small numbers of five marine mammal species incidental to the Pier Maintenance and Bank Stabilization project in Port Angeles, Washington, that includes the previously explained mitigation, monitoring and reporting requirements. The IHA can be found at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-us-coast-guard-air-station-port-angeles-pier-maintenance-and.*

Dated: October 25, 2023.

Catherin Marzin,

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

[FR Doc. 2023–23948 Filed 10–30–23; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XD325]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Eareckson Air Station Fuel Pier Repair in Alcan Harbor on Shemya Island, Alaska

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

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

SUMMARY: NMFS has received a request from the U.S Army Corps of Engineers (USACE) on behalf of the Pacific Air Forces Regional Support Center (USAF) for authorization to take marine mammals incidental to the Eareckson Air Station (EAS) Fuel Pier Repair in Alcan Harbor, Shemya Island, Alaska. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-time, 1-year renewal that could be issued under certain circumstances and if all requirements are met, as described in the Request for Public Comments section 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 November 30, 2023.

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 mitigation, monitoring and reporting of the takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216–6A, NMFS must review our proposed action (*i.e.,* the issuance of an IHA) with respect to potential impacts on the human environment. This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion Manual for NAO 216–6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has preliminarily determined that the issuance of the proposed IHA qualifies to be categorically excluded from further NEPA review.

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

Summary of Request

On May 15, 2023, NMFS received a request from the USACE on behalf of USAF for an IHA to take marine mammals incidental to construction associated with the EAS Fuel Pier Repair in Alcan Harbor on Shemya Island, Alaska. Following NMFS' review of the application, and discussions between NMFS and USAF, the application was deemed adequate and complete on September 19, 2023. The USAF's request is for take of 12 species of marine mammals, by Level B harassment and, for a subset of these species, Level A harassment. Neither USAF nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

This proposed IHA would cover 1 year of a larger 3-year project that involves construction activities that will not result in the take of marine mammals (*i.e.,* movement, mobilization, and staging of equipment; replacing the pier deck; and installing an engineered revetment along the western shoreline).

Description of Proposed Activity

Overview

The USAF is proposing to conduct long-term repairs on the only existing fuel pier at EAS on Shemya Island, Alaska. The fuel delivered to the pier is used by the island generator systems to aid in the operation of homeland defense early warning radar surveillance and communication systems. EAS also functions as an emergency divert airfield supporting commercial and air traffic destined for Japan, China, and other destinations in Asia and the Pacific. In February 2020, a destructive storm left the fuel pier in critical condition. In 2021, emergency repairs were completed to restore minimal function to the fuel pier. Long-term repairs are planned in order to prevent future degradation and catastrophic loss to the fuel pier, to maintain access to the pier, and to protect the shoreline facilities from further erosion. The activities that have the potential to take marine mammals, by Level A harassment and Level B harassment, include down-the-hole (DTH) drilling, vibratory and impact installation of temporary and permanent steel pipe piles, and vibratory removal of temporary steel pipe piles, and would introduce underwater sounds that may result in take, by Level A harassment and Level B harassment, of marine mammals. The marine construction associated with the proposed activities is planned to occur over 160 days over 1 year, accounting for weather delays and mechanical issues.

Dates and Duration

The proposed IHA would be effective from April 1, 2024 to March 31, 2025. The project would occur between April and October 2024 and would require approximately 160 days of pile driving. In-water construction activities would only occur during daylight hours, and typically over a 12-hour work day, up to 7 days per week.

Specific Geographic Region

The proposed activities would occur on the EAS Fuel Pier on Shemya Island, located in Section 16, Township 86 South, Range 257 West, of the Seward Meridian, Alaska. Shemya Island is a remote island in the western Aleutians. The fuel pier is located in Alcan Harbor, which opens to Shemya Pass to the west and the Bering Sea to its north and east. Alcan harbor is exposed to strong north winds. The dimensions of the new Pier footprint would be approximately 30 by 104 meters (m), or 100 by 340 feet (ft). Depths at the project site range from 5 to 10 m (16 to 33 ft). However, the area of impact would extend 40 kilometers (km), or 25 miles (mi), into the southwest portion of the Bering Sea, reaching depths of approximately 3,900 m (2.4 mi).

Shemya Island and its waters are within the Alaska Maritime National Wildlife Refuge, which if not for it being a military base, would typically be under the jurisdiction of U.S. Fish and Wildlife Service (USFWS, 2021). The fuel pier is the only pier on Shemya Island; there are no neighboring piers or docks. The next nearest developed location that is inhabited is Nikol'skoe, which is approximately 370 mi (595 km) west on Bering Island, Russia. Adak, Alaska, is approximately 400 mi (644 km) to the east in the Central Aleutians. The United States Coast Guard previously maintained a long-range navigation station on Attu Island, Alaska, 28 mi (45 km) to the west, but that site has been abandoned for several years. All former Alaska Native village sites in the region have been abandoned since World War II.

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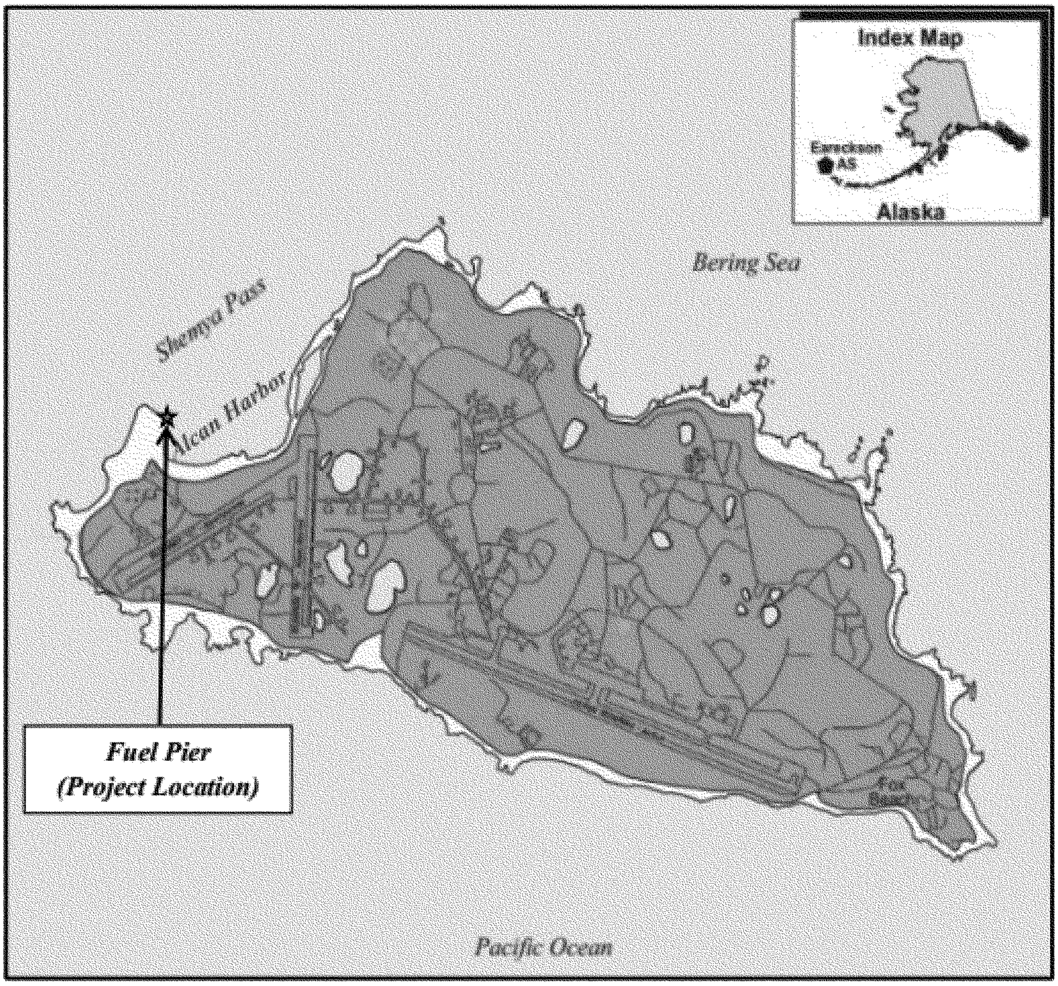

Figure 1 -- Project Location on Shemya Island, Alaska

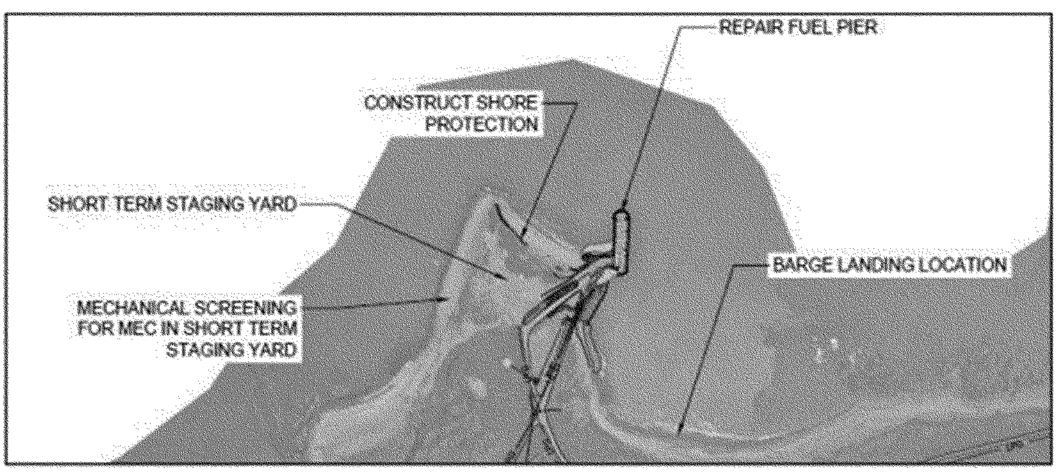

Figure 2 -- Detailed view of the Fuel Pier location on Shemya Island, Alaska

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Detailed Description of the Specified Activity

The USAF is proposing to repair the fuel pier at EAS on Shemya Island, Alaska. As noted above, this proposed IHA would authorize take associated with Year 1 of a larger 3-year project. Please refer to USAF's application for additional information about project components planned for the period beyond Year 1.

The USAF estimates that Year 1 activities would include vessel movement and mobilization; pile installation for the fuel pier, screening and clearance for Munitions and Explosives of Concern (MEC) (see explanation below), remote equipment operations, removal of existing precast dolosse from the western shoreline, and crushing/recycling concrete.

The replacement fuel pier is within a Military Munitions Response Program (MMRP) site and although prior surveys and clearance of the Alcan Harbor Ordnance MMRP site have been completed, there is potential for munitions and explosives of concern to migrate within the site. As such, magnetometer-based surveys for MEC will be conducted prior to ground disturbing activities within the boundaries of the MMRP site to detect anomalies and inform follow-on actions to the extent practicable. Excavated material from in-water work will be further screened and cleared to remove any potential MEC. The material would be excavated with a clamshell bucket and placed in a hopper that deposits the material onto a conveyor leading to a 6-inch remote controlled grizzly rock screener. Subsequently, material six inches or larger would be inspected by UXO technicians for MEC prior to transfer by armored equipment to a screening plant with a specialized magnet belt to remove all potential metals and munitions. Cleared material would be transferred to an upland, low-grade staging area while MEC would be transferred from the construction site to the MEC storage and disposal site.

Additionally, USAF anticipates approximately five vessels (*i.e.,* tugboats towing barges) per season would be used for project activities, transiting between Seattle, WA and Shemya Island, AK, with some trips making a stop in Seward, Kodiak, or Anchorage, AK. With the exception of pile driving, these activities are not anticipated to result in take.

The proposed fuel pier replacement project would include the installation of an interlocking steel pipe combi-wall system, which will require the installation and removal of 60 30-inch (in) temporary steel pipe piles and the installation of 208 42-inch round steel interlocking pipe piles using vibratory, impact, and/or DTH methods (table 1). USAF does not plan to operate multiple hammers concurrently.

The interlocking steel pipe combi-wall system would be installed 15 ft (4.6 m) off the existing fuel pier to encapsulate most of the existing structure. The steel combi-wall system would extend approximately 560 ft (171 m) from the northern bulkhead corner, along the entire Pier berthing face, and around the northern perimeter.

Template frames for the pile wall would be installed to construct the new pier exterior structure and subsequently removed; template frames would be constructed to cantilever off the existing fuel pier structure (*i.e.,* not be placed in the water). However, up to 60 30-inch (76-cm) template piles may be installed in the water to provide additional support. A remotely operated vibratory pile driving hammer would be used to drive the piles through the bottom sediment to specified depths. It is anticipated that a diesel or hydraulic impact hammer would be utilized to achieve the specified embedment depth of 44 temporary piles. Up to six temporary piles in the southeast corner, where there is very little overburden, would likely need to be rock socketed into bedrock via a DTH.

The main component of the combi-wall system would require the installation of 208 42-inch (107-cm) interlocking permanent steel pipe piles that would be installed using vibratory and impact pile driving to specified embedment depths. The pile interlocks would be designed to transfer soil and water pressure to the interlocking steel pipe piles, which would carry most of the load. In addition to vibratory and impact pile driving, it is expected that most, if not all permanent piling will require a rock socket into the bedrock, at a minimum of 30 ft (9 m) below the mudline, using a DTH hammer and bit. The bit will be slightly larger than the outside diameter of the permanent pipe pile.

Construction of the proposed dock would follow this sequence:

1. Set one or two cantilevered templates utilizing existing fuel pier as support. These cantilevered templates would not be installed in the water. However, template piles may be installed in some areas to offer additional support (table 1).
2. Within the frame, loft and stab 6–12 each 42-inch permanent pile.
3. Within the frame, vibrate, impact, and DTH drill 42-inch diameter pipe pile. Only one pile would be driven at a time, even if two pile templates are used.
4. Remove the frame and any temporary piles and move to the next permanent pile location.
5. Repeat this process for placement of all the permanent piles.

TABLE 1—SUMMARY OF PILES TO BE INSTALLED AND REMOVED

Installation or removal	Number of piles	Impact strikers per pile	Vibratory duration per pile, minutes	DTH pile installation, duration per pile, minutes	Maximum piles per day—impact pile driving	Maximum piles per day—vibratory pile driving	Maximum piles per day—DTH pile installation	Days of installation and/or removal [a]
42-inch Interlocking Steel Pipe Piles—Permanent								
Installation	208	1,800	30	180	4	4	3	122
30-inch Steel Pipe Piles—Template								
Installation	60	900	15	150	4	4	3	17
Removal					....	4	....	....

[a] USAF estimates a total of 160 construction days to account for weather delays and mechanical issues.

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

Description of Marine Mammals in the Area of Specified Activities

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

Table 2 lists all species or stocks for which take is expected and proposed to be authorized for this activity, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or proposed to be authorized here, PBR and annual serious injury and mortality 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 2022 SARs (Young *et al.,* 2023). All values presented in table 2 are the most recent available at the time of publication and are available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments.*

TABLE 2—SPECIES LIKELY IMPACTED BY THE SPECIFIED ACTIVITIES

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N) [1]	Stock abundance (CV, N_{min}, most recent abundance survey) [2]	PBR	Annual M/SI [3]
Order Artiodactyla—Infraorder Cetacea—Mysticeti (baleen whales)						
Family Balaenopteridae						
Fin Whale	*Balaenoptera physalus*	Northeast Pacific	E, D, Y	UND (UND, UND, 2013) [4]	UND	0.6
Humpback Whale	*Megaptera novaeangliae*	Western North Pacific	E, D, Y	1,084, (0.088, 1,007, 2006)	3	2.8
		Mexico—North Pacific	T, D, Y	N/A (N/A, N/A, 2006) [5]	UND	0.56
		Hawai'i	-, -, N	11,278 (0.56, 7,265, 2020)	127	19.6
Minke Whale	*Balaenoptera acutorostrata*	Alaska	-, -, -	N/A (N/A, N/A, N/A) [6]	UND	0
Odontoceti (toothed whales, dolphins, and porpoises)						
Family Physeteridae						
Sperm whale	*Physeter macrocephalus*	North Pacific	E, D, Y	UND (UND, UND, 2015) [7]	UND	3.5
Family Ziphiidae (beaked whales)						
Baird's beaked whale	*Berardius bairdii*	Alaska	-, -, N	N/A (N/A, N/A, N/A) [8]	N/A	0
Stejneger's Beaked Whale.	*Mesoplodon stejnegeri*	Alaska	-, -, N	N/A (N/A, N/A, N/A) [8]	N/A	0
Family Delphinidae						
Killer Whale	*Orcinus orca*	ENP Alaska Resident Stock	-, -, N	1,920 (N/A, 1,920, 2019)	19	1.3
		ENP Gulf of Alaska, Aleutian Islands, and Bering Sea.	-, -, N	587 (N/A, 587, 2012)	5.9	0.8
Family Phocoenidae (porpoises)						
Dall's Porpoise	*Phocoenoides dalli*	Alaska	-, -, N	UND (UND, UND, 2015) [9]	UND	37
Harbor Porpoise	*Phocoena phocoena*	Bering Sea	-, -, Y	UNK (UNK, N/A, 2008) [10]	UND	0.4
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, U.S	E, D, Y	52,932 (N/A, 52,932, 2019)	318	254
Family Phocidae (earless seals)						
Harbor Seal	*Phoca vitulina*	Aleutian Islands	-, -, N	5,588 (N/A, 5,366, 2018)	97	90

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

[2] NMFS marine mammal stock assessment reports online at: *https://www.nmfs.noaa.gov/pr/sars/.* CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable (explain if this is the case).

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

[4] 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 upon this estimate and the Nmin, the PBR value is likely negatively biased for the entire stock.

[5] Abundance estimates are based upon data collected more than 8 years ago and therefore current estimates are considered unknown.

[6] Reliable population estimates are not available for this stock. Please see Friday *et al.* (2013) and Zerbini *et al.* (2006) for additional information on numbers of minke whales in Alaska.

[7] 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 negatively biased minimum abundance estimate.

[8] Reliable abundance estimates for this stock are currently unavailable.

[9] 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.

[10] The best available abundance estimate and Nmin are 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. PBR for this stock is undetermined due to this estimate being older than 8 years.

As indicated above, all 12 species (with 15 managed stocks) in table 2 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 project area are included in table 3–1 of the IHA application. While blue whale, gray whale, North Pacific right whale, Pacific white-sided dolphin, and ribbon seal could occur in the area, 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. These species all have extremely low abundance and most are observed in areas outside of the project area.

In addition, northern sea otter may be found the western Aleutians. However, this species is managed by the U.S. Fish and Wildlife Service and is not considered further in this document.

Fin Whale

Fin whales are found in polar, temperate, and subtropical waters worldwide, where they inhabit deep, offshore waters and often travel in open seas away from coasts. Fin whales in the northeast Pacific are typically distributed off the coast of the Gulf of Alaska and the Bering and Chukchi Seas. In general, the spring and early summer are spent in cold, high latitude feeding waters as far north as Chukchi Sea, the Gulf of Alaska, Prince William Sound, along the Aleutian Islands, and west of Kodiak Island. In the fall, fin whales return to low latitudes for the winter breeding season, though they may remain in residence in their high latitude ranges if food resources remain plentiful.

Although typically observed in groups of 6 to 10 individuals, fin whales are also sighted in pairs, alone, or in feeding aggregations up to 100 individuals. In the central eastern Bering Sea, most sightings have occurred along the continental shelf break in a zone of high prey abundance (Clark, 2008a). Across 119 days of three distinct marine mammal surveys completed from Shemya Island between 2016 and 2021, no fin whales were observed in the project area (see application). Note that Alcan harbor was included in island-wide monitoring of two of these surveys, and the third survey effort was conducted exclusively at the project site during an emergency repair of the fuel pier.

Humpback Whale

On September 8, 2016, NMFS divided the once single population into 14 distinct population segments (DPS) under the ESA, removed the species-level listing as endangered, and, in its place, listed four DPSs as endangered and one DPS as threatened (81 FR 62259, September 8, 2016). The remaining nine DPSs were not listed. There are four DPSs in the North Pacific, including the Western North Pacific and Central America, which are listed as endangered, Mexico, which is listed as threatened, and Hawaiʻi, which is not listed.

The 2022 Alaska and Pacific SARs described a revised stock structure for humpback whales which modifies the previous stocks designated under the MMPA to align more closely with the ESA-designated DPSs (Caretta *et al.,* 2023; Young *et al.,* 2023). Specifically, the three previous North Pacific humpback whale stocks (Central and Western North Pacific stocks and a CA/OR/WA stock) were replaced by five stocks, largely corresponding with the ESA-designated DPSs. These include the Western North Pacific and Hawaiʻi stocks and a Central America/Southern Mexico—CA/OR/WA stock (which corresponds with the Central America DPS). The remaining two stocks, corresponding with the Mexico DPS, are the Mainland Mexico—CA/OR/WA and Mexico—North Pacific stocks (Caretta *et al.,* 2023; Young *et al.,* 2023). The former stock is expected to occur along the west coast from California to southern British Columbia, while the latter stock may occur across the Pacific, from northern British Columbia through the Gulf of Alaska and Aleutian Islands/Bering Sea region to Russia.

The Hawaiʻi stock consists of one demographically independent population (DIP)—Hawaiʻi—Southeast Alaska/Northern British Columbia DIP and one unit—Hawaiʻi—North Pacific unit, which may or may not be composed of multiple DIPs (Wade *et al.,* 2021). The DIP and unit are managed as a single stock at this time, due to the lack of data available to separately assess them and lack of compelling conservation benefit to managing them separately (NMFS, 2023; NMFS, 2019; NMFS, 2022b). The DIP is delineated based on two strong lines of evidence: genetics and movement data (Wade *et al.,* 2021). Whales in the Hawaiʻi—Southeast Alaska/Northern British Columbia DIP winter off Hawaiʻi and largely summer in Southeast Alaska and Northern British Columbia (Wade *et al.,* 2021). The group of whales that migrate from Russia, western Alaska (Bering Sea and Aleutian Islands), and central Alaska (Gulf of Alaska excluding Southeast Alaska) to Hawaiʻi have been delineated as the Hawaiʻi—North Pacific unit (Wade *et al.,* 2021). There are a small number of whales that migrate between Hawaiʻi and southern British Columbia/Washington, but current data and analyses do not provide a clear understanding of which unit these whales belong to (Wade *et al.,* 2021; Caretta *et al.,* 2023; Young *et al.,* 2023).

The Mexico—North Pacific unit is likely composed of multiple DIPs, based on movement data (Martien *et al.,* 2021; Wade, 2021; Wade *et al.,* 2021). However, because currently available data and analyses are not sufficient to delineate or assess DIPs within the unit, it was designated as a single stock (NMFS, 2023a; NMFS, 2019; NMFS, 2022c). Whales in this stock winter off Mexico and the Revillagigedo Archipelago and summer primarily in Alaska waters (Martien *et al.,* 2021; Carretta *et al.,* 2023; Young *et al.,* 2023).

The Western North Pacific stock consists of two units—the Philippines/Okinawa—North Pacific unit and the Marianas/Ogasawara—North Pacific unit. The units are managed as a single stock at this time, due to a lack of data. Recognition of these units is based on movements and genetic data (Oleson *et al.,* 2022). Whales in the Philippines/Okinawa—North Pacific unit winter near the Philippines and in the Ryukyu Archipelago and migrate to summer feeding areas primarily off the Russian mainland (Oleson *et al.,* 2022). Whales that winter off the Mariana Archipelago, Ogasawara, and other areas not yet identified and then migrate to summer feeding areas off the Commander Islands, and to the Bering Sea and Aleutian Islands comprise the Marianas/Ogasawara—North Pacific unit.

Humpback whales that occur in the project area are predominantly members of the Hawai'i stock, which corresponds to the Hawaiʻi DPS (91 percent probability in the Aleutian Islands), and is not listed under the ESA. However, members of the Mexico North Pacific stock, which include the Mexico DPS and is listed as threatened, have a small potential to occur in the project location (7 percent probability in the Aleutians), and the Western North Pacific Stock, which corresponds to the Western North Pacific DPS and is listed as endangered, have an even smaller potential to occur in the project location (2 percent, Wade, 2021).

Humpback whales migrate to the North Pacific, including the Aleutian Islands, to feed after months of fasting in equatorial breeding grounds. Humpback whales generally travel alone or in small groups that persist only a few hours. Groups may stay together for longer in the summer in order to feed cooperatively. During the 2016 and 2021 Shemya Island marine mammal surveys, seven humpback whales were observed in the project area (see application).

Minke Whale

Minke whales occur in polar, temperate, and tropical waters worldwide in a range extending from the ice edge in the Arctic during the summer to near the equator during winter. However, they are known to prefer temperate to boreal waters due to the abundance of prey (Guerrero, 2008b). When comparing distribution and abundance in the years 2002, 2008, and 2010, it was found that that minke whales were scattered throughout all oceanographic domains: coastal, middle shelf, and outer shelf/slope (Muto *et al.,* 2021). The minke whale mostly migrates seasonally and can travel long distances; although, some minke whale individuals and stocks have resident home ranges and are not highly migratory (Guerrero, 2008b). The Alaska Stock of minke whales are migratory and are common in the waters of the Bering Sea, Gulf of Alaska, and Southeast Alaska in the spring and summer (NMFS, 2023c).

The distribution of minke whales vary according to age, sex, and reproductive status. Older mature males are commonly found in small social groups around the ice edge of polar regions during the summer feeding season. Comparatively, adult females will migrate farther into the higher latitudes but generally remain in coastal waters. Immature minke whales tend to be solitary and stay in lower latitudes during the summer (Guerrero, 2008b). Although the minke whale tends to be solitary or in groups of two to three individuals, they can congregate in larger groups containing up to 400 individuals at the higher latitude foraging areas (NOAA, 2021). During surveys in Alaska, minke whales are predominately observed alone (Wade *et al.,* 2003; Waite, 2003). Breeding season typically occurs from December to March, but in some regions minke whales breed year-round. When migrating north in spring and summer, they will travel along in coastal waters, whereas in fall and winter, they move farther offshore (NMFS, 2023c). In 2003, a minke whale was observed in July when a sea otter survey was being conducted at Attu Island (Doroff *et al.,* 2004), 28 mi to the west of Shemya Island. During the 2016 and 2021 Shemya Island marine mammal surveys, no minke whales were observed in the project area (see application).

Sperm Whale

Sperm whales are the most sighted and recorded cetacean in marine mammal surveys in high latitude regions of the North Pacific, including the Bering Sea and the Aleutian Islands (Young *et al.,* 2023). However, sperm whales exhibit sex-specific latitudinal segregation, where females and their young form social groups and are usually found in temperate and tropical latitudes, while males forage at higher latitudes and tends to only return to tropical and subtropical regions to breed (Whitehead, 2009). As such, males are more frequently encountered in the Aleutians than females; social groups typically occur in this area only during the winter when males are less likely to be present (Posdalijian, 2023).

Sperm whales tend to occur offshore in submarine canyons at the edge of the continental shelf in water 1,000 m (3,300 ft) deep (Jaquet and Whitehead, 1996). They hunt for food during deep dives that routinely reach depths of 2,000 feet and can last for 45 minutes. Because sperm whales spend most of their time in deep waters, their diet consists of species such as squid, sharks, skates, and fish that also occupy deep ocean waters.

The Aleutian Islands are considered a biologically important area (BIA) for feeding for sperm whale (Brower, 2022). This BIA overlaps with the project area and is active April through September. The BIA scored a three for importance and intensity, and a two for data support and boundary certainty, indicating that it is of high importance, has moderately certain boundaries, and moderate data to support the identification of the BIA (see Harrison *et al.* (2023) for additional information about the scoring process used to identify BIAs). The BIA was identified as having dynamic spatiotemporal variability.

During the 2016 and 2021 marine mammal surveys completed on Shemya Island, four sperm whales were observed on a single day (see application).

Baird's Beaked Whale

Baird's beaked whale occurs in the North Pacific and Bering Sea along the Aleutian Islands as well as the adjacent waters of the Gulf of Alaska, Sea of Okhotsk, and the Sea of Japan (Guerrero, 2008a). Within the North Pacific Ocean, Baird's beaked whales have been sighted north of 30° N in deep, cold waters over the continental shelf (Muto *et al.,* 2021), particularly in regions with 1,000 m (3,300 ft) or deeper contours, submarine canyons, and seamounts. However, they can be occasionally found in nearshore environments along narrow continental shelves. Baird's beaked whales migrate seasonally based on the temperature of surface water (NMFS, 2023a). They occur in waters of the continental slope during summer and fall months when surface water temperatures are the highest (Muto *et al.,* 2021). They have also been observed in the nearshore waters of the Bering Sea and Okhotsk Sea in May to October (NMFS, 2023a). Baird's beaked whales are usually found in tight social groups (schools or pods) averaging between five and 20 individuals, but they have occasionally been observed in larger groups of up to 50 animals.

During the 2016 and 2021 Shemya Island marine mammal surveys, no Baird's beaked whales were observed in the project area (see application).

Stejneger's Beaked Whale

Stejneger's beaked whale prefer cold, temperate, and subarctic waters of the North Pacific Ocean and are generally found in deep, offshore waters on or beyond the continental slope between 2,500 and 5,000 ft. Most records are from Alaskan waters, and the Aleutian Islands appear to be its center of distribution (Mead, 1989; Wade *et al.,* 2003).They are usually found in small, tight social groups averaging between 5 and 15 individuals. This whale is rarely sighted at sea, but they have been detected acoustically in the Aleutian waters in summer, fall, and spring (Baumann-Pickering *et al.,* 2014; Muto, 2021). Most data on Stejneger's beaked whale have been collected and inferred from stranded individuals. Though most strandings in the Aleutians occur in the central portion of the island chain, there was a stranding of an adult male Stejneger's beaked whale on the southeast coast of Shemya Island on September 1, 2005 (Savage *et al.,* 2021). During the 2016 and 2021 marine mammal surveys completed on Shemya Island, no Stejneger's beaked whale were observed.

Killer Whale

Killer whales occur in every ocean in the world and are the most widely distributed of all cetaceans. Along the west coast of North America, killer whales occur along the entire Alaska coast (Braham and Dahlheim, 1982).

This proposed IHA considers only the Eastern North Pacific Alaska Resident stock (Alaska Resident stock), and the Eastern North Pacific Gulf of Alaska, Aleutian Islands and Bering Sea Transient stocks because all other killer whale stocks occur outside the geographic area under consideration (Muto *et al.,* 2021).

There are three distinct ecotypes, or forms, of killer whales recognized: Resident, Transient, and Offshore. The three ecotypes differ morphologically, ecologically, behaviorally, and genetically. Spatial distribution has been shown to vary among the different ecotypes, with resident and, to a lesser extent, transient killer whales more commonly observed along the continental shelf, and offshore killer whales more commonly observed in pelagic waters (Rice *et al.,* 2021).

When comparing movement, residents tend to have more predictable movements and the smallest home ranges and they return annually, whereas transients are less predictable due to their larger home ranges and quick transits through local areas. Offshore ecotypes have the largest home ranges that are generally farther offshore compared to the other two ecotypes. (Zimmerman and Small, 2008). Resident killer whales live in large, stable groups ranging normally from 5 to 50 individuals and up to 100 or more. They feed only on fish, especially Pacific salmon. Transient killer whales, on the other hand, hunt marine mammals, like pinnipeds and porpoises, in smaller groups of 10 individuals or less (Forney and Wade, 2006).

During the 2016 and 2021 marine mammal surveys at Shemya Island, Killer whales were frequently documented within the project area and around the island during these surveys. Within the project area alone, the average daily observation rate was 0.6 killer whales (see application).

Dall's Porpoise

Dall's porpoises are widely distributed across the North Pacific Ocean, ranging from Japan to southern California and up to Alaska and the Bering Sea in coastal and pelagic waters between 28° N and 65° N (Wells, 2008; Muto *et al.,* 2021). They inhabit all strata on the continental shelf, slope, and pelagic waters with the greatest densities occurring in deeper inshore and slope habitats (Rone *et al.,* 2017). Throughout most of the eastern North Pacific they are present during all months of the year, although there may winter movements out of areas of ice like Prince William Sound and the Bering Sea or onshore-offshore movements along the west coast of the continental U.S. (Muto *et al.,* 2021). Depending on morphology/type, geography, and seasonality, they have inshore-offshore and north-south migration patterns (NMFS, 2023b).

They generally travel in groups of 10 to 20 individuals but can occur in groups with over hundreds of individuals (Wells, 2008). These groups appear to be fluid as they form and break-up during play and feeding.

During the 2016 and 2021 Shemya Island marine mammal surveys, no Dall's porpoise were observed in the project area (see application)

Harbor Porpoise

The Bering Sea stock of harbor porpoise occurs within the project area, ranging from throughout the Aleutian Islands and into all waters north of Unimak Pass. The harbor porpoise frequents nearshore waters and coastal embayments throughout their range, including bays, harbors, estuaries, and fjords less than 650 ft (198 m) deep (NMFS, 2023d). They are most often observed in groups of two or three. During the 2016 and 2021 marine mammal surveys completed on Shemya Island, one group of two to three harbor porpoise were observed (see application).

Northern Fur Seal

Northern fur seals occur from southern California north to the Bering Sea and west to the Sea of Okhotsk and Honshu Island, Japan. They are highly pelagic, spending most of their time each year alone at sea. During the summer breeding season, most of the worldwide population is found on the Pribilof Islands in the southern Bering Sea, with the remaining animals on rookeries in Russia, on Bogoslof Island in the southern Bering Sea, on San Miguel Island off southern California (Lander and Kajimura, 1982; NMFS, 1993), and on the Farallon Islands off central California. Non-breeding northern fur seals may occasionally haul out on land at other sites in Alaska, British Columbia, and on islets along the west coast of the United States (Fiscus, 1983).

During the reproductive season, adult males usually are on shore during the 4-month period from May to August, although some may be present until November. Adult females are ashore during a 6-month period (June–November). Following their respective times ashore, Alaska northern fur seals of both genders the move south and remain at sea until the next breeding season (Roppel, 1984). Adult females and pups from the Pribilof Islands move through the Aleutian Islands into the North Pacific Ocean, often to the waters offshore of Oregon and California (Ream *et al.,* 2005). Adult males generally move only as far south as the Gulf of Alaska in the eastern North Pacific (Kajimura, 1984) and the Kuril Islands in the western North Pacific (Loughlin *et al.,* 1999). In Alaska, pups are born during the summer months and leave the rookeries in the fall, on average around mid-November. They generally remain at sea for 22 months before returning to land (Kenyon and Wilke, 1953).

During the 2016 and 2021 marine mammal surveys completed on Shemya Island, no northern fur seals were observed (see application).

Steller Sea Lion

Steller sea lions in the project area are anticipated to be from the Western stock, which includes all Steller sea lions originating from rookeries west of Cape Suckling (144° W longitude). The centers of abundance and distribution for western DPS Steller sea lions are located in the Gulf of Alaska and Aleutian Islands. At sea, Steller sea lions commonly occur near the 656-ft (200-m) depth contour but have been found from nearshore to well beyond the continental shelf (Kajimura and Loughlin, 1988). Sea lions move offshore to pelagic waters for feeding excursions.

Steller sea lions are frequently observed around Shemya Island outside of the ensonified area, though only occasionally observed in low numbers in Alcan Harbor and Shemya Pass (see application). The ensonified area would intersect with the aquatic zone of Steller sea lion haulouts designated as critical habitat. The Shemya Island Major Haulout is 2.75 nmi to the east of the project site, Alaid Island Major Haulout is 5 nmi northwest of the project site, and Attu/Chirikof Point Major Haulout is 24 nmi to the northwest of the project site. However, no Steller sea lions have been observed on the Shemya Island Major Haulout during surveys completed between 2015 and 2017, and only one Steller sea lion was observed at Attu/Chirkock Point during surveys conducted during the same time frame. An average of 68 non-pups and 7 pups were observed annually during this time at Alaid Island Major Haulout (see application).

Harbor Seal

Harbor seals inhabit coastal and estuarine waters off Alaska. They haul out on rocks, reefs, beaches, and drifting glacial ice. They are generally non-migratory, with local movements associated with such factors as tides, weather, season, food availability, and reproduction (Muto *et al.,* 2021). They are opportunistic feeders and often adjust their distribution to take advantage of locally and seasonally abundant prey (Womble *et al.,* 2010; Allen and Angliss, 2015). Although they tend to be solitary when in the water, they can form groups of about 30 or less individuals of both sexes and all ages when hauling out. Harbor seals haul out to rest periodically, give birth or nurse.

Harbor seals in the project area are recognized as part of the Aleutian Island stock, occurring along the entire Aleutian island chain from Attu Island to Ugamak Island. Pupping season in the Aleutian Islands is occurs between mid-June to mid-July. (Sease, 1992). Harbor seals haul out on beaches all around Shemya Island, with largest numbers observed on the east side of the island, away from the ensonified area. However, harbor seals are occasionally observed occurring inside the ensonified area. During the 2016 and 2021 marine mammal surveys completed on Shemya Island, an average of 0.45 harbor seals were observed each day.

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 (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65-decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in table 3.

TABLE 3—MARINE MAMMAL HEARING GROUPS

[NMFS, 2018]

Hearing Group	Generalized Hearing Range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, *Kogia,* river dolphins, Cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz

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

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

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

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.

Acoustic effects on marine mammals during the specified activity can occur from impact and vibratory pile driving and removal and DTH. The effects of underwater noise from USAF's proposed activities have the potential to result in Level A harassment and Level B harassment of marine mammals.

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 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 to 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 (American National Standards Institute (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 and/or pushing 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 to 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 a 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 USAF's proposed activities on marine mammals could be generated from both non-acoustic and acoustic stressors. Potential non-acoustic stressors include the physical presence of the equipment, vessels, and personnel; however, any impacts to marine mammals are expected to primarily be acoustic in nature. Acoustic stressors include effects of heavy equipment operation during pile installation and removal and DTH.

Acoustic Impacts

The introduction of anthropogenic noise into the aquatic environment from pile driving and removal and DTH equipment is the primary means by which marine mammals may be harassed from USAF's specified activities. 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). Generally, exposure to pile driving and removal 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, auditory threshold shifts. Exposure to anthropogenic noise can also lead to non-observable physiological responses such as an increase in stress hormones. Additional noise in a marine mammal's habitat can mask acoustic cues used by marine mammals to carry out daily functions such as communication and predator and prey detection. The effects of pile driving and removal and DTH 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. mother 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.,* 2003; Southall *et al.,* 2007). Here we discuss physical auditory effects (threshold shifts) followed by behavioral effects and potential impacts on habitat.

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

Permanent Threshold Shift (PTS)—NMFS defines PTS as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). Available data from humans and other terrestrial mammals indicate that a 40-dB threshold shift approximates PTS onset (Ward *et al.,* 1958; Ward *et al.,* 1959; Ward, 1960; Kryter *et al.,* 1966; Miller, 1974; Henderson *et al.,* 2008). PTS levels for marine mammals are estimates, because there are limited empirical data measuring PTS in marine mammals (*e.g.,* Kastak *et al.,* 2008), 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), a TTS of 6 dB is considered the minimum threshold shift clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.,* 2000; Finneran *et al.,* 2000; Finneran *et al.,* 2002). As described in Finneran (2016), 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.

Currently, TTS data only exist for four species of cetaceans (bottlenose dolphin (*Tursiops truncatus*), beluga whale (*Delphinapterus leucas*), harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaeorientalis*) and five species of pinnipeds exposed to a limited number of sound sources (*i.e.,* mostly tones and octave-band noise) in laboratory settings (Finneran, 2015). TTS was not observed in trained spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to impulsive noise at levels matching previous predictions of TTS onset (Reichmuth *et al.,* 2016). In general, harbor seals and harbor porpoises have a lower TTS onset than other measured pinniped or cetacean species (Finneran, 2015). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species. No data are available on noise-induced hearing loss for mysticetes. For summaries of data on TTS in marine mammals or for further discussion of TTS onset thresholds, please see Southall *et al.* (2007), Finneran and Jenkins (2012), Finneran (2015), and table 5 in NMFS (2018).

Activities for this project include impact and vibratory pile driving, vibratory pile removal, and DTH activities. 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 threshold shift declines.

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

The following subsections provide examples of behavioral responses that provide an idea of the variability in behavioral responses that would be expected given the differential sensitivities of marine mammal species to sound and the wide range of potential acoustic sources to which a marine mammal may be exposed. Behavioral responses that could occur for a given sound exposure should be determined from the literature that is available for each species, or extrapolated from closely related species when no information exists, along with contextual factors. 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. 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 respiration, interference with or alteration of vocalization, avoidance, and flight.

Pinnipeds may increase their haul out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006). 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.

Alteration of Dive Behavior—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.,* 2013). Seals exposed to non-impulsive sources with a received sound pressure level within the range of calculated exposures (142–193 dB re 1 μPa), have been shown to change their behavior by modifying diving activity and avoidance of the sound source (Götz and Janik, 2010; Kvadsheim *et al.,* 2010). 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.

Alteration of Feeding Behavior—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; Melcón *et al.,* 2012). In addition, behavioral state of the animal plays a role in the type and severity of a behavioral response, such as disruption to foraging (*e.g.,* Silve *et al.,* 2016; Wensveen *et al.,* 2017). An evaluation of whether foraging disruptions would be likely to incur fitness consequences considers temporal and spatial scale of the activity in the context of the available foraging habitat and, in more severe cases may necessitate consideration of 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. Goldbogen *et al.* (2013) indicate that disruption of feeding and displacement could impact individual fitness and health. However, for this to be true, we would have to assume that an individual could not compensate for this lost feeding opportunity by either immediately feeding at another location, by feeding shortly after cessation of acoustic exposure, or by feeding at a later time. There is no indication this is the case here, particularly since prey would likely still be available in the environment in most cases following the cessation of acoustic exposure.

Respiration—Respiration naturally varies with different behaviors, and variations in respiration 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. Studies with captive harbor porpoises showed increased respiration rates upon introduction of acoustic alarms (Kastelein *et al.,* 2001; Kastelein *et al.,* 2006a) and emissions for underwater data transmission (Kastelein *et al.,* 2005). Various studies also have shown that species and signal characteristics are important factors in whether respiration rates are unaffected or change, 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.,* 2005; Kastelein *et al.,* 2006; Kastelein *et al.,* 2018; Gailey *et al.,* 2007; Isojunno *et al.,* 2018).

Vocalization—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 (*Orcinus orca*) have been observed to increase the length of their songs (Miller *et al.,* 2000; Fristrup *et al.,* 2003; Foote *et al.,* 2004), while right whales 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; Rolland *et al.,* 2012). Killer whales off the northwestern coast of the United States have been observed to increase the duration of primary calls once a threshold in observing vessel density (*e.g.,* whale watching) was reached, which has been suggested as a response to increased masking noise produced by the vessels (Foote *et al.,* 2004; NOAA, 2014). In some cases, however, animals may cease or alter sound production in response to underwater sound (*e.g.,* Bowles *et al.,* 1994; Castellote *et al.,* 2012; Cerchio *et al.,* 2014). Studies also demonstrate that even low levels of noise received far from the noise source can induce changes in vocalization and/or behavioral responses (Blackwell *et al.,* 2013; Blackwell *et al.,* 2015).

Avoidance—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). Avoidance is qualitatively different from the flight response, but also differs in the magnitude of the response (*i.e.,* directed movement, rate of travel, *etc.*). Often avoidance is temporary, and animals return to the area once the noise has ceased. Acute avoidance responses have been observed in captive porpoises and pinnipeds exposed to a number of different sound sources (Kastelein *et al.,* 2001; Finneran *et al.,* 2003; Kastelein *et al.,* 2006a; Kastelein *et al.,* 2006b; Kastelein *et al.,* 2015b; Kastelein *et al.,* 2015c; Kastelein *et al.,* 2018). Short-term avoidance of seismic surveys, low frequency emissions, and acoustic deterrents have also been noted in wild populations of odontocetes (Bowles *et al.,* 1994; Goold, 1996; Goold and Fish, 1998; Morton and Symonds, 2002; Hiley *et al.,* 2021) and to some extent in mysticetes (Malme *et al.,* 1984; McCauley *et al.,* 2000; 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).

Forney *et al.* (2017) described the potential effects of noise on marine mammal populations with high site fidelity, including displacement and auditory masking. In cases of western gray whales (*Eschrichtius robustus*) and beaked whales (*Ziphius cavirostris*), anthropogenic effects in areas where they are resident or exhibit site fidelity could cause severe biological consequences, in part because displacement may adversely affect foraging rates, reproduction, or health, while an overriding instinct to remain in the area could lead to more severe acute effects. Avoidance of overlap between disturbing noise and areas and/or times of particular importance for sensitive species may be critical to avoiding population-level impacts because (particularly for animals with high site fidelity) there may be a strong motivation to remain in the area despite negative impacts.

Flight Response—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). The result of a flight response could range from brief, temporary exertion and displacement from the area where the signal provokes flight to, in extreme cases, marine mammal strandings (Evans and England, 2001). There are limited data on flight response for marine mammals in water; however, there are examples of this response in species on land. For instance, the probability of flight responses in Dall's sheep *Ovis dalli dalli* (Frid, 2003), hauled out ringed seals (*Phoca hispida*) (Born *et al.,* 1999), Pacific brant (*Branta bernicla nigricans*), and Canada geese (*B. canadensis*) increased as a helicopter or fixed-wing aircraft more directly approached groups of these animals (Ward *et al.,* 1999). 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 observed in marine mammals, but studies involving fish and terrestrial animals have shown that increased vigilance may substantially reduce feeding rates and efficiency (*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).

Many animals perform vital functions, such as feeding, resting, traveling, and socializing, on a diel cycle (24-hour cycle). Disruption of such functions resulting from reactions to stressors such as sound exposure are more likely to be significant if they last more than one diel cycle or recur on subsequent days (Southall *et al.,* 2007). Consequently, a behavioral response lasting less than 1 day and not recurring on subsequent days is not considered particularly severe unless it could directly affect reproduction or survival (Southall *et al.,* 2007). Note that there is a difference between multi-day substantive behavioral reactions and multi-day anthropogenic activities. For example, just because an activity lasts for multiple days does not necessarily mean that individual animals are either exposed to activity-related stressors for multiple days or, further, exposed in a manner resulting in sustained multi-day substantive behavioral responses.

To assess the strength of behavioral changes and responses to external sounds and SPLs associated with changes in behavior, Southall *et al.* (2007) developed and utilized a severity scale, which is a 10-point scale ranging from no effect (labeled 0), effects not likely to influence vital rates (low; labeled from one to three), effects that could affect vital rates (moderate; labeled from four to six), to effects that were thought likely to influence vital rates (high; labeled from seven to nine). Southall *et al.* (2021) updated the severity scale by integrating behavioral context (*i.e.,* survival, reproduction, and foraging) into severity assessment. For non-impulsive sounds (*i.e.,* similar to the sources used during the proposed action), data suggest that exposures of pinnipeds to sources between 90 and 140 dB re 1 μPa do not elicit strong behavioral responses; no data were available for exposures at higher received levels for Southall *et al.* (2007) to include in the severity scale analysis. Reactions of harbor seals were the only available data for which the responses could be ranked on the severity scale. For reactions that were recorded, the majority (17 of 18 individuals/groups) were ranked on the severity scale as a 4 (defined as moderate change in movement, brief shift in group distribution, or moderate change in vocal behavior) or lower. The remaining response was ranked as a 6 (defined as minor or moderate avoidance of the sound source).

Habituation—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.,* 2003). 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, 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; NRC, 2003; Wartzok *et al.,* 2003). 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 impulsive sound sources (typically seismic airguns or acoustic harassment devices) have been varied but often consist of avoidance behavior or other behavioral changes suggesting discomfort (Morton and Symonds, 2002; Richardson *et al.,* 1995; Nowacek *et al.,* 2007).

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 these projects based on observations of marine mammals during previous, similar projects.

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

Airborne Acoustic Effects—Pinnipeds that occur near the project site could be exposed to airborne sounds associated with pile driving and removal that have the potential to cause behavioral harassment, depending on their distance from pile driving activities. Cetaceans are not expected to be exposed to airborne sounds that would result in harassment as defined under the MMPA. Airborne noise would primarily be an issue for pinnipeds that are swimming or hauled out near the project 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 likely previously have been 'taken' because of exposure to underwater sound above the behavioral harassment thresholds, which are generally 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 additional incidental take resulting from airborne sound for pinnipeds is warranted, and airborne sound is not discussed further.

Marine Mammal Habitat Effects

USAF's proposed construction activities could have localized, temporary impacts on marine mammal habitat, including prey, by increasing in-water sound pressure levels and slightly decreasing water quality. Increased noise levels may affect acoustic habitat (see *Masking* discussion above) and adversely affect marine mammal prey in the vicinity of the project areas (see discussion below). Elevated levels of underwater noise would ensonify the project areas where both fishes 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 Construction Effects on Potential Prey—Construction activities would produce continuous (*i.e.,* vibratory pile driving and DTH) and intermittent (*i.e.,* impact driving and DTH) sounds. 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. 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 and Mann, 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 that 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; several are based on studies in support of large, multiyear bridge construction projects (*e.g.,* Scholik and Yan, 2001; Scholik and Yan, 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).

SPLs of sufficient strength have been known to cause injury to fish and fish mortality. 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 to 6 dB was recoverable within 24 hours for one species. Impacts would be most severe when the individual fish is close to the source and when the duration of exposure is long. Injury caused by barotrauma can range from slight to severe and can cause death, and is most likely for fish with swim bladders. Barotrauma injuries have been documented during controlled exposure to impact pile driving (Halvorsen *et al.,* 2012b; Casper *et al.,* 2013).

The most likely impact to fishes from pile driving activities at the project area would be temporary behavioral avoidance of the area. The duration of fish avoidance of this area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution, and behavior is anticipated.

Construction activities have the potential to have adverse impacts on forage fish in the project area in the form of increased turbidity. Forage fish form a significant prey base for many marine mammal species that occur in the project area. Turbidity within the water column has the potential to reduce the level of oxygen in the water and irritate the gills of prey fish in the proposed project area. However, fish in the proposed project area would be able to move away from and avoid the areas where increase turbidity may occur. Given the limited area affected and ability of fish to move to other areas, any effects on forage fish are expected to be minor or negligible.

In summary, given the short daily duration of sound associated with individual pile driving and removal events and the relatively small areas being affected, pile driving and removal activities associated with the proposed actions 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 activities 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 this IHA, which will inform both NMFS' consideration of ''small numbers,'' and the negligible impact determinations.

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.,* impact and vibratory pile driving and removal and DTH) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for mysticetes and/or high frequency species and/or phocids because predicted auditory injury zones are larger than for mid-frequency species and/or otariids. Auditory injury is unlikely to occur for other groups. 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 thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the proposed take estimates.

Acoustic Thresholds

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

Level B Harassment—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.,* frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.,* bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.,* Southall *et al.,* 2007; Southall *et al.,* 2021; Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1 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. USAF's proposed activity includes the use of continuous (vibratory pile driving and removal and DTH) and impulsive (impact pile driving and DTH) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μPa is/are applicable.

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

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

marine-mammal-acoustic-technical-guidance.

TABLE 4—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

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

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

Note: Peak sound pressure (L_{pk}) has a reference value of 1 μPa, and cumulative sound exposure level (L_E) has a reference value of 1μPa²s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.,* varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that 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.,* pile driving and removal and DTH). The maximum (underwater) area ensonified above the thresholds for behavioral harassment referenced above is 1286 km² (496 mi²), and the calculated distance to the farthest behavioral harassment isopleth is approximately 39,811 m (24,737.4 mi).

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 piles available in the literature. Source levels for each pile size and activity are presented in table 5. Source levels for vibratory installation and removal of piles of the same diameter are assumed to be the same.

NMFS recommends treating DTH systems as both impulsive and continuous, non-impulsive sound source types simultaneously. Thus, impulsive thresholds are used to evaluate Level A harassment, and continuous thresholds are used to evaluate Level B harassment. With regards to DTH mono-hammers, NMFS recommends proxy levels for Level A harassment based on available data regarding DTH systems of similar sized piles and holes (Denes *et al.,* 2019; Reyff and Heyvaert, 2019; Reyff, 2020; Heyvaert and Reyff, 2021) (table 1 includes number of piles and duration; table 5 includes sound pressure and sound exposure levels for each pile type).

TABLE 5—ESTIMATES OF MEAN UNDERWATER SOUND LEVELS GENERATED DURING VIBRATORY AND IMPACT PILE INSTALLATION, DTH, AND VIBRATORY PILE REMOVAL

Continuous sound sources	SSL at 10 m dB rms	Literature source
Vibratory Hammer		
42-inch steel piles	168.2	Port of Anchorage Test Pile Program (Table 16 in Austin *et al.,* 2016).
30-inch steel piles	166	* NMFS Analysis (C. Hotchkin, April 24, 2023).
DTH		
42-inch steel piles	174	Reyff & Heyvaert, 2019; Reyff, 2020.
30-inch steel piles	174	Reyff & Heyvaert, 2019; Reyff, 2020.

Impulsive sound sources	dB rms	dB SEL	dB peak	Literature source
Impact Hammer				
42-inch steel piles	192	179	213	Caltrans, 2020.
30-inch steel piles	191	177	212	Caltrans, 2020.
DTH				
42-inch steel piles	N/A	164	194	Reyff & Heyvaert, 2019; Reyff, 2020; Denes *et al.,* 2019.

Impulsive sound sources	dB rms	dB SEL	dB peak	Literature source
30-inch steel piles	N/A	164	194	Reyff & Heyvaert, 2019; Reyff, 2020; Denes *et al.,* 2019.

Note: dB peak = peak sound level; DTH = down-the-hole drilling; rms = root mean square; SEL = sound exposure level.
* NMFS generated this source level by completing a completed a comprehensive review of source levels relevant to Southeast Alaska; NMFS compiled all available data from Puget Sound and Southeast Alaska and adjusted the data to standardize distance from the measured pile to 10 m. NMFS then calculated average source levels for each project and for each pile type. NMFS weighted impact pile driving project averages by the number of strikes per pile following the methodology in Navy (2015).

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

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

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 transmission loss, a practical spreading value of 15 is used as the transmission loss coefficient in the above formula. Site-specific transmission loss data for the Shemya Island 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 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, 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 PTS. Inputs used in the optional User Spreadsheet tool, and the resulting estimated isopleths, are reported below.

TABLE 6—USER SPREADSHEET INPUTS

	Vibratory		Impact		DTH	
	30-inch steel piles	42-inch steel piles	30-inch steel piles	42-inch steel piles	30-inch steel piles	42-inch steel piles
	Installation or removal	Installation	Installation	Installation	Installation	Installation
Spreadsheet Tab Used	A.1) Vibratory Pile Driving	A.1) Vibratory Pile Driving	E.1) Impact Pile Driving	E.1) Impact Pile Driving	E.2) DTH Pile Driving	E.2) DTH Pile Driving
Source Level (SPL)	166 RMS	168.2 RMS	177 SEL	179 SEL	174 RMS, 164 SEL	174 RMS, 164 SEL
Transmission Loss Coefficient	15	15	15	15	15	15
Weighting Factor Adjustment (kHz)	2.5	2.5	2	2	2	2
Activity Duration per day (minutes)	60	120	120	180	150	180
Strike Rate per second					10	10
Number of strikes per pile			900	1,800		
Number of piles per day	4	4	4	4	3	3
Distance of sound pressure level measurement	10	10	10	10	10	10

TABLE 7—LEVEL A HARASSMENT AND LEVEL B HARASSMENT ISOPLETHS FROM VIBRATORY AND IMPACT PILE DRIVING AND DTH

Pile type	Level A harassment isopleths (m)					Level B harassment isopleth (m)
	LF	MF	HF	PW	OW	
Vibratory						
42-inch steel pipe piles	32.7	2.9	48.4	19.9	1.4	16,343
30-inch Steel pipe piles	14.7	1.3	21.8	8.9	0.6	11,659
DTH						
42-inch Steel pipe piles	2,549.4	90.7	3,036.7	1,364.3	99.3	39,811
30-inch Steel pipe piles	2,257.6	80.3	2,689.2	1,208.2	88.0	39,811
Impact						
42-inch steel pipe piles	2,015.1	71.7	2,400.3	1,078.4	78.5	1,359
30-inch Steel pipe piles	933.8	33.2	1,112.3	499.7	36.4	1,166

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. We describe how the information provided is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and proposed for authorization.

As described above, for some species (humpback whale, killer whale, Steller sea lion and harbor seal) observations within the project area from the prior monitoring were available to directly inform the take estimates, while for other species (fin whale, minke whale, sperm whale, Baird's beaked whale, Stejneger's beaked whale, Dall's porpoise, harbor porpoise and northern fur seal) they were not. Prior surveys include Protected Species Observer (PSO) monitoring completed at the project site on 60 days between June and August 2021 during the emergency fuel pier repair, island-wide faunal surveys completed by the USACE Engineer Research Development Center (ERDC) across 33 days between 2016 and 2019 (primarily in the spring and fall), and island-wide marine mammal surveys completed by the USACE Civil Works Environmental Resource Section on 26 days between May and October 2021. From all three surveys, data that were collected within the project area are primarily the basis for the take estimates because those data best represents what might be encountered there. Average group sizes used to inform Level B take estimates (which also underlie the estimates for Level A harassment) for all species with prior observations in the project area are primarily based on those data. Alternate methods utilizing average group sizes informed primarily by Alaska's Wildlife Notebook Series are used for species without prior observations.

Also of note, while the results are not significantly different, in some cases we recommended modified methods for estimating take from those presented by the applicant and have described them below. A summary of proposed take, including as a percentage of population for each of the species, is shown in table 8.

Fin Whale

No fin whale were reported during monitoring conducted for the EAS fuel pier emergency repair completed in 2021, nor during other surveys completed from Shemya Island (see application). Accordingly, average group size, estimated group size based on information shared in the Alaska Wildlife Notebook Series (Clark 2008a), is used as the basis for the take estimates.

USAF requested 17 takes of fin whales by Level B harassment, using a calculation based on of 0.002 groups of eight fin whales per hour of construction activity. NMFS concurs with USAF's predicted group size of fin whale (8 individuals), but since there are no observations of this species from Shemya Island, NMFS finds it more appropriate to estimate take by Level B harassment using a less granular occurrence estimate (monthly) rather than USAF's hourly occurrence estimate. Specifically, 1 group of 8 fin whales is predicted every 2 construction months, based on the applicant's prediction that this species would be rare in the project area. The duration of the construction is 160 days ($2.65 \times$ the basic 60 day period) and 8 * 2.65 = 21 takes by Level B harassment).

Although the shutdown zone is larger than the Level A harassment zone for low frequency cetaceans, USAF indicates that at ≥2,000 m, it becomes more challenging to reliably detect low frequency cetaceans in some environmental conditions, and therefore it is possible that a fin whale could enter the Level A harassment zone during DTH activities and stay long enough to incur PTS before USAF detects the animal and shuts down. As such, USAF requested and NMFS proposed to authorize a small amount of take by Level A harassment of fin whales. NMFS calculated takes by Level A harassment by first determining the proportion of the area of largest Level A harassment zone (42-inch DTH, 2,549 m) that occurs beyond the readily observable 2,000 m from the pile driving location (*i.e.,* $7.5\ km^2 - 5\ km^2/7.5\ km^2 = 0.33$). This ratio was multiplied by the estimated fin whale exposures, which is generally one group of eight fin whale that would occur every 2 construction months (or 60 days, adjusted by 1.2 to account for the 70 days that DTH activities are planned). Multiplying these factors (8 * 1.2 * 0.33) results in = 3 takes by Level A harassment).

Any individuals exposed to the higher levels associated with the potential for PTS closer to the source might also be behaviorally disturbed, however, for the purposes of quantifying take we do not count those exposures of one individual as both a Level A harassment take and a Level B harassment take, and therefore takes by Level B harassment calculated as described above are further modified to deduct the proposed amount of take by Level A harassment (*i.e.,* $21 - 3 = 18$).

Therefore, NMFS proposes to authorize 3 takes by Level A harassment and 18 takes by Level B harassment for fin whales, for a total of 21 takes.

Humpback Whale

Across 119 days of marine mammal surveys completed from Shemya Island between 2016 and 2021, seven humpback whales were observed in the project area. The average group size for humpback whales detected in the project area was 2 humpback whales per group detected.

For estimating take by Level B harassment where monitoring data confirmed the presence of the marine mammal species, NMFS concurred with USAF's proposed approach. USAF requested take by Level B harassment by predicting that 0.07 groups of humpback whales would be sighted every hour, which was based on the applicant predicting this species would commonly occur within the project area. This was then multiplied by the average group size for humpback whales (2 individuals), to achieve an hourly humpback rate. Finally, these numbers are multiplied by the hours of construction activity. (0.07 * 2 * 1,101 = 154 takes by Level B harassment).

Although the shutdown zone is larger than the Level A harassment zone for low frequency cetaceans, USAF indicates that at ≥2,000 m, it becomes more challenging to reliably detect low frequency cetaceans in some environmental conditions, and therefore it is possible that humpback whales could enter the Level A harassment zone during DTH activities and stay long enough to incur PTS before USAF detects the animal and shuts down. As such, USAF requested and NMFS proposed to authorize a small amount of take by Level A harassment of humpback whales. NMFS calculated takes by Level A harassment by determining the proportion of the area of largest Level A harassment zone (42-inch DTH, 2,549 m) that occurs beyond 2,000 m from the pile driving location (*i.e.,* $7.5\ km^2 - 5\ km^2/7.5\ km^2 = 0.33$) and multiplying this ratio by the estimated humpback whale exposures (0.07 groups of 2 humpback whale) that would occur every construction hour that DTH activities are planned (624 hours) (0.07 * 2 * 624 * 0.33 = 29 takes by Level A harassment).

For the reasons described above, takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment (*i.e.,* $154 - 29 = 125$).

Therefore, NMFS proposes to authorize 29 takes by Level A harassment and 125 takes by Level B harassment for humpback whales, for a total of 154 takes.

Minke Whale

No minke whales were reported during monitoring conducted for the EAS fuel pier emergency repair completed in 2021, nor during other surveys completed from Shemya Island (*e.g.,* see application). Accordingly, average group size, estimated based on group size information shared in the Alaska Wildlife Notebook Series (Clark 2008a), is used as the basis for the take estimates (Guerrero 2008b).

USAF requested 7 takes of minke whales by Level B harassment, using a calculation of of 0.002 groups of three minke whales per hour of construction activity. NMFS concurs with USAF's predicted group size of minke whale (three individuals), but since there are no observations of this species from Shemya Island, NMFS finds it more appropriate to estimate take by Level B harassment using a less granular occurrence estimate (monthly) rather than USAF's hourly occurrence estimate. Specifically, one group of three minke whales is predicted every 2 construction months, based on the applicant's prediction that this species would be rare in the project area. The duration of construction is 160 days (2.65 * the basic 60 day period, which corresponds to two months) and 3 * 2.65 = 8 takes by Level B harassment.

Although the shutdown zone is larger than the Level A harassment zone for low frequency cetaceans, USAF indicates that at ≥2,000 m, it becomes more challenging to reliably detect low frequency cetaceans in some environmental conditions, and therefore it is possible that a minke whale could enter the Level A harassment zone during DTH activities and stay long enough to incur PTS before USAF detects the animal and shuts down. As such, USAF requested and NMFS proposed to authorize a small amount of take by Level A harassment of minke whales. NMFS calculated takes by Level A harassment by determining the proportion of the area of largest Level A harassment zone (42-inch DTH, 2,549 m) that occurs beyond the readily observable 2,000 m from the pile driving location (*i.e.,* $7.5\ km^2 - 5\ km^2/7.5\ km^2 = 0.33$). This ratio was multiplied by the estimated minke whale exposures, which is generally one group of three minke whales every 2 construction months (or 60 days), adjusted by 1.2 to account for the 70 days that DTH activities are planned. Multiplying these factors 1.2 * 0.33 results in 1 take by Level A harassment. Since the predicted average group size of minke whale is three, NMFS proposes to authorize three takes by Level A harassment of minke whale.

For reasons described above, takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment (*i.e.,* $8 - 3 = 5$).

Therefore, NMFS proposes to authorize three takes by Level A harassment and five takes by Level B harassment for minke whales, for a total of eight takes.

Sperm Whale

Across 119 monitoring days between 2016 and 2021, four sperm whales were observed on a single day from Shemya Island, though outside of the project area (see application).

USAF requested 27 takes of sperm whale by Level B harassment, using a calculation based on of 0.006 groups of four sperm whales per hour of construction activity. NMFS concurs with USAF's predicted group size of sperm whale (4 individuals, which corresponds to the number of sperm whales detected on a single day during Shemya Island marine mammal surveys), but since there are few observations of this species from Shemya Island, NMFS finds it more appropriate to estimate take by Level B harassment using a less granular occurrence estimate (monthly) rather than USAF's hourly occurrence estimate. Specifically, two groups of four sperm whales is predicted every 1 construction month based on sperm whales being one of the most frequently sighted marine mammals in the high latitude regions of the North Pacific, including the Bering Sea and the Aleutian Islands. The duration of the construction is 5 months and 2 * 4 * 5 = 40 takes by Level B harassment.

Due to the small Level A harassment zones (table 9), which do not reach deep water where sperm whales are expected to be encountered, coupled with the implementation of shutdown zones, which will be larger than Level A harassment zones for mid-frequency cetaceans (described in the Proposed Mitigation section), NMFS concurs with USAF's assessment that take by Level A harassment is not anticipated for sperm whale. Therefore, NMFS proposed to authorize all 40 estimated exposures as takes by Level B harassment. Takes by Level A harassment for sperm whales are not requested nor are they proposed for authorization.

Baird's Beaked Whale

Baird's beaked whales are usually found in tight social groups (schools or pods) averaging between 5 and 20 individuals, but they have occasionally been observed in larger groups of up to 50 animals. Across 119 days of marine mammal surveys completed from Shemya Island between 2016 and 2021, no observations of Baird's beaked whale were recorded (see application). Accordingly, average group size, estimated based on group size information shared in the Alaska Wildlife Notebook Series (Guerrero 2008a), is used as the basis for take estimates.

USAF requested 11 takes by Level B harassment, using a calculation based on 0.001 groups of ten Baird's beaked whales per hour of construction activity. NMFS concurs with USAF's predicted group size of Baird's beaked whale (10 individuals), but since there are no observations of this species from Shemya Island, NMFS finds it more appropriate to estimate take by Level B harassment using a less granular occurrence estimate (monthly) rather than USAF's hourly occurrence estimate. Specifically, 1 group of 10 Baird's beaked whales is predicted across the project, which is based on this species being shy and preferring deep waters and as such the applicant predicted they would be very rare in the project area. Therefore, NMFS proposes to authorize 10 takes of Baird's beaked whale by Level B harassment.

Due to the small Level A harassment zones (table 9), which do not reach deep water where Baird's beaked whales are expected to be encountered, coupled with the implementation of shutdown zones, which will be larger than Level A harassment zones for mid-frequency cetaceans (described in the Proposed Mitigation section), NMFS concurs with USAF's assessment that take by Level A harassment is not anticipated for Baird's beaked whale. Therefore, NMFS proposed to authorize all 10 estimated exposures as takes by Level B harassment. Takes by Level A harassment for Baird's beaked whales are not requested nor are they proposed for authorization.

Stejneger's Beaked Whale

Across 119 days of marine mammal surveys completed from Shemya Island between 2016 and 2021, no observations of Stejneger's beaked whale were recorded (see application). Accordingly, average group size, estimated based on group size information shared in the Alaska Wildlife Notebook Series (Guerrero 2008a), is used as the basis for take estimates.

USAF requested 9 takes of Stejneger's beaked whale by Level B harassment, using a calculation based on of 0.001 groups of eight Stejneger's beaked whales per hour of construction activity.

NMFS concurs with USAF's predicted group size of Stejneger's beaked whale (eight individuals), but since there are no observations of this species from Shemya Island, NMFS finds it more appropriate to estimate take by Level B harassment using a less granular occurrence estimate (monthly) rather than USAF's hourly occurrence estimate. Specifically, one group of eight Stejneger's beaked whales is predicted across the entirety of the project, based on this species being shy and preferring deep waters and as such the applicant predicted they would only be very rarely encountered in the project area. Therefore NMFS proposes to authorize 8 Stejneger's beaked whale by level B harassment.

Due to the small Level A harassment zones (table 9), which do not reach deep water where Stejneger's beaked whales are expected to be encountered, coupled with the implementation of shutdown zones, which will be larger than Level A harassment zones for mid-frequency cetaceans (described in the Proposed Mitigation section), NMFS concurs with USAF's assessment that take by Level A harassment is not anticipated for Stejneger's beaked whale. Therefore, NMFS proposed to authorize all eight estimated exposures as takes by Level B harassment. Takes by Level A harassment for Stejneger's beaked whales are not requested nor are they proposed for authorization.

Killer Whale

Across 119 days of marine mammal surveys completed from Shemya Island between 2016 and 2021, 69 killer whales were observed in the project area. The average group size for killer whales detected in the project area was 8 killer whales per group detected.

For estimating take by Level B harassment where monitoring data confirmed the presence of the marine mammal species, NMFS concurred with USAF's proposed approach. USAF requested take by Level B harassment by predicting that 0.02 groups of killer whales would be sighted every hour, which was based on the applicant's prediction that this species would commonly be encountered in the project area. This was then multiplied by the average group size for humpback whales (8 individuals), to achieve an hourly killer whale rate. Finally, these numbers are multiplied by the hours of construction activity. (0.02 * 8 * 1,101 = 176 takes by Level B harassment).

Due to the small Level A harassment zones (table 9), coupled with the implementation of shutdown zones, which will be larger than Level A harassment zones for mid-frequency cetaceans (described in the Proposed Mitigation section), NMFS concurs with USAF's assessment that take by Level A harassment is not anticipated for killer whale. Therefore, NMFS proposed to authorize all 176 estimated exposures as takes by Level B harassment. Takes by Level A harassment for killer whale are not requested nor are they proposed for authorization.

Dall's Porpoise

No Dall's porpoise were reported during monitoring conducted for the EAS fuel pier emergency repair completed in 2021, nor during other surveys completed from Shemya Island (see application). Dall's porpoise generally travel in groups of 10 to 20 individuals but can occur in groups with over hundreds of individuals (Wells, 2008). Accordingly, average group size, estimated based group size information shared in the Alaska Wildlife Notebook Series (Wells 2008), is used as the basis for the take estimates, is used as the basis for take estimates.

USAF requested 33 takes of Dall's porpoise by Level B harassment, using a calculation based on of 0.002 groups of 15 Dall's porpoise per hour of construction activity. NMFS concurs with USAF's predicted group size of Dall's porpoise (15 individuals), but since there are no observations of this species from Shemya Island, NMFS finds it more appropriate to estimate take by Level B harassment using a less granular occurrence estimate (monthly) rather than USAF's hourly occurrence estimate. Specifically, 1 group of 15 Dall's porpoise is predicted every 2 construction months, based on the applicant's prediction that this species would be rarely encountered in the project area. The duration of the construction is 160 days (2.65 * the basic 60 day period that corresponds to two construction months) and 15 * 2.65 = 40 takes by Level B harassment.

For most activities, NMFS calculated takes by Level A harassment by determining the ratio of the largest Level A harassment area for 42-inch DTH activities (*i.e.,* 10.2 km² for a Level A harassment distance of 3,037 m) minus the area of the proposed shutdown zone for Dall's porpoise (*i.e.,* 0.5 km² for a shutdown zone distance of 500 m) to the area of the Level B harassment isopleth (1,285.9 km²) for a Level B harassment distance of 39,811 m (*i.e.,* (10.2 km² − 0.5 km²)/1,285.9 km² = 0.008). We then multiplied this ratio by the number of estimated Dall's porpoise exposures calculated as described above for Level B harassment to determine take by Level A harassment (*i.e.,* 0.008 * 40 exposures = 0.32 takes by Level A harassment).

For Level A harassment during impact pile driving of 42-inch piles, for which the Level A harassment zone is larger than the Level B harassment zone, NMFS estimates take based on 1 group of 15 Dall's porpoise every 2 months, or 60 days, in consideration of the 52 days (0.87 of 60) of impact driving of 42-in piles (15 Dall's porpoise * 0.87 months = 13.05) for a total of 13.37 takes by Level A harassment (0.32 + 13.05 = 13).

For reasons described above, takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment (*i.e.,* 40 − 13 = 27).

Therefore, NMFS proposes to authorize 13 takes by Level A harassment and 27 takes by Level B harassment for Dall's porpoise, for a total of 40 takes.

Harbor Porpoise

Across 119 monitoring days between 2016 and 2021, one group of two to three harbor porpoise were observed from Shemya Island (see application), though outside of the project area. Average group size, estimated based on the Alaska Wildlife Notebook Series (Schmale 2008), is used as the basis for take estimates.

USAF requested 11 takes of harbor porpoise by Level B harassment, using a calculation based on of 0.01 groups of one harbor porpoise per hour of construction activity. NMFS concurs with USAF's predicted group size of harbor porpoise (1 individual), but since there are few observations of this species from Shemya Island, NMFS finds it more appropriate to estimate take by Level B harassment using a less granular occurrence estimate (monthly) rather than USAF's hourly occurrence estimate. Specifically, 3 groups of 1 harbor porpoise is predicted every 1 construction month. The duration of construction is 5 months and 3 * 5 = 15 takes by Level B harassment.

For most activities, NMFS calculated takes by Level A harassment by determining the ratio of the largest Level A harassment area for 42-inch DTH activities (*i.e.,* 10.2 km² for a Level A harassment distance of 3,037 m) minus the area of the proposed shutdown zone for harbor porpoise (*i.e.,* 0.5 km² for a shutdown zone distance of 500 m) to the area of the Level B harassment isopleth (1,285.9 km²) for a Level B harassment distance of 39,811 m (*i.e.,* (10.2 km² − 0.5 km²)/1,285.9 km² = 0.008). We then multiplied this ratio by the number of estimated harbor porpoise exposures calculated as described above for Level B harassment to determine take by Level

A harassment (*i.e.,* 0.008 * 15 exposures = 0.12 takes by Level A harassment).

For Level A harassment during impact pile driving of 42-inch piles, for which the Level A harassment zone is larger than the Level B harassment zone, NMFS estimates take based on 3 groups of 1 harbor porpoise could be taken by Level A harassment every 1 month, or 30 days in consideration of the 52 days (1.7 * 30) of impact pile driving of 42-inch piles (3 groups of1 harbor porpoise * 1.7 = 5.1) for a total of five takes by Level A harassment (0.12 + 5.1 = 5).

For reasons described above, takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment (*i.e.,* 15 − 5 = 10).

Therefore, NMFS proposes to authorize 5 takes by Level A harassment and 10 takes by Level B harassment for harbor porpoise, for a total of 15 takes.

Northern Fur Seal

USAF requested 33 takes of northern fur seal by Level B harassment using a calculation based on 0.003 groups of eight northern fur seals per hour of construction activity. NMFS disagrees with USAF's predicted group size of northern fur seal, as these animals are typically solitary when at sea. Additionally, because there are no records of northern fur seal in the area, NMFS finds it more appropriate to estimate take by Level B harassment according to a less granular occurrence estimate (monthly) rather than USAF's hourly occurrence estimate. Specifically, one group of one northern fur seal every 1 construction month is predicted and 1 * 5 = 5 takes by Level B harassment.

Due to the small Level A harassment zones (table 9), coupled with the implementation of shutdown zones, which will be larger than Level A harassment zones for otariids (described in the Proposed Mitigation section), NMFS concurs with USAF's assessment that take by Level A harassment is not anticipated for northern fur seal. Therefore, NMFS proposed to authorize all five estimated exposures as takes by Level B harassment. Takes by Level A harassment for northern fur seals are not requested nor are they proposed for authorization.

Steller Sea Lion

Steller sea lions are frequently observed around Shemya Island outside of the ensonified area, but only occasionally observed in Alcan Harbor and Shemya Pass (see application). Across 119 monitoring days between 2016 and 2021, 16 Steller sea lions were observed within the project area. The average group size for Steller sea lion detected in the project area as well as around Shemya Island was 1 Steller sea lion per detection.

For estimating take by Level B harassment where monitoring data confirmed the presence of the marine mammal species, NMFS concurred with USAF's proposed approach. USAF requested take by Level B harassment by predicting that 0.09 groups of Steller sea lion would be sighted every hour, which was based on the applicant's prediction that this species would be more commonly encountered in the project area. This was then multiplied by the average group size for Steller sea lion (1 individual), to achieve an hourly steller sea lion rate. Finally, these numbers are multiplied by the hours of construction activity. (0.09 * 1 * 1,101 = 99 takes by Level B harassment).

Due to the small Level A harassment zones (table 9), coupled with the implementation of shutdown zones, which will be larger than Level A harassment zones for otariids (described in the Proposed Mitigation section), NMFS concurs with USAF's assessment that take by Level A harassment is not anticipated for Steller sea lion. Therefore, NMFS proposed to authorize all 99 estimated exposures as takes by Level B harassment. Takes by Level A harassment for Steller sea lion are not requested nor are they proposed for authorization.

Harbor Seal

Across 119 monitoring days between 2016 and 2021, 54 harbor seals were observed within the project area. The average group size for harbor seals detected in the project area was 1 harbor seals per group.

For estimating take by Level B harassment where monitoring data confirmed the presence of the marine mammal species, NMFS concurred with USAF's proposed approach. USAF requested take by Level B harassment by predicting that 0.14 groups of harbor seals would be sighted every hour, which was based on the fact that this species is expected to more commonly occur within the project area. This was then multiplied by the average group size for harbor seal (1 individual), to achieve an hourly harbor seal rate. Finally, these numbers are multiplied by the hours of construction activity. (0.14 * 1 * 1,101 = 154 takes by Level B harassment).

NMFS initially calculated takes by Level A harassment by determining the ratio of the largest Level A harassment area for 42-inch DTH activities (*i.e.,* 2.6 km^2 for a Level A harassment distance of 1364 m) minus the area of the proposed shutdown zone for harbor seal (*i.e.,* 0.37 km^2 for a shutdown zone distance of 400 m) to the area of the Level B harassment isopleth (1,285.9 km^2) for a Level B harassment distance of 39,811 m (*i.e.,* (2.6 km^2 − 0.37 km^2)/ 1,285.9 km^2 = 0.002). We then multiplied this ratio by the number of estimated harbor seal exposures calculated as described above for Level B harassment to determine take by Level A harassment (*i.e.,* 0.002 * 154 exposures = 0.3 takes by Level A harassment).

Because harbor seals typically inhabit areas closer to shore rather than distances represented by the largest level B zone (39,811 m), NMFS determined that the method above could underestimate potential take by Level A harassment. NMFS accordingly estimated additional takes by Level A harassment by determining the ratio of harbor seals that were observed beyond the proposed shutdown zone isopleth compared to the harbor seals that were observed closer to construction activities during the EAS fuel pier emergency repair that was completed in 2021 (*i.e.,* 11/38 = 0.29 harbor seals). We then multiplied this ratio by the total number of estimated harbor seal exposures to determine take by Level A harassment (*i.e.,* 0.29 * 154 exposures = 45) for a total of 45 takes by Level A harassment (0.3 + 45 = 45.3).

For reasons described above, takes by Level B harassment were modified to deduct the proposed amount of take by Level A harassment (*i.e.,* 154 − 45 = 109).

Therefore, NMFS proposes to authorize 45 takes by Level A harassment and 109 takes by Level B harassment for harbor seal, for a total of 154 takes.

TABLE 8—PROPOSED TAKE BY STOCK AND HARASSMENT TYPE AND AS A PERCENTAGE OF STOCK ABUNDANCE

Species	Stock	Proposed authorized take		Proposed take as a percentage of stock abundance
		Level B harassment	Level A harassment	
Fin Whale	Northeast Pacific	18	3	>1
Humpback Whale	Western North Pacific	3	1	>1
	Mexico—North Pacific	9	2	1.2
Hawaiʻi	113	26	1.2	
Minke Whale	Alaska	5	3	>1
Sperm Whale	North Pacific	40	0	16.4
Baird's beaked whale	Alaska	10	0	-*
Stejneger's beaked whale	Alaska	8	0	-*
Killer whale	ENP Alaska Resident Stock	176	0	9.2
	ENP Gulf of Alaska, Aleutian Islands, and Bering Seal.			30
Dall's Porpoise	Alaska	26	13	<1
Harbor Porpoise	Bering Seal	10	5	<1
Northern Fur Seal	Eastern Pacific	5	0	<1
Steller Sea Lion	Western, U.S.	99	0	<1
Harbor Seal	Aleutian Islands	109	45	2.8

* Reliable abundance estimates for these stock are currently unavailable.

Proposed Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, and their habitat (50 CFR 216.104(a)(11)).

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

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

USAF must ensure that construction supervisors and crews, the monitoring team and relevant USAF staff are trained prior to the start of all pile driving and DTH activity, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.

Mitigation for Marine Mammals and Their Habitat

Shutdown Zones—For all pile driving/removal and DTH activities, USAF would implement shutdowns within designated zones. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones vary based on the activity type and marine mammal hearing group (table 9). In most cases, the shutdown zones are based on the estimated Level A harassment isopleth distances for each hearing group, as requested by USAF. However, in cases where it would be challenging to detect marine mammals at the Level A isopleth, (*e.g.,* for high frequency cetaceans and phocids during DTH activities and impact pile driving), smaller shutdown zones have been proposed (table 9). Additionally, USAF has agreed to implement a minimum shutdown zone of 25 m during all pile driving and removal activities and DTH.

Finally, construction supervisors and crews, PSOs, and relevant USAF staff must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 m of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction. If an activity is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone indicated in table 9 or 15 minutes have passed for delphinids or pinnipeds or 30 minutes for all other species without re-detection of the animal.

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 the harassment zone.

TABLE 9—PROPOSED SHUTDOWN ZONES

Activity	Pile diameter	Shutdown zones (m)				
		LF	MF	HF	PW	OW
Vibratory Installation or Removal	42-in	50				
	30-in	25				
DTH	42-in	2,600	100	500	400	100
	30-in	2,300	80			90
Impact Pile	42-in	2,100				80
	30-in	1,000	50			50

Protected Species Observers—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. USAF would employ at least two PSOs for all pile driving and DTH activities.

Monitoring for 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 the Level B 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 will observe the shutdown, Level A harassment, and Level B harassment 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 15 minutes have passed for delphinids or pinnipeds or 30 minutes have passed for all other species without re-detection of the animal. If a marine mammal for which Level B harassment take is authorized is present in the Level B harassment zone, activities would begin and Level B harassment take would be recorded.

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 and removal activities.

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

Proposed Monitoring and Reporting

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

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

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

Visual Monitoring—Marine mammal monitoring must be conducted in accordance with the Marine Mammal Monitoring and Mitigation Plan. Marine mammal monitoring during pile driving and removal and DTH 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 a NMFS-issued incidental 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 must also have the following additional qualifications:

• Ability to conduct field observations and collect data according to assigned protocols;

• Experience or training in the field identification of marine mammals, including 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 note 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 will be conducted by a minimum of two trained PSOs positioned at suitable vantage points. One PSO will have an unobstructed view of all water within the shutdown zone and will be stationed at or near the pier. Remaining PSOs will be placed at one or more of the observer monitoring locations identified on Figure 3–3 of the marine mammal monitoring and mitigation plan, in order to observe as much as the Level A and Level B harassment zone as possible. All PSOs will have access to 20 by 60 spotting scope on a window mount or tripod.

Monitoring will 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

USAF will 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, vibratory, DTH); (2) Total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving); and (3) For DTH drilling, duration of operation for both impulsive and non-pulse components;

• PSO locations during marine mammal monitoring;

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

• Upon observation of a marine mammal, the following information: (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 datasheets and/or raw sighting data 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 Office of Protected Resources (OPR), NMFS (*PR.ITP.MonitoringReports@noaa.gov* and *itp.fleming@noaa.gov*) and to the 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 animal(s), if alive;

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

• General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

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

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

Pile driving and DTH activities associated with the EAS fuel pier repair 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 DTH. Potential takes could occur if marine mammals are present in zones ensonified above the thresholds for Level B harassment or Level A harassment, identified above, while activities are underway.

No serious injury or mortality would be expected, even in the absence of required mitigation measures, given the nature of the activities. Further, no take by Level A harassment is anticipated for otariids and mid-frequency cetaceans, due to the application of proposed mitigation measures, such as shutdown zones that encompass Level A harassment zones for these species. The potential for harassment would be minimized through the implementation of planned mitigation measures (see Proposed Mitigation section).

Take by Level A harassment is proposed for six species (harbor porpoise, Dall's porpoise, harbor seal, fin whale, humpback whale, and minke whale) as the Level A harassment zone exceeds the size of the shutdown zones (high frequency cetaceans and phocids), or, in the case of low frequency cetaceans, the shutdown zone is so large that it is possible that a minke whale, fin whale, or humpback whale could enter the Level A harassment zone and remain within the zone for a duration long enough to incur PTS before being detected.

Any take by Level A harassment is expected to arise from, at most, a small degree of PTS (*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.

Given the small degree anticipated, any PTS potential incurred would not be expected to affect the reproductive success or survival of any individuals, much less result in adverse impacts on the species or stock.

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

As described above, NMFS expects that marine mammals would likely move away from an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice through use of soft start. USAF would also shut down pile driving activities if marine mammals enter the shutdown zones (table 9) further minimizing the likelihood and degree of PTS that would be incurred.

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 area does overlap a BIA identified as important for feeding by sperm whale (Brower *et al.,* 2022). The BIA that overlaps the project area is active April through September, which overlaps USAF's proposed work period (April to October). White the BIA is considered to be of higher importance, the area of the BIA is very large, spanning the island chain, and the project area is very small in comparison. Further sperm whales utilize deeper waters to feed, and while the Level B harassment zone does extend into deeper waters, the sound levels at the distances that overlay deeper water where sperm whales might be foraging would be of comparatively lower levels. Given the extensive options for high quality foraging area near and outside of the project area, any impacts to feeding sperm whales would not be expected to impact the survival or reproductive success of any individuals.

The ensonfied area also overlaps ESA-designated critical habitat for western DPS Steller sea lion. Specifically, the Level B ensonified area overlaps with the aquatic zones of three designated major haulouts to the east and northwest of the project site: Shemya Island Major Haulout, Alaid Island Major Haulout, Attu/Chirikof Point Major Haulout. The ensonified area Level B harassment zone related to implementation of the proposed project, described in the Estimated Take of Marine Mammals section, overlaps with the designated aquatic zone of all three designated major haulouts. No terrestrial or in-air critical habitat of any major haulout overlaps with the project area. No Steller sea lions have been observed on Shemya Island Major Haulout during the most recent surveys (between 2015 and 2017) and only one Steller sea lion was observed at Attu/Chirikof Point Major Haulout. An average of 68 non-pups and 7 pups were observed annually during this time at Alaid Island Major Haulout, which is 5 nmi northwest of the project site. The construction site itself does not overlap with critical habitat.

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 some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range. We do not expect pile driving activities to have significant consequences to marine invertebrate populations. Given the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat, including fish and invertebrates, are not expected to cause significant or long-term negative consequences.

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

- No serious injury or mortality is anticipated or authorized;
- No Level A harassment of six species is proposed;
- Level A harassment takes of six species proposed for authorization are expected to be of a small degree;
- While impacts would occur within areas that are important for feeding for sperm whale, because of the small footprint of the activity relative to the area of these important use areas, we do not expect impacts to the reproduction and survival of any individuals;
- Effects on species that serve as prey for marine mammals from the activities are expected to be short-term and, therefore, any associated impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue to adverse impacts on their populations;
- The lack of anticipated significant or long-term negative effects to marine mammal habitat; and
- The efficacy of the mitigation measures in reducing the effects of the specified activities on all species and stocks.

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 proposes to authorize are below one-third of the estimated stock abundance for all stocks (table 8). The number of animals that we expect to authorize 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, which is an unlikely scenario.

The best available abundance estimate for fin whale is not considered representative of the entire stock as surveys were limited to a small portion of the stock's range, but there are known to be over 2,500 fin whales in the northeast Pacific stock (Muto *et al.,* 2021). As such, the 18 takes by Level B harassment and 3 takes by Level A harassment proposed for authorization, compared to the abundance estimate, shows that less than 1 percent of the stock would be expected to be impacted.

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. The most relevant estimate of this stock's abundance in the Bering Sea and Aleutian Islands is 918 humpback whales (Wade, 2021), so the 9 proposed takes by Level B harassment and 2 proposed takes by Level A harassment, is small relative to the estimated abundance (1.2 percent), even if each proposed take occurred to a new individual.

A lack of an accepted stock abundance value for the Alaska stock of minke whale did not allow for the calculation of an expected percentage of the population that would be affected. The most relevant estimate of partial stock abundance is 1,233 minke whales in coastal waters of the Alaska Peninsula and Aleutian Islands (Zerbini *et al.,* 2006), so the 5 proposed takes by Level B harassment, and 3 proposed takes by Level A harassment, compared to the abundance estimate, shows that less than 1 percent of the stock would be expected to be impacted.

The most recent abundance estimate for sperm whale in the North Pacific is likely unreliable as it is more than 8 years old and was derived from data collected in a small area that may not have included females and juveniles, and did not account for animals missed on the trackline. The minimum population estimate for this stock is 244 sperm whales, so the 40 proposed takes by Level B harassment is small relative to the estimated survey abundance, even if each proposed take occurred to a new individual.

There is no abundance information available for any Alaskan stock of beaked whale. However, the take numbers are sufficiently small (8 and 10 takes by Level B harassment for Stejneger's beaked whale and Baird's beaked whale, respectively) that we can safely assume that they are small relative to any reasonable assumption of likely population abundance for these stocks. For reference, current abundance estimates for other beaked whale stocks in the Pacific include 1,363 Baird's beaked whales (California, Oregon/Washington stock), 3,044 Mesoplodont beaked whales (CA/OR/WA stock), 5,454 Cuvier's beaked whales (CA/OR/WA stock), 564 Blainville's beaked whales (Hawai'i Pelagic stock), 2,550 Longman's beaked whales (Hawai'i stock), and 3,180 Cuvier's beaked whales (Hawai'i Pelagic stock).

The Alaska stock of Dall's porpoise has no official NMFS abundance estimate for this area, as the most recent estimate is greater than 8 years old. The most recent estimate was 13,110 animals for just a portion of the stock's range. Therefore, the 26 takes by Level B harassment and 13 takes by Level A harassment of this stock proposed for authorization, compared to the abundance estimate, shows that less than 1 percent of the stock would be expected to be impacted.

For the Bering Sea stock of harbor porpoise, the most reliable abundance estimate is 5,713, a corrected estimate from a 2008 survey. However, this survey covered only a small portion of the stock's range, and therefore, is considered to be an underestimate for the entire stock (Muto *et al.,* 2022). Given the proposed 10 takes by Level B harassment for the stock, and 5 takes by Level A harassment for the stock, compared to the abundance estimate, which is only a portion of the Bering Sea Stock, shows that, at most, less than 1 percent of the stock would be expected to be impacted.

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.

No subsistence hunting occurs on Shemya Island, which is a USAF Air Station; Access to the island is only provided by military aircraft and USAF-contracted charter planes for crews and workers. The nearest community that engages in subsistence hunting is located on Adak, Alaska which is 640 km (399 mi) to the east. Historically, an Alaska Native community on Attu, 60 km (37 mi) to the west, hunted for subsistence, but that community was destroyed during WWII and the residents that survived internment did not return to the island.

Based on the description of the specified activity, NMFS has preliminarily determined that there will not be an unmitigable adverse impact on subsistence uses from USAF's proposed activities.

Endangered Species Act

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

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

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to USAF for conducting the EAS Fuel Pier Replacement project in Alcan Harbor on Shemya Island, Alaska during April through October 2024, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.*

Request for Public Comments

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

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

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

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

(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: October 25, 2023.

Catherine Marzin,

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

[FR Doc. 2023–23970 Filed 10–30–23; 8:45 am]

BILLING CODE 3510–22–P

CONSUMER FINANCIAL PROTECTION BUREAU

Credit Union Advisory Council Meeting

AGENCY: Consumer Financial Protection Bureau.

ACTION: Notice of public meeting.

SUMMARY: Under the Federal Advisory Committee Act (FACA), this notice sets forth the announcement of a public meeting of the Credit Union Advisory Council (CUAC or Council) of the Consumer Financial Protection Bureau (CFPB or Bureau). The notice also describes the functions of the Council.

DATES: The meeting date is Thursday, November 16, 2023, from approximately 1 p.m. to 3 p.m., eastern daylight time. This meeting will be held virtually and is open to the general public. Members of the public will receive the agenda and dial-in information when they RSVP.

FOR FURTHER INFORMATION CONTACT: Kim George, Outreach and Engagement Associate, Advisory Board and Councils, External Affairs Division, at 202–450–8617, or email: *CFPB_CABandCouncilsEvents@cfpb.gov.* If you require this document in an alternative electronic format, please contact *CFPB_Accessibility@cfpb.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

Section 2 of the CUAC charter provides that pursuant to the executive and administrative powers conferred on the CFPB by section 1012 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), the Director of the CFPB renews the discretionary Credit Union Advisory Council under agency authority in accordance with the provisions of the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. 10.

Section 3 of the CUAC charter states that the purpose of the CUAC is to advise the CFPB in the exercise of its functions under the Federal consumer financial laws as they pertain to credit unions with total assets of $10 billion or less.

II. Agenda

The CUAC will discuss broad policy matters related to the Bureau's Unified Regulatory Agenda and general scope of authority.

If you require any additional reasonable accommodation(s) in order to attend this event, please contact the Reasonable Accommodations team at *CFPB_ReasonableAccommodations@cfpb.gov,* 48 business hours prior to the start of this event.

Written comments will be accepted from interested members of the public and should be sent to *CFPB_CABandCouncilsEvents@cfpb.gov,* a minimum of seven (7) days in advance of the meeting. The comments will be provided to the CUAC members for consideration. Individuals who wish to join this meeting must RSVP via this link *https://surveys.consumerfinance.gov/jfe/form/SV_b9H4zHzWtrtXxZQ.*

III. Availability

The Council's agenda will be made available to the public on Tuesday, October 31, 2023, via *consumerfinance.gov.*

A recording and summary of this combined meeting will be available after the meeting on the Bureau's website *consumerfinance.gov.*

Jocelyn Sutton,

Deputy Chief of Staff, Consumer Financial Protection Bureau.

[FR Doc. 2023–23897 Filed 10–30–23; 8:45 am]

BILLING CODE 4810–AM–P

CONSUMER FINANCIAL PROTECTION BUREAU

Consumer Advisory Board Meeting

AGENCY: Consumer Financial Protection Bureau.

ACTION: Notice of public meeting.

SUMMARY: Under the Federal Advisory Committee Act (FACA), this notice sets forth the announcement of a public meeting of the Consumer Advisory Board (CAB or Board) of the Consumer Financial Protection Bureau (CFPB or Bureau). The notice also describes the functions of the Board.

DATES: The meeting date is Tuesday, November 14, 2023, from approximately 1 p.m. to 3:30 p.m., eastern daylight time. This meeting will be held virtually and is open to the general public. Members of the public will receive the agenda and dial-in information when they RSVP.

FOR FURTHER INFORMATION CONTACT: Kim George, Outreach and Engagement Associate, Advisory Board and Councils, External Affairs Division, at 202–450–8617, or email: *CFPB_CABandCouncilsEvents@cfpb.gov.* If you require this document in an alternative electronic format, please contact *CFPB_Accessibility@cfpb.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

Section 3 of the charter of the Board states that: The purpose of the CAB is outlined in section 1014(a) of the Dodd-Frank Act, which states that the CAB shall ''advise and consult with the Bureau in the exercise of its functions under the Federal consumer financial laws'' and ''provide information on emerging practices in the consumer financial products or services industry, including regional trends, concerns, and other relevant information.''

To carry out the CAB's purpose, the scope of its activities shall include providing information, analysis, and recommendations to the CFPB. The CAB will generally serve as a vehicle for trends and themes in the consumer finance marketplace for the CFPB. Its objectives will include identifying and assessing the impact on consumers and other market participants of new, emerging, and changing products, practices, or services.

II. Agenda

The CAB will discuss broad policy matters related to the Bureau's Unified Regulatory Agenda and general scope of authority.

If you require any additional reasonable accommodation(s) in order to attend this event, please contact the Reasonable Accommodations team at *CFPB_ReasonableAccommodations@cfpb.gov* 48 hours prior to the start of this event.

Written comments will be accepted from interested members of the public and should be sent to *CFPB_CABandCouncilsEvents@cfpb.gov,* a minimum of seven (7) days in advance of the meeting. The comments will be provided to the CAB members for consideration. Individuals who wish to join this meeting must RSVP via this link *https://surveys.consumerfinance.gov/jfe/form/SV_aVSwdg1vAHHzgKW.*

III. Availability

The Board's agenda will be made available to the public on Tuesday, October 31, 2023, via *consumerfinance.gov.*

A recording and summary of this meeting will be available after the meeting on the Bureau's website *consumerfinance.gov.*

Jocelyn Sutton,

Deputy Chief of Staff, Consumer Financial Protection Bureau.

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