in 2021 and 2022. Based on this and recent monitoring data collected near Sitka, the estimated occurrence of gray whales at Moorings Sitka is one group of 3.5 individuals every 2 weeks.

Fin whale – Fin whales have the potential to occur at both Moorings Seward and Moorings Sitka. Based on survey data, fin whales in the vicinity of Moorings Seward are anticipated to occur at a density of 0.068/km² and fin whales in the vicinity of Moorings Sitka are anticipated to occur at a density of 0.0001/km².

Humpback whale – Humpback whales found in the project areas are predominantly members of the Hawai'i DPS (89 percent at Moorings Seward, 98 percent probability at Moorings Sitka), which is not listed under the ESA. However, based on a comprehensive photo-identification study, members of the Mexico DPS, which is listed as threatened, have a small potential to occur in all project locations (11 percent at Moorings Seward, 2 percent at Moorings Sitka) (Wade, 2016), and it is estimated that one individual per day of either stock may occur at Moorings Seward while one group of 3.5 individuals per 2 weeks of either stock may occur at Moorings Sitka.

Minke whale – Minke whales are generally found in shallow, coastal waters within 200 m (656 ft) of shore (Zerbini *et al.*, 2006). Dedicated surveys for cetaceans in southeast Alaska found that minke whales were scattered throughout inland waters from Glacier Bay and Icy Strait to Clarence Strait, with small concentrations near the entrance of Glacier Bay. Surveys took place in spring, summer, and fall, and minke whales were

present in low numbers in all seasons and years (Dahlheim *et al.*, 2009). Additionally, minke whales were observed during the Biorka Island Dock Replacement Project at the mouth of Sitka Sound (Turnagain Marine Construction, 2018). Minke whale density at Moorings Seward is estimated as 0.006 individuals/km² while estimated occurrence at Moorings Sitka is one group of 3.5 individuals every 2 weeks.

Killer whale – Killer whales occur along the entire coast of Alaska (Braham and Dahlheim, 1982) and four stocks may be present in the project areas as follows: (1) Alaska Resident stock—both locations; (2) Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock—both locations; (3) Northern Resident—Sitka only; and (4) West Coast Transient stock—Sitka only.

The Alaska Resident stock occurs from southeast Alaska to the Aleutian Islands and Bering Sea. The Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock occurs from the northern British Columbia coast to the Aleutian Islands and Bering Sea. The Northern Resident stock occurs from Washington north through part of southeast Alaska. The West Coast Transient stock occurs from California north through southeast Alaska (Muto *et al.*, 2020). One group of seven individuals per week from either the Alaska Resident stock or the Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock are estimated to occur at Moorings Seward. One group of 6.6 individuals per week from any of the four stocks are estimated to occur at Moorings Sitka.

Pacific white-sided dolphin – Pacific white-sided dolphins are anticipated to occur in the vicinity of Moorings Seward only. Previous construction monitoring reported by NOAA as an appropriate proxy for Moorings Seward is three individuals per day. During 8 years of surveys near Sitka, Straley *et al.* (2017) only documented seven Pacific white-sided dolphins, therefore, we do not reasonably expect the species to occur in the vicinity of Moorings Sitka.

Dall's porpoise – Dall's porpoise are anticipated to occur in the vicinity of both locations. At Moorings Seward, the expected occurrence rate is approximately 0.25 animals per day, and the average group size throughout Alaskan waters is estimated to be between 2 and 12 individuals. We therefore estimate that approximately one group of up to six individuals could occur over 22 non-consecutive days of in-water work. At Moorings Sitka, the estimated density of Dall's porpoise is 0.121 individuals/km².

Harbor porpoise – Only the Yakutat/Southeast Alaska Offshore Waters stock and the Gulf of Alaska stock are expected to be encountered in the project areas. The Gulf of Alaska stock range includes Moorings Seward while the Yakutat/Southeast Alaska Offshore Waters stock's range includes Moorings Sitka. The estimated density of harbor porpoises at Moorings Seward is 0.4547/km² and the estimated occurrence at Moorings Sitka is one group of five individuals every week.

Northern fur seal – Northern fur seals are not expected near Moorings Seward and one individual per month is estimated to occur at Moorings Sitka.

Steller sea lion – Only the Western stock of Steller sea lion is expected to occur at Moorings Seward with an estimated occurrence of two individuals per day. Both the Western and Eastern stocks may occur at Moorings Sitka, which is located in the Central Outer Coast population mixing zone delineated by Hastings *et al.* (2020). Based on these data, 2.2 percent of Steller sea lions near Sitka are expected to be from the Western stock while 97.8 percent are expected to be from the Eastern stock (Hastings *et al.*, 2020), and it is estimated that two groups of two individuals per day may occur at Moorings Sitka in the Level A harassment zone.

Harbor seal – There are 12 stocks of harbor seals in Alaska, 2 of which occur in the project areas: (1) the Prince William Sound stock ranges from Elizabeth Island off the southwest tip of the Kenai Peninsula to Cape Fairweather, including Moorings Seward; and (2) the Sitka/Chatham Strait stock ranges from Cape Bingham south to Cape

Ommaney, extending inland to Table Bay on the west side of Kuiu Island and north through Chatham Strait to Cube Point off the west coast of Admiralty Island, and as far east as Cape Bendel on the northeast tip of Kupreanof Island, which includes Moorings Sitka. Daily occurrence of harbor seals at Moorings Sitka is estimated as 48.95 individuals/day and at Moorings Sitka 2 groups of 2.1 individuals/day are estimated based on previous monitoring in the vicinity, with a likelihood of 2 groups per day in the Level A harassment zone.

Take Estimation

Here we describe how the information provided above was synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and is authorized.

Neither the applicant nor NMFS have fine-scale data to quantitatively assess the number of animals in the relatively small predicted Level A harassment zones at either location. Therefore, we assumed that, for cryptic species (*e.g.*, Steller sea lion, Pacific white-sided dolphin (Moorings Seward only), harbor seal, harbor porpoise), up to 25 percent of the animals that entered the Level B harassment zone could enter the Level A harassment zone undetected, potentially accumulating sound exposure that rises to the level of Level A harassment.

For species with observational data, the following equation was used to estimate take by Level B harassment, where daily occurrence is measured as individuals per day:

$$\textit{Estimated take} = (\textit{daily occurrence} \times \textit{number of days}) - \textit{Level A harassment takes}$$

For species with observational data, the following equation was used to estimate take by Level A harassment, where daily occurrence is multiplied by the number of days of work, which is then multiplied by 25 percent:

$$\textit{Estimated take} = (\textit{daily occurrence} \times \textit{number of days}) \times 25 \textit{ percent}$$

For species with density data, the following equation was used to estimate take by Level B harassment, where ensonified area is measured as km²:

$$\text{Estimated take} = (\text{species density} \times \text{daily ensonified Level B harassment area} \times \text{number of days}) - \text{Level A harassment takes}$$

For species with density data, the following equation was used to estimate take by Level A harassment, where species density is multiplied by the daily ensonified Level A harassment area multiplied by the number of days of work:

$$\text{Estimated take} = \text{species density} \times \text{daily ensonified Level A harassment area} \times \text{number of days}$$

Table 11 summarizes the amount of take authorized by both Level A and Level B harassment, as well as the percentage of each stock expected to be taken, at Moorings Seward.

Table 11 – Authorized Take of Marine Mammals by Level A and Level B Harassment at Moorings Seward

Species	Stock	Level A	Level B	Total	SAR abundance	Percentage of population
Steller sea lion	Western	10	34	44	49,837	0.09
Harbor seal	Prince William Sound	245	833	1078	44,756	2.41
Killer whale*	Alaska Resident	0	21	21	1,920	1.09
Killer whale*	Eastern North Pacific Gulf of Alaska, Aleutian Islands and Bering Sea Transient	0	7	7	587	1.19
Pacific white-sided dolphin	North Pacific	15	51	66	26,880	0.25
Harbor porpoise	Gulf of Alaska	8	15	23	31,046	0.07
Dall's porpoise	Alaska	1	5	6	UND	UND
Humpback whale	Hawai'i	0	20	20	11,278	0.18
Humpback whale	Mexico-North Pacific	0	2	2	N/A	N/A

Species	Stock	Level A	Level B	Total	SAR abundance	Percentage of population
Gray whale	Eastern North Pacific	0	1	1	26,960	0
Fin whale	Northeast Pacific	0	3	3	UND	UND

Note: Humpback whale stock attribution: 89 percent Hawai'i and 11 percent Mexico-North Pacific.

* Percent of stock impacted for killer whales was estimated assuming each stock is taken in proportion to its population size at each location from the total take. At Moorings Seward, the Alaska Resident and Gulf of Alaska stocks are the only stocks present. Of these, the Alaska Resident stock represents approximately 76 percent of the available animals, while the Gulf of Alaska stock represents approximately 23 percent. Takes were then calculated for each site based on the proportional representation of available stocks, so for Moorings Seward, this results in 21 Level B harassment takes of the Alaska Resident stock of killer whale and 7 Level B harassment takes of the Gulf of Alaska stock of killer whale. Total takes for each stock are shown as a percentage of the stock size.

Table 12 summarizes amount of take authorized by both Level A and Level B harassment, as well as the percentage of each stock expected to be taken, at Moorings Sitka.

Table 12 – Authorized Take of Marine Mammals by Level A and Level B Harassment at Moorings Sitka

Species	Stock	Level A	Level B	Total	SAR abundance	Percentage of population
Steller sea lion	Western	2	6	8	49,837	0.02
Steller sea lion	Eastern	82	270	352	36,308	0.97
Northern fur seal	Eastern Pacific	0	3	3	626,618	0
Harbor seal	Sitka/Chatham Strait	88	272	360	13,289	2.71
Killer whale*	Alaska Resident	0	55	55	1,920	2.86
Killer whale*	Eastern North Pacific Gulf of Alaska, Aleutian Islands and Bering Sea Transient	0	17	17	587	2.90
Killer whale*	Northern Resident	0	8	8	302	2.65
Killer whale*	West Coast Transient	0	10	10	349	2.87
Harbor porpoise	Yakutat/Southeast Alaska Offshore Waters	15	20	35	N/A	N/A
Dall's porpoise	Alaska	24	42	66	UND	UND
Humpback whale	Hawai'i	0	43	43	11,278	0.38
Humpback whale	Mexico-North Pacific	0	1	1	N/A	N/A
Gray whale	Eastern North Pacific	0	22	22	26,960	0.08

Species	Stock	Level A	Level B	Total	SAR abundance	Percentage of population
Minke whale	Alaska	0	22	22	N/A	N/A

Note: Steller sea lion stock attribution: 97.8 percent Eastern DPS and 2.2 percent Western DPS at Moorings Sitka. Humpback whale stock attribution: 98 percent Hawai'i and 2 percent Mexico-North Pacific.

* Percent of stock impacted for killer whales was estimated assuming each stock is taken in proportion to its population size at each location from the total take. At Moorings Sitka, the Alaska Resident, Gulf of Alaska, Northern Resident, and West Coast Transient stocks are expected, and the Alaska Resident stock represents approximately 60 percent of the available animals, the Gulf of Alaska stock represents approximately 19 percent, the Northern Resident stock represents approximately 10 percent, and the West Coast Transient represents approximately 11 percent. Takes were then calculated based on the proportional representation of available stocks, which results in 55 Level B harassment takes of the Alaska Resident stock, 17 Level B harassment takes of the Gulf of Alaska stock, 8 Level B harassment takes of the Northern Resident stock, and 10 Level B harassment takes of the West Coast Transient stock. Total takes for each stock are shown as a percentage of the stock size.

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. 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, as well as subsistence uses. 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.

For each IHA, the USCG must:

- Ensure that construction supervisors and crews, the monitoring team, and relevant USCG staff are trained prior to the start of all pile driving and DTH activity, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work;
- Employ one to five PSOs and establish monitoring locations as described in the application and the IHA. The USCG must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions. For all pile driving and removal at least one PSO must be used. The PSO will be stationed as close to the activity as possible;
- The placement of the PSOs during all pile driving and removal and DTH activities will ensure that the entire shutdown zone is visible during pile installation;
- Monitoring must take place from 30 minutes prior to initiation of pile driving or DTH activity (*i.e.*, pre-activity monitoring) through 30 minutes post-activity of pile driving or DTH activity;
- Pre-activity monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones indicated

in table 13 are clear of marine mammals. Pile driving and DTH may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals;

- The USCG must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. A soft start must 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; and
- If a marine mammal is observed entering or within the shutdown zones indicated in table 13, pile driving and DTH 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 (table 13) or 15 minutes have passed without re-detection of the animal.

As proposed by the applicant, in-water activities will take place only between civil dawn and civil dusk (generally 30 minutes after sunrise and up to 45 minutes before sunset), and work may not begin without sufficient daylight to conduct pre-activity monitoring, and may extend up to 3 hours past sunset, as needed to either completely remove an in-process pile or to embed a new pile far enough to safely leave piles in place until work can resume the next day; during conditions with a Beaufort Sea State of four or less; and when the entire shutdown zones are visible.

Protected Species Observers

The placement of PSOs during all pile driving activities (described in **Monitoring and Reporting**) will ensure that the entire shutdown zone is visible. Should environmental conditions deteriorate such that the entire shutdown zone will not be

visible (*e.g.*, fog, heavy rain), pile driving will be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.

PSOs will monitor the full shutdown zones and the Level B harassment zones to the extent practicable. 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 areas outside the shutdown zones and thus prepare for a potential cessation of activity should the animal enter the shutdown zone.

Pre- and Post-Activity Monitoring

Monitoring must take place from 30 minutes prior to initiation of pile driving activities (*i.e.*, pre-clearance monitoring) through 30 minutes post-completion of pile driving. Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 minutes or longer occurs, PSOs will observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone will be considered cleared when a marine mammal has not been observed within the zone for a 30-minute period. If a marine mammal is observed within the shutdown zones listed in table 9, pile driving activity will be delayed or halted. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones will commence. A determination that the shutdown zone is clear must be made during a period of good visibility (*i.e.*, the entire shutdown zone and surrounding waters must be visible to the naked eye).

Soft-Start Procedures for Impact Driving

Soft-start procedures 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. If impact pile driving is necessary to achieve required tip elevation, the USCG is required to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period, then two subsequent

reduced-energy strike sets. Soft-start must 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.

Shutdown Zones

The USCG must establish shutdown zones for all pile driving activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones are based upon the Level A harassment thresholds for each pile size/type and driving method where applicable, as shown in table 13. During all in-water piling activities, the USCG plans to implement a minimum 30-m shutdown zone, larger than NMFS' typical requirement of a minimum 10-m shutdown zone, with the addition of larger zones during DTH. These distances exceed the estimated Level A harassment isopleths described in tables 8 and 9. Adherence to this expanded shutdown zone will reduce the potential for the take of marine mammals by Level A harassment but, due to the large zone sizes and small, inconspicuous nature of five species (Steller sea lion, Pacific white-sided dolphin (Mooring Seward only), harbor seal, harbor porpoise, Dall's porpoise), the potential for Level A harassment cannot be completely avoided. If a marine mammal is observed entering, or detected within, a shutdown zone during pile driving activity, the activity must be stopped until there is visual confirmation that the animal has left the zone or the animal is not sighted for a period of 15 minutes. Shutdown zones for each activity type are shown in table 13.

All marine mammals would be monitored in the Level B harassment zones and throughout the area as far as visual monitoring can take place. If a marine mammal enters the Level B harassment zone, in-water activities will continue and PSOs will document the animal's presence within the estimated harassment zone.

Table 13 – Shutdown Zones and Harassment Zones

Activity	Shutdown zone (m) for LF	Shutdown zone (m) for HF	Shutdown zone (m) for VHF	Shutdown zone (m) for PW	Shutdown zone (m) for OW	Level B Harassment zone (m) at Seward	Level B Harassment zone (m) at Sitka
Vibratory pile extraction	30	30	30	30	30	4,645	6,310
Impact drive plastic pile	30	30	30	30	30	N/A	5
Impact drive timber pile	30	30	30	30	30	N/A	50
DTH (Impulsive component) concrete pile	1,955	85	2,325	1,050	85	39,815	39,815
Vibratory concrete pile settling	30	30	30	30	30	7,360	7,360
Impact drive concrete pile proofing	30	30	30	30	30	545	545

Note: Level A (AUD INJ onset) harassment will only potentially result from DTH rock socket drilling activities that will generate underwater noise in exceedance of Level A harassment thresholds for all marine mammal hearing groups beyond the 30-m shutdown zone that will be implemented for all in-water activities. Therefore, larger shutdown zones will be implemented during DTH activities and at least two additional PSOs will be assigned to a captained vessel at one or more monitoring locations that provide full views of the shutdown zones and as much of the monitoring zones as possible.

Based on our evaluation of the applicant's planned measures, NMFS has determined that the planned 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 must be conducted in accordance with the conditions in this section and this IHA. Marine mammal monitoring during pile driving activities would be conducted by up to five 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 other relevant experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;

- A team of three PSOs (up to five PSOs) at up to three locations (including two PSOs on a captained vessel in the case of a five-member team) will conduct the marine protected species monitoring depending on the activity and size of the relevant shutdown and monitoring zones;
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- For activities with monitoring zones beyond the visual range of a single PSO (*i.e.*, DTH), additional monitoring locations or the use of a vessel with captain and up to three other PSOs (depending on size of the monitoring zones) will conduct monitoring; and
- PSOs must be approved by NMFS prior to beginning any activity subject to the 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.

For all pile driving activities, at least one PSO must be stationed at the best possible vantage point to monitor the shutdown zones and as much of the Level B harassment zones as possible. A team of three or five PSOs at up to three locations (including two PSOs on a captained vessel in the case of a five-member team) would conduct marine mammal monitoring depending on the activity and size of monitoring zones. PSOs would be equipped with high quality binoculars for monitoring and radios or cell phones for maintaining contact with work crews. Monitoring would be conducted 30 minutes before, during, and 30 minutes after all in-water construction activities. In addition, PSOs would record all incidents of marine mammal occurrence, regardless of distance from activity, and would 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.

Reporting

A draft marine mammal monitoring report will be submitted to NMFS within 90 days after the completion of pile driving and removal activities for each IHA, or 60 days prior to a requested date of issuance from any future IHAs for projects at the same location, whichever comes first. The report will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. The USCG must submit all PSO data electronically in a format that can be queried such as a spreadsheet or database (*i.e.*, digital images of data sheets are not sufficient). 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, vibratory, DTH) and the total equipment duration for vibratory removal 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 the time of sighting;
 - Time of sighting;
 - Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentifiable), 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, sex class, *etc.*);

- Animal's closest point of approach and estimated time spent within the harassment zone; and
- Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses 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 and shutdown zones; by species; and
- Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensured, and resulting changes in behavior of the animal(s), if any.

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

Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the USCG must immediately cease the specified activities and report the incident to the Office of Protected Resources (*PR.ITP.MonitoringReports@noaa.gov* and *ITP.clevenstine@noaa.gov*), NMFS, and to the Alaska Regional Stranding Coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, the USCG must immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHA. The IHA-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 discussion of our analysis applies to all the species listed in table 1 at both project locations, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar in Seward and Sitka. There is little information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for this activity.

Pile driving and DTH activities associated with the specified activities, as described 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 only for all species other than the Steller sea lion, harbor seal, Pacific white-sided dolphin, harbor porpoise, and Dall's porpoise from underwater sounds generated from pile driving and DTH. Potential takes could occur if individual marine mammals are present in the ensonified areas when pile driving or DTH is occurring.

No serious injury or mortality would be expected, even in the absence of required mitigation measures, given the nature of the activities. For all species other than Steller sea lion, harbor seal, Pacific white-sided dolphin, harbor porpoise, and Dall's porpoise, no Level A harassment is anticipated due to the confined nature of the facilities, ability to position PSOs at stations from which they can observe the entire shutdown zones, and the high visibility of the species expected to be present at each site. The potential for injury is small for mid- and low-frequency cetaceans and sea lions, and is expected to be essentially eliminated through implementation of the planned mitigation measures—soft start (for impact driving), and shutdown zones. Further, no take by Level A harassment is anticipated for killer whales, humpback whales, gray whales, fin whales, or minke whales due to the application of planned mitigation measures and the small Level A harassment

zones (for killer whales only). The potential for harassment will be minimized through the construction method and the implementation of the planned mitigation measures (see **Mitigation** section).

Take by Level A harassment is authorized for Steller sea lion, harbor seal, Pacific white-sided dolphin, harbor porpoise, and Dall's porpoise. Due to their inconspicuous nature, it is possible individuals of these species could enter the Level A harassment zone undetected and remain within that zone for a duration long enough to incur AUD INJ. 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 AUD INJ.

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;
- Level A harassment would be very small amounts and of low degree;
- Level B harassment would be primarily in the form of behavioral disturbance, resulting in avoidance of the project areas around where piling 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 of the activities;

- The ensonified areas are very small relative to the overall habitat ranges of all species and stocks, and would not adversely affect ESA-designated critical habitat for any species or any areas of known biological importance;
- The amount of take authorized accounts for no more than, at most, 3 percent of any stock that may occur in the project areas;
- The lack of anticipated significant or long-term negative effects to marine mammal habitat; and
- The implementation of mitigation measures to minimize the number of marine mammals exposed to injurious levels of sound and ensure take by Level A harassment is, at most, a small degree of AUD INJ.

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 planned 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 fewer than one-third of the species or stock abundance, the take is considered to be of small

numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS has authorized is below one-third of the estimated stock abundance of all species and stocks (take of individuals is less than 3 percent of the abundance of the affected stocks at Moorings Seward and Moorings Sitka; see tables 11 and 12). This is likely a conservative estimate because it assumes all takes are of different individual animals, which is likely not the case. Some individuals may return multiple times in a day but PSOs would count them as separate takes if they cannot be individually identified.

There are no valid abundance estimates available for humpback whales (Mexico-North Pacific stock), fin whales (Northeast Pacific stock), minke whales (Alaska stock), Dall's porpoises (Alaska stock), and harbor porpoises (Yakutat/Southeast Alaska Offshore Waters stock). There is no recent stock abundance estimate for the Mexico-North Pacific stock of humpback whale and the minimum population is considered unknown (Young *et al.*, 2023). There are 2 minimum population estimates for this stock that are over 15 years old: 2,241 (Martínez-Aguilar, 2011) and 766 (Wade, 2021). Using either of these estimates, the three takes by Level B harassment authorized (two at Moorings Seward, one at Moorings Sitka) represent small numbers of the stock. Muto *et al.* (2021) estimate the minimum stock size for the Northeast Pacific stock of fin whale for the areas surveyed is 2,554 individuals. Therefore, the three takes by Level B harassment of this stock at Moorings Seward represent small numbers of this stock. There is also no current abundance estimate of the Alaska stock of minke whale but over 2,000 individuals were documented in areas recently surveyed (Muto *et al.*, 2021). Therefore, the 22 takes by Level B harassment at Moorings Sitka represent small numbers of this stock, even if each take occurred to a new individual.

The most recent stock abundance estimate of the Alaska stock of Dall's porpoise was 83,400 animals and, although the estimate is more than 8 years old, it is unlikely this stock has drastically declined since that time. Therefore, the 72 takes authorized, 15 by Level A and 57 by Level B harassment (6 total at Moorings Seward, 66 total at Moorings Sitka), represent small numbers of this stock. A current stock-wide abundance estimate for the Yakutat/Southeast Alaska Offshore Waters stock of harbor porpoises in offshore waters (which includes Moorings Sitka) is not available (Young *et al.*, 2023). However, Muto *et al.* (2021) estimate the minimum stock size for the areas surveyed is 1,057 individuals. Therefore, the 35 takes authorized at Moorings Sitka (3 by Level A harassment, 32 by Level B harassment) represent small numbers of this stock.

Based on the analysis contained herein of the activity (including the planned 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

In order to issue an IHA, NMFS must find that the specified activity will not have an "unmitigable adverse impact" on the subsistence uses of the affected marine mammal species or stocks by Alaskan Natives. NMFS has defined "unmitigable adverse impact" in 50 CFR 216.103 as an impact resulting from the specified activity: (1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) Causing the marine mammals to abandon or avoid hunting areas; (ii) Directly displacing subsistence users; or (iii) Placing physical barriers between the marine mammals and the subsistence hunters; and (2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

There are two species of marine mammals analyzed herein that have been taken as part of subsistence harvests in Resurrection Bay and southeast Alaska: Steller sea lion and harbor seal. The most recent data on subsistence-harvested marine mammals near Seward is of harbor seals in 2002, and the most recent data near Sitka is of both harbor seals and Steller sea lions in 2013 (ADFG, 2013). The most recent subsistence hunt survey data available indicated approximately 11 percent of Sitka households used subsistence-caught marine mammals (Sill and Koster, 2013) and no data is available since that time.

The project is not likely to adversely impact the availability of any marine mammal species or stocks that are commonly used for subsistence purposes or impact subsistence harvest of marine mammals in the region. Although the activities are located in regions where subsistence harvests have occurred historically, subsistence harvest of marine mammals is rare in the project areas and local subsistence users have not expressed concern about this project. Both locations are adjacent to heavily traveled industrialized waterways and all project activities will take place within closed and secured waterfronts where subsistence activities do not generally occur. The project also will not have an adverse impact on the availability of marine mammals for subsistence use at locations farther away, where the construction activities are not expected to take place. Some minor, short-term harassment of Steller sea lions and harbor seals could occur, but any effects on subsistence harvest activities in the project areas will be minimal, and not have an adverse impact.

Based on the description of the specified activity and the measures described to minimize adverse effects on the availability of marine mammals for subsistence purposes, and the planned mitigation and monitoring measures, NMFS has determined that there will not be an unmitigable adverse impact on subsistence uses from the USCG's activities.

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 propose to authorize take for endangered or threatened species, in this case with the Alaska Regional Office.

There are three marine mammal species (Western DPS Steller sea lion, Mexico-North Pacific stock of humpback whale, and the Northeast Pacific stock of fin whale) with confirmed occurrence in the project areas that are listed as endangered under the ESA. The NMFS Alaska Regional Office Protected Resources Division issued a Biological Opinion on December 3, 2024, under section 7 of the ESA, on the issuance of an IHA to the USCG under section 101(a)(5)(D) of the MMPA by the NMFS Permits and Conservation Division. The Biological Opinion concluded that the proposed action is not likely to jeopardize the continued existence of Western DPS Steller sea lion, Mexico DPS of humpback whale, the Western North Pacific DPS of humpback whale, or the Northeast Pacific stock of fin whale, and is not likely to destroy or adversely modify critical habitat for Western DPS Steller sea lion, Mexico DPS of humpback whale, the Western North Pacific DPS of humpback whale, or the Northeast Pacific stock of fin whale.

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 determined that the issuance of these IHAs qualify to be categorically excluded from further NEPA review.

Authorization

NMFS has issued 2 IHAs to the USCG for the potential harassment of small numbers of 11 marine mammal species incidental to construction of FRC homeporting docks in Seward and Sitka, Alaska, that includes the previously explained mitigation, monitoring, and reporting requirements.

Dated: December 17, 2024.

Kimberly Damon-Randall,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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