DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 217

[Docket No. 230420–0108]

RIN 0648–BK57

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to the U.S. Coast Guard's Alaska Facility Maintenance and Repair Activities

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

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS has received a request from the U.S. Coast Guard (Coast Guard) for authorization to take marine mammals incidental to conducting construction activities related to maintenance and repair at facilities in Alaska over the course of 5 years (2023–2028). As required by the Marine Mammal Protection Act (MMPA), NMFS is proposing regulations to govern that take, and requests comments on the proposed regulations.

DATES: Comments and information must be received no later than May 30, 2023.

ADDRESSES: Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to *www.regulations.gov* and enter NOAA–NMFS–2022–0023 in the Search box. Click on the ''Comment'' icon, complete the required fields, and enter or attach your comments.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.,* name, address), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, or Adobe PDF file formats only.

FOR FURTHER INFORMATION CONTACT: Cara Hotchkin, Office of Protected Resources, NMFS, (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Availability

A copy of the Coast Guard's application and any supporting documents, as well as a list of the references cited in this document, may be obtained online at: *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 above (see **FOR FURTHER INFORMATION CONTACT**).

Purpose and Need for Regulatory Action

We received an application from Coast Guard requesting 5-year regulations and authorization to take multiple species of marine mammals. This proposed rule would establish a framework under the authority of the MMPA (16 U.S.C. 1361 *et seq.*) to allow for the authorization of take of marine mammals incidental to the Coast Guard's construction activities related to maintenance and repair at facilities in Alaska.

Legal Authority for the Proposed Action

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1371(a)(5)(A)) directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region for up to five years if, after notice and public comment, the agency makes certain findings and issues regulations that set forth permissible methods of taking pursuant to that activity and other means of effecting the ''least practicable adverse impact'' on the affected species or stocks and their habitat (see the discussion below in the Proposed Mitigation section), as well as monitoring and reporting requirements. Section 101(a)(5)(A) of the MMPA and the implementing regulations at 50 CFR part 216, subpart I provide the legal basis for issuing this proposed rule containing 5-year regulations, and for any subsequent Letters of Authorization (LOAs). As directed by this legal authority, this proposed rule contains mitigation, monitoring, and reporting requirements.

Summary of Major Provisions Within the Proposed Rule

Following is a summary of the major provisions of this proposed rule regarding Coast Guard construction activities. These measures include:

- Required monitoring of the construction areas to detect the presence of marine mammals before beginning construction activities.
- Shutdown of construction activities under certain circumstances to avoid injury of marine mammals.
- Soft start for impact pile driving to allow marine mammals the opportunity to leave the area prior to beginning impact pile driving at full power.

Background

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 issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be 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 as ''mitigation''); and requirements pertaining to the mitigation, monitoring, and reporting of the takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

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 evaluate our proposed action (*i.e.,* the promulgation of regulations and subsequent issuance of incidental take authorization) and alternatives with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 of the Companion Manual for NAO 216–6A, which do not individually or

cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has preliminarily determined that the proposed action qualifies to be categorically excluded from further NEPA review.

Information in the Coast Guard's application and this document collectively provide the environmental information related to proposed issuance of these regulations and subsequent incidental take authorization for public review and comment. We will review all comments submitted in response to this document prior to concluding our NEPA process or making a final decision on the request for incidental take authorization.

Summary of Request

On March 15, 2021, NMFS received an application from the Coast Guard requesting authorization for take of marine mammals incidental to construction activities related to maintenance and repair at eight Coast Guard facilities in Alaska. On November 24, 2021 (86 FR 67023), we published a notice of receipt of the Coast Guard's application in the **Federal Register**, requesting comments and information related to the request for 30 days. We received no public comments. After the applicant responded to our questions and redrafted the application, we determined the application was adequate and complete on January 19, 2022. On August 12, 2022, the Coast Guard submitted a minor modification to their application (to include vibratory driving of composite piles as part of the specified activity).

The Coast Guard proposes to conduct construction necessary for maintenance and repair of existing in-water structures at the following eight Coast Guard station facilities in Alaska: Kodiak, Sitka, Ketchikan, Valdez, Cordova, Juneau, Petersburg, and Seward. These repairs would include installation and removal of steel, concrete, and timber piles, involving use of impact and vibratory hammers and Down-The-Hole drilling (DTH) equipment, and removal of piles by cutting, clipping, or vibration. Maintenance activities may also include underwater power washing. Up to 245 piles will be removed and replaced on a 1 to 1 basis (*i.e.,* total pile numbers at these facilities are expected to remain the same) over the 5-year period of effectiveness for the regulations. Hereafter (unless otherwise specified or detailed) we use the term ''pile driving'' to refer to both pile installation and pile removal. The use of vibratory, DTH, and impact pile driving equipment expected to produce underwater sound at levels that have the potential to result in harassment of marine mammals.

The Coast Guard requests authorization to take individuals of 14 species by Level B harassment and, for an additional 3 species (harbor seal, harbor porpoise, and Dall's porpoise), by Level A harassment. The proposed regulations would be valid for 5 years (2023–2028).

Description of the Specified Activity

Overview

Maintaining existing wharfs and piers is vital to sustaining the Coast Guard's mission and ensuring readiness. To ensure continuance of necessary missions at the eight facilities, the Coast Guard must conduct annual maintenance and repair activities at existing marine waterfront structures, including removal and replacement or repair of piles of various types and sizes. Exact timing and amount of necessary in-water work is unknown, but the Coast Guard estimates replacing up to 245 structurally unsound piles over the 5-year period, including individual actions currently planned and estimates for future marine structure repairs. Construction will include use of impact, DTH, and vibratory pile driving, including removal and installation of steel, concrete, composite, and timber piles. Pile removal may occur by various cutting or clipping methods and power washing may occur on some piles being repaired. Pile cutting, clipping, and power washing, and certain other activities (*e.g.,* deck repair, moving of rip-rap, *etc.*) 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.

The Coast Guard's inspection program prioritizes deficiencies in marine structures and plans those maintenance and repairs for design and construction. The Coast Guard's proposed activities include individual projects (where an existing need has been identified) and estimates for ongoing repairs. Estimates of activity levels for ongoing repairs are based on Coast Guard surveys of existing structures, which provide assessments of structure condition and estimates of numbers of particular pile types that may require replacement (at an assumed 1:1 ratio) over the 5-year duration of these proposed regulations. Additional allowance is made for the likelihood that future waterfront inspections will reveal unexpected damage, or that damage caused by severe weather events and/or incidents caused by vessels will result in need for additional contingency repairs. This regional programmatic approach to MMPA compliance is expected to allow for efficient compliance for the Coast Guard, while satisfying the requirements of the MMPA. The detailed discussion of planned or anticipated projects provided here and in the Coast Guard's application allow for more comprehensive analysis, while providing a reduction in the time and effort that could be required to obtain individual incidental take authorizations. LOAs could be issued for projects conducted at any or all of the eight facilities if they fit within the structure of the programmatic analysis provided herein and are able to meet the requirements described in the regulations.

The Coast Guard would report to NMFS on an annual basis prior to the start of in-water work windows to review results of relevant projects conducted in the preceding in-water work window and propose upcoming projects. The intent is to utilize lessons learned to better inform potential effects of future activities through adaptive management.

Dates and Duration

The proposed regulations would be valid for a period of 5 years from the date of issuance. The specified activities may occur at any time during the 5-year period of validity of the proposed regulations, subject to existing timing restrictions. These timing restrictions, or in-water work windows, are designed to protect fish species listed under the Endangered Species Act (ESA) as well as marine mammals under the MMPA. No work would occur outside these work windows unless necessary for the safety and stability of the structure. Work windows for the eight facilities are described in Table 1. Pile driving could occur on any day within in-water work windows during the period of validity of these proposed regulations.

TABLE 1—IN-WATER WORK WINDOWS FOR EACH FACILITY

Facility	Period of no in-water work	Notes
Kodiak	May 1–June 30	pink salmon fry and coho salmon smolts.
Sitka	March 1–October 1	herring spawning and summer prey feeding.
Ketchikan	April 1–June 30	outmigrating juvenile salmon.
Valdez	March 1–October 1	herring spawning and summer prey feeding, whale presence, Steller sea lion breeding.
Cordova	March 1–October 1	herring spawning and summer prey feeding, whale presence, Steller sea lion breeding.
Juneau	May 1–June 30	pink and chum salmon fry and coho and Chinook salmon smolt, hatchery net pen species.
Petersburg	April 1–June 30	outmigrating juvenile salmon.
Seward	May 1–June 30	pink salmon fry and coho salmon smolts.

For many projects the design details are not known in advance; thus, it is not possible to state the exact number of pile driving days that will be required. Days of pile driving at each site were based on the estimated work days using a slow production rate, *i.e.,* one pile removed per day and one pile installed per day. These conservative rates give the following estimates of total days at each facility over the 5-year duration: Kodiak: 100 days, Sitka: 50 days, Ketchikan: 100 days, Valdez: 15 days, Cordova: 6 days, Juneau: 100 days, Petersburg: 20 days, and Seward: 4 days. These totals include both removal and installation of piles, and represent a conservative estimate of pile driving days at each facility. In a real construction situation, pile driving production rates would be maximized when possible and actual daily production rates may be higher, resulting in fewer actual pile driving days.

Specified Geographical Region

The eight facilities are located within the coastal waters of the Gulf of Alaska (Figure 1). For full details regarding the facilities and specified geographical region, please see sections 1.3 and 2, respectively, of the Coast Guard's application.

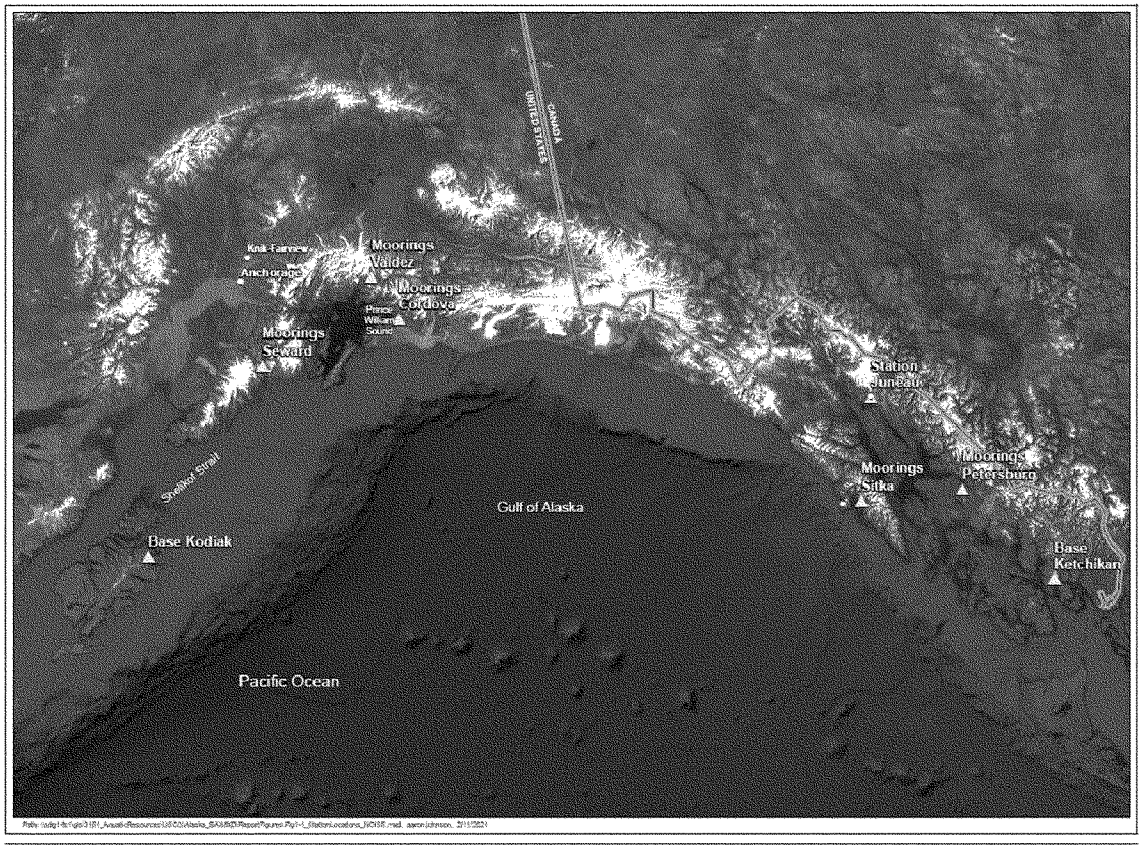

Figure 1—Location of the Eight Facilities

Coast Guard Base Kodiak is located on Womens Bay, a largely enclosed arm of the larger Chiniak Bay on the northeast side of Kodiak Island, Alaska's largest island. Womens Bay is separated from the rest of Chiniak Bay by Nyman Peninsula providing a protected harbor for Coast Guard vessels. Coast Guard vessels are the primary users of Womens Bay; however, a sea plane runway is present at the mouth of the bay and barges regularly transit Womens Bay.

Two of the three piers (the Fuel Pier and Cargo Wharf) at Base Kodiak need periodic maintenance and repair, while the Marginal Wharf is currently being evaluated for demolition. Any actions related to the Marginal Wharf would occur under a separate action. Because there is the potential for contaminated sediments at this location, no pressure washing will occur.

The Coast Guard's Sitka Moorings are located near Sitka Harbor on the Sitka Channel separating Japonski Island from the larger Baranof Island. The Sitka Channel connects the Eastern Anchorage southeast of Sitka to the Western Anchorage northwest of the town. Beyond Coast Guard vessels, typical vessel traffic within the Sitka Channel includes private watercraft, commercial fishing vessels, and seaplanes.

Base Ketchikan is situated on Revillagigedo Island, which is separated from nearby Pennock Island by the East Channel of the Tongass Narrows. At Base Ketchikan, the Tongass Narrows are approximately 2,000 ft (610 meters (m)) across with steep surface bathymetry reaching a maximum mid-channel depth of over 100 ft (30 m). The Tongass Narrows are a busy passage frequented by private and commercial vehicles, including large cruise ships servicing the cruise terminal in Ketchikan (north of Base Ketchikan).

The Coast Guard's Valdez moorings are located west of the entrance to Valdez Harbor located on Port Valdez, itself part of the Valdez Arm of Prince William Sound. Port Valdez is the U.S.' northernmost ice-free port and non-Coast Guard vessel traffic in the immediate vicinity of the Valdez moorings includes private craft and commercial cargo vessels. The Valdez Marine Terminal is located 2.3 miles (3.7 kilometers (km)) south of the Valdez moorings and is the offshoring point for petroleum products transported via the Trans-Alaska Pipeline, with corresponding oil tanker traffic through the area. Depths adjacent to the Valdez moorings fall off steeply from approximately 13 ft (4 m) at the entrance to Valdez Harbor to over 600 ft (183 m) along the centerline of the Valdez Arm.

The dock used by the Coast Guard at Cordova is owned by the City of Cordova and is located on the Cordova waterfront on Orca Inlet, which separates the mainland from Hawkins Island. Orca Inlet is generally shallow reaching depths of 75 ft (23 m) at the deepest parts of the channel with significantly more shallow depths closer to Hawkins and Observation Islands.

The Coast Guard wharf at Station Juneau is on the southeast facing portion of the Juneau waterfront on the Gastineau Channel separating the North American mainland (Juneau) from Douglas Island. The Gastineau Channel is accessible to large vessels up to the bridge linking Douglas Island to the mainland and navigable by smaller vessels for its entire length. The Channel is generally shallow in the northern section but up to 35 ft (10.7 m) deep adjacent to the wharf frontage and up to 100 ft (30 m) in the mid-channel south of Station Juneau.

The Coast Guard moorings in Petersburg are located within Petersburg Harbor, which supports the area's commercial fishing industry. Petersburg is located at the northern end of the Wrangell Narrows separating Mitkof and Kupreanof Islands near the confluence with the Frederick Sound. The Narrows are generally only used by fishing boats and Alaska Marine Highway ferries as it is too shallow and narrow for use by larger vessels. Depths adjacent to the Petersburg Moorings are approximately 20 ft (6 m).

The dock used by the Coast Guard in Seward is owned by the City of Seward and is located within Seward Harbor. The Seward Harbor breakwaters separate the harbor and moorings from the main body of Resurrection Bay. Seward Harbor itself serves smaller craft, with larger cruise ships and ferries using facilities just east of the harbor. Depths within the harbor, including the harbor entrance, range between 12 and 15 ft (4–5 m).

Detailed Description of Activities

As described above, the Coast Guard has requested incidental take regulations for its maintenance and repair program, which includes maintenance and repair activities at marine waterfront structures at eight facilities within the Gulf of Alaska. In order to address identified deficiencies in existing marine structures at the 8 facilities, the Coast Guard proposes to replace up to 245 structurally unsound piles over the 5-year period using methods including impact and vibratory pile driving, and DTH to make holes. Existing marine structures at the eight facilities are described in detail in section 6.8 of the Coast Guard's application and details of pile maintenance and repair activity are summarized in Table 2.

TABLE 2—IN-WATER MAINTENANCE ACTIVITY FOR EACH COAST GUARD FACILITY

Facility	Number and material of pile replacements					
	Year 1	Year 2	Year 3	Year 4	Year 5	Maximum total
Kodiak	20 timber* or steel	20 timber* or steel	20 timber* or steel	20 timber* or steel	20 timber* or steel	100.
Sitka**	Replace 5 piles	Replace 5 piles	Replace 5 piles	Replace 5 piles	Replace 5 piles	25 piles replaced.
Ketchikan**	Replace 10–15 timber* piles.	Replace 10–15 timber* piles.	Replace 10–15 timber* piles.	Replace 10–15 timber* piles.	Replace 10–15 timber* piles.	50 piles replaced.
Valdez**	Replace 1 timber* pile	Replace 1 timber* pile	Replace 1 timber* pile	Replace 1 timber* pile, replace 1 steel guide pile.	Replace 1 timber* pile	6 piles replaced.
Cordova		Replace 3 steel piles				3 piles replaced.
Juneau**	Replace 10 timber* piles.	Replace 10 timber* piles.	Replace 10 timber* piles.	Replace 10 timber* piles.	Replace 10 timber* piles.	50 piles replaced.
Petersburg**	Replace 2 fender piles	Replace 2 fender piles	Replace 2 fender piles	Replace 2 fender piles	Replace 2 fender piles	10 fender piles replaced.
Seward			Replace 1 steel pile			1 pile replaced.
Total Replaced	53	56	53	54	52	245 piles replaced.***

*Timber piles will be preferentially replaced with composite piles where technically possible.
**These facilities will also conduct pile repairs; see text for full description of repair methods.
***Yearly pile numbers may add up to be larger than the number reported here to allow for flexibility between years. Piles replaced may not exceed yearly maximum totals.

The project includes pile repair, extraction, and installation, all of which may be accomplished through a variety of methods. However, only extraction and installation using DTH equipment and vibratory and impact pile drivers

are expected to have the potential to result in incidental take of marine mammals. Pile repair methods include sleeve or jacket replacement, pressure washing, rub strip and ladder replacement, wrapping, pile encapsulation, painting, coating, and replacement of treated wood decking. These processes do not involve pile driving or long durations of other loud sound sources and are not expected to have the potential to result in incidental take of marine mammals. Pile removal may be accomplished via mechanical methods such as clipping, clamshell removal, or direct pull. Noise levels produced through these activities are not expected to exceed baseline levels produced by other routine activities and operations at the eight facilities, and any elevated noise levels produced through these activities are expected to produce intermittent (and generally continuous) noise, be of short duration, or of low peak values. Therefore, only DTH, vibratory, and impact pile driving are carried forward for further analysis.

Vibratory hammers, which can be used to either install or extract a pile, contain a system of counter-rotating eccentric weights powered by hydraulic motors, and are designed in such a way that horizontal vibrations cancel out, while vertical vibrations are transmitted into the pile. The pile driving machine is lifted and positioned over the pile by means of an excavator or crane, and is fastened to the pile by a clamp and/or bolts. The vibrations produced cause liquefaction of the substrate surrounding the pile, enabling the pile to be extracted or driven into the ground using the weight of the pile plus the hammer.

Impact hammers use a rising and falling piston to repeatedly strike a pile and drive it into the ground. Steam, hydraulic and pneumatic hammers use compressed fluids to create the force to raise or drive a piston weight. A diesel hammer works much like a car engine with fuel injected into a combustion chamber where the fuel is then ignited and the force of the explosion drives a piston, which pushes the pile down with great force.

DTH systems create holes by combining impact forces from a hydraulically or pneumatically controlled piston and hammer that directly impact the substrate along with a rotating drill function, aided by an intricate series of rock cutting bits on the end of the hammer.

Steel piles are typically vibratory-driven for their initial embedment depths or to refusal and finished with an impact hammer for proofing or until the pile meets structural requirements, as necessary. Where structural requirements necessitate stronger support piles may need to be driven into bedrock substrates. DTH systems are used for this purpose. Proofing involves striking a driven pile with an impact hammer to verify that it provides the required load-bearing capacity, as indicated by the number of hammer blows per foot of pile advancement. Non-steel piles (concrete, timber, composite) are typically impact-driven for their entire embedment depth, in part because non-steel piles are often displacement piles (as opposed to pipe piles) and require some impact to allow substrate penetration. Pile installation can range from under one minute to 60 minutes depending on pile type, pile size, and conditions (*i.e.,* bedrock, loose soils, etc.) to reach the required tip elevation. DTH can typically take multiple hours depending on the equipment, rock hardness, and required hole depth, though the process is dynamic and driving is not continuous.

The most effective and efficient method of pile driving available would be implemented in each case. The method fitting these criteria may vary based on specific project requirements and local conditions. Impact driving, while generally producing higher levels of sound, also minimizes the net amount of active driving time, thus reducing the amount of time during which marine mammals may be exposed to noise. Impact, DTH, or vibratory pile driving could occur on any day but would not occur simultaneously. Location-specific pile totals are given in Table 2 and described below. These totals assume a 1:1 replacement ratio; however, the actual number installed may result in a replacement ratio of less than 1:1.

Steel, concrete, timber, and composite piles will all be a maximum of 24-inch (0.61 m) diameter. For purposes of analysis, it is assumed that any unknown pile type would be steel, since this would give a worst-case scenario in terms of loudest noise levels produced. All concrete, composite, and timber piles are assumed to be installed entirely by impact pile driver, and all steel piles are assumed to require some use of an impact driver. This is a conservative assumption, as all steel piles would be initially driven with a vibratory driver until they reach a point of refusal (where substrate conditions make use of a vibratory hammer ineffective) or engineering specifications require impact driving to verify load-bearing capacity. Therefore, some steel piles may not in fact require use of the impact driver during installation. DTH will only be used at Ketchikan and Kodiak.

At this time, of the 245 piles expected to be extracted, 5 have been identified as steel piles (3 at Cordova, 1 each at Seward and Valdez) and 106 as timber piles (50 each at Ketchikan and Juneau, 5 at Valdez, and 1 at Seward). The remaining piles have not been identified to type and so for analysis will be considered to be steel, typically the loudest type. Replacement will often be of the same type, but could include different materials, though diameters will generally be the same. Replacements for extracted timber piles will typically be composite piles of similar diameter.

Pile driving could occur on any work day within in-water work windows during the period of validity of these proposed regulations. Proposed mitigation, monitoring, and reporting measures are described in detail later in this document (please see Proposed Mitigation and Proposed Monitoring and Reporting).

Description of Marine Mammals in the Area of the Specified Activity

We have reviewed the Coast Guard's species descriptions that summarize available information regarding status and trends, distribution and habitat preferences, behavior and life history, and auditory capabilities of the potentially affected species, for accuracy and completeness and refer the reader to Sections 3 and 4 of the application, instead of reprinting all of the information here. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SAR; *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 (*www.fisheries.noaa.gov/find-species*).

Table 3 lists all species or stocks for which take is expected and proposed to be authorized for this action and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. PBR, 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, is considered in concert with known sources of ongoing anthropogenic mortality (as described in NMFS' SARs).

While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' 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 the specified geographical regions are assessed in either NMFS' U.S. Alaska SARs or U.S. Pacific SARs. All values presented in Table 3 are the most recent available at the time of writing and are available in the draft 2022 SARs (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock*).

TABLE 3—SPECIES LIKELY IMPACTED BY THE SPECIFIED ACTIVITIES

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N) [1]	Stock abundance (CV, N_{min}, most recent abundance survey) [2]	PBR	Annual M/SI [3]
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae:						
Gray whale	*Eschrichtius robustus*	Eastern North Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	131
Family Balaenopteridae (rorquals):						
Humpback whale	*Megaptera novaeangliae*	Central North Pacific	-, -, Y	10,103 (0.30, 7,891, 2006)	83	26
		Western North Pacific	E, D, Y	1,107, (0.30, 865, 2006)	3	2.8
Fin whale	*Balaenoptera physalus*	Northeast Pacific	E, D, Y	UND (UND, UND, 2013)	UND	0.6
Minke whale	*Balaenoptera acutorostrata*	Alaska	-, -, N	N/A (N/A, N/A, N/A) [4]	UND	0
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae:						
Killer whale	*Orcinus orca*	Eastern North Pacific Alaska Resident.	-, -, N	1,920 (N/A, 1,920, 2009)	19	1.3
		Eastern North Pacific Gulf of Alaska, Aleutian Islands, Bearing Sea Transient.	-, -, N	587 (N/A, 587, 2012)	5.9	0.8
		Eastern North Pacific Northern Resident.	-, -, N	302 (N/A, 302, 2018)	2.2	0.2
		AT1 Transient	-, D, Y	7 (N/A, 7, 2019)	0.1	0
		West Coast Transient	-, -, N	349 (N/A, 349, 2018)	3.5	0.4
Pacific white-sided dolphin	*Lagenorhynchus obliquidens*	North Pacific	-, -, N	26,880 (UND, UND, 1990)	UND	0
Family Phocoenidae (porpoises):						
Dall's porpoise [5]	*Phocoenoides dalli*	Alaska	-, -, N	UND (UND, UND, 2015)	UND	37
Harbor porpoise [6]	*Phocoena phocoena*	Southeast Alaska	-, -, Y	1,302 (0.21, 1,057, 2019)	11	34
		Gulf of Alaska	-, -, Y	31,046 (0.21, N/A, 1998)	UND	72
Order Carnivora—Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions):						
California sea lion	*Zalophus californianus*	U.S	-, -, N	257,606 (N/A, 233,515, 2014)	14,011	>321
Northern fur seal	*Callorhinus ursinus*	Eastern Pacific	-, D, Y	626,618 (0.2, 530,376, 2019)	11,403	373
Steller sea lion	*Eumetopias jubatus*	Eastern	-,-, N	43,201 (N/A, 43,201, 2017)	2,592	112
	Eumetopias jubatus	Western	E, D, Y	52,932 (N/A, 52,932, 2019)	318	254
Family Phocidae (earless seals):						
Harbor seal	*Phoca vitulina*	Prince William Sound	-, -, N	44,756 (N/A, 41,776, 2015)	1,253	413
		Lynn Canal/Stephens Passage.	-, -, N	13,388 (N/A, 11,867, 2016)	214	50
		Sitka/Chatham Straight	-, -, N	13,289 (N/A, 11,883, 2015)	356	77
		Clarence Strait	-, -, N	27,659 (N/A, 24,854, 2015)	746	40
		South Kodiak	-, -, N	26,448 (N/A, 22,351, 2017)	939	127

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

[2] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments/*. CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable (N/A). UND indicates data unavailable.

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

[4] 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).

[5] 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 Nmin 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.

[6] 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.

Twelve species (with 23 managed stocks) are considered to have the potential to co-occur with Coast Guard activities to the degree that take is likely to occur. Table 4 identifies which stocks are expected to occur near each of the Coast Guard facilities. There are several species or stocks that occur in Gulf of Alaska waters, but which are not expected to occur in the vicinity of any of the eight Coast Guard facilities. In addition, the sea otter is found in coastal waters. However, sea otters are managed by the U.S. Fish and Wildlife Service and are not considered further in this document.

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Table 4 -- Species and Critical Habitat[1] Occurrence by Each Project Facility

Species	*Occurrence by Installation*							
	Kodiak	*Sitka*	*Ketchikan*	*Seward*	*Valdez*	*Cordova*	*Juneau*	*Petersburg*
Steller Sea Lion								
Eastern Stock		X	X				X	X
Western Stock	X	X		X	X	X	X	X
Western DPS – Critical Habitat	X					X		
Northern Fur Seal								
Eastern North Pacific Stock	X	X		X	X	X		
California Sea Lion								
U.S. Stock		X					X	
Harbor Seal								
Prince William Sound Stock				X	X	X		
Lynn Canal/Stephens Passage Stock							X	
Sitka/Chatham Strait Stock		X						
Clarence Strait Stock			X					X
South Kodiak	X							
Killer Whale								
Alaska Resident Stock	X	X	X	X	X	X	X	X
Northern Resident		X	X				X	X
Gulf of Alaska, Aleutian Islands, and Bering Sea Transient Stock	X	X		X	X	X		
AT1 Transient Stock				X	X	X		
West Coast Transient Stock		X	X				X	X
Pacific White-Sided Dolphin								
North Pacific Stock	X	X	X	X	X	X	X	X
Harbor Porpoise								
Southeast Alaska Stock		X	X				X	X
Gulf of Alaska Stock	X			X	X	X		
Dall's Porpoise								
Alaska Stock	X	X	X	X	X	X	X	X
Humpback Whale								
Western North Pacific Stock	X			X				
Central North Pacific Stock	X	X	X	X	X	X	X	X
Western North Pacific DPS and Mexico DPS – Critical Habitat	X							
Gray Whale								
Eastern North Pacific	X	X	X					
Fin Whale								
Northeast Pacific Stock	X	X	X		X	X		
Minke Whale								
Alaska Stock	X	X	X	X	X	X	X	X

[1] Critical Habitat is designated under the Endangered Species Act, and defined as specific areas within the geographical area occupied by the species at the time of listing that contain physical or biological features essential to conservation of the species and that may require special management considerations or protection; and specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. Designated critical habitat for Western Distinct Population Segment (DPS) of Steller sea lion may be viewed at: *https://www.fisheries.noaa.gov/resource/map/steller-sea-lion-western-dps-critical-habitat-map-and-gis-data* and designated critical habitat Western North Pacific and Mexico DPSs of Humpback Whales may be viewed at: *https://www.fisheries.noaa.gov/resource/map/humpback-whale-critical-habitat-maps-and-gis-data*.

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As indicated above, all 12 species (and 23 managed stocks) in Table 3 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have proposed authorizing it. While Cuvier's beaked whales have been reported near all eight project areas, the spatial occurrence of this species generally offshore in deep water is such that take is not expected to occur, and it is not discussed further beyond the explanation provided here.

Gray Whale

Gray whales occur exclusively in the North Pacific Ocean. The Eastern North Pacific stock of gray whales inhabit California and Mexico in the winter months, and the Chukchi, Beaufort, and Bering Seas in northern Alaska in the summer and fall. Gray whales have also been observed feeding in waters off Southeast Alaska during the summer (NMFS, 2022). The migration pattern of gray whales appears to follow a route along the western coast of Southeast Alaska, traveling northward from British Columbia through Hecate Strait and Dixon Entrance, passing the west coast of Baranof Island from late March to May and then return south in October and November (Jones *et al.,* 1984, Ford *et al.,* 2012).

Two populations of gray whales are recognized, the eastern and a western North Pacific (ENP and WNP). WNP whales are known to feed in the Okhotsk Sea and off of Kamchatka before migrating south to poorly known wintering grounds, possibly in the South China Sea. The two populations have historically been considered geographically isolated from each other; however, data from satellite-tracked whales indicate that there is some overlap between the stocks. Two WNP whales were tracked from Russian foraging areas along the Pacific rim to Baja California (Mate *et al.,* 2011), and, in one case where the satellite tag remained attached to the whale for a longer period, a WNP whale was tracked from Russia to Mexico and back again (IWC, 2012). Between 22–24 WNP whales are known to have occurred in the eastern Pacific through comparisons of ENP and WNP photo-identification catalogs (IWC, 2012; Weller *et al.,* 2011; Burdin *et al.,* 2011). Urban *et al.* (2013) compared catalogs of photo-identified individuals from Mexico with photographs of whales off Russia and reported a total of 21 matches. Therefore, a portion of the WNP population is assumed to migrate, at least in some years, to the eastern Pacific during the winter breeding season. However, it is extremely unlikely that a gray whale in close proximity to Coast Guard construction activity would be one of the few WNP whales that have been documented in the eastern Pacific. The likelihood that a WNP whale would be present in the vicinity of Coast Guard construction activities at all locations is insignificant and discountable, and WNP gray whales are omitted from further analysis.

Kodiak, Sitka, and Juneau are within a gray whale migratory corridor Biologically Important Area (BIA) (Ferguson *et al.,* 2015).

Humpback Whale

Humpback whales are the most commonly observed baleen whale in Alaska and have been observed in Southeast Alaska in all months of the year (Baker *et al.,* 1986). They undergo seasonal migration with more whales present in Alaska from spring until fall. There are two potential stocks of humpback whales that may occur in the project area: the Central North Pacific stock and the Western North Pacific stock. The Central North Pacific stock consists of winter/spring populations of the Hawaiian Islands and Mexico, which migrate primarily to northern British Columbia/Southeast Alaska, the Gulf of Alaska, and the Bering Sea/Aleutian Islands (Baker *et al.,* 1990; Perry *et al.,* 1990; Calambokidis *et al.,* 1997). The Western North Pacific stock consists of winter/spring populations off Asia, which migrate primarily to Russia and the Bering Sea/Aleutian Islands. Members of the Western North Pacific stock have the potential to occur at Base Kodiak and in the vicinity of Seward moorings, whereas members of the Central North Pacific stock have the potential to occur at any of the eight facilities.

Prior to 2016, humpback whales were listed under the ESA as an endangered species worldwide. Following a 2015 global status review (Bettridge *et al.,* 2015), NMFS established 14 DPSs with different listing statuses (81 FR 62259, September 8, 2016) pursuant to the ESA. The DPSs that occur in U.S. waters do not necessarily equate to the existing stocks designated under the MMPA and shown in Table 3. Because MMPA stocks cannot be portioned, *i.e.,* parts managed as ESA-listed while other parts managed as not ESA-listed, until such time as the MMPA stock delineations are reviewed in light of the DPS designations, NMFS considers the existing humpback whale stocks under the MMPA to be endangered and depleted for MMPA management purposes.

Within Alaska waters, three current DPSs may occur: the Hawaii DPS (not listed), the Western North Pacific DPS (endangered), and the Mexico DPS (threatened). Humpback whales found in the project areas are predominantly members of the Hawaii DPS (98 percent probability in Southeast Alaska (Sitka, Ketchikan, Juneau, and Petersburg sites), 89 percent in the Gulf of Alaska (Kodiak, Seward, Valdez, and Cordova sites), and 91 percent in the Aleutian Islands), 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 (2 percent probability in Southeast Alaska, 11 percent in Gulf of Alaska, and 7 percent in the Aleutian Islands), and members of the Western North Pacific DPS have a small potential to occur in the Aleutian Islands (2 percent probability) and the Gulf of Alaska (1 percent probability) (Wade 2021).

On January 24, 2023, NMFS published the draft 2022 SARs (*https://*

www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region). The Alaska and Pacific Ocean SARs include proposed updates to the humpback whale and harbor porpoise stock structures. The new humpback whale stock structure, if finalized, would modify the MMPA-designated stocks to align more closely with the ESA-designated DPSs. The new harbor porpoise stock structure, if finalized, would split the Southeast Alaska stock into three new stocks. Please refer to the draft 2022 Alaska (Young *et al.,* 2023) and Pacific Ocean SARs for additional information.

NMFS' Office of Protected Resources, Permits and Conservation Division has generally considered peer-reviewed data in draft SARs (relative to data provided in the most recent final SARs), when available, as the best available science, and has done so in this proposed rule for all species and stocks, with the exception of a new proposal to revise humpback whale and harbor porpoise stock structures. Given that the proposed changes involve application of NMFS' Guidance for Assessing Marine Mammals Stocks and could be revised following consideration of public comments, it is more appropriate to conduct our analysis in this proposed rule based on the status quo stock structure identified in the most recent final SARs (2021; Carretta *et al.,* 2022; Muto *et al.,* 2022).

Critical habitat was recently finalized for the humpback whale in Alaska (86 FR 21082, April 21, 2021). Designated critical habitat for the Western North Pacific and Mexico DPSs overlaps Kodiak Island; Cordova and Valdez are located near, but not within, critical habitat for the Mexico DPS. Kodiak, Sitka, Juneau, and Petersburg are within seasonal humpback whale feeding BIAs (Ferguson *et al.,* 2015).

Fin Whale

The fin whale is widely distributed in all the world's oceans (Gambell, 1985), but typically occurs in temperate and polar regions from 20–70° north and south of the Equator (Perry *et al.,* 1999). Fin whales occur in coastal, shelf, and oceanic waters. Sergeant (1977) suggested that fin whales tend to follow steep slope contours, either because they detect them readily or because biological productivity is high along steep contours because of mixing. Stafford *et al.* (2009) noted that sea-surface temperature is a good predictor variable for fin whale call detections in the North Pacific.

Fin whales appear to have complex seasonal movements and are seasonal migrants; they mate and calve in temperate waters during the winter and migrate to feed at northern latitudes during the summer (Gambell, 1985). The North Pacific population summers from the Chukchi Sea to California and winters from California southwards (Gambell, 1985). Aggregations of fin whales are found year-round off southern and central California (Dohl *et al.,* 1980, 1983; Forney *et al.,* 1995; Barlow, 1997) and in the summer off Oregon (Green *et al.,* 1992; Edwards *et al.,* 2015). Diet for the fin whale varies by location and availability, but includes primarily krill, large copepods, some small squid, and small schooling fish (Cooke, 2018). Much of foraging occurs in spring, summer, and fall, with fasting or minimal feeding occurring during winter. Fin whales are generally solitary but can also occur in groups of two to seven individuals. Larger aggregations are usually due to gatherings at concentrated food sources and individuals display no social bonds (Wiles, 2017). The project site in Kodiak is just outside the fin whale feeding BIA, which cuts off at the mouth of Chiniak Bay where Base Kodiak is located.

Minke Whale

Minke whales are found throughout the northern hemisphere in polar, temperate, and tropical waters. The International Whaling Commission has identified three minke whale stocks in the North Pacific: one near the Sea of Japan, a second in the rest of the western Pacific (west of 180° W), and a third, less concentrated stock throughout the eastern Pacific. NMFS further splits this third stock between Alaska whales and resident whales of California, Oregon, and Washington (Muto *et al.,* 2018). Minke whales are found in all Alaska waters, however no population estimates are currently available for the Alaska stock.

In Alaska, minke whales feed primarily on euphausiids and walleye pollock. 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).

Killer Whale

Killer whales have been observed in all oceans, but the highest densities occur in colder and more productive waters found at high latitudes. Killer whales occur along the entire coast of Alaska (Braham and Dahlheim, 1982), inland waterways of British Columbia and Washington (Bigg *et al.,* 1990), and along the outer coasts of Washington, Oregon, and California (Green *et al.,* 1992; Barlow, 1995, 1997; Forney *et al.,* 1995). Eight stocks of killer whales are recognized within the Pacific U.S. Exclusive Economic Zone (Muto *et al.,* 2020). Of those, five stocks may be present in the project areas as follows: (1) Alaska Resident stock—All project locations; (2) AT1 Transient stock—Cordova, Valdez, and Seward; (3) Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock—Kodiak, Sitka, Valdez, Cordova, and Seward; (4) Northern Resident—Juneau, Sitka, Petersburg, and Ketchikan; and (5) West Coast Transient stock—Juneau, Sitka, Petersburg, and Ketchikan. Table 4 outlines where each stock is expected to overlap with each project location.

Transient killer whales hunt and feed primarily on marine mammals, including harbor seals, Dall's porpoises, harbor porpoises, and sea lions. Resident killer whale populations in the eastern North Pacific feed mainly on salmonids, showing a strong preference for Chinook salmon (Muto *et al.,* 2020).

The Alaska Resident stock occurs from southeast Alaska to the Aleutian Islands and Bering Sea. The Northern Resident stock occurs from Washington north through part of southeast Alaska. 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 AT1 Transient stock occurs only in Prince William Sound and in the Kenai Fjords region. The West Coast Transient stock occurs from California north through southeast Alaska (Muto *et al.,* 2020).

Dahlheim *et al.,* (2009) noted a 5.2 percent annual decline in transient killer whales observed in southeast Alaska between 1991 and 2007. Both resident and transient killer whales were observed in southeast Alaska during all seasons during surveys between 1991 and 2007, in a variety of habitats and in all major waterways, including Lynn Canal, Icy Strait, Stephens Passage, Frederick Sound, and upper Chatham Strait (Dahlheim *et al.,* 2009). There does not appear to be strong seasonal variation in abundance

or distribution of killer whales, but Dahlheim *et al.* (2009) observed substantial variability among different years.

Members of the fish-eating resident stocks are the most commonly seen in nearshore waters with members of the Alaska Resident stock having the potential to occur at any of the facilities while Northern Resident individuals have the potential to occur at all of the facilities except Base Ketchikan which is south of their expected range (Muto *et al.,* 2020). Transient killer whales of the Gulf of Alaska, Aleutian Islands, and Bering Sea stock have the potential to occur at all facilities except those facilities along the Inside Passage (*i.e.,* Base Ketchikan, Petersburg Moorings, and Station Juneau). Southeast Alaska is at the northern limit of the West Coast Transient stock and individuals of this population are only anticipated to appear at Station Sitka, Base Ketchikan, Station Juneau, and Petersburg Moorings.

Pacific White-Sided Dolphin

The Pacific white-sided dolphin is found in cool temperate waters of the North Pacific from the southern Gulf of California to Alaska. Across the North Pacific, it appears to have a relatively narrow distribution between 38° N and 47° N (Brownell *et al.,* 1999). In the eastern North Pacific Ocean, the Pacific white-sided dolphin is one of the most common cetacean species, occurring primarily in shelf and slope waters (Green *et al.,* 1993; Barlow 2003, 2010).

Results of aerial and shipboard surveys strongly suggest seasonal north-south movements of the species between California and Oregon/Washington; the movements apparently are related to oceanographic influences, particularly water temperature (Green *et al.,* 1993; Forney and Barlow, 1998; Buchanan *et al.,* 2001). During winter, this species is most abundant in California slope and offshore areas; as northern waters begin to warm in the spring, it appears to move north to slope and offshore waters off Oregon/Washington (Green *et al.,* 1992, 1993; Forney *et al.,* 1995; Buchanan *et al.,* 2001; Barlow 2003).

Pacific white-sided dolphins are highly gregarious with groups usually between 10 and 100 animals but ranging up to the thousands.

Dall's Porpoise

Dall's porpoise is found in temperate to subarctic waters of the North Pacific and adjacent seas (Jefferson *et al.,* 2015). It is widely distributed across the North Pacific over the continental shelf and slope waters, and over deep (2500 m and greater) oceanic waters (Hall, 1979). It is probably the most abundant small cetacean in the North Pacific Ocean, and its abundance changes seasonally, likely in relation to water temperature (Becker, 2007). They occur in groups of up to 25 individuals and are expected to occur at all eight facilities.

Harbor Porpoise

Harbor porpoise are common in coastal waters. They frequently occur in coastal waters of southeast Alaska and are observed most frequently in waters less than 350 ft (107 m) deep (Dahlheim *et al.,* 2009). There are three harbor porpoise stocks in Alaska: (1) The Southeast Alaska stock occurs from Dixon Entrance to Cape Suckling, including inland waters; (2) The Gulf of Alaska stock occurs from Cape Suckling to Unimak Pass; and (3) The Bering Sea stock occurs throughout the Aleutian Islands and all waters north of Unimak Pass (Muto *et al.,* 2021). Only the Southeast Alaska stock and the Gulf of Alaska stock are expected to be encountered throughout all project sites. The Southeast Alaska stock's range includes the Sitka, Ketchikan, Juneau, and Petersburg facilities, while the Gulf of Alaska stock range includes the Kodiak, Valdez, Seward, and Cordova facilities.

California Sea Lion

The primary range of the California sea lion includes the coastal areas and offshore islands of the eastern North Pacific Ocean from British Columbia to central Mexico, including the Gulf of California (Jefferson *et al.,* 2015). However, its distribution is expanding (Jefferson *et al.,* 2015), and its secondary range extends into the Gulf of Alaska (Maniscalco *et al.,* 2004) and southern Mexico (Gallo-Reynoso and Solórzano-Velasco, 1991).

In California and Baja California, births occur on land from mid-May to late-June. During August and September, after the mating season, the adult males migrate northward to feeding areas (Lowry *et al.,* 1992). They remain there until spring (March-May), when they migrate back to the breeding colonies (Lowry *et al.,* 1992; Weise *et al.,* 2006). The distribution of immature California sea lions is less well known but some make northward migrations that are shorter in length than the migrations of adult males (Huber, 1991). However, most immature seals are presumed to remain near the rookeries for most of the year, as are females and pups (Lowry *et al.,* 1992).

Northern Fur Seal

The northern fur seal is endemic to the North Pacific Ocean and occurs from southern California to the Bering Sea, Sea of Okhotsk, and Sea of Japan (Jefferson *et al.,* 2015). The worldwide population of northern fur seals has declined substantially from 1.8 million animals in the 1950s (Muto *et al.,* 2020). They were subjected to large-scale harvests on the Pribilof Islands to supply a lucrative fur trade. Two stocks are recognized in U.S. waters: The Eastern North Pacific and the California stocks. The Eastern Pacific stock ranges from southern California during winter to the Pribilof Islands and Bogoslof Island in the Bering Sea during summer (Carretta *et al.,* 2020; Muto *et al.,* 2020). Abundance of the Eastern Pacific Stock has been decreasing at the Pribilof Islands since the 1940s and increasing on Bogoslof Island. The northern fur seal population appears to be greatly affected by El Niño events.

Most northern fur seals are highly migratory. During the breeding season, most of the world's population of northern fur seals occurs on the Pribilof and Bogoslof islands (NMFS 2007). The main breeding season is in July (Gentry, 2009). Adult males usually occur onshore from May to August, though some may be present until November; females are usually found ashore from June to November (Muto *et al.,* 2020). Nearly all fur seals from the Pribilof Island rookeries are foraging at sea from fall through late spring. In November, females and pups leave the Pribilof Islands and migrate through the Gulf of Alaska to feeding areas primarily off the coasts of British Columbia, Washington, Oregon, and California before migrating north again to the rookeries in spring (Ream *et al.,* 2005; Pelland *et al.,* 2014). Immature seals can remain at sea in southern foraging areas year-round until they are old enough to mate (Muto *et al.,* 2022). Adult males migrate only as far south as the Gulf of Alaska or to the west off the Kuril Islands (Kajimura, 1984).

The northern fur seal spends approximately 90 percent of its time at sea, typically in areas of upwelling along the continental slopes and over seamounts (Gentry, 1981). The remainder of its life is spent on or near rookery islands or haulouts. While at sea, northern fur seals usually occur singly or in pairs, although larger groups can form in waters rich with prey (Antonelis and Fiscus, 1980; Gentry, 1981). Northern fur seals dive to relatively shallow depths to feed: 100–200 m for females, and <400 m for males (Gentry, 2009). Tagged adult female fur

seals were shown to remain within 200 km of the shelf break (Pelland *et al.,* 2014).

Steller Sea Lion

The Steller sea lion's range extends across the North Pacific Rim from northern Japan to California with areas of abundance in the Gulf of Alaska and Aleutian Islands (Muto *et al.,* 2020). In 1997, based on demographic and genetic dissimilarities, NMFS identified two DPSs of Steller sea lions under the ESA: a western DPS (western stock) and an eastern DPS (eastern stock). The western DPS breeds on rookeries located west of 144° W in Alaska and Russia, whereas the eastern DPS breeds on rookeries in southeast Alaska through California.

Movement occurs between the western and eastern DPS of Steller sea lions, and increasing numbers of individuals from the western DPS have been seen in Southeast Alaska in recent years (Muto *et al.,* 2020, Fritz *et al.,* 2016; DeMaster, 2014). This DPS-exchange is especially evident in the outer southeast coast of Alaska, including Sitka Sound. The distribution of marked animals (along with other demographic data) indicates that movements of Steller sea lions during the breeding season result in a small net annual movement of animals from southeast Alaska (eastern DPS) to the western DPS (approximately 80 sea lions total) but a much larger inter-regional movement between the western DPS and the eastern DPS (approximately 1,000 sea lions per year; Fritz *et al.,* 2016). Hastings *et al.* (2020) indicates that the eastern population is increasing while the western population is decreasing, influencing mixing of both populations at new rookeries in northern southeast Alaska. They estimate 38 percent and 13 percent of animals in the northern outer coast from the Glacier Bay and Lynn Canal in southeast Alaska carry genetic information unique to the western population.

Critical habitat has been defined in Alaska at major haulouts and major rookeries (50 CFR 226.202), but the project action areas do not overlap with Steller sea lion critical habitat. Additionally, no in-water work will occur from March 1 through October 1 at Valdez and Cordova to avoid overlap with Steller sea lion breeding season.

Harbor Seal

Harbor seals are common in the coastal and inside waters of the project areas. Harbor seals in Alaska are typically non-migratory with local movements attributed to factors such as prey availability, weather, and reproduction (Scheffer and Slipp, 1944; Fisher, 1952; Bigg 1969, 1981; Hastings *et al.,* 2004). Harbor seals haul out of the water periodically to rest, give birth, and nurse their pups. According to the NMFS Alaska Fisheries Science Center (AFSC, 2021) there is one haulout near Valdez (HG08A), and one near Cordova (GG08D) that are within direct line of sight and that could be exposed in larger Level B harassment zones (see below).

There are 12 stocks of harbor seals in Alaska, 5 of which occur in the project areas: (1) the South Kodiak stock ranges from Middle Cape on the west coast of Kodiak Island southwest to Chirikof Island and east along the south coast of Kodiak Island to Spruce Island; (2) the Prince William Sound stock ranges from Elizabeth Island off the southwest tip of the Kenai Peninsula to Cape Fairweather; (3) the Lynn Canal/Stephens Passage stock ranges north along the east and north coast of Admiralty Island from the north end of Kupreanof Island through Lynn Canal; (4) 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; and (5) the Clarence Strait stock ranges along the east coast of Prince of Wales Island from Cape Chacon north through Clarence Strait to Point Baker and along the east coast of Mitkof and Kupreanof Islands north to Bay Point.

Unusual Mortality Events (UME)

A UME is defined under the MMPA as ''a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response.'' The only currently ongoing UME investigation involves gray whales (*https://www.fisheries.noaa.gov/national/marine-life-distress/2019-2021-gray-whale-unusual-mortality-event-along-west-coast-and.* Beginning in early 2019, elevated strandings were observed along the west coast, with the majority of strandings in Alaska. Findings to date indicate that the whales are often emaciated but a cause of the UME has not been determined.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (2016) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65-decibel (dB) threshold from the normalized composite audiograms, with an exception for lower limits for low-frequency cetaceans where the result was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 5.

TABLE 5—MARINE MAMMAL HEARING GROUPS

[NMFS, 2018]

Hearing group	Generalized hearing range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz.
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
High-frequency (HF) cetaceans (true porpoises, *Kogia,* river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*)..	275 Hz to 160 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz.

TABLE 5—MARINE MAMMAL HEARING GROUPS—Continued

[NMFS, 2018]

Hearing group	Generalized hearing range *
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.,* 2006; Kastelein *et al.,* 2009; Reichmuth and Holt, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. Please refer to Table 3.

Potential Effects of the Specified Activity on Marine Mammals and Their Habitat

This section includes a summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat. The Estimated Take section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis and Determination section considers the content of this section, the Estimated Take section, and the Proposed Mitigation section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

In the following discussion, we provide general background information on sound before considering potential effects to marine mammals from sound produced by pile driving.

Description of Sound Sources

This section contains a brief technical background on sound, on the characteristics of certain sound types, and on metrics used in this proposal inasmuch as the information is relevant to the specified activity and to a discussion of the potential effects of the specified activity on marine mammals found later in this document.

The marine soundscape is comprised of both ambient and anthropogenic sounds. Ambient sound is defined as the all-encompassing sound in a given place and is usually a composite of sound from many sources both near and far (ANSI 1994, 1995). The sound level of an area is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.,* waves, wind, precipitation, earthquakes, ice, atmospheric sound), biological (*e.g.,* sounds produced by marine mammals, fish, and invertebrates), and anthropogenic sound (*e.g.,* vessels, dredging, aircraft, construction).

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

In-water construction activities associated with the project would include impact pile driving, vibratory pile driving, DTH, pile cutting, and power washing. Of these sounds, pile cutting and power washing are not expected to cause take of marine mammals and are thus not addressed further. The sounds produced by these activities fall into one of two general sound types: intermittent impulsive and continuous, non-impulsive. Impulsive sounds (*e.g.,* explosions, gunshots, sonic booms, impact pile driving) are typically transient, brief (less than 1 second), broadband, and consist of high peak sound pressure with rapid rise time and rapid decay (ANSI, 1986; NIOSH, 1998; ANSI, 2005; NMFS, 2018). As regards the temporal aspect of these sound types, impulsive sounds are inherently intermittent, while non-impulsive sounds may be intermittent or continuous. Non-impulsive sounds (*e.g.,* machinery operations such as drilling or dredging, vibratory pile driving, pile cutting, power washing, and active sonar systems) can be broadband, narrowband or tonal, brief or prolonged (continuous or intermittent), and typically do not have the high peak sound pressure with raid rise/decay time that impulsive sounds do (ANSI 1995; NIOSH 1998; NMFS 2018). The distinction between these two sound types is important because they have differing potential to cause physical effects, particularly with regard to hearing (*e.g.,* Ward 1997 in Southall *et al.,* 2007).

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

Rock or tension anchoring would be conducted using a DTH hammer. A DTH hammer is essentially a drill bit that drills through the bedrock using a rotating function like a normal drill in concert with a hammering pulse mechanism operated by a pneumatic (or sometimes hydraulic) component

integrated into the DTH hammer to increase speed of progress through the substrate (*i.e.,* it is similar to a ''hammer drill'' hand tool). Rock anchoring or socketing involves using DTH equipment to create a hole in the bedrock inside which the pile is placed to give it lateral and longitudinal strength. Tension anchoring involves creating a smaller hole below the bottom of a pile. A length of rebar is typically inserted in the small hole and is long enough to run up through the middle of a hollow pile to reach the surface where it is connected to the pile to provide additional mechanical support and stability to the pile. The sounds produced by DTH systems contain both a continuous, non-impulsive component from the drilling action and an impulsive component from the hammering effect. Therefore, NMFS treats DTH systems as both impulsive (for estimating Level A harassment zones) and non-impulsive (for estimating Level B harassment zones) sound source types simultaneously.

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

Acoustic Impacts

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

NMFS defines a noise-induced threshold shift (TS) as a change, usually an increase, in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS 2018). The amount of threshold shift is customarily expressed in dB. A TS can be permanent or temporary. As described in NMFS (2018), there are numerous factors to consider when examining the consequence of TS, including, but not limited to, the signal temporal pattern (*e.g.,* impulsive or non-impulsive), likelihood an individual would be exposed for a long enough duration or to a high enough level to induce a TS, the magnitude of the TS, time to recovery (seconds to minutes or hours to days), the frequency range of the exposure (*i.e.,* spectral content), the hearing and vocalization frequency range of the exposed species relative to the signal's frequency spectrum (*i.e.,* how an animal uses sound within the frequency band of the signal; *e.g.,* Kastelein *et al.,* 2014), and the overlap between the animal and the source (*e.g.,* spatial, temporal, and spectral).

Permanent Threshold Shift (PTS)—NMFS defines PTS as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS 2018). Available data from humans and other terrestrial mammals indicate that a 40 dB threshold shift approximates PTS onset (see Ward *et al.,* 1958, 1959; Ward 1960; Kryter *et al.,* 1966; Miller 1974; Ahroon *et al.,* 1996; Henderson *et al.,* 2008). PTS levels for marine mammals are estimates, as with the exception of a single study unintentionally inducing PTS in a harbor seal (Kastak *et al.,* 2008), there are no empirical data measuring PTS in marine mammals largely due to the fact that, for various ethical reasons, experiments involving anthropogenic noise exposure at levels inducing PTS are not typically pursued or authorized (NMFS 2018).

Temporary Threshold Shift (TTS)—TTS is a temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS 2018). Based on data from cetacean TTS measurements (see Southall *et al.,* 2007), a TTS of 6 dB is considered the minimum threshold shift clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.,* 2000; Finneran *et al.,* 2000, 2002). As described in Finneran (2015), marine mammal studies have shown the amount of TTS increases with cumulative sound exposure level (SELcum) in an accelerating fashion: At low exposures with lower SELcum, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SELcum, the growth curves become steeper and approach linear relationships with the noise SEL.

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

Many studies have examined noise-induced hearing loss in marine mammals (see Finneran (2015) and Southall *et al.* (2019) for summaries). For cetaceans, published data on the onset of TTS are limited to the captive bottlenose dolphin (*Tursiops truncatus*), beluga whale (*Delphinapterus leucas*), harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaeorientalis*), and for pinnipeds in water, measurements of TTS are limited to harbor seals, elephant seals (*Mirounga angustirostris*), and California sea lions. These studies examine hearing thresholds measured in marine mammals before and after exposure to

intense sounds. The difference between the pre-exposure and post-exposure thresholds can be used to determine the amount of threshold shift at various post-exposure times. The amount and onset of TTS depends on the exposure frequency. Sounds at low frequencies, well below the region of best sensitivity, are less hazardous than those at higher frequencies, near the region of best sensitivity (Finneran and Schlundt, 2013). At low frequencies, onset-TTS exposure levels are higher compared to those in the region of best sensitivity (*i.e.,* a low frequency noise would need to be louder to cause TTS onset when TTS exposure level is higher), as shown for harbor porpoises and harbor seals (Kastelein *et al.,* 2019a, 2019b). In addition, TTS can accumulate across multiple exposures, but the resulting TTS will be less than the TTS from a single, continuous exposure with the same SEL (Finneran *et al.,* 2010; Kastelein *et al.,* 2014; Kastelein *et al.,* 2015a; Mooney *et al.,* 2009). This means that TTS predictions based on the total, SELcum will overestimate the amount of TTS from intermittent exposures such as sonars and impulsive sources. Nachtigall *et al.,* (2018) describe the measurements of hearing sensitivity of multiple odontocete species (bottlenose dolphin, harbor porpoise, beluga, and false killer whale (*Pseudorca crassidens*)) when a relatively loud sound was preceded by a warning sound. These captive animals were shown to reduce hearing sensitivity when warned of an impending intense sound. Based on these experimental observations of captive animals, the authors suggest that wild animals may dampen their hearing during prolonged exposures or if conditioned to anticipate intense sounds. Another study showed that echolocating animals (including odontocetes) might have anatomical specializations that might allow for conditioned hearing reduction and filtering of low-frequency ambient noise, including increased stiffness and control of middle ear structures and placement of inner ear structures (Ketten *et al.,* 2021). Data available on noise-induced hearing loss for mysticetes are currently lacking (NMFS, 2018).

Installing piles requires a combination of impact pile driving, vibratory pile driving, and DTH. For the project, these activities would not occur at the same time and there would likely be pauses in activities producing the sound during each day. Given these pauses and that many marine mammals are likely moving through the action area and not remaining for extended periods of time, the potential for TS declines.

Behavioral Harassment—Exposure to noise from pile driving and drilling also has the potential to behaviorally disturb marine mammals. Available studies show wide variation in response to underwater sound; therefore, it is difficult to predict specifically how any given sound in a particular instance might affect marine mammals perceiving the signal. If a marine mammal does react briefly to an underwater sound by changing its behavior or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the stock or population. However, if a sound source displaces marine mammals from an important feeding or breeding area for a prolonged period, impacts on individuals and populations could be significant (*e.g.,* Lusseau and Bejder, 2007; Weilgart, 2007; NRC, 2005).

Disturbance may result in changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where sound sources are located. Pinnipeds may increase their haul out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.,* 1995; Wartzok *et al.,* 2003; Southall *et al.,* 2007; Weilgart, 2007; Archer *et al.,* 2010). Behavioral reactions can vary not only among individuals but also within an individual, depending on previous experience with a sound source, context, and numerous other factors (Ellison *et al.,* 2012), and can vary depending on characteristics associated with the sound source (*e.g.,* whether it is moving or stationary, number of sources, distance from the source). In general, pinnipeds seem more tolerant of, or at least habituate more quickly to, potentially disturbing underwater sound than do cetaceans, and generally seem to be less responsive to exposure to industrial sound than most cetaceans. Please see Appendices B and C of Southall *et al.* (2007) for a review of studies involving marine mammal behavioral responses to sound.

Disruption of feeding behavior can be difficult to correlate with anthropogenic sound exposure, so it is usually inferred by observed displacement from known foraging areas, the appearance of secondary indicators (*e.g.,* bubble nets or sediment plumes), or changes in dive behavior. As for other types of behavioral response, the frequency, duration, and temporal pattern of signal presentation, as well as differences in species sensitivity, are likely contributing factors to differences in response in any given circumstance (*e.g.,* Croll *et al.,* 2001; Nowacek *et al.,* 2004; Madsen *et al.,* 2006; Yazvenko *et al.,* 2007). A determination of whether foraging disruptions incur fitness consequences would require information on or estimates of the energetic requirements of the affected individuals and the relationship between prey availability, foraging effort and success, and the life history stage of the animal.

In 2016, the Alaska Department of Transportation and Public Facilities (ADOT&PF) documented observations of marine mammals during construction activities (*i.e.,* pile driving and DTH drilling) at the Kodiak Ferry Dock (see 80 FR 60636, October 7, 2015). In the marine mammal monitoring report for that project (ABR 2016), 1,281 Steller sea lions were observed within the estimated Level B harassment zone during pile driving or drilling. Of these, 19 individuals demonstrated an alert behavior, 7 were fleeing, and 19 swam away from the project site. All other animals (98 percent) were engaged in activities such as milling, foraging, or fighting and did not change their behavior. In addition, two sea lions approached within 20 meters of active vibratory pile driving activities. Three harbor seals were observed within the disturbance zone during pile driving activities; none of them displayed disturbance behaviors. Fifteen killer whales and three harbor porpoises were also observed within the estimated Level B harassment zone during pile driving. The killer whales were travelling or milling while all harbor porpoises were travelling. No signs of disturbance were noted for either of these species. Given the similarities in activities and habitat and the fact the same species are involved, we expect similar behavioral responses of marine mammals to the Coast Guard's specified activity. That is, disturbance, if any, is likely to be temporary and localized (*e.g.,* small area movements). Monitoring reports from other recent pile driving and DTH projects in Alaska

have observed similar behaviors (for example, the Biorka Island Dock Replacement Project *https://www.fisheries.noaa.gov/action/incidental-take-authorization-faa-biorka-island-dock-replacement-project-sitka-ak*).

Airborne Acoustic Effects—Pinnipeds that occur near the project sites could be exposed to airborne sounds associated with pile driving or DTH that have the potential to cause behavioral harassment, depending on their distance from the activities. Cetaceans are not expected to be exposed to airborne sounds that would result in harassment as defined under the MMPA.

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

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

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

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

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

Auditory Masking—Sound can disrupt behavior through masking, or interfering with, an animal's ability to detect, recognize, or discriminate between acoustic signals of interest (*e.g.,* those used for intraspecific communication and social interactions, prey detection, predator avoidance, navigation) (Richardson *et al.,* 1995; Erbe *et al.,* 2016). Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher intensity, and may occur whether the sound is natural (*e.g.,* snapping shrimp, wind, waves, precipitation) or anthropogenic (*e.g.,* shipping, sonar, seismic exploration) in origin. The ability of a noise source to mask biologically important sounds depends on the characteristics of both the noise source and the signal of interest (*e.g.,* signal-to-noise ratio, temporal variability, direction), in relation to each other and to an animal's hearing abilities (*e.g.,* sensitivity, frequency range, critical ratios, frequency discrimination, directional discrimination, age or TTS hearing loss), and existing ambient noise and propagation conditions. Masking of natural sounds can result when human activities produce high levels of background sound at frequencies important to marine mammals. Conversely, if the background level of underwater sound is high (*e.g.,* on a day with strong wind and high waves), an anthropogenic sound source would not be detectable as far away as would be possible under quieter conditions and would itself be masked.

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

The frequency range of the potentially masking sound is important in determining any potential behavioral impacts. For example, low-frequency signals may have less effect on high-frequency echolocation sounds produced by odontocetes but are more likely to affect detection of mysticete communication calls and other potentially important natural sounds

such as those produced by surf and some prey species. The masking of communication signals by anthropogenic noise may be considered as a reduction in the communication space of animals (*e.g.,* Clark *et al.,* 2009) and may result in energetic or other costs as animals change their vocalization behavior (*e.g.,* Miller *et al.,* 2000; Foote *et al.,* 2004; Parks *et al.,* 2007; Di Iorio and Clark, 2009; Holt *et al.,* 2009). Masking can be reduced in situations where the signal and noise come from different directions (Richardson *et al.,* 1995), through amplitude modulation of the signal, or through other compensatory behaviors (Houser and Moore, 2014). Masking can be tested directly in captive species (*e.g.,* Erbe, 2008), but in wild populations it must be either modeled or inferred from evidence of masking compensation. There are few studies addressing real-world masking sounds likely to be experienced by marine mammals in the wild (*e.g.,* Branstetter *et al.,* 2013).

Masking affects both senders and receivers of acoustic signals and can potentially have long-term chronic effects on marine mammals at the population level as well as at the individual level. Low-frequency ambient sound levels have increased by as much as 20 dB (more than three times in terms of SPL) in the world's ocean from pre-industrial periods, with most of the increase from distant commercial shipping (Hildebrand, 2009). All anthropogenic sound sources, but especially chronic and lower-frequency signals (*e.g.,* from vessel traffic), contribute to elevated ambient sound levels, thus intensifying masking. Many of the Coast Guard facilities are in areas that contain active commercial shipping, fishing, cruise ship, and ferry operations, as well as numerous recreational and other commercial vessels; therefore, background sound levels in the areas are generally already elevated.

Marine Mammal Habitat Effects

The Coast Guard's construction activities could have localized, temporary impacts on marine mammal habitat and their prey by increasing in-water sound pressure levels and slightly decreasing water quality. Increased noise levels may affect acoustic habitat (see masking discussion above) and adversely affect marine mammal prey in the vicinity of the project area (see discussion below). During construction activities, elevated levels of underwater noise would ensonify nearby areas where both fishes and mammals occur and could affect foraging success.

Construction activities are of short duration and would likely have temporary impacts on marine mammal habitat through increases in underwater and airborne sound.

In-water pile driving, cutting, and power washing activities would also cause short-term effects on water quality due to increased turbidity. Local strong currents are anticipated to disburse any additional suspended sediments produced by project activities at moderate to rapid rates depending on tidal stage. The Coast Guard would employ other standard construction best management practices (see section 11 in the Coast Guard's application), thereby reducing any impacts. Therefore, the impact from increased turbidity levels is expected to be discountable.

In-Water Construction Effects on Potential Foraging Habitat

The area likely impacted by the project is relatively small compared to the available habitat in the Gulf of Alaska. For a couple of facilities the ensonified area includes BIAs for feeding or migration for gray and/or humpback whales as well as critical habitats (see above). Kodiak and the distant areas around Cordova are included in the area designated as critical habitat for the Mexico DPS of humpback whales. Additionally, five haulout sites are located within 20 nautical miles (37 km) of Base Kodiak, the Seward Moorings, and of the Cordova Moorings. The planned activity is not anticipated to have any meaningful or lasting impacts to any of the aforementioned habitats of biological or critical importance, nor is it anticipated to significantly influence the behaviors of marine mammals in these habitats. Pile driving, power washing, and DTH may temporarily increase turbidity resulting from suspended sediments. Any increases would be temporary, localized, and minimal. The Coast Guard must comply with state water quality standards during these operations. In general, turbidity associated with pile installation is localized to about a 25-ft (7.6-m) radius around the pile (Everitt *et al.,* 1980). Any pinnipeds would be transiting the area and could avoid localized areas of turbidity. Therefore, the impact from increased turbidity levels is expected to be discountable to marine mammals. Furthermore, pile driving at the project sites would not obstruct movements or migration of marine mammals.

Avoidance by potential prey (*i.e.,* fish) of the immediate area due to the temporary loss of this foraging habitat is also possible. The duration of fish avoidance of this area after pile driving, washing, cutting or DTH stops is unknown, but a rapid return to normal recruitment, distribution, and behavior is anticipated. Any behavioral avoidance by fish of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity.

The duration of the construction activities is relatively short. During each day, construction activities would generally only occur during daylight hours, with exceptions at the end of the work day to ensure safety of the site and construction personnel. Impacts to habitat and prey are expected to be minimal based on the short duration of activities and small size of affected areas, and the likelihood that the areas that are impacted are not of particular importance to marine mammals.

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

SPLs of sufficient strength have been known to cause injury to fish and fish mortality (Dahl *et al.,* 2020). However, in most fish species, hair cells in the ear continuously regenerate and loss of auditory function likely is restored when damaged cells are replaced with new cells. Halvorsen *et al.* (2012a) showed that a TTS of 4–6 dB was recoverable within 24 hours for one species. Non-auditory injuries caused by barotrauma can range from slight to severe and can cause death, and is most likely for fish with swim bladders. Barotrauma injuries have been documented during controlled exposure to explosions and during impact pile driving; however, the relationships between severity of injury and location

of the fish relative to the sound are not well understood (Halvorsen *et al.,* 2012b; Casper *et al.,* 2013; Dahl *et al.,* 2020).

Fish react to sounds that are especially strong and/or intermittent low-frequency sounds. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. Hastings and Popper (2005) identified several studies that suggest fish may relocate to avoid certain areas of sound energy. Additional studies have documented effects of pile driving on fish (*e.g.,* Scholik and Yan, 2001, 2002; Popper and Hastings, 2009). Impulsive sounds might affect the distribution and behavior of some fishes, potentially impacting foraging opportunities or increasing energetic costs (*e.g.,* Fewtrell and McCauley, 2012; Pearson *et al.,* 1992; Skalski *et al.,* 1992; Santulli *et al.,* 1999; Paxton *et al.,* 2017). However, some studies have shown no or slight reaction to impulse sounds (*e.g.,* Pena *et al.,* 2013; Wardle *et al.,* 2001; Jorgenson and Gyselman, 2009; Cott *et al.,* 2012). More commonly, though, the impacts of noise on fish are temporary and include changes to behavior that return to baseline shortly after the noise-producing activity stops.

The most likely impact to fish from pile driving and DTH activities at the project areas would be temporary behavioral avoidance of the area. The duration of fish avoidance of the area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution, and behavior is anticipated. There are times of known seasonal marine mammal foraging in the area of the facilities around fish processing/hatchery infrastructure or when fish are congregating, but the impacted areas are a small portion of the total foraging habitat available in the region. In general, impacts to marine mammal prey species are expected to be minor and temporary due to the short timeframe of the project and the small project footprint.

Construction activities, in the form of increased turbidity, have the potential to adversely affect forage fish and juvenile salmonid out-migratory routes in the project area. Both herring and salmon form a significant prey base for Steller sea lions, herring is a primary prey species of humpback whales, and both herring and salmon are components of the diet of many other marine mammal species that occur in the project area. Increased turbidity is expected to occur in the immediate vicinity (on the order of 25 ft or less) of construction activities. However, suspended sediments and particulates are expected to dissipate quickly within a single tidal cycle. Given the limited area affected and high tidal dilution rates any effects on forage fish and salmon are expected to be minor or negligible. In addition, best management practices would be in effect, which would limit the extent of turbidity to the immediate project area. Finally, exposure to turbid waters from construction activities is not expected to be different from the current exposure; fish and marine mammals in the region are routinely exposed to substantial levels of suspended sediment from glacial sources.

In-water work windows have been established to minimize the impacts of the proposed activity on sensitive life stages essential fish that are considered prey species for many marine mammals. Table 1 notes when periods of in-water work may not occur and at which facility.

In summary, given the short daily duration of sound associated with individual pile driving and DTH events and the relatively small areas being affected, pile driving and DTH activities associated with the proposed action are not likely to have a permanent, adverse effect on any fish habitat, or populations of fish species. Thus, we conclude that impacts of the specified activity are not likely to have more than short-term adverse effects on any prey habitat or populations of prey species. Further, any impacts to marine mammal habitat are not expected to result in significant or long-term consequences for individual marine mammals, or to contribute to adverse impacts on their populations.

Estimated Take

This section provides an estimate of the number of incidental takes proposed for authorization, which will inform both NMFS' consideration of ''small numbers'' and the negligible impact determination.

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

Authorized takes would be by Level A or Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to the acoustic sources. Based on the nature of the activity, no serious injury or mortality is anticipated or proposed to be authorized for this activity. Below we describe how the take is estimated.

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

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.,* frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.,* 2007, Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB referenced to 1 micropascal (re 1 μPa) root mean square (rms) for continuous (*e.g.,* vibratory pile-driving, DTH) and

above 160 dB re 1 µPa (rms) for non-explosive impulsive, intermittent (*e.g.,* impact driving, DTH) sources.

The Coast Guard's proposed activity includes the use of continuous (vibratory, DTH) and impulsive (impact pile driving and DTH) sources, and therefore the 120 and 160 dB re 1 µPa (rms) thresholds, respectively, are applicable.

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

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

TABLE 6—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

Hearing Group	PTS onset acoustic thresholds * (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1:* $L_{pk,flat}$*:* 219 dB; $L_{E,LF,24h}$*:* 183 dB	*Cell 2:* $L_{E,LF,24h}$*:* 199 dB.
Mid-Frequency (MF) Cetaceans	*Cell 3:* $L_{pk,flat}$*:* 230 dB; $L_{E,MF,24h}$*:* 185 dB	*Cell 4:* $L_{E,MF,24h}$*:* 198 dB.
High-Frequency (HF) Cetaceans	*Cell 5:* $L_{pk,flat}$*:* 202 dB; $L_{E,HF,24h}$*:* 155 dB	*Cell 6:* $L_{E,HF,24h}$*:* 173 dB.
Phocid Pinnipeds (PW) (Underwater)	*Cell 7:* $L_{pk,flat}$*:* 218 dB; $L_{E,PW,24h}$*:* 185 dB	*Cell 8:* $L_{E,PW,24h}$*:* 201 dB.
Otariid Pinnipeds (OW)(Underwater)	*Cell 9:* $L_{pk,flat}$*:* 232 dB; $L_{E,OW,24h}$*:* 203 dB	*Cell 10:* $L_{E,OW,24h}$*:* 219 dB.

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

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa^{2}s. In this table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for the Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.,* varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into estimating the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

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

The actual durations of each installation method vary depending on the type and size of the pile. In order to calculate distances to the Level A harassment and Level B harassment sound thresholds for piles of various sizes and equipment being used in this project, NMFS used acoustic monitoring data from other locations to develop source levels (Table 7). Note that piles and holes of differing sizes have different sound source levels (SSLs). For simplicity and to be precautionary we analyze the largest pile diameter of each type (*e.g.,* 24-inch diameter) even though it is possible at some locations in some situations smaller pile diameters may be used or be removed.

TABLE 7—SOUND SOURCE LEVELS

Method and pile type	Sound source level at 10 meters (dB)	Literature source
Timber Vibratory	152 RMS	Greenbusch Group 2018.
24-inch Steel Pipe Vibratory	162 RMS	Laughlin 2010.
Timber Impact	170 RMS, 160 SEL, 180 Pk	CALTRANS 2015.
Composite impact	153 RMS, 145 SEL	CALTRANS 2020.
24-inch Steel Pipe Impact	190 RMS, 177 SEL, 203 Pk	CALTRANS 2015.
24-inch Concrete Impact	170 RMS, 159 SEL, 184 Pk	Mukilteo Terminal (WSDOT 2020).
DTH Non-impulsive component	167 RMS	Heyvaert & Reyff 2021.
24-inch DTH Impulsive component	159 SEL, 184 dB Pk	Heyvaert & Reyff 2021.

Note: It is assumed that noise levels during pile installation and removal are similar. SEL = single strike sound exposure level; peak = peak sound level; RMS = root mean square.

Level B Harassment Zones

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

$$TL = B * \mathrm{Log10}\,(R1/R2),$$

where

TL = transmission loss in dB
B = transmission loss coefficient; for practical spreading equals 15
R1 = the distance of the modeled SPL from the driven pile, and
R2 = 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. 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 Coast Guard's proposed activity.

Using the practical spreading model, the Coast Guard determined underwater noise would fall below the behavioral effects thresholds of 120 dB rms or 160 dB rms for marine mammals at a maximum radial distances from 46 m for impact driving of timber or concrete piles to 13,594 m for DTH (Table 8). These distances determine the maximum Level B harassment zones for the project. It should be noted that based on the geography of many of the sites, sound will not reach the full distance of the Level B harassment isopleth. Generally, due to interaction with land, only a portion of the possible area is ensonified.

TABLE 8—CALCULATED DISTANCES TO LEVEL B HARASSMENT ISOPLETHS

Method and pile type	Level B isopleth (m)
Timber Vibratory	1,359
24-inch Steel Pipe Vibratory	6,310
Timber Impact	46
Composite Impact	3
24-inch Steel Pipe Impact	1000
24-inch Concrete Impact	46
DTH	13,594

Level A Harassment Zones

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of take by Level A harassment. However, these tools offer the best way to predict appropriate isopleths when more sophisticated three dimensional modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources such as pile driving or DTH, NMFS User Spreadsheet predicts the closest distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would not incur PTS.

Inputs used in the User Spreadsheet (Table 9), and the resulting isopleths are reported below (Table 10). We analyzed scenarios with up to five piles per day to account for maximum possible production rates. Level A harassment thresholds for impulsive sound sources (impact pile driving and DTH) are defined for both SELcum and Peak SPL, with the threshold that results in the largest modeled isopleth for each marine mammal hearing group used to establish the Level A harassment isopleth. In this analysis, Level A harassment isopleths based on SELcum were always larger than those based on Peak SPL.

TABLE 9—INPUTS OF PILE DRIVING AND DTH ACTIVITY USED IN USER SPREADSHEET

Method and pile type	Weighting factor adjustment	Duration (minutes; vibratory) or strikes per pile (impact)	Piles per day
Timber Vibratory	2.5	50	5
24-inch Steel Pipe Vibratory	2.5	10	5
Timber Impact	2	100	5
Composite Impact	2	120	5
24-inch Steel Pipe Impact	2	400	1
24-inch Concrete Impact	2	184	5
24-inch DTH	2	60	2

Note: Data for all equipment types were for transmission loss of 15*log(r) and distance of source level measurements was 10 meters.

The above input scenarios lead to a PTS isopleth distance (Level A harassment threshold) of 0 to 517.1 m, depending on the marine mammal hearing group and scenario (Table 9).

TABLE 10—CALCULATED DISTANCES TO LEVEL A HARASSMENT ISOPLETHS (m) DURING PILE INSTALLATION AND REMOVAL FOR EACH HEARING GROUP

Method and pile type	Low frequency	Mid frequency	High frequency	Phocid	Otariid
Timber Vibratory	1.5	0.1	2.2	0.9	0.1
24-inch Steel Pipe Vibratory	7.1	0.6	10.4	4.3	0.3
Timber Impact	18.4	0.7	21.9	9.9	0.7
Composite Impact	2.1	0.1	2.5	1.1	0.1
24-inch Steel Pipe Impact	215.8	7.7	257.1	115.5	8.4
24-inch Concrete Impact	27.7	1	33.0	14.8	1.1
24-inch DTH	434.1	15.4	517.1	232.2	16.9

Note: a minimum 20-m shutdown zone, as proposed by the Coast Guard, will be implemented for all species and activity types to prevent direct injury of marine mammals.

Marine Mammal Occurrence and Take Calculation and Estimation

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations. Here we describe how the information provided above is brought together to produce a quantitative take estimate.

Available information regarding marine mammal occurrence and abundance in the vicinity of the eight facilities includes monitoring data from the NMFS Alaska Regional Office, prior incidental take authorizations, and ESA consultations on additional projects (Table 11). When local density information is not available, data aggregated in the Navy's Marine Mammal Species Density Database (U.S. Navy, 2019, 2020) for the Gulf of Alaska or Northwest Testing and Training areas (Table 12) or nearby proxies from the monitoring data are used; whichever gives the most precautionary take estimate was chosen.

Table 11—Marine Mammal Occurrence Data (per day) From Prior Projects

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Stock	Project Location					
	Ketchikan	Sitka	Seward	Juneau	Valdez	Kodiak
Gray whale	0.067	0.1	NA	NA	NA	NA
Humpback whale	0.571	5	1	4	NA	NA
Minke whale	0.024	1	NA	NA	0.25	NA
Killer whale	0.4	8	NA	NA	NA	NA
Pacific white-sided dolphin	2.86	NA	NA	NA	NA	NA
Dall's porpoise	2	NA	0.25	NA	NA	NA
Harbor porpoise	0.5	5	NA	NA	NA	NA
California sea lion	NA	1	NA	NA	NA	NA
Steller sea lion Eastern	10	15.6	NA	NA	NA	NA
Steller sea lion Western	NA	0.4	2	NA	4.2	0.083
Harbor seal Prince William Sound	NA	NA	NA	NA	48.95	NA
Harbor seal Lynn Canal/Stephens Passage	NA	NA	NA	43	NA	NA
Harbor seal Sitka/Chatham Straight	NA	23	NA	NA	NA	NA
Harbor seal Clarence Strait	12	NA	NA	NA	NA	NA

Note: NA indicates that occurrence data was not used for that species and site combination. Density data for species/site combinations listed as NA in this table are shown in Table 12.

TABLE 12—MARINE MAMMAL DENSITIES FROM NAVY DATA

Stock	Southeast Alaska facilities species density (#/km²) [1 2 3]	Gulf of Alaska/ Prince William Sound facilities species density (#/km²) [3 4 5]
Gray whale	0.016	0.048
Humpback whale Central North Pacific	0.002	0.093
Humpback Whale Western North Pacific [6]	N/A	0.093
Fin whale	0.0001	0.068
Minke whale	0.001	0.006
Killer whale (General)	N/A	0.005
Killer whale Resident	0.035	N/A
Killer whale Transient	0.006	N/A
Pacific white-sided dolphin	0.085	0.020
Dall's porpoise	0.121	0.218
Harbor porpoise	0.010	0.455
California sea lion [7]	0.025	0
Northern fur seal	0.276	0.090
Steller sea lion	0.316	0.068
Harbor seal	1.727	0.169

[1] Facilities including Ketchikan, Sitka, Juneau, and Petersburg.
[2] Southeast Alaska density values generally from Western Behm Canal values reported in U.S. Navy (2020).
[3] Where species density values reported in the U.S. Navy (2020) and U.S. Navy (2021) vary by time of year, the greatest value is presented here as a conservative estimate.
[4] Facilities including Kodiak, Seward, Valdez, and Cordova.
[5] Gulf of Alaska/Prince William Sound species density values generally from inshore or within the 500–1000 m isobath values reported in U.S. Navy (2021).
[6] The range for the Western North Pacific stock of humpback whales does not extend to Southeast Alaska.
[7] U.S. Navy 2020 density values for California sea lion do not include Western Behm Canal and the value used here is from the San Juan Islands, the next closest zone to the project area where a density value is available.

The data on abundance and occurrence from prior projects is derived from the following projects: (1) Kodiak—PSO monitoring reports from dock repair projects in 2018 and 2020 (NMFS Alaska Region). (2) Sitka—Data are from the Old Sitka Dock project (86 FR 22392, April 28, 2021). (3) Ketchikan—Data are from the Tongass Narrows project (85 FR 673, January 7, 2020) and other projects in preparation in the area. (4) Valdez—Data are from monitoring for an oil spill response in late April and early May 2020 (NMFS Alaska Region). (5) Juneau—Data are from the Erickson Dock project (84 FR 65360, November 27, 2019) and the Juneau Waterfront Improvement Project (85 FR 18562, April 2, 2020). (6) Seward—An IHA application for the Seward Passenger Terminal project recently received by NMFS included information resulting from consultation with the Alaska SeaLife Center, the Kenai Fjords NPS, local whale watching companies, and scientific literature to estimate the occurrence of marine mammals in Seward.

To quantitatively assess exposure of marine mammals to noise from pile driving and drilling activities when density estimates are most appropriate we used the density estimate and the annual anticipated number of work days for each activity (Table 2) at each facility to determine the number of animals potentially harassed on any one day of activity. The calculation is:

Exposure estimate = Density × harassment area × maximum days of activity

For example, exposure estimates at the Ketchikan site for gray whales were calculated by first finding the product of the SE Alaska species density (0.0155 animals/km²), the ensonified area for the activity (*e.g.,* 1.45 km² for vibratory pile driving of timber piles), for the anticipated number of days for that activity each year (10 days/year). After finding the product for each activity for each year, the values were summed to find the total number of takes for that species across all 5 years. This method was used for all species for which local occurrence data were not available.

When occurrence data from prior projects are the most appropriate data for exposure estimation, we used the occurrence estimate (number/unit of time) and the maximum work days (converted to the appropriate unit of time as needed) per year (Table 2) at each facility to determine the number of animals potentially exposed to an activity. The calculation is:

Exposure estimate = Occurrence/time × time of activity

And these values are then summed across activity/pile types.

When exposure estimates from density data are used for sites with no local occurrence data and the exposure estimate is less than a typical group size, we increase the estimated take based on that group size to account for the possibility a single group entering the project area would exceed authorized take. Table 13 shows the source of data used in exposure estimates.

The size of the Level B harassment zones for each facility and activity are in Table 14. Level A harassment take is only proposed for the activities creating the largest Level A harassment zones: DTH and impact driving of steel pipe piles (see Figures 6–2 through Figure 6–9 in the Coast Guard's application), and for species that would be difficult for observers to detect within large, unconfined zones: high frequency cetaceans and phocid pinnipeds. The topography of sites and facilities in Seward, Juneau, Sitka, and Petersburg are restricted such that noise would be confined to a small area or basin, and PSOs would be able to observe any marine mammals approaching the activity are and Level A shutdown zone with enough warning that work could be stopped before a take by Level A harassment would occur. The facilities at the remaining four sites (Kodiak, Ketchikan, Valdez, and Cordova) are less confined, and PSOs may be unable

to observe cryptic species at the calculated isopleths. Therefore, we conservatively propose small numbers of take by Level A harassment for high frequency cetaceans and phocid pinnipeds at these sites.

Table 13—Source of Data Used To Estimate Exposure for Each Species or Stock and Facility

Species/Stock	Kodiak	Sitka	Ketchikan	Seward	Valdez	Cordova	Juneau	Petersburg
Gray whale	N	Sit	Ke	*	*	*	*	*
Humpback whale	N	Sit	Ke	Sew	V	N	J	N
Fin whale	*	*	*	*	N	N	*	*
Minke whale	N	Sit	Ke	N	V	N	Ke	Ke
Killer whale	N	Sit	Ke	G	N	G	Ke	Ke
Pacific white-sided dolphin	N	Ke	Ke	G	G	G	Ke	Ke
Dall's porpoise	N	N	Ke	Sew	N	N	Ke	Ke
Harbor porpoise Southeast Alaska	*	Sit	Ke	*	*	*	Ke	Ke
Harbor porpoise Gulf of Alaska	N	*	*	N	N	N	*	*
California sea lion	*	Sit	*	*	*	*	N	*
Northern fur seal	N	N	*	G	N	N	*	*
Steller sea lion	Ko	Sit	Ke	Sew	V	N	N	Sit
Harbor seal Prince William Sound	*	*	*	V	V	V	*	*
Harbor seal Lynn Canal/Stephens Passage	*	*	*	*	*	*	J	*
Harbor seal Sitka/Chatham Straight	*	Sit	*	*	*	*	*	*
Harbor seal Clarence Strait	*	*	Ke	*	*	*	*	J
Harbor seal South Kodiak	N	*	*	*	*	*	*	*

Abbreviations for source data are: N—Navy density data, Ke—Ketchikan, Sit—Sitka, Sew—Seward, J—Juneau, V—Valdez, Ko—Kodiak, G—estimate rounded up to 1 group *—Not applicable (no take).

TABLE 14—LEVEL B HARASSMENT AREAS AT EACH FACILITY (km^2) FOR EACH METHOD AND/OR PILE TYPE

Facility	Timber vibratory	Steel vibratory	Timber impact	Composite [1] impact	Steel impact	DTH
Kodiak	1.3	4.51	0.006	0	1.03	4.51
Sitka	0.87	5.67	0.007	0	0.56	.....
Ketchikan	1.45	7.29	0.004	0	1.06	10.1
Valdez	2.62	40.21	0.007	0	1.43	.....
Cordova	.....	23.42	.....	.....	1.57	.....
Juneau	1.62	NA	0.003	0	NA	.....
Petersburg	1.63	2.89	0.006	0	1.33	.....
Seward	.....	0.24	.....	.....	0.24	.....

[1] Composite Level B harassment zone (3 m) is completely encompassed by the 20 m shutdown zone proposed by Coast Guard.

The calculated Level B harassment takes using the above data for each year are in Table 15 and for each facility over the course of the proposed rule are in Table 16. See Tables 6–14 through 6–21 in the application and the supplemental memo (composite piles) for detailed calculations of estimated take for each pile type and activity at each facility. The calculated Level A harassment takes using the above data for each year are in Table 17 and for each facility over the course of the proposed rule are in Table 18.

Table 19 summarizes Level A and Level B harassment take proposed to be authorized for the project as well as the percentage of each stock expected to be taken in the year with the maximum annual takes over the course of the project.

TABLE 15—PROPOSED LEVEL B HARASSMENT TAKE IN EACH OF THE FIVE YEARS AND IN TOTAL FOR THE PROPOSED RULE

Stock	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Gray whale	8	8	8	8	8	40
Humpback whale *	160	174	164	160	160	818
Fin whale	13	23	13	13	13	75
Minke whale	5	6	5	5	5	25
Killer whale *	103	344	144	103	103	797
Pacific white-sided dolphin	215	297	337	215	215	1,379
Dall's porpoise	114	147	115	114	114	604
Harbor porpoise Southeast Alaska	72	72	72	72	72	360
Harbor porpoise Gulf of Alaska	47	115	48	47	47	304
California sea lion	10	10	10	10	10	50
Northern fur seal	9	23	131	9	9	181
Steller sea lion Eastern	425	425	425	425	425	2,125
Steller sea lion Western	24	34	32	24	24	138
Harbor seal Prince William Sound	148	442	344	148	148	1,230
Harbor seal Lynn Canal/Stephens Passage	860	860	860	860	860	4,300
Harbor seal Sitka/Chatham Straight	230	230	230	230	230	1,150
Harbor seal Clarence Strait	412	412	412	412	412	2,060
Harbor seal South Kodiak	17	17	17	17	17	85

* Stocks of killer whales and humpback whales cannot generally be identified in the field so total proposed take is listed at species level only.

Table 16—Proposed Level B Harassment Take for Each Facility

Species	Stock	Kodiak	Sitka	Ketchikan	Seward	Valdez	Cordova	Juneau	Petersburg
Gray whale	Eastern North Pacific	25	5	10	0	0	0	0	0
Humpback whale	Central North Pacific[b]	50	250	60	4	40	14	400	0
	Western North Pacific[c]		0[a]	0[a]				0[a]	0[a]
Fin whale	Northeast Pacific	35	0	0	0	30	10	0	0
Minke whale	Alaska	5	0	5	0	5	1	5	5
Killer whale	Alaska Resident[b]	5	400	40	20	241	40	10	41
	Gulf of Alaska, Aleutian Islands, Bearing Sea Transient[d]								
	Northern Resident[e]								
	West Coast Transient[f]								
	AT1 Transient[g]								
Pacific white-sided dolphin	North Pacific	300	145	285	122	0	182	285	60
Dall's porpoise	Alaska	15	20	200	1	95	33	200	40
Harbor porpoise	Southeast Alaska	0[a]	250	50	0[a]	0[a]	0[a]	50	10
	Gulf of Alaska	235	0[a]	0[a]	1	0	68	0[a]	0[a]
California sea lion	United States	0[a]	50	0	0[a]	0[a]	0[a]	0	0[a]
Northern fur seal	Eastern Pacific	0	0	0	122	40	14	5	0[a]
Steller sea lion	Eastern	0[a]	780	1,000	0[a]	0[a]	0[a]	25	320
	Western	35	20	0[a]	8	65	10	0[a]	0[a]

Harbor seal	Prince William Sound	0[a]	0[a]	0[a]	196	735	294	5	0[a]
	Lynn Canal/Stephens Passage	0[a]	0[a]	0[a]	0[a]	0[a]	0[a]	4,300	0[a]
	Sitka/Chatham Straight	0[a]	1,150	0[a]	0[a]	0[a]	0[a]	0[a]	0[a]
	Clarence Strait	0[a]	0[a]	1,200	0[a]	0[a]	0[a]	0[a]	860
	South Kodiak	85	0[a]	0[a]	0[a]	0[a]	0[a]	0[a]	0[a]

a. Stock does not occur in this region, therefore no takes would be authorized (Muto *et al.*, 2022)
b. Stock range overlaps with all 8 locations(Muto *et al.*, 2022)
c. Stock range overlaps with Kodiak, Seward, Valdez, and Cordova (Muto *et al.*, 2021)
d. Stock range overlaps with Kodiak, Sitka, Seward, Valdez, Cordova (Muto *et al.*, 2022)
e. Stock range overlaps with Sitka, Ketchikan, Juneau, and Petersburg (Muto *et al.*, 2022)
f. Stock range overlaps with Seward, Valdez, and Cordova (Muto et al., 2022)
g. No takes of the AT1 stock are expected or proposed for authorization.

TABLE 17—PROPOSED LEVEL A HARASSMENT TAKE IN EACH YEAR AND IN TOTAL FOR THE PROPOSED RULE

Stock	1	2	3	4	5	Total
Dall's porpoise Alaska	86	98	86	86	86	442
Harbor porpoise Southeast Alaska	20	20	20	20	20	100
Harbor porpoise Gulf of Alaska	55	85	55	55	55	305
Harbor seal South Kodiak	20	20	20	20	20	100
Harbor seal Clarence Strait	20	20	20	20	20	100

Table 18—Proposed Level A Harassment Take for Each Facility of the Proposed Rule

Stock	Kodiak	Ketchikan	Cordova	Valdez
Dall's porpoise Alaska	200	200	12	30
Harbor porpoise Southeast Alaska	NA	100	NA	NA
Harbor porpoise Gulf of Alaska	200	NA	30	75
Harbor seal South Kodiak	100	NA	NA	NA
Harbor seal Clarence Strait	NA	100	NA	NA

[Define ''NA''].

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TABLE 19—PROPOSED LEVEL A AND LEVEL B HARASSMENT TAKE AND PERCENT OF STOCK FOR THE HIGHEST ANNUAL ESTIMATED TAKES OF THE PROJECT

Stock	Level A	Level B	Total	Percent of stock
Gray whale Eastern North Pacific	0	8	8	0.03
Humpback whale Central North Pacific Humpback whale Western North Pacific	0	174	174	[a] 1.7 [a] 0.3
Fin whale Northeast Pacific	0	23	23	N/A
Minke whale Alaska	0	6	6	N/A
Killer whale Alaska Resident	0	344	344	[a] 14.65
Killer whale Gulf of Alaska, Aleutian Islands, Bearing Sea Transient	.....	.....	.....	[a] 13.95
Killer whale Northern Resident	.....	.....	.....	[a] 3.23
Killer whale AT1 Transient [b]	.....	.....	.....	[a b] 0
Killer whale West Coast Transient	.....	.....	.....	[a] 3.23
Pacific white-sided dolphin North Pacific	0	397	397	1.48
Dall's porpoise Alaska	98	147	245	N/A
Harbor porpoise Southeast Alaska	20	72	92	8.70
Harbor porpoise Gulf of Alaska	85	115	245	0.64
California sea lion U.S	0	10	10	0.00
Northern fur seal Eastern Pacific	0	131	131	0.02
Steller sea lion Eastern	0	425	425	0.98
Steller sea lion Western	0	34	34	0.06
Harbor seal Prince William Sound	0	442	442	1.06
Harbor seal Lynn Canal/Stephens Passage	0	860	860	7.25
Harbor seal Sitka/Chatham Straight	0	230	230	1.94
Harbor seal Clarence Strait	20	412	432	1.74
Harbor seal South Kodiak	20	17	37	0.17

[a] Percent of stock impacted for humpback and killer whales was estimated assuming each stock is taken in proportion to its population size at any given facility site from the total take (*E.g.,* for killer whales at Kodiak, the Alaska Resident and Gulf of Alaska stocks are the only stocks present. Of these, the Alaska Resident stock represents approximately 80% of the available animals, and GOA represents approximately 20%, giving 4 total Alaska Resident killer whale takes over the 5 years, and 1 GOA killer whale take. This division was replicated for each site for all present stocks. Takes were then calculated for each site based on the proportional representation of available stocks. Total takes for each stock are shown as a percentage of the stock size.)

[b] AT1 Transient killer whales have the potential to be present in the Seward, Valdez, and Cordova, however we do not expect any of the seven individuals to approach the project sites, therefore no take is expected to occur for this stock and none is proposed for authorization.

Proposed Mitigation

Under section 101(a)(5)(A) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (''least practicable adverse impact''). NMFS does not have a regulatory definition for ''least practicable adverse impact.'' NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

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

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat, 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.

The mitigation strategies described below largely follow those required and successfully implemented under previous incidental take authorizations issued in association with similar construction activities. Measurements from similar pile driving events were coupled with practical spreading loss and other relevant information to estimate harassment zones (see Estimated Take); these zones were used to develop mitigation measures for DTH and pile driving activities at the eight facilities. Background discussion related to underwater sound concepts and terminology is provided in the section on *Description of Sound Sources,* earlier in this preamble.

The following mitigation measures are proposed:

- Avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 20 m of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions. The Coast Guard has elected to establish a minimum shutdown zone size of 20 m, larger than NMFS' typical requirement of a minimum 10 m shutdown zone;
- Conduct training between construction supervisors and crews and the marine mammal monitoring team and relevant Coast Guard staff prior to the start of all pile driving, cutting or power washing activity and when new personnel join the work, so that responsibilities, communication

procedures, monitoring protocols, and operational procedures are clearly understood;

- DTH and pile driving activity must be halted upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the harassment zone;
- The Coast Guard will establish and implement a minimum shutdown zone of 20 m during all pile driving and removal activity, as well as the larger zones indicated in Table 20. 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 typically vary based on the activity type and marine mammal hearing group. The Coast Guard has elected to establish a minimum shutdown zone size of 20 m, larger than NMFS' typical requirement of a minimum 10 m shutdown zone;
- Employ PSOs and establish monitoring locations as described in the application, any issued LOA and the Marine Mammal Monitoring Plan. The Holder 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 DTH and pile driving 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 DTH and pile driving activities will ensure that the entire shutdown zone is visible during pile installation. Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone will not be visible (*e.g.,* fog, heavy rain), pile driving must be delayed until the PSO is confident marine mammals within the shutdown zone could be detected;
- Monitoring must take place from 30 minutes prior to initiation of DTH and pile driving activity through 30 minutes post-completion of DTH and pile driving activity. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine the shutdown zones clear of marine mammals. DTH and pile driving may commence following 30 minutes of observation when the determination is made;
- If DTH or pile driving is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal;
- The Coast Guard must use soft start techniques prior to beginning 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;
- As described previously, the Coast Guard would adhere to in-water work windows designed for the protection of fishes and marine mammals under other permitting requirements;
- The Coast Guard has volunteered that in-water construction activities will occur only during civil daylight hours; and
- Pile driving activity must be halted upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the largest applicable harassment zone.

TABLE 20—SHUTDOWN ZONES (m) FOR EACH PILE TYPE AND METHOD

Method and pile type	Low frequency cetacean	Mid frequency cetacean	High frequency cetacean	Phocid	Otariid
Timber Vibratory	20	20	20	20	20
24-inch Steel Pipe Vibratory	20	20	20	20	20
Timber Impact	20	20	30	20	20
Composite Impact	20	20	20	20	20
24-inch Steel Pipe Impact	220	20	260	120	20
24-inch Concrete Impact	30	20	40	20	20
24-inch DTH	440	20	520	240	20

Based on our evaluation of the applicant's proposed measures, as well as other measures considered by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means 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, and on the availability of such species or stock for subsistence uses.

Proposed Monitoring and Reporting

In order to issue an LOA for an activity, section 101(a)(5)(A) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of the authorized 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 in the proposed action area. 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 action; or (4) biological or behavioral context of exposure (*e.g.,* age, calving, or feeding areas).
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or

cumulative), other stressors, or cumulative impacts from multiple stressors.

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

Visual Monitoring

- Monitoring must be conducted by qualified, NMFS-approved PSOs, in accordance with the following: PSOs must be independent (*i.e.,* not construction personnel) and have no other assigned tasks during monitoring periods. At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization. Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training. PSOs must be approved by NMFS prior to beginning any activity subject to these regulations.
- PSOs must record all observations of marine mammals as described in any issued LOA and the NMFS-approved Marine Mammal Monitoring Plan, regardless of distance from the pile being driven. PSOs shall document any behavioral reactions in concert with distance from piles being driven or removed;

PSOs must have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary;
- The Coast Guard must establish the following monitoring locations. For all pile driving activities, a minimum of one PSO must be assigned to the active pile driving location to monitor the shutdown zones and as much of the Level B harassment zones as possible. Proposed monitoring locations are shown in Figures 6–1 through 6–41 of the application and summarized in Table 21. The number of PSOs required at each facility is dependent upon the size of the Level B harassment area as well as the topography of the activity site and a PSO's ability to observe the estimated Level A harassment area for the particular activity.

TABLE 21—SUMMARY OF PROTECTED SPECIES OBSERVER (PSO) COVERAGE AT EACH FACILITY

Facility	Maximum number of PSOs
Kodiak	2
Sitka	5
Ketchikan	5
Valdez	3
Cordova	3
Juneau	3
Petersburg	3
Seward	2

Reporting

A draft marine mammal monitoring report will be submitted to NMFS within 90 days after the completion of pile driving activities, or 60 days prior to a requested date of issuance of any future LOAs 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. 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 or cutting) and the total equipment duration for cutting for each pile or total number of strikes for each pile (impact driving, DTH).
- PSO locations during marine mammal monitoring.
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;
- Upon observation of a marine mammal, the following information: name of PSO who sighted the animal(s), and PSO location and activity at time of sighting; time of sighting; identification of the animal(s) (*e.g.,* genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species; distance and bearing of each marine mammal observed relative to the pile being driven for each sighting (if pile driving was occurring at time of sighting); Estimated number of animals (min/max/best estimate); estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*); animal's closest point of approach and estimated time spent within the harassment zone; 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, by species.
- Detailed information about any implementation of any mitigation triggered (*e.g.,* shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any.

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

Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the LOA-holder must immediately cease the specified activities and report the incident to the Office of Protected Resources (OPR) (*PR.ITP.Monitoring Reports@noaa.gov*), NMFS and to Alaska Regional Stranding Coordinator as soon as feasible. If the death or injury was likely caused by the specified activity, the Coast Guard 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 LOA

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

DTH and pile driving activities associated with the maintenance projects, 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 (behavioral disturbance) only for all species other than the harbor porpoise, harbor seal, and Dall's porpoise from underwater sounds generated from DTH and pile driving. Potential takes could occur if individual marine mammals are present in the ensonified zone when DTH or pile driving is happening.

No serious injury or mortality would be expected even in the absence of the proposed mitigation measures. For all species other than the harbor seal, 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. Additionally, much of the anticipated activity would involve vibratory driving or installation of small-diameter, non-steel piles, and include measures designed to minimize the possibility of injury. 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.

DTH and impact driving, as compared with vibratory driving, have source characteristics (short, sharp pulses with higher peak levels and much sharper rise time to reach those peaks) that are potentially injurious or more likely to produce severe behavioral reactions. Given sufficient notice through use of soft start, marine mammals are expected to move away from a sound source that is annoying prior to its becoming potentially injurious or resulting in more severe behavioral reactions. Environmental conditions in these waters are expected to generally be good, with calm sea states, and we expect conditions would allow a high marine mammal detection capability, enabling a high rate of success in implementation of shutdowns to avoid injury.

As described previously, there are multiple species that should be considered rare in the proposed project areas and for which we propose to authorize only nominal and precautionary take. Therefore, we do not expect meaningful impacts to these species (*i.e.,* gray whale, minke whale, transient and resident killer whales, and California sea lions) and preliminarily find that the total marine mammal take from each of the specified activities will have a negligible impact on these marine mammal species.

For remaining species, we discuss the likely effects of the specified activities in greater detail. Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.,* Thorson and Reyff, 2006; U.S. Navy, 2012; Lerma, 2014). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. The pile driving activities analyzed here are similar to, or less impactful than, numerous other construction activities conducted in Alaska, San Francisco Bay and in the Puget Sound region, which have taken place with no known long-term adverse consequences from behavioral harassment.

The U.S. Navy has conducted multi-year activities potentially affecting marine mammals, and typically involving greater levels of activity than is contemplated here in various locations such as San Diego Bay and Puget Sound. Reporting from these activities has similarly reported no apparently consequential behavioral reactions or long-term effects on marine mammal populations (Lerma, 2014; U.S. Navy, 2016a and b).

Repeated exposures of individuals to relatively low levels of sound outside of preferred habitat areas are unlikely to significantly disrupt critical behaviors. Thus, even repeated Level B harassment of some small subset of the overall stock is unlikely to result in any significant realized decrease in viability for the affected individuals, and thus would not result in any adverse impact to the stock as a whole. Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activity is occurring. While vibratory driving or DTH associated with some project components may produce sound at distances of many kilometers from the pile driving site, thus intruding on higher-quality habitat, the project sites themselves and the majority of sound fields produced by the specified activities are within industrialized areas. Therefore, we expect that animals annoyed by project sound would simply avoid the area and use more-preferred habitats.

In addition to the expected effects resulting from authorized Level B

harassment, we anticipate that harbor seals, harbor porpoises, and Dall's porpoises may sustain some limited Level A harassment in the form of auditory injury at four of the facilities, assuming they remain within a given distance of the pile driving activity for the full number of pile strikes or DTH strikes. Considering the short duration to impact drive or vibrate each pile and breaks between pile installations (to reset equipment and move pile into place), this means an animal would have to remain within the area estimated to be ensonified above the Level A harassment threshold for multiple hours. This is highly unlikely given marine mammal movement throughout the area. Harbor seals and porpoises in these locations that do experience PTS would likely only receive slight PTS, *i.e.,* minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by DTH or pile driving, *i.e.,* the low-frequency region below 2 kHz, not severe hearing impairment or impairment in the regions of greatest hearing sensitivity. If hearing impairment occurs, it is most likely that the affected animal would lose a few decibels in its hearing sensitivity, which in most cases is not likely to meaningfully affect its ability to forage and communicate with conspecifics. As described above, we expect that marine mammals would be likely to move away from a sound source that represents an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice through use of soft start. Shutdown zones for the porpoises are only slightly smaller than the extent of the Level A harassment zones, further minimizing the chances for PTS or more severe effects.

In addition, although affected humpback whales and Steller sea lions may be from DPSs that are listed under the ESA, it is unlikely that minor noise effects in a small, localized area of sub-optimal habitat would have any effect on the stocks' ability to recover. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activities will have only minor, short-term effects on individuals. The specified activities are not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

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

- No mortality is anticipated or authorized.
- Use of soft start (for impact driving) is expected to minimize Level A harassment.
- No important habitat areas have been identified within the project area.
- For all species, the project locations are a very small and generally peripheral part of their range.
- Authorized Level A harassment would be very small amounts and of low degree.
- Monitoring reports from similar work in many of the locations in Alaska have documented little to no effect on individuals of the same species impacted by the specified activities.

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

Small Numbers

As noted above, only small numbers of incidental take may be authorized under section 101(a)(5)(A) of the MMPA for specified 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 proposes to authorize is below one-third of the estimated stock abundance of all species and stocks (take of individuals is less than 14 percent of the abundance of the affected stocks for the year of this rulemaking with the maximum amount of activity; see Table 19). 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.

For fin whale, minke whale, Dall's porpoise, and Southeast Alaska harbor porpoise, no valid abundance estimate for the entire stock is available. There is no stock-wide abundance estimate for Northeast Pacific fin whales. However, Muto *et al.* (2021) estimate the minimum stock size for the areas surveyed is 2,554. Therefore, the 23 maximum annual authorized takes of this stock represents small numbers of this stock. There is no stock-wide abundance estimate for the Alaska stock of minke whales. However, Muto *et al.* (2021) show over 2,000 animals for areas surveyed recently. Therefore, the six maximum annual authorized takes of this stock represents small numbers of this stock. The Alaska stock of Dall's porpoise has no official NMFS abundance estimate for this area, as the most recent estimate is greater than 8 years old. Nevertheless, the most recent estimate was 83,400 animals and it is unlikely this number has drastically declined. Therefore, the 245 maximum annual authorized takes of this stock represents small numbers of this stock. There is no stock-wide abundance estimate for the Southeast Alaska stock of harbor porpoises. However, Muto *et al.* (2021) estimate the minimum stock size for the areas surveyed is 1,057. Therefore, the 92 maximum annual authorized takes of this stock represents small numbers of this stock. Therefore, we preliminarily find that small numbers of marine mammals will be taken relative to the population size of all stocks.

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

Unmitigable Adverse Impact Analysis and Determination

In order to issue regulations and LOAs, 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.

As discussed above in the Effects of Specified Activities on Subsistence Uses of Marine Mammals section, subsistence harvest of harbor seals and other marine mammals is rare in the project areas and local subsistence users have not expressed concern about this project. All project activities will take place within industrialized areas 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 these construction activities are not expected to take place. Some minor, short-term harassment of the harbor seals could occur, but any effects on subsistence harvest activities in the region will be minimal, and not have an adverse impact.

Based on the effects and location of the specified activity, and the mitigation and monitoring measures, NMFS has preliminarily determined that there will not be an unmitigable adverse impact on subsistence uses from the Coast Guard's planned activities.

Adaptive Management

The regulations governing the take of marine mammals incidental to Coast Guard maintenance construction activities would contain an adaptive management component.

The reporting requirements associated with this proposed rule are designed to provide NMFS with monitoring data from the previous year to allow consideration of whether any changes are appropriate. The use of adaptive management allows NMFS to consider new information from different sources to determine (with input from the Coast Guard regarding practicability) on an annual basis if mitigation or monitoring measures should be modified (including additions or deletions). Mitigation measures could be modified if new data suggests that such modifications would have a reasonable likelihood of reducing adverse effects to marine mammals and if the measures are practicable.

The following are some of the possible sources of applicable data to be considered through the adaptive management process: (1) results from monitoring reports, as required by MMPA authorizations; (2) results from general marine mammal and sound research; and (3) any information which reveals that marine mammals may have been taken in a manner, extent, or number not authorized by these regulations or subsequent LOAs.

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act 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 regulations and LOAs, NMFS consults internally, in this case with the Alaska Regional Office, whenever we propose to authorize take for endangered or threatened species.

NMFS is proposing to authorize take of Western DPS Steller sea lions (*Eumetopias jubatus*) and Mexico DPS of humpback whales (*Megaptera novaeangliae*), which are listed under the ESA. NMFS' Office of Protected Resources has requested initiation of Section 7 consultation with the NMFS Alaska Regional Office for the issuance of these regulations and LOA. NMFS will conclude the ESA consultation prior to reaching a determination regarding the proposed issuance of the authorization.

Request for Information

NMFS requests interested persons to submit comments, information, and suggestions concerning the Coast Guard's request and the proposed regulations (see **ADDRESSES**). All comments will be reviewed and evaluated as we prepare a final rule and make final determinations on whether to issue the requested authorization. This document and referenced documents provide all environmental information relating to our proposed action for public review.

Classification

Pursuant to the procedures established to implement Executive Order 12866, the Office of Management and Budget has determined that this proposed rule is not significant.

Pursuant to section 605(b) of the Regulatory Flexibility Act (RFA), the Chief Counsel for Regulation of the Department of Commerce has certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities. The Coast Guard is the sole entity that would be subject to the requirements in these proposed regulations, and the Coast Guard is not a small governmental jurisdiction, small organization, or small business, as defined by the RFA. Because of this certification, a regulatory flexibility analysis is not required and none has been prepared.

This proposed rule does not contain a collection-of-information requirement subject to the provisions of the Paperwork Reduction Act because the applicant is a federal agency.

List of Subjects in 50 CFR Part 217

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

Dated: April 20, 2023.

Samuel D. Rauch, III,

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

For reasons set forth in the preamble, NMFS proposes to amend 50 CFR part 217 as follows:

PART 217—REGULATIONS GOVERNING THE TAKING OF MARINE MAMMALS INCIDENTAL TO SPECIFIED ACTIVITES

■ 1. The authority citation for part 217 continues to read as follows:

Authority: 16 U.S.C. 1361 *et seq.*

■ 2. Add subpart T, consisting of §§ 217.190 through 217.199, to read as follows:

Subpart T—Taking Marine Mammals Incidental to U.S. Coast Guard Alaska Facility Maintenance and Repair Activities

Sec.

217.190 Specified activity and specified geographical region.
217.191 Effective dates.
217.192 Permissible methods of taking.
217.193 Prohibitions.
217.194 Mitigation requirements.
217.195 Requirements for monitoring and reporting.
217.196 Letters of Authorization.
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§ 217.190 Specified activity and specified geographical region.

(a) Regulations in this subpart apply only to incidental taking of marine mammals by the U.S. Coast Guard (Coast Guard) and those persons it authorizes or funds to conduct activities on its behalf in the areas outlined in paragraph (b) of this section and that occurs incidental to maintenance construction activities.

(b) The taking of marine mammals by the Coast Guard may be authorized in a Letter of Authorization (LOA) only if it occurs within Gulf of Alaska waters in

the vicinity of one of the following eight Coast Guard facilities: Kodiak, Sitka, Ketchikan, Valdez, Cordova, Juneau, Petersburg, and Seward.

§ 217.191 Effective dates.

Regulations in this subpart are effective from [EFFECTIVE DATE OF A FINAL RULE], through [DATE 5 YEARS AFTER THE EFFECTIVE DATE OF A FINAL RULE].

§ 217.192 Permissible methods of taking.

Under LOAs issued pursuant to § 216.106 of this chapter and § 217.196, the Holder of the LOA (hereinafter ''Coast Guard'') may incidentally, but not intentionally, take marine mammals within the area described in § 217.190(b) by Level A or Level B harassment associated with maintenance construction activities, provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate LOA.

§ 217.193 Prohibitions.

Except for takings described in § 217.192 and authorized by a LOA issued under § 216.106 of this chapter and § 217.196, it shall be unlawful for any person to do any of the following in connection with the activities described in § 217.190 may:

(a) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or a LOA issued under § 216.106 of this chapter and § 217.196;

(b) Take any marine mammal not specified in such LOAs;

(c) Take any marine mammal specified in such LOAs in any manner other than as authorized;

(d) Take a marine mammal specified in such LOAs after NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal; or

(e) Take a marine mammal specified in such LOAs after NMFS determines such taking results in an unmitigable adverse impact on the species or stock of such marine mammal for taking for subsistence uses.

§ 217.194 Mitigation requirements.

When conducting the activities identified in § 217.190(a), the mitigation measures contained in this subpart and any LOA issued under § 216.106 of this chapter and § 217.196 must be implemented. These mitigation measures shall include but are not limited to:

(a) *General conditions.* (1) A copy of any issued LOA must be in the possession of the Coast Guard, supervisory construction personnel, lead protected species observers (PSOs), and any other relevant designees of the Coast Guard operating under the authority of this LOA at all times that activities subject to this LOA are being conducted.

(2) The Coast Guard shall conduct training between construction supervisors and crews and the marine mammal monitoring team and relevant Coast Guard staff prior to the start of all down-the-hole (DTH), pile driving, cutting or power washing activity and when new personnel join the work, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood.

(3) The Coast Guard shall avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 20 m of an activity regulated under this subpart, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions.

(b) *Shutdown zones.* (1) For all DTH, pile driving, cutting or power washing activity, the Coast Guard shall implement a minimum shutdown zone of a 20-m radius around the pile or DTH hole. If a marine mammal comes within or approaches the shutdown zone, such operations shall cease.

(2) For all DTH and pile driving activity, the Coast Guard shall implement shutdown zones with radial distances as identified in any LOA issued under § 216.106 of this chapter and § 217.196. If a marine mammal comes within or approaches the 20-m shutdown zone, such operations shall cease.

(3) For all DTH and pile driving activity, the Coast Guard shall designate monitoring zones with radial distances as identified in any LOA issued under § 216.106 of this chapter and § 217.196. Anticipated observable zones within the designated monitoring zones shall be identified in the Marine Mammal Monitoring Plan, subject to approval by NMFS.

(c) *Shutdown protocols.* (1) The Coast Guard shall deploy Protected Species Observers (PSOs) as indicated in the Marine Mammal Monitoring Plan, which shall be subject to approval by NMFS, and as described in § 217.195.

(2) For all DTH and pile driving activities, a minimum of one PSO shall be stationed at the active pile driving rig or activity site or in reasonable proximity in order to monitor the entire shutdown zone.

(3) Monitoring must take place from 30 minutes prior to initiation of DTH and pile driving activity through 30 minutes post-completion of DTH and pile driving activity. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine the shutdown zones clear of marine mammals. DTH and pile driving activity may commence following 30 minutes of observation when the determination is made.

(4) If DTH and pile driving activity is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal.

(5) Monitoring shall be conducted by trained PSOs, who shall have no other assigned tasks during monitoring periods. Trained PSOs shall be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator. The Coast Guard shall adhere to the following additional PSO qualifications:

(i) Independent observers (*i.e.,* not construction personnel) are required.

(ii) At least one observer must have prior experience working as an observer.

(iii) Other observers may substitute education (degree in biological science or related field) or training for experience.

(iv) Where a team of three or more PSOs are required, one observer shall be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer.

(v) The Coast Guard shall submit PSO CVs for approval by NMFS.

(d) *Soft start protocols.* The Coast Guard must use soft start techniques for impact pile driving. Soft start for impact drivers 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 three-strike sets. Soft start shall be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

§ 217.195 Requirements for monitoring and reporting.

(a) *Marine mammal monitoring plan.* The Coast Guard must submit a Marine Mammal Monitoring Plan to NMFS for approval in advance of construction. Marine mammal monitoring must be conducted in accordance with the

conditions in this section and the Marine Mammal Monitoring Plan.

(b) *PSO requirements.* Monitoring must be conducted by qualified, NMFS-approved PSOs, in accordance with the following: PSOs must be independent (*i.e.,* not construction personnel) and have no other assigned tasks during monitoring periods. At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization. Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training. PSOs must be approved by NMFS prior to beginning any activity subject to this subpart.

(c) *Marine mammal observation recording.* PSOs must record all observations of marine mammals as described in the Marine Mammal Monitoring Plan, regardless of distance from the pile being driven. PSOs shall document any behavioral reactions in concert with distance from piles being driven or removed.

(d) *PSO deployment.* The Coast Guard shall deploy additional PSOs to monitor harassment zones according to the minimum requirements defined in Marine Mammal Monitoring Plan, subject to approval by NMFS. These observers shall collect sighting data and behavioral responses to pile driving for marine mammal species observed in the region of activity during the period of activity, and shall communicate with the shutdown zone observer(s) as appropriate with regard to the presence of marine mammals. All observers shall be trained in identification and reporting of marine mammal behaviors.

(e) *Reporting.* (1)(i) Coast Guard shall submit a draft monitoring report to NMFS within 90 work days of the completion of required monitoring for each portion of the project as well as a comprehensive summary report at the end of the project. Coast Guard shall provide a final report within 30 days following resolution of comments on the draft report. If no work requiring monitoring is conducted within a calendar year, Coast Guard shall provide a statement to that effect in lieu of a draft report.

(ii) These reports shall contain, at minimum, the following:

(A) Dates and times (begin and end) of all marine mammal monitoring;

(B) 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 or vibratory) and the total equipment duration for vibratory or DTH for each pile or total number of strikes for each pile (impact driving, DTH);

(C) PSO locations during marine mammal monitoring;

(D) 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;

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

(F) Number of marine mammals detected within the harassment zones, by species; and

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

(2) Coast Guard shall submit a comprehensive summary report to NMFS not later than 90 days following the conclusion of marine mammal monitoring efforts described in this subpart.

(3) All draft and final monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *ITP.Hotchkin@noaa.gov.*

(f) *Reporting of injured or dead marine mammals.* (1) In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the LOA-holder must immediately cease the specified activities and report the incident to the Office of Protected Resources (*PR.ITP.MonitoringReports@noaa.gov* and *ITP.Hotchkin@noaa.gov*), NMFS and to Alaska Regional Stranding Coordinator as soon as feasible. If the death or injury was likely caused by the specified activity, the Coast Guard 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 regulations under this subpart and LOAs. The LOA-holder must not resume their activities until notified by NMFS. The report must include the following information:

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

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

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

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

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

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

(2) [Reserved]

§ 217.196 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to the regulations under this subpart, the Coast Guard must apply for and obtain an LOA.

(b) An LOA, unless suspended or revoked, may be effective for a period of time not to exceed the expiration date of the regulations under this subpart.

(c) If an LOA expires prior to the expiration date of the regulations under this subpart, the Coast Guard may apply for and obtain a renewal of the LOA.

(d) In the event of projected changes to the activity or to mitigation and monitoring measures required by an LOA, the Coast Guard must apply for and obtain a modification of the LOA as described in § 217.197.

(e) The LOA shall set forth:

(1) Permissible methods of incidental taking;

(2) Means of effecting the least practicable adverse impact (*i.e.,* mitigation) on the species, its habitat, and on the availability of the species for subsistence uses; and

(3) Requirements for monitoring and reporting.

(f) Issuance of the LOA shall be based on a determination that the level of taking will be consistent with the findings made for the total taking allowable under the regulations of this subpart.

(g) Notice of issuance or denial of an LOA shall be published in the **Federal Register** within 30 days of a determination.

§ 217.197 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under § 216.106 of this chapter and § 217.196 for the activity identified in § 217.190(a) shall be renewed or modified upon request by the applicant, provided that:

(1) The proposed specified activity and mitigation, monitoring, and reporting measures, as well as the anticipated impacts, are the same as those described and analyzed for the regulations under this subpart (excluding changes made pursuant to the adaptive management provision in paragraph (c)(1) of this section); and

(2) NMFS determines that the mitigation, monitoring, and reporting measures required by the previous LOA under the regulations of this subpart were implemented.

(b) For LOA modification or renewal requests by the applicant that include changes to the activity or the mitigation, monitoring, or reporting (excluding changes made pursuant to the adaptive management provision in paragraph (c)(1) of this section) that do not change the findings made for the regulations in this subpart or result in no more than a minor change in the total estimated number of takes (or distribution by species or years), NMFS may publish a notice of proposed LOA in the **Federal Register**, including the associated analysis of the change, and solicit public comment before issuing the LOA.

(c) An LOA issued under § 216.106 of this chapter and § 217.196 for the activity identified in § 217.190(a) may be modified by NMFS under the following circumstances:

(1) *Adaptive management.* NMFS may modify (including augment) the existing mitigation, monitoring, or reporting measures (after consulting with the Coast Guard regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring.

(i) Possible sources of data that could contribute to the decision to modify the mitigation, monitoring, or reporting measures in an LOA:

(A) Results from the Coast Guard's monitoring from the previous year(s).

(B) Results from other marine mammal and/or sound research or studies.

(C) Any information that reveals marine mammals may have been taken in a manner, extent, or number not authorized by the regulations under this subpart or subsequent LOAs.

(ii) If, through adaptive management, the modifications to the mitigation, monitoring, or reporting measures are substantial, NMFS will publish a notice of proposed LOA in the **Federal Register** and solicit public comment.

(2) *Emergencies.* If NMFS determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in LOAs issued pursuant to § 216.106 of this chapter and § 217.196, an LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within 30 days of the action.

§§ 217.198–217.199 [Reserved]

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