DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XE174]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to U.S. Coast Guard Base Kodiak Homeporting Facility in Kodiak, Alaska

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

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

SUMMARY: NMFS has received a request from the U.S. Coast Guard (USCG) for authorization to take marine mammals incidental to 2 years of construction activities associated with the Base Kodiak Homeporting Facility project in Womens Bay, Kodiak Alaska. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue two consecutive 1-year incidental harassment authorizations (IHAs) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-time, 1-year renewal that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorization and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than April 14, 2025.

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

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

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

SUPPLEMENTARY INFORMATION:

Background

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

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other ''means of effecting the least practicable adverse impact'' on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as ''mitigation''); and requirements pertaining to the monitoring and reporting of the takings. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below and can be found in section 3 of the MMPA (16 U.S.C. 1362) and NMFs regulations at 50 CFR 216.103.

National Environmental Policy Act

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

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

We will review all comments submitted in response to this notice prior to concluding our NEPA process or making a final decision on the request for two consecutive IHAs.

Summary of Request

On April 8, 2024, NMFS received a request from the USCG for two consecutive IHAs to take marine mammals incidental to construction associated with the USCG's Base Kodiak Homeport Facility project in Womens Bay in Kodiak, Alaska. Following NMFS' review of the application and associated discussions, the USCG submitted a revised version on June 14, 2024, July 17, 2024, and November 28, 2024. The application was deemed adequate and complete on December 7, 2024. The USCG's request is for take of 12 species of marine mammals, by Level B harassment and, for Dall's porpoise, harbor porpoise, harbor seal, northern elephant seal, Steller sea lion, and northern fur seal, Level A harassment. Neither the USCG nor NMFS expect serious injury or mortality to result from this activity and, therefore, IHAs are appropriate.

Description of Proposed Activity

Overview

The USCG plans to upgrade waterfront facilities to construct a homeport facility for two Fast Response Cutters and two Offshore Patrol Cutters at Base Kodiak, in Womens Bay, Kodiak, Alaska. The facility will also provide berthing and supporting infrastructure for temporary homeporting (up to 5 years) and long-term major maintenance of an additional Fast Response Cutter to be homeported in Seward, Alaska.

The activities that have the potential to take marine mammals by Level A and Level B harassment include removal and installation of timber, concrete, and steel piles by vibratory or impact pile driving and down the hole (DTH) drilling. A total of 340 in-water construction days are planned across 2 years. The first year of construction activities would begin May 19, 2025 and continue through May 18, 2026, and the second year of construction activities would begin May 19, 2026 and continue through May 18, 2027.

The USCG has requested the issuance of two consecutive IHAs in association with the two project years. Given the similarities in activities between project years, NMFS is issuing a single **Federal Register** notice to solicit public comments on the issuance of the two similar, but separate, IHAs.

Dates and Duration

The USCG anticipates that the project will take place over 2 years. The Year 1 IHA would be effective from May 19, 2025 through May 18, 2026, and the Year 2 IHA would be effective from May 19, 2026 through May 18, 2027. The specified activities would occur any time during each project year, for 7–14 hours each day, depending on time of year, during daylight hours only. A total of 264 days of in-water work are planned in Year 1 and 76 construction days of in-water work are planned in year 2.

Specific Geographic Region

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. Womens Bay is approximately 3.5 miles (mi) (5.6 kilometers (km)) long and water depths range from 0 to 100 ft (31 meters (m)). Near the planned activities, Womens Bay is approximately 1,700 feet (ft) (519 m) wide and 30 ft (9 m) deep.

The shores of Womens Bay are relatively undeveloped; only the most inner portion of Womens Bay, which includes Base Kodiak and several other industries, have significant existing shoreline development. The peninsula and the inner shore host several waterfront and industrial uses that support current mission-related USCG operations, including the operational fuel pier and Cargo Wharf. The Cargo Wharf provides berthing for Base Kodiak cutters and visiting vessels and is where project activities are planned.

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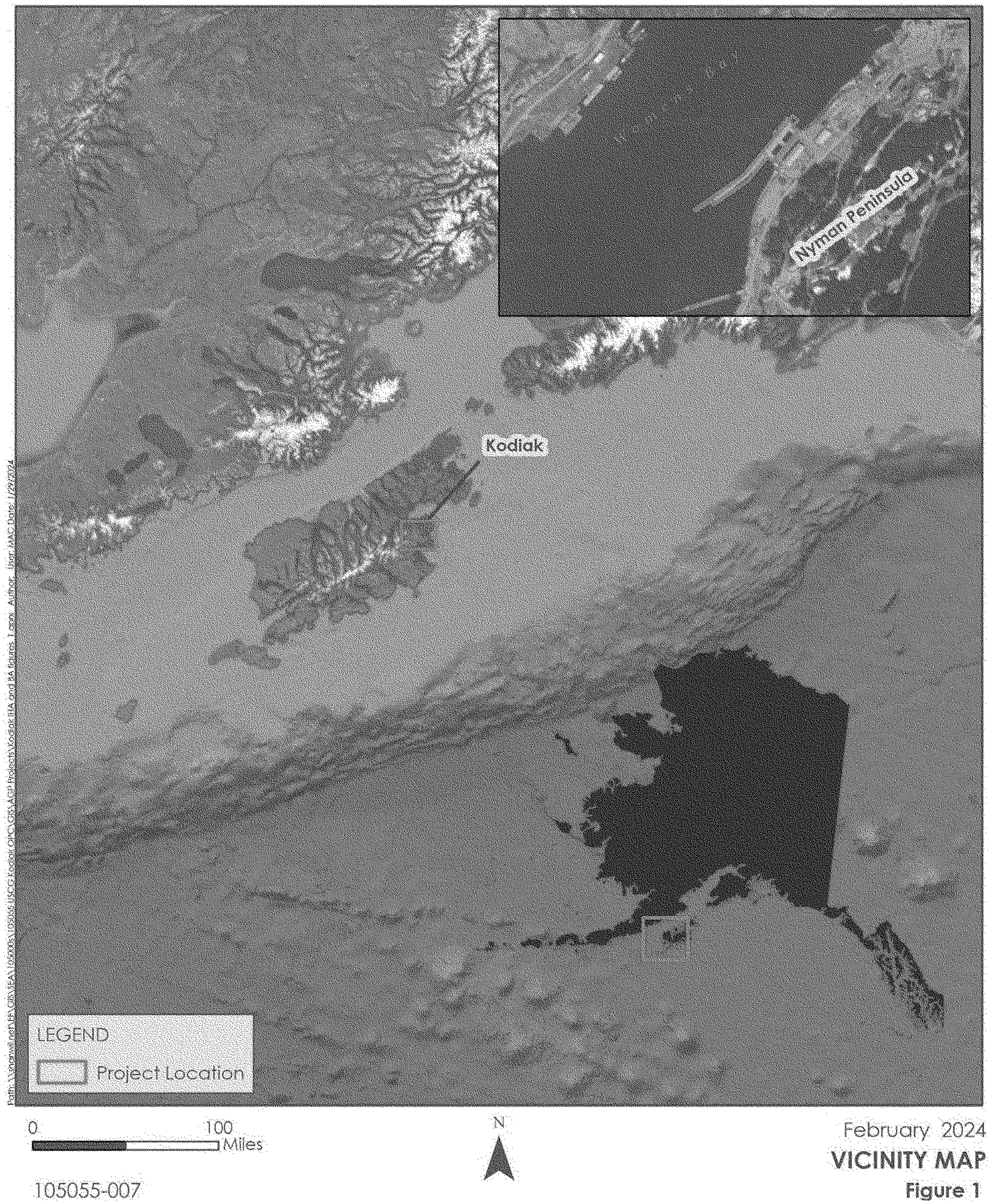

Figure 1 – Project Location on Kodiak Island, Alaska

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Detailed Description of the Specified Activity

At Base Kodiak in Womens Bay, Kodiak, Alaska, the USCG is upgrading existing waterfront and constructing new shore facilities to construct a homeport facility for two Fast Response Cutters and two Offshore Patrol Cutters and a temporary homeport facility for an additional Fast Response Cutter to be homeported in Seward, Alaska. The USCG estimates that Year 1 activities associated with this IHA would include (1) demolition of 363 piles (14-in and 24-in timber; 12-in and 14-in steel; 24-in steel filled with concrete) via vibratory removal, pulling, or cutting (a 1.5 multiplier was added to the total number of existing piles to be removed to account for uncertainty in the existing site conditions. As such, 363 piles is a conservative estimate) (table 1); (2) installation of 217 permanent piles (24-in and 42-in steel; and 24-inch pre-cast square concrete) piles via vibratory and impact pile driving and DTH drilling; (3) installation of 488 permanent stone columns installed below the mudline below mean high water using vibroflation and replacement to improve soil stability; (4) installation of 495 permanent stone columns above the mean high water (in-air work) using vibroflotation and replacement to improve soil stability;

and (5) vibratory installation and removal of 94 36-in steel temporary guide piles. The USCG estimates that Year 2 activities would include (1) the installation of 75 permanent piles (24-in, 30-in, 36-in, and 42-in steel) via vibratory and impact pile driving and DTH; and (2) vibratory installation and removal of 44 36-in steel temporary guide piles. See the IHA application for a site-specific description of activities.

Vibratory hammers use vibratory drivers to rapidly alternate forces by rotating eccentric weights. This process ''liquefies'' the soil surrounding the pile so that the pile can either penetrate or be removed from the ground with reduced resistance. Vibratory hammers would be used for all pile extraction of existing piles (14-inch and 24-inch timber piles, 12-inch and 14-inch steel piles, and 24-inch concrete-filled piles) at an assumed rate of 20 piles per day. For pile installation of permanent and temporary piles, a vibratory hammer would likely be used until refusal which is anticipated to take 15 to 20 minutes per pile at a rate of four to six piles per day, after which either impact and/or DTH drilling would be employed to reach depth.

If piles cannot be removed using vibratory methods, they would be cut-off at the mudline using a hydraulic chainsaw or hydraulic shearing device operated by divers.

An impact hammer is a steel device that uses air or ignited fuel to lift a heavy piston, then allows gravity to drop the piston on top of the pile, repeating until the pile is driven into the substrate (Washington State Department of Transportation [WSDOT], 2020). Impact pile driving is anticipated to occur during pile installation; piles would be impact-driven at a rate of four to six piles a day in combination with DTH drilling after vibratory methods have met refusal. Impact pile driving may also be used during pile proofing.

DTH systems use a combination of percussive and drilling mechanisms to advance a hole into the rock, with or without simultaneously advancing a pile or casing into that hole. Drill cuttings and debris at the rock face are removed by an air-lift exhaust up the inside of the pile (Guan and Miner, 2020). DTH systems will be used to drill a rock socket approximately 10 ft (3 m) depth below the pile tip. A rebar cage would then be inserted from the base of the socket to some distance into the pile and backfilled with concrete from the base of the socket to some distance up the pile. DTH methods are anticipated to take 150 minutes per pile with an installation rate of two piles per day.

Vibroflotation and replacement is a type of vibrocompaction commonly used to partially replace poor soil material by flushing out the weaker soil and replacing it with granular fill material resulting in a stone column (VGL, 2023). An approximately 30-in-diameter torpedo-shaped, vibrating probe (a ''vibroflot'') would be vibrated vertically into the fill placed within the bulkhead. The resulting hole would then be backfilled with gravel as the vibroflot is removed to create stone columns within the substrate. This process would be repeated within a grid to create stone columns, approximately 2.5 ft (0.8 m) apart. Installation of vibroflot columns is assumed to require up to 45 minutes of vibratory equipment use per column. Vibroflotation and replacement would occur above and below the mean high water line. Vibroflotation and replacement above the mean high water line (*i.e.,* 135 vibroflots to stabilize some shoreline outside the bulkhead and 360 vibroflots to stabilize the approach bulkhead) is not expected to result in take of marine mammals as pinnipeds are not known to haulout within the project area.

Permanent piles would be installed through sand and gravel with a vibratory hammer until advancement stops. Then, the pile will be driven to depth with an impact hammer. If design tip elevation is still not achieved, the contractor will utilize a DTH drill to secure the pile. Pile depths are expected to be approximately 40 to 70 ft (12 m to 21 m) below the mudline and estimated to take approximately 1.25 to 4 hours per pile to be driven, depending on which method is utilized. Temporary 36-inch-diameter piles will be installed and removed using a vibratory hammer. Soil-stabilizing stone columns will be installed using vibroflotation and replacement, a type of vibrocompaction commonly used within offshore fills. To account for unforeseen circumstances like poor weather, the contractor added a 20 percent contingency to the number of days of effort for each pile type.

TABLE 1—YEAR 1 SUMMARY OF PLANNED ACTIVITIES

Pile size and type	Number of piles for removal	Number piles for installation	Vibratory piles/day; min/pile	Impact piles/day; strikes/pile	Days of effort		
					Vibratory	Impact	DTH
Temporary Piles:							
36-in Steel	94	94	6/day; 20 min/pile	N/A	38	0	0
Permanent Piles:							
14-in Timber	158	N/A	20/day; 10 min/pile	N/A	10	N/A	N/A
24-in Timber	24	N/A	20/day; 10 min/pile	N/A	2	N/A	N/A
12-in Steel	147	N/A	20/day; 10 min/pile	N/A	9	N/A	N/A
14-in Steel	30	N/A	20/day; 10 min/pile	N/A	2	N/A	N/A
24-in Steel	N/A	22	6/day; 20 min/pile	6/day; 1,800 strikes/pile	5	5	7
42-in Steel	N/A	160	6/day; 20 min/pile	6/day; 2,400 strikes/pile	32	32	48
24-in steel filled with concrete.	4	N/A	20/day; 10 min/pile	N/A	1	N/A	N/A
24-in precast square concrete.	N/A	35	6/day; 20 min/pile	6/day; 2,400 strikes/pile	7	7	N/A
Soil stabilizing stone columns:							
Vibroflot soil stabilization columns [below Mean High Water (MHW)].	N/A	488	10/day; 45 min/pile	N/A	59	N/A	N/A

TABLE 2—YEAR 2 SUMMARY OF PLANNED ACTIVITIES

Pile size and type	Number of piles for removal	Number piles for installation	Vibratory piles/day; min/pile	Impact piles/day; strikes/pile	Days of effort		
					Vibratory	Impact	DTH
Temporary Piles:							

TABLE 2—YEAR 2 SUMMARY OF PLANNED ACTIVITIES—Continued

Pile size and type	Number of piles for removal	Number piles for installation	Vibratory piles/day; min/pile	Impact piles/day; strikes/pile	Days of effort		
					Vibratory	Impact	DTH
36-in Steel	44	44	6/day; 20 min/pile	N/A	18	0	0
Permanent Piles:							
24-in Steel	N/A	20	6/day; 20 min/pile	6/day; 1,800 strikes/pile	4	4	6
30-in Steel	N/A	23	6/day; 20 min/pile	6/day; 1,800 strikes/pile	5	5	7
36-in Steel	N/A	8	4/day; 20 min/pile	4/day; 1,800 strikes/pile	3	3	3
42-in Steel	N/A	24	6/day; 20 min/pile	6/day; 2,400 strikes/pile	5	5	8

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

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. NMFS fully considered all of this information, and we refer the reader to these descriptions, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.,* physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species).*

Table 3 lists all species or stocks for which take is expected and proposed to be authorized both proposed IHAs, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality (M/SI) is anticipated or proposed to be authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Alaska and Pacific SARs. All values presented in table 3 are the most recent available at the time of publication (including from the 2023 SARs) and are available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments.*

TABLE 3—SPECIES [1] WITH ESTIMATED TAKE FROM THE SPECIFIED ACTIVITIES

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N) [2]	Stock abundance (CV, N_{min}, most recent abundance survey) [3]	PBR	Annual M/SI [4]
Order Artiodactyla—Cetacea—Mysticeti (baleen whales)						
Family Eschrichtiidae:						
Gray Whale	*Eschrichtius robustus*	ENP	-, -, N	26,960 (0.05, 25,849, 2016)	801	131
Family Balaenopteridae (rorquals):						
Fin Whale	*Balaenoptera physalus*	Northeast Pacific	E, D, Y	UND (UND, UND, 2013) [5]	UND	0.6
Humpback Whale	*Megaptera novaeangliae*	Hawai'i	-, -, N	11,278 (0.56, 7,265, 2020)	127	27.09
		Mexico-North Pacific	T, D, Y	N/A (N/A, N/A, 2006) [6]	UND	0.57
		Western-North Pacific	E, D, Y	1,0844 (0.88, 1,007, 2006)	[7] 3.4	[7] 5.82
Minke Whale	*Balaenoptera acutorostrata*	AK	-, -, N	N/A (N/A, N/A, N/A) [8]	UND	0
Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae:						
Killer Whale	*Orcinus orca*	ENP Alaska Resident	-, -, N	1,920 (N/A, 1,920, 2019) [9]	19	1.3
		ENP Gulf of Alaska, Aleutian Islands and Bering Sea Transient.	-, -, N	587 (N/A, 587, 2012) [10]	5.9	0.8
Pacific White-Sided Dolphin.	*Lagenorhynchus obliquidens*	N Pacific	-, -, N	26,880 (N/A, N/A, 1990)	UND	0
Family Phocoenidae (porpoises):						
Dall's Porpoise	*Phocoenoides dalli*	AK	-, -, N	UND (UND, UND, 2015) [11]	UND	37
Harbor Porpoise	*Phocoena phocoena*	Gulf of Alaska	-, -, Y	31,046 (0.21, N/A, 1998)	UND	72
Order Carnivora—Pinnipedia						
Family Otariidae (eared seals and sea lions):						
Northern Fur Seal	*Callorhinus ursinus*	Eastern Pacific	-, D, Y	626,618 (0.2, 530,376, 2019)	11,403	373
Steller Sea Lion	*Eumetopias jubatus*	Western	E, D, Y	9,837 (N/A, 49,837, 2022) [12]	299	267

TABLE 3—SPECIES [1] WITH ESTIMATED TAKE FROM THE SPECIFIED ACTIVITIES—Continued

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N) [2]	Stock abundance (CV, N_{min}, most recent abundance survey) [3]	PBR	Annual M/SI [4]
Family Phocidae (earless seals):						
Harbor Seal	*Phoca vitulina*	South Kodiak	-, -, N	26,448 (N/A, 22,351, 2017)	939	127
Northern Elephant Seal	*Mirounga angustirostris*	CA Breeding	-, -, N	187,697 (N/A, 85,369, 2013)	5,122	13.7

[1] Information on the classification of marine mammal species can be found on the web page for The Society for Marine Mammalogy's Committee on Taxonomy (*https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/;* Committee on Taxonomy (2022)).
[2] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-cause mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.
[3] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region.* CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance.
[4] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, 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.
[5] The best available abundance estimate for this stock is not considered representative of the entire stock as surveys were limited to a small portion of the stock's range. Based on upon this estimate and the N_{min}, the PBR value is likely negatively biased for the entire stock.
[6] Abundance estimates are based upon data collected more than 8 years ago and therefore, current estimates are considered unknown.
[7] PBR in U.S waters = 0.2, M/SI in U.S. waters = 0.06.
[8] Reliable population estimates are not available for this stock. See Friday *et al.,* 2013 and Zerbini *et al.,* 2006 for additional information on number of minke whales in Alaska.
[9] Nest is based upon counts of individuals identified from photo-ID catalogs.
[10] The most recent abundance estimate is likely unreliable as it covered a small area that may not have included females and juveniles, and did not account for animals missed on the trackline. The calculated PBR is not a reliable index for the stock as it is based upon a negatively biased minimum abundance estimate.
[11] The best available abundance estimate is likely an underestimate for the entire stock because it is based upon a survey that covered only a small portion of the stock's range.
[12] Nest is best estimate of counts, which have not been corrected for animals at sea during abundance surveys. Estimates provides are for the United States only. The overall N_{min} is 73,211 and overall PBR is 439.

As indicated above, all 12 species (with 15 managed stocks) in table 3 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. All species that could potentially occur in the proposed construction area are included in table 3–1 of the application for two consecutive IHAs. While North Pacific right whale and Goose-beaked whales have been reported in waters off of Kodiak Island, the temporal and/or spatial occurrence of these species is such that take is not expected to occur, and they are not discussed further beyond the explanation provided here. Goose-beaked whale prefer deep, pelagic waters and both species would be considered very rare in the project area. Additionally, USCG initially requested take for sperm whale, but sperm whale inhabit deep water and the project area is well outside their range.

In addition, the northern sea otter may be found in Kodiak, Alaska. However, northern sea otter are managed by the U.S. Fish and Wildlife Service and are not considered further in this document.

Gray Whale

Gray whales are found most regularly throughout the North Pacific Ocean in shallow coastal waters, occasionally crossing deep waters during migration (NOAA Fisheries, 2022f).

Two distinct population segments (DPS) of gray whale occur in the north Pacific: the Eastern North Pacific Distinct Population Segment (delisted) and the Western North Pacific DPS (Endangered). The Eastern North Pacific DPS is more likely to occur near Kodiak Archipelago.

During aerial surveys conducted between 1999 and 2005 for Sea Grant Gulf Apex Predator-Prey Project, gray whales were primarily observed near Ugak Bay, approximately 30 (km) (17 mi) south of the project area (straightline) (Sea Grant Alaska, 2012). Smaller numbers of gray whales were also observed approximately 15 km (9 mi) to the southeast of the project site, in Chiniak Bay (Sea Grant Alaska 2012). During a ferry terminal reconstruction and dock improvement project completed in Kodiak Harbor, approximately 9 km (6 m) north of site, monitors observed marine mammals during construction activities on 110 days between November 10, 2015 and June 16, 2016 (ABR, Inc., 2016). No gray whales were observed during that time.

Wild *et al.,* 2023 identified a Gray Whale Migratory Route Biologically Important Area (BIA) that intersects with a small portion of the project area during the months of January, March, April, May, November and December, with an importance score of 1 (the lowest of three possible scores (1, 2, or 3), reflecting an intensity score of 2 (indicating an area of moderate comparative significance) and a Data Support score of 1 (lower relative confidence in the available supporting data). Wild *et al.,* 2023 also identified the waters to the south east of Kodiak Island as a BIA for Gray Whale for feeding during June through August, April and May, and September and October. However, this BIA does not intersect with the project area.

While the shallow waters of Womens Bay do not represent preferred habitat for large whales, given confirmed gray whale sightings in Chiniak Bays, and that a small portion of the project area at the mouth of Womens Bay overlaps with a small portion of a BIA for this species, gray whales could occur within the project area.

Fin Whale

Fin whales are known to occur in the Kodiak Island area, though their distributions shift between years (Zerbini *et al.,* 2006). Aerial surveys conducted between 1999 and 2005 for Sea Grant Gulf Apex Predator-Prey Project indicate that some of the highest concentrations of fin whale in the region occur around Kodiak Island (Sea Grant Alaska, 2012). Across 110 monitoring days between November 10, 2015 and June 16, 2016 no fin whales were observed during the ferry terminal reconstruction and dock improvement project in Kodiak Harbor (ABR, Inc. *et al.,* 2016).

Wild *et al.* (2023) identified the waters around Kodiak Island (including a small portion of the proposed project area) as a BIA for fin whales for feeding during the months of June through September, with an importance score of 1 (the lowest of three possible scores (1, 2, or 3), reflecting an Intensity score of 1 (indicating an area of lower comparative significance) and a Data Support score of 2 (moderate relative confidence in the available supporting data).

There are no known recent observations of fin whale in Womens Bay and the shallow waters of Womens Bay do not represent preferred habitat for large whales. However, fin whales do use coastal areas in the Gulf of Alaska and a small portion of the project area at the mouth of Womens Bay overlaps with a small portion of a BIA for this species, and as such, fin whale could occur within the project area.

Humpback Whale

Humpback whales occur along the coastline of the Kodiak Archipelago, including areas just outside of Womens Bay in Chiniak Bay (Baraff, 2006; Sea Grant Alaska, 2012). Humpback whales often feed in shallower waters closer to the coastline, and have been documented in shallow coastal waters near Kodiak Island on some years (Baraff 2006, ABR Inc., 2016). The highest concentrations occur near Ugak Bay with numbers peaking in August (Sea Grant Alaska, 2012). Across 110 monitoring days between November 10, 2015 and June 16, 2016 one humpback whale was observed during the ferry terminal reconstruction and dock improvement project in Kodiak Harbor (ABR, Inc. *et al.,* 2016).

According to Wade *et al.,* 2023, humpback whales in Kodiak are most likely to be from the Hawaii DPS (88 percent probability), with an 11 percent probability of being form the threatened Mexico DPS and 1 percent probability of being from the endangered Western North Pacific DPS.

Wild *et al.* (2023) identified the waters around and to the East of Kodiak Island as a feeding BIA for humpback whales during the months of May through September, with an importance score of 1 (the lowest of three possible scores (1, 2, or 3), reflecting an Intensity score of 2 (indicating an area of moderate comparative significance) and a Data Support score of 1 (lower relative confidence in the available supporting data). A small portion of the project area at the mouth of Womens Bay overlaps with a small portion of this BIA.

While the shallow waters of Womens Bay do not represent preferred habitat for large whales, given confirmed humpback whale sightings in Chiniak Bay, and that a small portion of the project area at the mouth of Womens Bay overlaps with a small portion of this BIA, humpback whales could occur within the project area

Minke Whale

During the Gulf of Alaska Line-Transect Survey (GOALS) II, so few individuals were sighted in the central Gulf of Alaska that no abundance estimates could be computed (Rone *et al.,* 2014). Across 110 monitoring days between November 10, 2015 and June 16, 2016 no minke whales were observed during the ferry terminal reconstruction and dock improvement project in Kodiak Harbor (ABR, Inc. *et al.,* 2016). However, a few observations of minke whale were recorded in nearshore waters near Kodiak Island during line transect surveys conducted in central Alaska coastal waters (Zerbini *et al.,* 2006). They are often observed in groups of two or three (Guerrero, 2008).

Killer Whale

The fish-eating Alaska Resident stock of killer whale most commonly occurs in nearshore waters near the project area throughout the year. Transient killer whales are known to frequent the Kodiak Harbor area to hunt Steller sea lions during the months of February through May (UAF, 2015). A total of 19 killer whales in 4 pods were observed across 110 days of monitoring between November 10, 2015 and June 16, 2016 during the Kodiak Ferry Terminal Dock Improvements Project, (ABR, Inc., 2016). The largest of these pods included seven individuals. The Sunaq Tribe of Kodiak indicated that killer whales have only been observed in the project area approximately two times in the last 5 years (Van Daele, 2024, personal communication).

Pacific White-Sided Dolphin

Pacific white-sided dolphins sometimes occur in pods of thousands, but group sizes are usually between 10 and 100 animals (Clark, 2008b; NMFS, 2022). In 2015, NOAA Fisheries Southwest Fisheries Science Center (SWFSC) in collaboration with NOAA Fisheries Alaska Fisheries Science Center undertook a robust whale survey along the U.S. and Canadian Pacific coast (Weller, 2021). During the SWFSC survey several Pacific white-sided dolphins where sighted south of the project area between Chiniak and Sitkalidak Island (Weller, 2021). Across 110 monitoring days between November 10, 2015 and June 16, 2016 no Pacific white-sided dolphins were observed during the ferry terminal reconstruction and dock improvement project in Kodiak Harbor (ABR, Inc. *et al.,* 2016). Given their preference for deeper, pelagic waters, Pacific white-sided dolphins have the potential to occur near Base Kodiak, which is situated close to the edge of the continental shelf and the Chiniak trough.

Dall's Porpoise

Several surveys conducted by the National Marine Mammal Laboratory (NMML) in the late 1990s documented dozens of Dall's porpoises in waters around Kodiak Island (Hobbs, 2004). They have been documented around Kodiak Island and occur in nearshore habitats. However, across 110 monitoring days between November 10, 2015 and June 16, 2016 no Dall's porpoise were observed during the ferry terminal reconstruction and dock improvement project in Kodiak Harbor (ABR, Inc. *et al.,* 2016), and the Sunaq Tribe of Kodiak indicates that this species has never been observed in Womens Bay (Van Daele, 2024, personal communication).

Harbor Porpoise

During the 1992 NMML Harbor Porpoise Aerial Survey conducted around Kodiak Island, dozens of harbor porpoises were spotted, with one documentation occurring within the action area (Dahlheim *et al.,* 2000). Group sizes reported during the same survey averaged 1.41 individuals (Dahlheim *et al.,* 2000). A total of six harbor porpoise were documented across 110 monitoring days between November 10, 2015 and June 16, 2016 during the ferry terminal reconstruction and dock improvement project in Kodiak Harbor (ABR, Inc. *et al.,* 2016). The largest group size was two.

Harbor porpoises are known to frequent nearshore habitats, including bays, and have been documented in bays near the project area (Van Daele, 2024, personal communication); therefore, harbor porpoises may intermittently enter the project area.

Northern Elephant Seal

Northern elephant seals are uncommon in Alaskan waters and rarely seen as far north as Kodiak Island. However, the Sunaq Tribe of Kodiak indicated that a northern elephant seal was observed near the project area for about 10 days in 2023.

Northern Fur Seal

Northern fur seals inhabit deep pelagic waters for most of their lives. The closest documented occurrence occurred approximately 60 miles west of the project area (Hobbs, 2004). Across 110 monitoring days between November 10, 2015 and June 16, 2016 no northern fur seal were observed during the ferry terminal reconstruction and dock improvement project in Kodiak Harbor (ABR, Inc. *et al.,* 2016).

Steller Sea Lion

Steller sea lions in the project area are anticipated to be part of the western DPS (western stock; Hastings *et al.,* 2020).

Steller sea lions do not follow traditional migration patterns, but will move from offshore rookeries in the summer to more protected haulouts closer to shore in the winter. They use rookeries and haulouts as resting spots as they follow prey movements and take foraging trips for days, usually within a few miles of their rookery or haulout. They are generalist marine predators and opportunistic feeders based on seasonal abundance and location of prey. Steller sea lions forage in nearshore as well as offshore areas, following prey resources.

Steller sea lion critical habitat in western Alaska includes a 20 nautical mile buffer around all major haulouts and rookeries as well as associated terrestrial, air and aquatic zones, and three large offshore foraging areas. The project area would overlap with the aquatic zone of Steller sea lion haulouts designated as critical habitat.

Limited data exist to inform the potential occurrence of Steller sea lion in Womens Bay. Although the Comprehensive Plan for the Womens Bay community does note that sea lions inhabit the bay (Kodiak Island Borough *et al,* 2006), the Sunaq Tribe of Kodiak suggests that Steller Sea Lion are rarely observed in Womens Bay. Steller sea lion are more abundant approximately 9 km northeast of the project area, where the Kodiak Ferry Terminal project was planned in 2015 (80 FR 51211, August 24, 2015). At this location, Steller sea lions regularly haul out on the artificial haulout float called Dog Bay in St. Herman Harbor, near the Kodiak Ferry Terminal. This haulout is not designated as a major haulout and is not considered Steller Sea Lion critical habitat. A bi-weekly census of Steller sea lions at the Dog Bay float, was conducted from November 2015 to June 2016 in association with the Kodiak Ferry Terminal project, revealing maximum numbers (>100) from mid-March through mid-June, with 5,111 total observations from November 2015 to June 2016 (ABR Inc, 2016). Additionally, counts conducted by Protected Species Observers during the Kodiak Terminal and Dock Improvements Project documented 6 to 114 Steller sea lion (33 on average) observations daily (ABR, Inc., 2016).

Harbor Seal

The Sunaq Tribe of Kodiak indicates that large congregations (approximately 24 individuals) of harbor seals are frequently observed within the project area, concentrating near Mary's Island to dive for prey. During the Kodiak Ferry Terminal and Dock Improvements Project (approximately 6 miles northeast of the Proposed Action), 13 sightings of seals, with a maximum group size of 3, were reported during the 110 days of monitoring (ABR Inc, 2016).

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (2024) described updated generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges chosen based on the ~65 decibel (dB) threshold from composite audiograms, previous analyses in NMFS (2019, and/or data from Southall *et al.,* (2007) and Southall *et al.,* (2019). Marine mammal hearing groups and their associated hearing ranges are provided in table 4.

TABLE 4—MARINE MAMMAL HEARING GROUPS
[NMFS, 2024]

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

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

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

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section provides a discussion of the ways in which components of the specified activity may impact marine mammals and their habitat. The Estimated Take of Marine Mammals section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis and Determination section considers the content of this section, the Estimated Take of Marine Mammals section, and the Proposed Mitigation section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and whether those impacts are reasonably expected to, or reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

Description of Sound Sources

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

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

In-water construction activities associated with the project would include impact pile driving, vibratory pile driving and removal, and use of DTH equipment. The sounds produced by these activities fall into one of two general sound types: impulsive and non-impulsive. Impulsive sounds (*e.g.,* explosions, gunshots, sonic booms, impact pile driving) are typically transient, brief (less than 1 second), broadband, and consist of high peak sound pressure with rapid rise time and rapid decay (ANSI, 1986; National Institute of Occupational Safety and Health (NIOSH), 1998; NMFS, 2018). Non-impulsive sounds (*e.g.,* aircraft, machinery operations such as drilling or dredging, vibratory pile driving, and active sonar systems) can be broadband, narrowband or tonal, brief or prolonged (continuous or intermittent), and typically do not have the high peak sound pressure with rapid rise/decay time that impulsive sounds do (ANSI, 1995; NIOSH, 1998; NMFS, 2018). The distinction between these two sound types is important because they have differing potential to cause physical effects, particularly with regard to hearing (*e.g.,* Ward, 1997, in Southall *et al.,* 2007).

Three types of 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).

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 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). The sounds produced by the DTH method contain both continuous, non-impulsive, component from the drilling action and an impulsive component from the hammering effect. Therefore, we treat DTH systems as both impulsive and continuous, non-impulsive sound source types simultaneously.

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

Acoustic Effects

The introduction of anthropogenic noise into the aquatic environment from pile driving and removal and DTH is the means by which marine mammals may be harassed from USCG's specified activity. In general, animals exposed to natural or anthropogenic sound may experience behavioral, physiological, and/or physical effects, ranging in magnitude from none to severe (Southall *et al.,* 2007, 2019). In general, exposure to pile driving and DTH noise has the potential to result in behavioral reactions (*e.g.,* avoidance, temporary cessation of foraging and vocalizing, changes in dive behavior) and, in limited cases, an auditory threshold shift (TS). Exposure to anthropogenic noise can also lead to non-observable physiological responses such 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 (TSs) followed by behavioral effects and potential impacts on habitat.

NMFS defines a noise-induced TS as a change, usually an increase, in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2024). The amount of TS is customarily expressed in dB. A TS can be permanent or temporary. As described in NMFS (2024), there are numerous factors to consider when examining the consequence of TS, including, but not limited to, the signal temporal pattern (*e.g.,* impulsive or non-impulsive), likelihood an individual would be exposed for a long enough duration or to a high enough level to induce a TS, the magnitude of the TS, time to recovery (seconds to minutes or hours to days), the frequency range of the exposure (*i.e.,* spectral content), the hearing and vocalization frequency range of the exposed species relative to the signal's frequency spectrum (*i.e.,* how animal uses sound within the frequency band of the signal; *e.g.,* Kastelein *et al.,* 2014), and the overlap between the animal and the source (*e.g.,* spatial, temporal, and spectral).

Auditory Injury and Permanent Threshold Shift (PTS)—NMFS defines auditory injury (AUD INJ) as ''damage to the inner ear that can result in destruction of tissue . . . which may or may not result in PTS'' (NMFS, 2024). NMFS defines PTS as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2024). Available data from humans and other terrestrial mammals indicate that a 40-dB TS approximates PTS onset (Ward *et al.,* 1958, 1959; Ward 1960; Kryter *et al.,* 1966; Miller, 1974; Ahroon *et al.,* 1996; Henderson *et al.,* 2008). PTS levels for marine mammals are estimates, as with the exception of a single study unintentionally inducing PTS in a harbor seal (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)—A temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). Based on data from cetacean TTS measurements (Southall *et al.,* 2007, 2019), a TTS of 6 dB is considered the minimum TS clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.,* 2000; Finneran *et al.,* 2000, 2002). As described in Finneran (2015), marine mammal studies have shown the amount of TTS increases with cumulative sound exposure level (SEL_{cum}) in an accelerating fashion: At low exposures with lower SEL_{cum}, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SEL_{cum}, the growth curves become steeper and approach linear relationships with the noise SEL.

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

Many studies have examined noise-induced hearing loss in marine mammals (see Finneran (2015) and Southall *et al.* (2019) for summaries). TTS is the mildest form of hearing impairment that can occur during exposure to sound (Kryter, 2013). While experiencing TTS, the hearing threshold rises, and a sound must be at a higher level in order to be heard. In terrestrial and marine mammals, TTS can last from minutes or hours to days (in cases of strong TTS). In many cases, hearing sensitivity recovers rapidly after exposure to the sound ends. For cetaceans, published data on the onset of TTS are limited to captive bottlenose dolphin (*Tursiops truncatus*), beluga whale, harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaeorientalis*) (Southall *et al.,* 2019). For pinnipeds in water, measurements of TTS are limited to harbor seals, elephant seals (*Mirounga angustirostris*), bearded seals (*Erignathus barbatus*) and California sea lions (*Zalophus californianus*) (Kastak *et al.,* 1999, 2007; Kastelein *et al.,* 2019b, 2019c, 2021, 2022a, 2022b; Reichmuth *et al.,* 2019; Sills *et al.,* 2020). TTS was not observed in spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to single airgun impulse sounds at levels matching previous predictions of TTS onset (Reichmuth *et al.,* 2016). These studies examine hearing thresholds measured in marine mammals before and after exposure to intense or long-duration sound exposures. The difference between the pre-exposure and post-exposure thresholds can be used to determine the amount of threshold shift at various post-exposure times.

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

Relationships between TTS and PTS thresholds have not been studied in marine mammals, and there is no PTS data for cetaceans, but such relationships are assumed to be similar to those in humans and other terrestrial mammals. PTS typically occurs at exposure levels at least several decibels above that inducing mild TTS (*e.g.,* a 40-dB threshold shift approximates PTS onset (Kryter *et al.,* 1966; Miller, 1974), while a 6-dB threshold shift approximates TTS onset (Southall *et al.,* 2007, 2019). Based on data from terrestrial mammals, a precautionary assumption is that the PTS thresholds for impulsive sounds (such as impact pile driving pulses as received close to the source) are at least 6 dB higher than the TTS threshold on a peak-pressure basis and PTS cumulative sound exposure level thresholds are 15 to 20 dB higher than TTS cumulative sound exposure level thresholds (Southall *et al.,* 2007, 2019). Given the higher level of sound or longer exposure duration necessary to cause PTS as compared with TTS, it is considerably less likely that PTS could occur.

Activities for this project include impact and vibratory pile driving and removal and DTH. For the proposed project, these activities would not occur at that same time and there would likely be pauses in activities producing the sound during each day. Given these pauses and the fact that many marine mammals are likely moving through the project areas and not remaining for extended periods of time, the potential for TS declines.

Behavioral Harassment—Exposure to noise from pile driving and DTH also has the potential to behaviorally disturb marine mammals. Generally speaking, NMFS considers a behavioral disturbance that rises to the level of harassment under the MMPA a non-minor response—in other words, not every response qualifies as behavioral disturbance, and for responses that do, those of a higher level, or accrued across a longer duration, have the potential to affect foraging, reproduction, or survival. Behavioral disturbance may include a variety of effects, including subtle changes in behavior (*e.g.,* minor or brief avoidance of an area or changes in vocalizations), more conspicuous changes in similar behavioral activities, and more sustained and/or potentially severe reactions, such as displacement from or abandonment of high-quality habitat. Behavioral responses may include changing durations of surfacing and dives, changing direction and/or speed; reducing/increasing vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); eliciting a visible startle response or aggressive behavior (such as tail/fin slapping or jaw clapping); avoidance of areas where sound sources are located. Pinnipeds may increase their haul out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.,* 1995; Wartzok *et al.,* 2004; Southall *et al.,* 2007, 2019; Weilgart, 2007; Archer *et al.,* 2010). Behavioral reactions can vary not only among individuals but also within an individual, depending on previous experience with a sound source, context, and numerous other factors (Ellison *et al.,* 2012), and can vary depending on characteristics associated with the sound source (*e.g.,* whether it is moving or stationary, number of sources, distance from the source). In general, pinnipeds seem more tolerant of, or at least habituate more quickly to, potentially disturbing underwater sound than do cetaceans, and generally seem to be less responsive to exposure to industrial sound than most cetaceans. Please see Appendices B and C of Southall *et al.* (2007) and Gomez *et al.* (2016) for reviews of studies involving marine mammal behavioral responses to sound.

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

As noted above, behavioral state may affect the type of response. For example, animals that are resting may show greater behavioral change in response to disturbing sound levels than animals that are highly motivated to remain in an area for feeding (Richardson *et al.,* 1995; Wartzok *et al.,* 2004; National Research Council (NRC), 2005). Controlled experiments with captive marine mammals have showed pronounced behavioral reactions, including avoidance of loud sound sources (Ridgway *et al.,* 1997; Finneran *et al.,* 2003). Observed responses of wild marine mammals to loud pulsed sound sources (*e.g.,* seismic airguns) have been varied but often consist of avoidance behavior or other behavioral changes (Richardson *et al.,* 1995; Morton and Symonds, 2002; Nowacek *et al.,* 2007).

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

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

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

Variations in respiration naturally vary with different behaviors and alterations to breathing rate as a function of acoustic exposure can be expected to co-occur with other behavioral reactions, such as a flight response or an alteration in diving. However, respiration rates in and of themselves may be representative of annoyance or an acute stress response. Various studies have shown that respiration rates may either be unaffected or could increase, depending on the species and signal characteristics, again highlighting the importance in understanding species differences in the tolerance of underwater noise when determining the potential for impacts resulting from anthropogenic sound exposure (*e.g.,* Kastelein *et al.,* 2001, 2005, 2006; Gailey *et al.,* 2007). For example, harbor porpoise' respiration rate increased in response to pile driving sounds at and above a received broadband SPL of 136 dB (zero-peak SPL: 151 dB re 1 micropascal (µPa); SEL of a single strike: 127 dB re 1 μPa^2-s) (Kastelein *et al.,* 2013).

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

Avoidance is the displacement of an individual from an area or migration path as a result of the presence of a sound or other stressors, and is one of the most obvious manifestations of disturbance in marine mammals (Richardson *et al.,* 1995). For example, gray whales are known to change direction—deflecting from customary migratory paths—in order to avoid noise from seismic surveys (Malme *et al.,* 1984). Avoidance may be short-term, with animals returning to the area once the noise has ceased (*e.g.,* Bowles *et al.,* 1994; Goold, 1996; Stone *et al.,* 2000; Morton and Symonds, 2002; Gailey *et al.,* 2007). Longer-term displacement is possible, however, which may lead to changes in abundance or distribution patterns of the affected species in the affected region if habituation to the presence of the sound does not occur (*e.g.,* Blackwell *et al.,* 2004; Bejder *et al.,* 2006; Teilmann *et al.,* 2006).

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

Behavioral disturbance can also impact marine mammals in more subtle ways. Increased vigilance may result in costs related to diversion of focus and attention (*i.e.,* when a response consists of increased vigilance, it may come at the cost of decreased attention to other critical behaviors such as foraging or resting). These effects have generally not been demonstrated for marine mammals, but studies involving fishes and terrestrial animals have shown that increased vigilance may substantially reduce feeding rates (*e.g.,* Beauchamp and Livoreil, 1997; Fritz *et al.,* 2002; Purser and Radford, 2011). In addition, chronic disturbance can cause population declines through reduction of fitness (*e.g.,* decline in body condition) and subsequent reduction in reproductive success, survival, or both (*e.g.,* Harrington and Veitch, 1992; Daan *et al.,* 1996; Bradshaw *et al.,* 1998). However, Ridgway *et al.* (2006) reported that increased vigilance in bottlenose dolphins exposed to sound over a 5-day period did not cause any sleep deprivation or stress effects.

In 2015 and 2016, the Alaska Department of Transportation and Public Facilities documented observations of marine mammals during construction activities (*i.e.,* pile driving and DTH) at the Kodiak Ferry Dock (see 80 FR 60636, October 7, 2015) across 110 monitoring days. In the marine mammal monitoring report for that project, 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, seven 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 m 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 3 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 USCG's specified activity. That is, disturbance, if any, is likely to be temporary and localized (*e.g.,* small area movements).

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.,* Seyle, 1950; Moberg, 2000). In many cases, an animal's first and sometimes most economical (in terms of energetic costs) response is behavioral avoidance of the potential stressor. Autonomic nervous system responses to stress typically involve changes in heart rate, blood pressure, and gastrointestinal activity. These responses have a relatively short duration and may or may not have a significant long-term effect on an animal's fitness.

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

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

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

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

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

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

Marine mammals at or near the proposed USCG project site may be exposed to anthropogenic noise which may be a source of masking. Vocalization changes may result from a need to compete with an increase in background noise and include increasing the source level, modifying the frequency, increasing the call repetition rate of vocalizations, or ceasing to vocalize in the presence of increased noise (Hotchkin and Parks, 2013). For example, in response to loud noise, beluga whales may shift the frequency of their echolocation clicks to prevent masking by anthropogenic noise (Tyack, 2000; Eickmeier and Vallarta, 2022).

Masking is more likely to occur in the presence of broadband, relatively continuous noise sources such as vibratory pile driving. Energy distribution of pile driving covers a broad frequency spectrum, and sound from pile driving would be within the audible range of pinnipeds and cetaceans present in the proposed action area. While some construction during the USCG's activities may mask some acoustic signals that are relevant to the daily behavior of marine mammals, the short-term duration and limited areas affected make it very unlikely that the fitness of individual marine mammals would be impacted.

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

Marine Mammal Habitat Effects

The USCG's proposed construction activities could have localized, temporary impacts on marine mammal habitat and their prey by increasing in-water SPLs and slightly decreasing water quality. Increased noise levels may affect acoustic habitat (see *Masking*) and adversely affect marine mammal prey in the vicinity of the project area (see discussion below). During vibratory and impact pile driving and DTH, elevated levels of underwater noise would ensonify a portion of Womens Bay, where both fish and mammals occur and could affect foraging success. Additionally, marine mammals may avoid the area during construction; however, displacement due to noise is expected to be temporary and is not expected to result in long-term effects to the individuals or populations. In-water pile driving activities would also cause short-term effects on water quality due to increased turbidity. Temporary and localized increase in turbidity near the seafloor would occur in the immediate area surrounding the area where piles and vibroflots are installed or removed. 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). The sediments of the project site would settle out rapidly when disturbed. Cetaceans are not expected to be close enough to the pile driving areas to experience effects of turbidity, and any pinnipeds could avoid localized areas of turbidity.

In-water Construction Effects on Potential Foraging Habitat—The proposed activities would not result in permanent impacts to habitats used directly by marine mammals. The areas likely impacted by the proposed action are relatively small compared to the total available habitat in the Gulf of Alaska. The total seafloor area affected by piling activities is small compared to the vast foraging areas available to marine mammals at either location. At best, the areas impacted provide marginal foraging habitat for marine mammals and fishes. Furthermore, pile driving at the project locations would not obstruct movements or migration of marine mammals.

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

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

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

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

In year 1, the greatest potential impact to fishes during construction would occur during impact pile installation of 24-in and 42-in steel pipe piles, and 24-in precast square concrete, which is estimated to occur on up to 44 days for a maximum of 14,400 strikes per day, and DTH installation of 19–42-inch steel piles, which is estimated to occur up to 55 days for a maximum of 180,000 strikes per day. In year 2, the greatest potential impact to fishes during construction would occur during impact pile installation of 24-in through 42-in steel pipe piles, which is estimated to occur on up to 17 days for a maximum of 14,400 strikes per day, and DTH installation of 19–24 inch steel piles, which is estimated to occur up to 24 days for a maximum of 180,000 strikes per day. In-water construction activities would only occur during daylight hours, allowing fish to forage and transit the project area in the evening. Vibratory pile driving would possibly elicit behavioral reactions from fishes such as temporary avoidance of the area but is unlikely to cause injuries to fishes or have persistent effects on local fish populations.

The most likely impact to fishes from pile driving and DTH activities in the project area would be temporary behavioral avoidance of the area. The duration of fish avoidance of the area after pile driving stops is unknown but a rapid return to normal recruitment, distribution, and behavior is anticipated. There are times of known seasonal marine mammal foraging when fish are aggregating but the impacted areas are small portions of the total foraging habitats available in the regions. In general, impacts to marine mammal prey species are expected to be minor and temporary. Further, it is anticipated that preparation activities for pile driving and DTH (*i.e.,* positioning of the hammer) and upon initial startup of devices would cause fish to move away from the affected area where injuries may occur. Therefore, relatively small portions of the proposed project area would be affected for short periods of time, and the potential for effects to fish would be temporary and limited to the duration of sound-generating activities.

In summary, given the short daily duration of sound associated with individual pile driving and DTH, 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. Any behavioral avoidance by fish of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity. Thus, we conclude that impacts of the specified activity are not likely to have more than short-term adverse effects on any prey habitat or populations of prey species. Further, any impacts to marine mammal habitat are not expected to result in significant or long-term consequences for individual marine mammals, or to contribute to adverse impacts on their populations.

Estimated Take of Marine Mammals

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

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

Authorized takes would primarily be by Level B harassment, as use of the acoustic sources (*i.e.,* vibratory and impact pile driving, DTH) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for AUD INJ (Level A harassment) to result, primarily for very high frequency species, phocids, and otariids, because predicted AUD INJ zones are larger than are observable. AUD INJ is unlikely to occur for high-frequency species and mysticetes. The proposed mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

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

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

Acoustic Criteria

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

Level B Harassment—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.,* frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.,* bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.,* Southall *et al.,* 2007, 2021, Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 (re 1 μPa) for continuous (*e.g.,* vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μPa for non-explosive impulsive (*e.g.,* seismic airguns) or intermittent (*e.g.,* scientific sonar) sources. Generally speaking, Level B harassment take estimates based on these behavioral harassment thresholds are expected to include any likely takes by TTS as, in most cases, the likelihood of TTS occurs at distances from the source less than those at which behavioral harassment is likely. TTS of a sufficient degree can manifest as behavioral harassment, as reduced hearing sensitivity and the potential reduced opportunities to detect important signals (conspecific communication, predators, prey) may result in changes in behavior patterns that would not otherwise occur.

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

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

The 2024 Updated Technical Guidance criteria include both updated thresholds and updated weighting functions for each hearing group. These thresholds criteria thresholds are provided in the table below. The references, analysis, and methodology used in the development of the criteria thresholds, as well as the detailed description of the updated weighting functions, are described in NMFS' 202418 Updated Technical Guidance, which may be accessed at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

TABLE 5—THRESHOLDS IDENTIFYING THE ONSET OF AUD INJ BASED ON 2024 TECHNICAL GUIDANCE

Hearing group	AUD INJ onset thresholds * (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1:* $L_{p,\text{0-pk,flat}}$: 222 dB; $L_{E,p,\text{LF,24h}}$: 183 dB	*Cell 2:* $L_{E,p,\text{LF,24h}}$: 197 dB.
High-Frequency (HF) Cetaceans	*Cell 3:* $L_{p,\text{0-pk,flat}}$: 230 dB; $L_{E,p,\text{HF,24h}}$: 193 dB	*Cell 4:* $L_{E,p,\text{HF,24h}}$: 201 dB.
Very High-Frequency (VHF) Cetaceans	*Cell 5:* $L_{p,\text{0-pk,flat}}$: 202 dB; $L_{E,p,\text{VHF,24h}}$: 159 dB	*Cell 6:* $L_{E,p,\text{VHF,24h}}$: 181 dB.
Phocid Pinnipeds (PW) (Underwater)	*Cell 7:* $L_{p,\text{0-pk.flat}}$: 223 dB; $L_{E,p,\text{PW,24h}}$: 183 dB	*Cell 8:* $L_{E,p,\text{PW,24h}}$: 195 dB.
Otariid Pinnipeds (OW) (Underwater)	*Cell 9:* $L_{p,\text{0-pk,flat}}$: 230 dB; $L_{E,p,\text{OW,24h}}$: 185 dB	*Cell 10:* $L_{E,p,\text{OW,24h}}$: 199 dB.

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

Note: Peak sound pressure level ($L_{p,\text{0-pk}}$) has a reference value of 1 μPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1μPa²s. In this table, thresholds are abbreviated to be more reflective of International Organization for Standardization standards (ISO 2017). The subscript "flat" is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals (*i.e.,* 7 Hz to 165 kHz). The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, HF, and VHF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level 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 thresholds will be exceeded.

Ensonified Area

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

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

The project includes vibratory pile installation and removal, impact pile driving, and DTH. Source levels for these activities are based on reviews of measurements of the same or similar types and dimensions of pile available in the literature. Source levels for each pile size and activity each year are presented in tables 6 and 7. Source levels for vibratory installation and removal of piles of the same diameter are assumed to be the same.

TABLE 6—YEAR 1 ESTIMATES OF MEAN UNDERWATER SOUND LEVELS * GENERATED DURING VIBRATORY, IMPACT, AND DTH PILE INSTALLATION AND VIBRATORY PILE REMOVAL

Method	Pile type	Pile size	dB RMS	dB peak	dB SEL	Reference
Vibratory installation and extraction	Timber	14	160	N/A	N/A	Greenbusch 2018.
		24	160	N/A	N/A	Greenbusch 2018.
	Steel Pipe	12	155	N/A	N/A	CalTrans 2015.
		14	154	N/A	N/A	CalTrans 2020.
		24	153	N/A	N/A	CalTrans 2020.
		36	170	N/A	N/A	CalTrans 2015.
		42	169	N/A	N/A	Illingworth and Rodkin 2019.
	Steel Pipe filled with Concrete	24	163	N/A	N/A	NAVFAC SW 2022.
	Precast square concrete	24	163	N/A	N/A	NAVFAC SW 2022.
	Stone column via Vibroflot	30	159	N/A	N/A	CalTrans 2020.
Impact	Steel Pipe	24	190	203	177	CalTrans 2015.
		42	192	213	179	CalTrans 2020.
	Precast Square Concrete	** 24	176	195	164	CalTrans (measured at 17.5 m).
DTH	Steel Pipe	19–24	167	184	159	Heyvaert & Reyff 2021.
		25–42	174	194	164	Denes *et al.,* 2019; Heyvaert, 2019; Reyff, 2020.

Note: dB peak = peak sound level; rms = root mean square; SEL = sound exposure level.
* All sound levels are referenced at 10 m unless otherwise indicated.
** Sound levels for impact installation of 24-inch precast square concrete are measured at 17.5 m.

TABLE 7—YEAR 2 ESTIMATES OF MEAN UNDERWATER SOUND LEVELS * GENERATED DURING VIBRATORY, IMPACT, AND DTH PILE INSTALLATION AND VIBRATORY PILE REMOVAL

Method	Pile type	Pile size	dB RMS	dB peak	dB SEL	Reference
Vibratory installation and extraction	Steel Pipe	24	153	N/A	N/A	CalTrans 2020.
		30	159	N/A	N/A	CalTrans 2020.
		36	170	N/A	N/A	CalTrans 2015.
		42	169	N/A	N/A	Illingworth and Rodkin 2019.
Impact	Steel Pipe	24	190	203	177	CalTrans 2015.
		30	190	210	177	CalTrans 2020.
		36	193	210	183	CalTrans 2020.
		42	192	213	179	CalTrans 2020.
DTH	Steel Pipe	19–24	167	184	159	Heyvaert & Reyff 2021.

TABLE 7—YEAR 2 ESTIMATES OF MEAN UNDERWATER SOUND LEVELS * GENERATED DURING VIBRATORY, IMPACT, AND DTH PILE INSTALLATION AND VIBRATORY PILE REMOVAL—Continued

Method	Pile type	Pile size	dB RMS	dB peak	dB SEL	Reference
		25–42	174	194	164	Denes *et al.,* 2019; Heyvaert, 2019; Reyff, 2020.

Note: dB peak = peak sound level; rms = root mean square; SEL = sound exposure level.
* All sound levels are referenced at 10 m.

DTH systems have both continuous, non-impulsive, and impulsive components as discussed in the *Description of Sound Sources* section above. When evaluating Level B harassment, NMFS recommends treating DTH as a continuous source and applying RMS SPL thresholds of 120 dB re 1 μPa. When evaluating Level A harassment, NMFS recommends treating DTH as an impulsive source. NMFS (2022) guidance on DTH systems (*https://media.fisheries.noaa.gov/2022-11/PUBLIC%20DTH%20Basic%20Guidance_November%202022.pdf*) recommends source levels for DTH systems; NMFS has applied those levels in our analysis (see tables 6 and 7 for NMFS' proposed source levels).

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

$$TL = B \times \text{Log10}\,(R_1/R_2),$$

Where:

TL = transmission loss in dB
B = transmission loss coefficient
R_1 = the distance of the modeled SPL from the driven pile, and
R_2 = the distance from the driven pile of the initial measurement

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

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the 2024 Updated Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources such as pile driving and DTH, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur AUD INJ, which includes but is not limited to PTS. Inputs used in the optional User Spreadsheet tool (*e.g.,* number of piles per day, duration, and/or strikes per pile), are presented in tables 1, 2, the sound levels are presented in tables 6 and 7, and the resulting estimated isopleths and total ensonified areas are reported below in tables 8 and 9.

TABLE 8—PROJECTED DISTANCES TO LEVEL A AND LEVEL B HARASSMENT ISOPLETHS (m) AND ASSOCIATED AREAS [1] (km^2) BY MARINE MAMMAL HEARING GROUP—YEAR 1 ACTIVITIES

Pile type	Pile size	LF	HF	VHF	PW	OW	Level B harassment
Vibratory Installation and Extraction:							
Timber	14	17.7	6.8	14.4	22.7	7.6	[2] 4,642 (*7.52*)
	24	17.7	6.8	14.4	22.7	7.6	[2] 4,642 (*7.52*)
Steel	12	18.2	3.1	6.7	10.5	3.5	2,154
	14	7.0	2.7	5.7	9.0	3.0	1,848
	24	4.3	1.6	3.5	5.5	1.9	1,585
	36	58.3	22.4	47.6	75.0	25.3	[2] 21,544 (*7.52*)
	42	50.0	19.2	40.8	64.3	21.7	[2] 18,478 (*7.52*)
Steel/Concrete	24	28	10.7	22.9	36.0	12.1	[2] 7,356 (*7.52*)
Precast Concrete	24	19.9	7.6	16.3	25.6	8.6	[2] 7,356 (*7.52*)
Vibroflot	30	26	10	21.2	33.5	11.3	3,981
Impact Pile Driving:							
Steel	24	1,935.4	246.9	2,995.1	1,719.3	640.9 (*1.01*)	1,000
	42	3,187.1	406.6	4,932.1	2,831.3	1,055 (*1.32*)	1,359
Precast Concrete	24	557.7	71.2	863.1	495.5	184.7	204
Down-the-hole Drilling:							
Steel	19–24	796.8	101.7	1,233.0 (*1.49*)	707.8 (*1.07*)	263.8 (*0.32*)	[2] 13,594 (*7.52*)
	25–42	1,716.6	219.0	2,656.5 (*4.17*)	1,525.0 (*1.83*)	568.4 (*0.91*)	[2] 39,811 (*7.52*)

Abbreviations: LF = low-frequency cetaceans, HF = high-frequency cetaceans, VHF = very high-frequency cetaceans, PW = phocid pinnipeds in water, OW = otariid pinnipeds in water.
[1] Only harassment areas used in take estimate calculations are presented.
[2] Total harassment areas are the same despite having varying calculated isopleths because the maximum distance is truncated by the other side of Womens Bay.

TABLE 9—PROJECTED DISTANCES TO LEVEL A AND LEVEL B HARASSMENT ISOPLETHS (m) AND ASSOCIATED AREAS [1] (km^2) BY MARINE MAMMAL HEARING GROUP—YEAR 2 ACTIVITIES

Pile type	Pile size	LF	HF	VHF	PW	OW	Level B harassment
Vibratory Installation and Extraction:							
Steel	24	4.3	1.6	3.5	5.5	1.9	1,585
	30	10.8	4.1	8.8	13.9	4.7	3,981
	36	58.3	22.4	47.6	75.0	25.3	[2] 21,544 (*7.52*)
	42	50.0	19.2	40.8	64.3	21.7	[2] 18,478 (*7.52*)
Impact Pile Driving:							
Steel	24	1,935.4	246.9	2,995.1	1,719.3	640.9 (*1.01*)	1,000
	30	1,935.4	246.9	2,995.1	1,719.3	640.9 (*1.01*)	1,000
	36	3,710.0	473.4	[1] 5,741.3	3,295.9	1,228.6 (*1.49*)	1,585
	42	3,187.1	406.6	[1] 4,932.1	2,831.3	1,055 (*1.32*)	1,359
Down-the-hole Drilling:							
Steel	19–24	796.8	101.7	1,233.0 (*1.49*)	707.8 (*1.07*)	263.8 (*0.32*)	[2] 13,594 (*7.52*)
	25–42	1,716.6	219.0	2,656.5 (*4.17*)	1,525.0 (*1.83*)	568.4 (*0.91*)	[2] 39,811 (*7.52*)

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

[1] Only harassment areas used in take estimate calculations are presented.

[2] Total harassment areas are the same despite having varying calculated isopleths because the maximum distance is truncated by the other side of Womens Bay.

Level A harassment zones are typically smaller than Level B harassment zones. However, in rare cases such as during impact pile driving of 24, 30, 36 and 42-inch steel piles and 24-inch precast concrete piles, the calculated Level A harassment isopleth is greater than the calculated Level B harassment isopleth for low frequency cetaceans, very high-frequency cetaceans, and phocids (tables 8 and 9). Calculation of Level A harassment isopleths include a duration component, which in the case of impact pile driving, is estimated through the total number of daily strikes and the associated pulse duration. For a stationary sound source such as impact pile driving, we assume here that an animal is exposed to all of the strikes expected within a 24-hour period. Calculation of a Level B harassment zone does not include a duration component. Depending on the duration included in the calculation, the calculated Level A harassment isopleths can be larger than the calculated Level B harassment isopleth for the same activity. This is the case for this project for low frequency cetaceans, very high frequency cetaceans, and phocids during impact pile driving of 24 and 42-inch steel piles and 24-inch precast concrete piles in year 1, and during impact pile driving of 24, 30, 36, and 42-inch steel piles in year 2.

Marine Mammal Occurrence and Take Estimation

In this section we provide information about the occurrence of marine mammals, including density or other relevant information which will inform the take calculations. Additionally, we describe how the occurrence information is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and proposed for authorization. Available information regarding marine mammal occurrence in the vicinity of the project area includes site-specific and nearby survey information and knowledge from local tribes. Data sources consulted included: (1) Anecdotal input from the Sunaq Tribe of Kodiak's Natural Resources Director (Van Daele, personal communication, 2024), (2) Protected Species Observer (PSO) monitoring completed in Near Island Channel on 110 days between November 205 and June 2016 during the Kodiak Ferry Terminal and Dock Improvements Project, approximately 9 km northeast of Womens Bay (ABR Inc., 2016), (3) PSO monitoring completed in Womens Bay on 12 days in March 2018 during the USCG Cargo Dock Repair project (USCG 2018), (4) Surveys described in Cetaceans of Southeast Alaska: Distribution and Seasonal Occurrence (group size estimates for Dall's porpoise) (Dalheim *et al.,* 2009), and (5) Alaska Wildlife Notebook Series (group size estimates for low-frequency cetaceans) (Frost and Karpovich, 2008; Clark, 2008; Guerrero, 2008).

In its initial application, the USCG estimated take using data sources 2, 4, and the U.S. Navy's Marine Species Density Database. NMFS recommended the inclusion of the data sources listed above and the exclusion of the density estimates given that they were calculated for offshore areas; USCG concurred, and updated its application to reflect NMFS' recommended method. Therefore, to estimate take, NMFS referred to the sets listed above to estimate a daily occurrence probability in which groups per day and group size are estimated for each species and multiplied by the number of days of each type of pile driving activity. For species that are unlikely to occur in the project area, but for which there is some potential (low frequency cetaceans and Pacific white-sided dolphin), NMFS predicts that one group of each species may occur in the project area during each project year. NMFS used the following equation to estimate take by Level B harassment for all species other than low-frequency cetaceans and Pacific white-sided dolphin:

Take by Level B harassment = group size × groups per day × days of pile driving activities in which the Level B harassment isopleths are larger than the Level A harassment isopleths

For activities where the Level A harassment isopleth is larger than the Level B harassment isopleth for a given hearing group, NMFS conservatively assumes that all take from that activity of that hearing group would be by Level A harassment, as described further below.

The USCG proposes to implement shutdown zones that meet or exceed the Level A harassment isopleths: (1) for all hearing groups during all vibratory pile driving activities; (2) for low and high-frequency cetaceans during impact pile driving and DTH activities (3) for otariids, during impact installation of 24-inch pre-cast concrete and DTH installation of 19–24-inch Steel piles. For other hearing groups and activity combinations, the Level A harassment zone would exceed the shutdown zone, as described in more detail below.

For activities and hearing groups where the Level A harassment isopleth is larger than the Level B harassment isopleth, NMFS used the following equation to estimate take by Level A harassment:

Group size × groups per day × days of pile driving activities in which the Level A harassment isopleth is larger than the Level B isopleth

For very-high frequency cetaceans and phocids, the calculated Level A harassment zones exceed the proposed shutdown zones during impact installation of all piles. For otariids, the calculated Level A harassment zones exceed the proposed shutdown zones during impact installation of all piles except for 24-inch pre-cast concrete and DTH of 19–24-inch steel.

For activities and hearing groups where the Level A harassment isopleth is larger than the shutdown zone but smaller than the Level B harassment zone, we proportionally compared, by hearing group, the portion of the largest Level A harassment area (km^2) that exceeds the planned shutdown zone area (km^2) to the area (km^2) of the Level B harassment zone for that activity and pile type. NMFS then multiplied this proportion by the group size, daily sightings, and number of construction days, according to the following equation:

Take by Level A harassment = Level A harassment area (km^2)/Level B harassment area (km^2) × group size × groups per day × days of pile driving.*

* The Level A harassment area refers to the Level A harassment isopleth minus the proposed shutdown zone for that activity and hearing group.

Gray Whale

Gray whales are solitary animals often traveling alone or in small groups of three (Frost and Karpovich, 2008). They are rare in the project area. Therefore, NMFS predicts that one group of three gray whales could occur within the Level B harassment zone during each year of the project and proposes to authorize three takes by Level B harassment for gray whale in year 1 and three takes by Level B harassment for gray whale in year 2.

Takes by Level A harassment for gray whale are not requested nor are they proposed for authorization during either project year.

Fin Whale

Fin whale are typically observed in groups of 6 to 10 animals (Clark, 2008a). They are rare in the project area. Therefore NMFS predicts that one group of six fin whale could occur within the Level B harassment zone across the project, each year, to account for the small but unlikely possibility that this species could occur within the project area. Therefore, NMFS proposes to authorize six takes by Level B harassment for fin whale in year 1 and six takes by Level B harassment for fin whale in year 2.

Takes by Level A harassment for fin whale are not requested nor are they proposed for authorization either project year.

Humpback Whale

Humpback whale are often observed alone or in small groups that persist for only a few hours (Zimmerman and Karpovich, 2008). They are rare in the project area. Therefore NMFS predicts that one group of two humpback whale could occur within the Level B harassment zone across the project, each year, to account for the small but unlikely possibility that this species could occur within the project area. Therefore, NMFS proposes to authorize two takes by Level B harassment for humpback whale (any stock) in year 1 and two takes by Level B harassment for humpback whale (any stock) in year 2.

Takes by Level A harassment for humpback whale are not requested nor are they proposed for authorization either project year.

Minke Whale

Minke whale are often observed in groups of two or three (Guerrero, 2008). While rare, it is possible that minke whale could occur within the project area. Therefore, NMFS predicts that one group of two minke whale could occur within the Level B harassment zone across the project, each year, to account for the small but unlikely possibility that this species could occur within the project area. Therefore, NMFS proposes to authorize three takes by Level B harassment for minke whale in year 1 and three takes by Level B harassment for minke whale in year 2.

Takes by Level A harassment for minke whale are not requested nor are they proposed for authorization either project year.

Killer Whale

Based on the known occurrence of killer whale and confirmation of sightings within the general vicinity of Womens Bay, it is likely that both resident and transient killer whale would occur within the project area. Based on local sightings, NMFS predicts one group of seven killer whales could occur within the Level B harassment zone every 1 construction month (30 days). In year 1, for this species, the duration of the construction for which the Level B zone is larger than the Level A zone is 264 days (8.8 is the basic 30 day period that corresponds to 1 construction months). This results in 62 takes by Level B harassment of killer whale (7 killer whale × 8.8 30-day periods) across any stock.

In year 2, for this species, the duration of the construction for which the Level B zone is larger than the Level A zone is 76 days (2.5 is the basic 30 day period that corresponds to 1 construction months). This results in 18 takes by Level B harassment of killer whale (7 killer whale × 2.5 30-day periods) across any stock.

Takes by Level A harassment for killer whale are not requested nor are they proposed for authorization either project year.

Pacific White-Sided Dolphin

Pacific white-sided dolphin group sizes are usually between 10 and 100 animals. Due to the shallow, enclosed nature of Womens Bay it would be a rare, though possible, occurrence for individuals to enter the action area. Therefore, NMFS predicts that one group of 10 pacific white-sided dolphin could occur within the Level B harassment zone across the project, each year, to account for the small but unlikely possibility that this species could occur within the project area. Therefore, NMFS proposes to authorize 10 takes by Level B harassment for pacific white-sided dolphin in year 1 and 3 takes by Level B harassment for pacific white-sided dolphin in year 2.

Takes by Level A harassment for Pacific white-sided dolphin are not requested nor are they proposed for authorization either project year.

Dall's Porpoise

Information regarding group size near Kodiak Island is limited; however, studies conducted along the inland waters of southeast Alaska indicate average group sizes ranged from 2.51 to 5.46 individuals during surveys conducted from 1991 to 2007 (Dahlheim *et al.,* 2009). While there are no known sightings in Womens Bay, because Dall's porpoise have been documented around Kodiak Island and have been known to occur in nearshore habitats, NMFS predicts that one group of four Dall's porpoise could occur within the Level B harassment zone every 1 construction month (30 days) each year.

In year 1, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 257 days (8.6 is the basic 30 day period that corresponds to 1 construction months). This results in 35 takes by Level B harassment of Dall's porpoise (4 Dall's porpoise × 8.6 30-day periods).

During all DTH activities, the Level A harassment zone is larger than the shutdown zone, but smaller than the Level B harassment zone. As such it is possible that Dall's porpoise may enter the Level A harassment zone and stay long enough to incur AUD INJ before exiting. For DTH of 19–24-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.14. This activity is predicted to take place on 7 construction days (7 construction days ÷ 30 days = 0.23 30-day construction periods). For DTH of 24–42-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.50. This activity is predicted to take place on 48 construction days (48 construction days ÷ 30 days = 1.6 30-day construction periods). As such, 4 takes by Level A harassment are proposed for authorization [(0.14 × 1 group × 4 Dall's porpoise × 0.23 30-day construction periods) + (0.5 × 1 group × 4 Dall's porpoises × 1.6 30-day construction periods) = 3.3 takes by Level A harassment].

During all impact pile driving, the Level A harassment zone is larger than the Level B harassment zone. These activities are predicted to take place on 44 construction days (44 construction days ÷ 30 days = 1.5 30-day construction periods). Estimated take by Level A harassment for these activities result in 2 based on 1 group × 4 Dall's porpoise × 1.5 30 day construction periods (1 × 4 × 1.5 = 6 takes by Level A harassment).

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated in cases where the Level A zone is smaller than the Level B zone (*i.e.,* 35 total exposures − 4 takes by Level A harassment estimated during DTH activities = 31 takes by Level B harassment). Therefore, for Dall's porpoise, NMFS proposes to authorize 10 takes by Level A harassment (4 takes + 6 takes) and 31 takes by Level B harassment, for a total of 41 takes in year 1.

In year 2, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 76 days (2.5 is the basic 30 day period that corresponds to 1 construction months). This results in 10 takes by Level B harassment of Dall's porpoise (4 Dall's porpoise × 2.5 30-day periods).

During all DTH activities, the Level A harassment zone is larger than the shutdown zone, but smaller than the Level B harassment zone. As such it is possible that Dall's porpoise may enter the Level A harassment zone and stay long enough to incur AUD INJ before exiting. For DTH of 19–24-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.14. This activity is predicted to take place on 6 construction days (6 construction days ÷ 30 days = 0.2 30-day construction periods). For DTH of 24–42-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.50. This activity is predicted to take place on 18 construction days (18 construction days ÷ 30 days = 0.6 30-day construction periods). As such, two takes by Level A harassment are proposed for authorization [(0.14 × 1 group × 4 Dall's porpoise × 0.2 30-day construction periods) + (0.5 × 1 group × 4 Dall's porpoises × 0.6 30-day construction periods) = 1.3 takes by Level A harassment].

During all impact pile driving, the Level A harassment zone is larger than the Level B harassment zone. These activities are predicted to take place on 17 construction days (17 construction days ÷ 30 days = 0.6 30-day construction periods). Estimated take by Level A harassment for these activities result in three based on 1 group × 4 Dall's porpoise × 0.6 30 day construction periods (1 × 4 x 0.6 = 2.4 takes by Level A harassment).

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated in cases where the Level A harassment zone is smaller than the Level B zone (*i.e.,* 10 total exposures − 2 takes by Level A harassment estimated during DTH activities = 8 takes by Level B harassment). Therefore, for Dall's porpoise, NMFS proposes to authorize 5 takes by Level A harassment (2 takes + 3 takes) and 8 takes by Level B harassment, for a total of 13 takes in year 1.

Harbor Porpoise

Harbor porpoises are known to frequent nearshore habitats, including bays, and have been documented in bays near the project area (Van Daele, 2024, personal communication; therefore, harbor porpoises may intermittently enter the project area. Based on input from the Sunaq tribe, NMFS predicts one group of six harbor porpoises could occur within the Level B harassment zone every 1 construction month (30 days) each year (Van Deale, 2024, personal communication).

In year 1, the duration of the construction for which the Level B zone is larger than the Level A zone is 257 days (8.6 is the basic 30 day period that corresponds to 1 construction months). This results in 52 takes by Level B harassment of harbor porpoise (6 harbor porpoise × 8.6 30-day periods).

During all DTH activities, the Level A harassment zone is larger than the shutdown zone, but smaller than the Level B zone. As such it is possible that harbor porpoise may enter the Level A harassment zone and stay long enough to incur AUD INJ before exiting. For DTH of 19–24-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.14. This activity is predicted to take place on 7 construction days (7 construction days ÷ 30 days = 0.23 30-day construction periods). For DTH of 24–42-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.50. This activity is predicted to take place on 48 construction days (48 construction days ÷ 30 days = 1.6 30-day construction periods). As such, five takes by Level A harassment are proposed for authorization [(0.14 × 1 group × 6 harbor porpoise × 0.23 30-day construction periods) + (0.5 × 1 group × 6 harbor porpoises × 1.6 30-day construction periods) = 5 takes by Level A harassment].

During all impact pile driving, the Level A harassment zone is larger than the Level B harassment zone. These activities are predicted to take place on 44 construction days (44 construction days ÷ 30 days = 1.5 30-day construction periods). Estimated take by Level A harassment for these activities result in nine based on 1 group × 6 harbor porpoise × 1.5 30 day construction periods (1 × 6 × 1.5 = 8.8 takes by Level A harassment).

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated in cases where the Level A harassment zone is smaller than the Level B harassment zone (*i.e.,* 52 total exposures − 5 takes by Level A harassment estimated during DTH activities = 47 takes by Level B harassment). Therefore, for harbor porpoise, NMFS proposes to authorize 14 takes by Level A harassment (5 takes + 9 takes) and 47 takes by Level B harassment, for a total of 61 takes in year 1.

In year 2, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 76 days (2.5 is the basic 30 day period that corresponds to 1 construction months). This results in 16 takes by Level B harassment of harbor porpoise (6 harbor porpoise × 2.5 30-day periods).

During all DTH activities, the Level A harassment zone is larger than the shutdown zone, but smaller than the Level B zone. As such it is possible that Dall's porpoise may enter the Level A harassment zone and stay long enough to incur AUD INJ before exiting. For DTH of 19–24-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.14. This activity is predicted to take place on 6 construction days (6 construction days ÷ 30 days = 0.2 30-day construction periods). For DTH of 24–42-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.50. This activity is predicted to take place on 18 construction days (18 construction days ÷ 30 days = 0.6 30-day construction periods). As such, two takes by Level A harassment are proposed for authorization [(0.14 × 1 group × 6 harbor porpoise × 0.2 30-day construction periods) + (0.5 × 1 group × 6 harbor porpoise × 0.6 30-day construction periods) = 2.0 takes by Level A harassment].

During all impact pile driving, the Level A harassment zone is larger than the Level B harassment zone. These activities are predicted to take place on 17 construction days (17 construction days ÷ 30 days = 0.6 30-day construction periods). Estimated take by Level A harassment for these activities result in four based on 1 group × 6 harbor porpoise × 0.6 30 day construction periods (1 × 6 × 0.6 = 3.6 takes by Level A harassment).

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated in cases where the Level A zone is smaller than the Level B harassment zone (*i.e.,* 16 total exposures − 2 takes by Level A harassment estimated during DTH activities = 14 takes by Level B harassment). Therefore, for harbor porpoise, NMFS proposes to authorize 6 takes by Level A harassment (2 takes + 4 takes) and 14 takes by Level B harassment, for a total of 20 takes in year 2.

Northern Fur Seal

It is possible, though rare, that a northern fur seal could occur within the project area. Therefore, NMFS predicts that one northern fur seal could occur within the Level B harassment zone every 1 construction month (30 days) each year, to account for the small but unlikely possibility that this species could occur within the project area. In year 1, the duration of the construction for which the Level B zone is larger than the Level A zone is 264 days (8.8 is the basic 30 day period that corresponds to 1 construction months). This results in nine takes by Level B harassment of northern fur seal (1 northern fur seal × 8.8 30-day periods). Because exposure estimates are low, and the Level A harassment zones are larger than are likely observable during impact pile driving and DTH of 24–42-inch steel piles, NMFS proposed to authorize these nine takes by either Level A harassment or Level B harassment.

In year 2, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 76 days (2.5 is the basic 30 day period that corresponds to 1 construction months). This results in three takes by Level B harassment of northern fur seal (1 northern fur seal × 2.5 30-day periods). Because exposure estimates are low, and the Level A harassment zones are larger than are likely observable during impact pile driving and DTH of 24–42-inch steel piles, NMFS proposed to authorize these three takes by either Level A harassment or Level B harassment.

Steller Sea Lion

While data are limited, the Sunaq Tribe of Kodiak suggests that the bottom topography of Womens Bay is not conducive to Steller sea lion foraging, but it is possible that Steller sea lions will occur intermittently in Womens Bay (Van Daele, 2024, personal communication). Therefore, NMFS predicts that one group of two Steller sea lions could occur within the Level B harassment zone every 2 construction weeks (14 days) each year.

In year 1, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 264 days (18.9 is the basic 14 day period that corresponds to 2 construction weeks). This results in 38 takes by Level B harassment of Steller sea lion (2 Steller sea lion × 18.9 14-day periods).

During DTH of 25–42-inch steel piles and all impact pile driving activities except for 24-inch pre-cast concrete, the Level A harassment zone is larger than the shutdown zone, but smaller than the Level B harassment zone. As such it is possible that Steller sea lions may enter the Level A harassment zone and stay long enough to incur AUD INJ before exiting. For DTH of 25–42-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.07. This activity is predicted to take place on 48 construction days (48 construction days ÷ 14 days = 3.4 14-day construction periods). For impact installation of 42-in steel, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.12. This activity is predicted to take place on 32 construction days (32 construction days ÷ 14 days = 2.3 14-day construction periods). For impact installation of 24-in steel, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is also 0.08. This activity is predicted to take place on 5 construction days (5 construction days ÷ 14 days = 0.4 14-day construction periods).

As such, two takes by Level A harassment is proposed for authorization [(0.07 × 1 group × 2 Steller sea lion × 3.4 14-day construction periods) + (0.12 × 1 group × 2 Steller sea lion × 2.3 14-day construction periods) + 0.08 × 1 group × 2 Steller sea lion × 0.4 14-day construction periods = 1.08 takes by Level A harassment].

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated in cases where the Level A zone is smaller than the Level B zone (*i.e.,* 38 total exposures − 2 takes by Level A harassment activities = 36 takes by Level B harassment). Therefore, for Steller sea lion, NMFS proposes to authorize 2 takes by Level A harassment and 36 takes by Level B harassment, for a total of 38 takes in year 1.

In year 2, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 76 days (5.4 is the basic 14 day period that corresponds to 2 construction weeks). This results in 11 takes by Level B harassment of Steller sea lion (2 Steller sea lion × 5.4 14-day periods).

During DTH of 25–42-inch steel piles and all impact pile driving activities except for 24-inch pre-cast concrete, the Level A harassment zone is larger than the shutdown zone, but smaller than the Level B harassment zone. As such it is possible that Steller sea lion may enter the Level A harassment zone and stay long enough to incur AUD INJ before exiting. For DTH of 25–42-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.07. This activity is predicted to take place on 18 construction days (18 construction days ÷ 14 days = 1.3 14-day construction periods). For impact installation of 42-in steel, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.12. This activity is predicted to take place on 5 construction days (5 construction days ÷ 14 days = 0.4 14-day construction periods). For impact installation of 36-in steel, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.14. This activity is predicted to take place on 3 construction days (3 construction days ÷ 14 days = 0.2 14-day construction periods). For impact installation of 30-in steel, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.08. This activity is predicted to take place on 5 construction days (5 construction days ÷ 14 days = 0.4 14-day construction periods). For impact installation of 24-in steel, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is also 0.08. This activity is predicted to take place on 4 construction days (4 construction days ÷ 14 days = 0.3 14-day construction periods).

As such, one take by Level A harassment is proposed for authorization [(0.07 × 1 group × 2 Steller sea lion × 1.3 14-day construction periods) + (0.12 × 1 group × 2 Steller sea lion × 0.4 14-day construction periods) + 0.14 × 1 group × 2 Steller sea lion × 0.2 14-day construction periods + (0.08 × 1 group × 2 Steller sea lion × 0.4 14-day construction periods) + (0.08 × 1 group × 2 Steller sea lion × 0.3 14-day construction periods) = 0.43 takes by Level A harassment].

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated in cases where the Level A harassment zone is smaller than the Level B harassment zone (*i.e.,* 11 total exposures − 1 take by Level A harassment activities = 10 takes by Level B harassment). Therefore, for Steller sea lion, NMFS proposes to authorize 1 take by Level A harassment and 10 takes by Level B harassment, for a total of 11 takes in year 2.

Harbor Seal

Harbor seals are known to frequent nearshore habitats and have been documented in large numbers in the project area. Based on local data, NMFS predicts that one group of 24 harbor seal are could occur within the Level B harassment zone every 1 construction week (7 days) each year.

In year 1, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 257 days (36.7 is the basic 7 day period that corresponds to 1 construction week). This results in 882 takes by Level B harassment of harbor seal (24 harbor seal × 36.7 7-day periods).

During all DTH activities, the Level A harassment zone is larger than the shutdown zone, but smaller than the Level B harassment zone. As such it is possible that harbor porpoise may enter the Level A harassment zone and stay long enough to incur AUD INJ before exiting. For DTH of 19–24-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.09. This activity is predicted to take place on 7 construction days (7 construction days ÷ 7 days = 1 7-day construction periods). For DTH of 24–42-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.19. This activity is predicted to take place on 48 construction days (48 construction days ÷ 7 days = 6.9 7-day construction periods). As such, 34 takes by Level A harassment are proposed for authorization [(0.09 × 1 group × 24 harbor seal × 1 7-day construction periods) + (0.19 × 1 group × 24 harbor seal × 6.9 7-day construction periods) = 34 takes by Level A harassment].

During all impact pile driving, the Level A harassment zone is larger than the Level B harassment zone. These activities are predicted to take place on 44 construction days (44 construction days ÷ 7 days = 6.3 1-week construction periods). Estimated take by Level A harassment for these activities result in 151 based on 1 group × 24 harbor seal × 6.3 14 day construction periods (1 × 24 × 6.3 = 151.2 takes by Level A harassment).

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated in cases where the Level A harassment zone is smaller than the Level B harassment zone (*i.e.,* 882 total exposures − 34 takes by Level A harassment estimated during DTH activities = 848 takes by Level B harassment). Therefore, for harbor seal, NMFS proposes to authorize 185 takes by Level A harassment (34 takes + 151 takes) and 848 takes by Level B harassment, for a total of 1,033 takes in year 1.

In year 2, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 76 days (10.9 is the basic 7 day period that corresponds to 1 construction week). This results in 262 takes by Level B harassment of harbor seal (24 harbor seal × 10.9 7-day periods).

During all DTH activities, the Level A harassment zone is larger than the shutdown zone, but smaller than the Level B harassment zone. As such it is possible that harbor seal may enter the Level A harassment zone and stay long enough to incur AUD INJ before exiting. For DTH of 19–24-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.09. This activity is predicted to take place on 6 construction days (6 construction days ÷ 7 days = 0.86 7-day construction periods). For DTH of 24–42-in steel piles, the ratio of the Level A harassment area that exceeds the shutdown zone to the Level B harassment area is 0.19. This activity is predicted to take place on 18 construction days (18 construction days ÷ 7 days = 2.6 7-day construction periods). As such, 14 takes by Level A harassment are proposed for authorization [(0.09 × 1 group × 24 harbor seal × 0.86 7-day construction periods) + (0.19 × 1 group × 14 harbor seal × 2.6 7-day construction periods) = 13.57 takes by Level A harassment].

During all impact pile driving, the Level A harassment zone is larger than the Level B harassment zone. These activities are predicted to take place on 17 construction days (17 construction days ÷ 7 days = 2.4 7-day construction periods). Estimated take by Level A harassment for these activities result in 58 based on 1 group × 24 harbor seal × 2.4 7-day construction periods (1 × 24 × 2.4 = 57.6 takes by Level A harassment).

Takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment estimated in cases where the Level A zone is smaller than the Level B zone (*i.e.,* 262 total exposures − 14 takes by Level A harassment estimated during DTH activities = 248 takes by Level B harassment). Therefore, for harbor seal, NMFS proposes to authorize 72 takes by Level A harassment (14 takes + 58 takes) and 248 takes by Level B harassment, for a total of 320 takes in year 2.

Northern Elephant Seal

Although rare, Northern elephant seals could occur in the project area (Van Daele, 2024, personal communication). NMFS predicts that one northern elephant seal could occur within the Level B harassment zone every 2 construction weeks (14 days), each year. In year 1, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 257 days (18.4 is the basic 14 day period that corresponds to 2 construction weeks). This results in 19 takes by Level B harassment of northern fur seal (1 northern elephant seal × 18.4 14-day periods). Because exposure estimates are low, and the Level A harassment zones are larger than are likely observable during impact pile driving and DTH, NMFS proposed to authorize these 19 takes by either Level A harassment or Level B harassment.

In year 2, the duration of the construction for which the Level B harassment zone is larger than the Level A harassment zone is 76 days (5.4 is the basic 14 day period that corresponds to 2 construction weeks). This results in six takes by Level B harassment of northern elephant seal (1 northern elephant seal × 5.4 14-day periods). Because exposure estimates are low, and the Level A harassment zones are larger than are likely observable during impact pile driving and DTH, NMFS proposed to authorize these six takes by either Level A harassment or Level B harassment.

TABLE 10—TAKE BY STOCK AND HARASSMENT TYPE AND AS A PERCENTAGE OF STOCK ABUNDANCE

Species	Stock	Proposed take—year 1		Proposed take—year 2		Take as percentage of stock abundance—year 1, (year 2)
		Level A harassment	Level B harassment	Level A harassment	Level B harassment	
Gray Whale	Eastern N Pacific	0	3	0	3	(<1)
Fin Whale	Northeast Pacific	0	6	0	6	*, (*)
Humpback Whale	Hawaiʻi	0	2	0	2	<1, (<1)
	Mexico-N Pacific					*, (*)
	Western N Pacific					<1, (<1)
Minke Whale	Alaska	0	2	0	2	*, (*)
Killer Whale	Eastern North Pacific-Alaska Resident.	0	62	0	18	<1, (<1)
	Eastern North Pacific-Gulf of Alaska, Aleutian Islands, and Bering Sea.					11, (3)
Pacific White-sided Dolphin	North Pacific	0	10	0	10	<1, (<1)
Dall's Porpoise	Alaska	10	31	5	8	*, (*)
Harbor Porpoise	Gulf of Alaska	14	47	6	20	<1, (<1)
Northern Fur Seal	Eastern Pacific	9		3		<1, (<1)
Steller Sea Lion	Western	2	36	1	10	<1, (<1)
Harbor Seal	South Kodiak	185	848	72	248	3.9, (1.2)
Northern Elephant Seal	CA Breeding	19		6		<1, (<1)

* A reliable abundance estimate is not available for this stock.

Proposed Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses. NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, and their habitat (50 CFR 216.104(a)(11)).

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

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

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

Shutdown Zones—For all pile driving and DTH activities, USCG proposes to implement shutdowns within designated zones. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones vary based on the activity type and marine mammal hearing group (table 11 and 12). In most cases, the shutdown zones are based on the estimated Level A harassment isopleth distances for each hearing group. However, in cases where it would be challenging to detect marine mammals at the Level A harassment isopleth (*e.g.,* for very high-frequency cetaceans, phocids, and otariids during most impact pile driving), smaller shutdown zones have been proposed (table 11 and 12).

Construction supervisors and crews, PSOs, and relevant USCG staff must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 25 m of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction. If an activity is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone indicated in table 11 and 12, or 30 minutes (ESA-listed large whales) or 15 minutes (all other species) have passed without re-detection of the animal.

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

TABLE 11—PROPOSED SHUTDOWN ZONES (m): YEAR 1

Pile driving method	Pile type	Pile size	LF	HF	VHF	PW	OW
Vibratory Installation and Extraction.	Timber	14	25	25	25	25	25
		24					
	Steel	12					
		14					
		24					
		36	60		50	80	30
		42	50			70	25
	Steel/Concrete	24	30		25	40	
	Precast Concrete	24	25			30	
	Vibroflot	30	30			40	
Impact Pile Driving	Steel	24	1,940	250	300	300	300
		42	3,200	410			
	Precast Concrete	24	560	80			190
DTH	Steel	19–24	800	110			300
		24–42	1,720	220			

TABLE 12—PROPOSED SHUTDOWN ZONES (m): YEAR 2

Pile driving method	Pile type	Pile size	LF	HF	VHF	PW	OW
Vibratory Installation and Extraction.	Steel	24	25	25	25	25	25
		30	25				
		36	60		50	80	30
		42	50			70	25
Impact Pile Driving	Steel	24	1,940	250	300	300	300
		30					
		36	3,720	480			
		42	3,200	410			
DTH	Steel	19–24	800	110			
		24–42	1,720	220			

Protected Species Observers (PSOs)—The number and placement of PSOs during all construction activities (described in the Proposed Monitoring and Reporting section) would ensure that the entire shutdown zone is visible. USCG would employ at least one PSOs during all vibratory pile driving and removal activities and at least two PSOs during all impact pile driving and DTH activities.

Monitoring for Level A and Level B Harassment—PSOs would monitor the shutdown zones and beyond to the extent that PSOs can see. Monitoring beyond the shutdown zones enables observers to be aware of and communicate the presence of marine mammals in the project areas outside the shutdown zones and thus prepare for a potential cessation of activity should the animal enter the shutdown zone. If a marine mammal enters either harassment zone, PSOs will document the marine mammal's presence and behavior.

Pre- and Post-Activity Monitoring—Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 minutes or longer occurs, PSOs would observe the shutdown zones and as much as the harassment zones as possible for a period of 30 minutes. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones are clear of marine mammals. If the shutdown zone is obscured by fog or poor lighting conditions, in-water construction activity will not be initiated until the entire shutdown zone is visible. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals. If a marine mammal is observed entering or within shutdown zones, pile driving activity must be delayed or halted. If pile driving is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or 30 minutes (ESA-listed large whales) or 15 minutes have passed without re-detection of the animal. If a marine mammal for which take by Level B harassment is authorized is present in the Level B harassment zone, activities may begin.

Soft-Start—The use of soft-start procedures are believed to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors would be required to provide an initial set of three strikes from the hammer at reduced energy, with each strike followed by a

30-second waiting period. This procedure would be conducted a total of three times before impact pile driving begins. Soft start would be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer. Soft start is not required during vibratory pile driving activities.

Based on our evaluation of the applicant's proposed measures, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for subsistence uses.

Proposed Monitoring and Reporting

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

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

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.,* presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.,* source characterization, propagation, ambient noise); (2) affected species (*e.g.,* life history, dive patterns); (3) co-occurrence of marine mammal species with the activity; or (4) biological or behavioral context of exposure (*e.g.,* age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.,* marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and,
- Mitigation and monitoring effectiveness.

Visual Monitoring

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

- PSOs must be independent of the activity contractor (for example, employed by a subcontractor), and have no other assigned tasks during monitoring periods;
- At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute other relevant experience, education (degree in biological science or related field) or training for experience performing the duties of a PSO during construction activities pursuant to NMFS-issued take authorization;
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator will be designated. The lead observer will be required to have prior experience working as a marine mammal observer during construction activity pursuant to a NMFS-issued incidental take authorization; and,
- PSOs must be approved by NMFS prior to beginning any activity subject to this IHA.

PSOs should also have the following qualifications:

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

Visual monitoring would be conducted by trained PSOs positioned at suitable vantage points, such as the project site, and the southern tip of Nyman Peninsula. During vibratory pile driving and removal, at least one PSO would placed near the pile driving site and have an unobstructed view of all water within the shutdown zone. During impact pile driving and DTH, a second PSO would be placed at a location like the southern end of Nyman Peninsula ensure the larger shutdown zones would be observable as well.

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

Reporting

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

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

cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;

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

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

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Holder must report the incident to the OPR, NMFS (*PR.ITP.MonitoringReports@noaa.gov* and *itp.fleming@noaa.gov*) and Alaska Regional Stranding network (877–925–7773) as soon as feasible. If the death or injury was clearly caused by the specified activity, the Holder must immediately cease the activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this IHA. The Holder must not resume their activities until notified by NMFS. The report must include the following information:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animals(s), if alive;
- If available, photographs or video footage of the animal(s); and,
- General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

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

To avoid repetition, the majority of our analysis applies to all the species listed in table 3, given that many of the anticipated effects of this project on different marine mammal stocks are expected to be relatively similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

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

No serious injury or mortality is expected in either year, even in the absence of required mitigation measures, given the nature of the activities. Further, no take by Level A harassment is anticipated for any low-frequency or high-frequency cetaceans, due to the rarity of the species near the project area and the application of proposed mitigation measures, such as shutdown zones that encompass the Level A harassment zones for these species (see Proposed Mitigation section).

In both Year 1 and Year 2, take by Level A harassment is proposed for authorization for six species (Dall's porpoise, harbor porpoise, northern fur seal, Steller sea lion, harbor seal, and northern elephant seal). Any take by Level A harassment is expected to arise from, at most, a small degree of AUD INJ (*i.e.,* minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by impact pile driving such as the low-frequency region below 2 kHz), not severe hearing impairment or impairment within the ranges of greatest hearing sensitivity. Animals would need to be exposed to higher levels and/or longer duration than are expected to occur here in order to incur any more than a small degree of PTS.

Further, in both year 1 and year 2, the amount of take by Level A harassment proposed for authorization is very low. For six species, NMFS anticipates no take by Level A harassment over the duration of USCG's planned activities (both years); In year 1, NMFS expects no more than 6 takes by Level A harassment for Dall's porpoise in year 1 and 5 in year 2; 15 takes by Level A harassment for harbor porpoise in year 1 and 5 in year 2; 19 takes by Level A harassment for northern elephant seal in year 1 and 6 in year 2; and 2 takes by Level A harassment for Steller sea lion in year 1 and 1 in year 2. The proposed amount of take by Level A harassment for harbor seal is a bit larger—185 takes in year 1 and 73 in year 2. However, for all hearing groups, if hearing impairment occurs, it is most likely that the affected animal would lose only a few dB in its hearing sensitivity. Due to the small degree anticipated, any AUD INJ potentially incurred would not be expected to affect the reproductive success or survival of any individuals, much less result in adverse impacts on the species or stock.

Additionally, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. However, since the hearing sensitivity of individuals that incur TTS is expected to recover completely within minutes to hours, it is unlikely that the brief hearing impairment would affect the individual's long-term ability to forage and communicate with conspecifics, and would therefore not likely impact reproduction or survival of any individual marine mammal, l*et al*one adversely affect rates of recruitment or survival of the species or stock.

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

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

Steller sea lions are not common in the project area, and there are no essential primary constituent elements (biological or physical features within designated critical habitat that are essential to the conservation of the listed species), such as haulouts or rookeries, present. The nearest haulout is 4 km away on a man-made float. Therefore, the project is not expected to have significant adverse effects on the critical habitat of Western DPS Steller sea lions.

While waters off Kodiak have been identified as BIAs for gray whale, fin whale, and humpback whale, only a small portion of the project area at the mouth of Womens Bay overlaps with a minimal part of these identified areas. The shallow waters of Womens Bay do not represent habitat for these species and occurrence of these species is low in the project area.

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

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

- No serious injury or mortality is anticipated or proposed for authorization;
- No take by Level A harassment is proposed for 6 out of 12 species;
- Take by Level A harassment would be very small amounts for most species and of a low severity;
- For all species, Womens Bay is a very small and peripheral part of their range;
- Proposed takes by Level B harassment are relatively low for most stocks. Level B harassment would be primarily in the form of behavioral disturbance, resulting in avoidance of the project areas around where impact or vibratory pile driving is occurring, with some low-level TTS that may limit the detection of acoustic cues for relatively brief amounts of time in relatively confined footprints on their populations;
- The ensonified areas are very small relative to the overall habitat ranges of all species and stocks, and overlap with known areas of important habitat is minimal; and,
- The lack of anticipated significant or long-term negative effects to marine mammal habitat.

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

Small Numbers

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

The instances of take NMFS proposed to authorize is below one third of the estimated stock abundance for all species. The number of animals authorized to be taken from these stocks would be considered small relative to the relevant stocks' abundances even if each estimated taking occurred to a new individual. Some individuals may return multiple times in a day, but PSOs would count them as separate takes if they cannot be individually identified.

There are no official abundance estimates available for humpback whale (Mexico-North Pacific stock), fin whale (Northeast Pacific stock), minke whale (Alaska stock), and Dall's porpoises (Alaska stock).

The most recent abundance estimate for the Mexico-North Pacific stock of humpback whale is likely unreliable as it is more than 8 years old. There are 2 minimum population estimates for this stock that are over 15 years old: 2,241 (Martínez-Aguilar, 2011) and 766 (Wade, 2021). Using either of these estimates, the 2 takes by Level B harassment proposed for authorization each year is small relative to the estimated abundance (<1 percent), even if each proposed take occurred to a new individual. Young *et al.* (2024) estimate the minimum stock size for the Northeast Pacific stock of fin whale for the areas surveyed is 2,554 individuals. Therefore, the six takes by Level B harassment of this stock each year represent small numbers of this stock. There is also no current abundance estimate of the Alaska stock of minke whale, but over 2,000 individuals were documented in areas recently surveyed (Young *et al.,* 2024). Therefore, the 2 takes by Level B harassment each year represent small numbers of this stock, even if each take occurred to a new individual. The most recent stock abundance estimate of the Alaska stock of Dall's porpoise was 83,400 animals and, although the estimate is more than 8 years old, it is unlikely this stock has drastically declined since that time. Therefore, the 41 takes proposed for authorization in year 1, and the 13 takes proposed for authorization in year 2, represent small numbers of this stock.

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

Unmitigable Adverse Impact Analysis and Determination

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

The USCG indicated that most recent data from Kodiak Station, which is the closest community observation station for subsistence harvesting, is from 1991 and does not show any marine mammal harvest data. The most recent data from the Old Harbor Station, which is located southeast of Kodiak Station is from 2018 and indicates that 37 marine mammals were harvested that year (harbor seals, steller sea lion, unidentified marine mammal). The USCG sent scoping letters to potentially affected entities (local governments, Alaska native organizations). No concerns related to potential impacts on marine mammal subsistence activities and resources were provided.

- As noted above, recent data suggests that subsistence harvest of marine mammals does not currently occur in the project area. Further, construction activities would be temporary and localized to Womens Bay, near an active USCG base where human presence is common, marine mammal occurrence is low, and local marine mammals are likely accustomed to human activities. Further, mitigation measures will be implemented to minimize disturbance of marine mammals in the project area;

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

Endangered Species Act

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

NMFS is proposing to authorize take of humpback whale (Mexico-North Pacific and Western North Pacific), fin whale (northeast Pacific), and Steller sea lion (Western DPS), which are listed under the ESA. The Permits and Conservation Division has requested initiation of section 7 consultation with the AKRO for the issuance of this IHA. NMFS will conclude the ESA consultation prior to reaching a determination regarding the proposed issuance of the authorization.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue two consecutive IHAs to USCG for conducting Base Kodiak Vessel Homeporting Facility Project in Womens Bay, Kodiak, Alaska between May 19, 2025 and May 18, 2026 and May 19, 2026 and May 18, 2027, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. Drafts of the proposed IHAs can be found at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.*

Request for Public Comments

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

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

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

• The request for renewal must include the following:

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

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

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

Dated: March 7, 2025.

Kimberly Damon-Randall,

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

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