After reviewing the decision record developed to date, the NOAA Administrator has determined that it is not necessary to stay the closure of the decision record in this appeal. Consistent with the schedule contained in the CZMA and its implementing regulations, the decision record for Appellant's federal consistency appeal of the New York Department of State's objection closed on December 1, 2021. No further information or briefs will be considered in deciding this appeal.

Public Availability of Appeal Documents

NOAA has provided access to publicly available materials and related documents comprising the appeal record on the following website: *www.regulations.gov,* under docket number NOAA–HQ–2021–0059.

(Authority Citation: 15 CFR 930.130(a)(1))

Adam Dilts,

Chief, Oceans and Coasts Section, National Oceanic and Atmospheric Administration Office of the General Counsel.

[FR Doc. 2021–26010 Filed 11–30–21; 8:45 am]

BILLING CODE 3510–JE–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XB571]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the NOAA Port Facility Project in Ketchikan, 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 National Oceanic and Atmospheric Administration (NOAA) for authorization to take marine mammals incidental to the NOAA Port Facility Project in Ketchikan, 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-year renewal that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this document. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorizations and agency responses will be summarized in the final notification of our decision.

DATES: Comments and information must be received no later than January 3, 2022.

ADDRESSES: Comments should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service and should be sent to *ITP.Meadows@noaa.gov.*

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 received electronically, including all attachments, must not exceed a 25-megabyte file size. Attachments to electronic comments will be accepted in Microsoft Word or Excel or Adobe PDF file formats only. 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: Dwayne Meadows, Ph.D., Office of Protected Resources, NMFS, (301) 427–8401. 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/permit/incidental-take-authorizations-under-marine-mammal-protection-act.* In case of problems accessing these documents, please call the contact listed above.

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 issued or, if the taking is limited to harassment, a notice of a proposed IHA may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other ''means of effecting the least practicable adverse impact'' on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to 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 NOAA Administrative Order 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 notification prior to concluding our NEPA process or making a final decision on the IHA request.

Summary of Request

On October 26, 2021, NMFS received an application from NOAA's Office of Marine and Aviation Operations requesting an IHA to take small numbers of 9 species (Dall's porpoise (*Phocoenoides dalli*), Steller sea lions (*Eumetopias jubatus*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), killer whale (*Orcinus orca*), gray whale (*Eschrichtius robustus*), minke whale (*Balaenoptera acutorostrata*), harbor seal (*Phoca vitulina*), harbor porpoise (*Phocoena phocoena*) and humpback whale (*Megaptera novaeangliae*)) of marine mammals incidental to vibratory and impact pile driving and down-the-hole (DTH) system use associated with the project. The application was deemed adequate and complete on November 16, 2021. NOAA's request is for take of a small number of these species by Level A or Level B harassment. Neither NOAA nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of Proposed Activity

Overview

The purpose of the project is to remove an obsolete dock facility and construct a new facility including a 240 feet (ft) x 50 ft floating pier connected to land by a transfer bridge. A small boat dock would be connected to the large ship pier and a small boat launch ramp will be constructed adjacent to the other structures.

The pile driving/removal and DTH can result in take of marine mammals from sound in the water which results in behavioral harassment or auditory injury.

Dates and Duration

This construction work will occur from 1 February 2022 through 31 January 2023 and will take no more than 47 days of in-water pile and DTH work.

Specific Geographic Region

The project is located in the city of Ketchikan on Revillagigedo Island and the east shore of the Tongass Narrows waterway (Figure 1). The natural topography of the local area largely consists of moderately steep slopes trending toward the Tongass Narrows waterway. In this region, the Tongass Narrows is part of Southeast Alaska's Inside Passage where it splits into two channels by Pennock Island. The project area is in an industrial waterfront. The shoreline and underwater portions of the area are highly modified by existing dock structures and past dredging. Offshore marine sediments are reported to be minimal, with sediment cover depths progressively increasing away from the shoreline. Marine sediment depths overlying bedrock reportedly range from four to five feet and consist of coarse sand, rock fragments, and shells. Ongoing vessel activities throughout Tongass Narrows waterway, land-based industrial and commercial activities, and regular aircraft operations result in elevated in-air and underwater sound conditions in the area. Sound levels likely vary seasonally, with elevated levels during summer when the tourism and fishing industries are at their peaks. The shoreline and underwater portions of the area are highly modified by existing dock structures and past dredging.

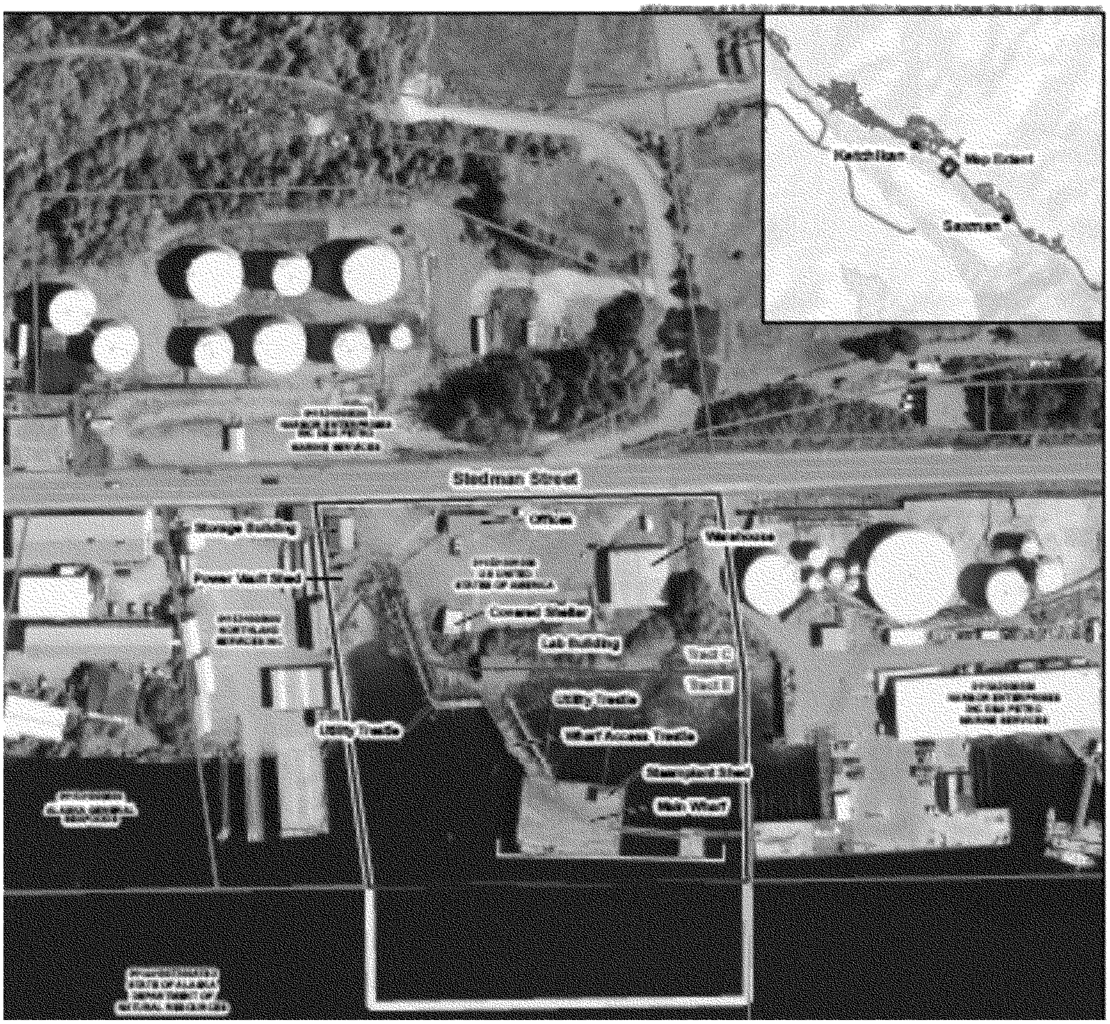
Detailed Description of Specific Activity

The project consists of an almost complete recapitalization of the existing facility. This includes the removal and appropriate disposal of unused or obsolete structures and infrastructure, in both a 77,000-square-feet (ft^2) upland area and within 102,000 ft^2 of the in-water area. Descriptions of additional upland activities may be found in the application but such actions will not affect marine mammals and are not described in detail here.

All existing in-water structures, including pier, access trestle, and mooring dolphins present above and below the water surface, are inadequate and would be removed except for a concrete/steel mooring platform and breasting dolphin with fender. The in-water structures would be replaced by adequately sized and structurally sound elements necessary for berthing, preparing, and maintaining vessel operations.

An estimated 134 remnant timber piles would be removed by direct pull or by vibratory methods. If piles incur breakage or splintering during the removal process, the pile would be cut at or about 2 feet (0.67 meters (m)) from the bottom. In addition, 66 remnant steel piles must be removed. This will occur by use of a pile clipper or hydraulic saw.

Figure 1-- Map of Proposed Project Area.



An approximately 240-ft long and 50-ft wide (73 by 15 m) floating pier would replace the existing pier and its supporting piles. The floating pier would be secured and stabilized by 10 24-inch diameter steel pipe piles, and accessed via a single, 144-ft long and 17-ft wide (44 by 5 m) steel, truss-framed transfer bridge. The transfer bridge would be supported by a bridge support float adjacent to the pier and hinged to the shoreline cast in place concrete abutment. The 24-ft by 22-ft (7.3 by 6.7 m) bridge support float would be secured by four additional 24-inch diameter steel piles. A small boat dock, approximately 90 ft long by 14 ft wide (27 by 4 m), would be installed and connected to the floating pier by an aluminum gangway and would require an additional four 24-inch steel piles. Thus the new structures would require a total of 18 24-inch steel piles. Installation of the new steel piles is anticipated to be undertaken using a barge mounted DTH system to create holes in the rock (sockets) in which the piles would be placed. Piles would be embedded into socket holes created by the DTH in bedrock to a minimum depth of 20 ft. The last foot of each pile would be ''proofed'' using an impact pile driver that is anticipated will require approximately 5 to 10 blows per pile.

Replacement mooring dolphins and fenders for mooring would be installed. Ship utilities would be extended dockside attached to the transfer bridge. A small boat launch ramp would be built on the northern portion of the site and would be supported on a raised, rip-rap protected mound with a footprint of approximately 200 ft by 70 ft wide (61 by 21 m).

Table 1 provides a summary of the pile driving activities. Because the steel piles being removed could be removed using either a pile clipper or hydraulic saw, we use the loudest, most precautionary source level for those piles which are pile clippers. In-water work would be performed using equipment based on a floating barge or from the shore, as needed. Pile work would normally only occur during civil daylight hours unless work needs to continue on a pile until it is safe to leave overnight. In summary, the project period includes 47 days of pile or DTH activities for which this IHA is requested.

TABLE 1—SUMMARY OF PILE DRIVING ACTIVITIES AND USER SPREADSHEET INPUTS

Method	Pile type	Number of piles	Minutes/strikes per pile	Piles per day
DTH Impact	24-inch Steel	18	25,000 48	1.5 1.5
Vibratory	14-inch Timber	130	2	10
Small Pile Clipper	14-inch Steel	28	10	10
Large Pile Clipper	20- or 24-inch Steel	42	10	10
Totals		218		

All User spreadsheet calculations use Transmission Loss = 15 and standard weighting factor adjustments.

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

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's 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's website (*https://www.fisheries.noaa.gov/find-species)*.

Table 2 lists all species with expected potential for occurrence in the project area 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. For taxonomy, we follow Committee on Taxonomy (2021). 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's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's 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's U.S. Alaska or Pacific SARs including the 2021 draft SARs.

TABLE 2—SPECIES THAT SPATIALLY CO-OCCUR WITH THE ACTIVITY TO THE DEGREE THAT TAKE IS REASONABLY LIKELY TO OCCUR

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N) [1]	Stock abundance (CV, N_{min}, most recent abundance survey) [2]	PBR	Annual M/SI [3]
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)						
Family Balaenopteridae (rorquals):						
Humpback whale	*Megaptera novaeangliae*	Central North Pacific	-,-; Y	10,103 (0.3, 7,890, 2006)	83	26
Minke Whale	*Balaenoptera acutorostrata*	Alaska	-,-; N	N/A (see SAR, N/A, see SAR).	uND	0
Family Eschrichtiidae (gray whale):						
Gray Whale	*Eschrichtius robustus*	Eastern North Pacific	-,-; N	26,960 (0.05, 25,849, 2016).	801	131
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae:						
Pacific white-sided dolphin	*Lagenorhynchus obliquidens*	North Pacific	-,-; N	26,880 (N/A, N/A, 1990)	uND	0
Killer Whale	*Orcinus orca*	Northern Resident	-,-; N	302 (N/A, 302, 2018)	2.2	0.2
		Alaska Resident	-,-; N	2,347 (N/A, 2347, 2012)	24	1
		West Coast Transient	-,-; N	349 (N/A, 349, 2018)	3.5	0.4
Family Phocoenidae (porpoises):						
Harbor porpoise	*Phocoena phocoena*	Southeast Alaska	-,-; N	see SAR (see SAR, see SAR, 2012).	See SAR	34
Dall's porpoise	*Phocoenoides dalli*	Entire Alaska Stock	-,-; N	83,400 (0.097, N/A, 1991)	uND	38
Order Carnivora—Superfamily Pinnipedia						
Family Otariidae (sea lions and fur seals):						
Steller sea lion	*Eumetopias jubatus*	Eastern Stock	-,-; N	43,201 a (see SAR, 43,201, 2017).	2592	112

TABLE 2—SPECIES THAT SPATIALLY CO-OCCUR WITH THE ACTIVITY TO THE DEGREE THAT TAKE IS REASONABLY LIKELY TO OCCUR—Continued

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]
Family Phocidae (earless seals): Harbor seal	*Phoca vitulina*	Clarence Strait	-; N	27,659 (see SAR, 24,854, 2015).	746	40

[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.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports*. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

[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, ship strike). Annual Mortality/ Serious Injury (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.

Humpback whales, minke whales, gray whales, Pacific white-sided dolphin, killer whale, harbor porpoise, Dall's porpoise, harbor seal, and Steller sea lions spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have proposed authorizing take of these species. Fin whale could potentially occur in the area, however there are no known sightings nearby so the species is very rare, is readily observed, and the applicant would shut down pile driving if they enter the project area. Thus take is not expected to occur, and they are not discussed further.

Humpback Whale

The humpback whale is found worldwide in all oceans. Prior to 2016, humpback whales were listed under the ESA as an endangered species worldwide. Following a 2015 global status review (Bettridge *et al.*, 2015), NMFS established 14 DPSs with different listing statuses (81 FR 62259; September 8, 2016) pursuant to the ESA. Humpback whales found in the project area are predominantly members of the Hawaii DPS, which is not listed under the ESA. However, based on a comprehensive photo-identification study, members of the Mexico DPS, which is listed as threatened, are known to occur in Southeast Alaska. Members of different DPSs are known to intermix on feeding grounds; therefore, all waters off the coast of Alaska should be considered to have ESA-listed humpback whales. Approximately 2 percent of all humpback whales in Southeast Alaska and northern British Columbia are members of the Mexico DPS, while all others are members of the Hawaii DPS (Wade *et al.*, 2021).

The DPSs of humpback whales that were identified through the ESA listing process do not equate to the existing MMPA stocks. The stock delineations of humpback whales under the MMPA are currently under review. Until this review is complete, NMFS considers humpback whales in Southeast Alaska to be part of the Central North Pacific stock, with a status of endangered under the ESA and designations of strategic and depleted under the MMPA (Muto *et al.*, 2021).

Humpback whales experienced large population declines due to commercial whaling operations in the early 20th century. Barlow (2003) estimated the population of humpback whales at approximately 1,200 animals in 1966. The population in the North Pacific grew to between 6,000 and 8,000 by the mid-1990s. Current threats to humpback whales include vessel strikes, spills, climate change, and commercial fishing operations (Muto *et al.*, 2021).

Humpback whales are found throughout Southeast Alaska in a variety of marine environments, including open-ocean, near-shore waters, and areas with strong tidal currents (Dahlheim *et al.*, 2009). Most humpback whales are migratory and spend winters in the breeding grounds off either Hawaii or Mexico. Humpback whales generally arrive in Southeast Alaska in March and return to their wintering grounds in November. Some humpback whales depart late or arrive early to feeding grounds, and therefore the species occurs in Southeast Alaska year-round (Straley, 1990, Straley *et al.*, 2018). Across the region, there have been no recent estimates of humpback whale density.

No systematic studies have documented humpback whale abundance near Ketchikan. Anecdotal information suggests that this species is present in low numbers year-round in Tongass Narrows, with the highest abundance during summer and fall. Anecdotal reports suggest that humpback whales are seen only once or twice per month, while more recently it has been suggested that the occurrence is more regular, such as once per week on average, and more seasonal. Humpbacks observed in Tongass Narrows are generally alone or in groups of one to three individuals. In August 2017, a group of 6 individuals was observed passing through Tongass Narrows several times per day, for several days in a row.

The City of Ketchikan (COK) Rock Pinnacle project, which was located approximately 4 kilometers (km) southeast of the proposed project site, reported one humpback whale sighting of one individual during the project (December 2019 through January 2020). During the Ward Cove Cruise Ship Dock Construction, located approximately 5 km northwest of the proposed project site, 28 sightings of humpbacks were made on eighteen days of in water work that occurred between February and September 2020, with at least one humpback being recorded every month. A total of 42 individuals were recorded and group sizes ranged from 1 to 6 (Power Systems & Supplies of Alaska, 2020). Humpback whales were sighted on 17 days out of 88 days of monitoring in Tongass Narrows in 2020 and 2021 (DOT&PF 2020, 2021a, 2021b, 2021c, 2021d). There were no sightings in January or February, but humpback whales were observed each month from October to December 2020 and May to June 2021. During November 2020, a single known individual (by fluke pattern) was observed repeatedly, accounting for 14 of the 26 sighting events that month (DOT&PF, 2020). During monitoring, humpback whales were observed on average once a week.

Southeast Alaska is considered an important area for feeding humpback whales between March and May (Ellison *et al.*, 2012), though not currently designated as critical habitat (86 FR 21082; April 21, 2021). In Alaska, humpback whales filter feed on tiny crustaceans, plankton, and small fish such as walleye pollock, Pacific sand lance, herring, eulachon (*Thaleichthys pacificus*), and capelin (Witteveen *et al.*, 2012).

Minke Whale

Minke whales are found throughout the northern hemisphere in polar, temperate, and tropical waters. The population status of minke whales is considered stable throughout most of their range. Historically, commercial whaling reduced the population size of this species, but given their small size, they were never a primary target of whaling and did not experience the severe population declines as did larger cetaceans.

Minke whales are found in all Alaska waters. Minke whales in Southeast Alaska are part of the Alaska stock (Muto *et al.*, 2021). Research in Southeast Alaska have consistently identified individuals throughout inland waters in low numbers (Dahlheim *et al.*, 2009). All sightings were of single minke whales, except for a single sighting of multiple minke whales. Surveys took place in spring, summer, and fall, and minke whales were present in low numbers in all seasons and years. No information appears to be available on the winter occurrence of minke whales in Southeast Alaska.

There are no known occurrences of minke whales within the project area. Since their ranges extend into the project area and they have been observed in southeast Alaska, including in Clarence Strait (Dahlheim *et al.*, 2009), it is possible the species could occur near the project area. No minke whales were reported during the COK Rock Pinnacle Blasting Project (Sitkiewicz, 2020). During marine mammal monitoring of Tongass Narrows in 2020 and 2021, there were no minke whales observed on 88 days of observations across 7 months (October 2020—February 2021; May—June 2021) (DOT&PF 2020, 2021a, 2021b, 2021c, 2021d).

In Alaska, the minke whale diet consists primarily of euphausiids and walleye pollock. Minke whales are generally found in shallow, coastal waters within 200 m of shore (Zerbini *et al.*, 2006) and are almost always solitary or in small groups of 2 to 3. In Alaska, seasonal movements are associated with feeding areas that are generally located at the edge of the pack ice (NMFS, 2014).

Gray Whale

Gray whales are distributed throughout the North Pacific Ocean and are found primarily in shallow coastal waters (Muto *et al.*, 2021). Gray whales in the Eastern North Pacific stock range from the southern Gulf of California, Mexico to the arctic waters of the Bering and Chukchi Seas. Gray whales are generally solitary creatures and travel together alone or in small groups.

Gray whales are rare in the action area and unlikely to occur in Tongass Narrows. They were not observed during the Dahlheim *et al.* (2009) surveys of Alaska's inland waters with surveys conducted in the spring, summer and fall months. No gray whales were reported during the COK Rock Pinnacle Blasting Project (Sitkiewicz, 2020) or Ward Cove (Power Systems & Supplies of Alaska, 2020). However a gray whale could migrate through or near the project during November especially.

There is an ongoing Unusual Mortality Event (UME) involving gray whales on the Pacific Coast (*https://www.fisheries.noaa.gov/national/marine-life-distress/2019-2021-gray-whale-unusual-mortality-event-along-west-coast-and*). Almost half of the strandings in the United States have been in Alaska. A definitive cause has not been found for the UME but many of the animals show signs of emaciation.

Killer Whale

Killer whales have been observed in all the world's oceans, but the highest densities occur in colder and more productive waters found at high latitudes (NMFS, 2016b). Killer whales occur along the entire Alaska coast, in British Columbia and Washington inland waterways, and along the outer coasts of Washington, Oregon, and California (NMFS, 2016b).

Based on data regarding association patterns, acoustics, movements, and genetic differences, eight killer whale stocks are now recognized within the Pacific U.S. Exclusive Economic Zone. This proposed IHA considers only the Eastern North Pacific Alaska Resident stock (Alaska Resident stock), Eastern North Pacific Northern Resident stock (Northern Resident stock), and West Coast Transient stock, because all other 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. Surveys between 1991 and 2007 encountered resident killer whales during all seasons throughout Southeast Alaska. Both residents and transients were common in a variety of habitats and all major waterways, including protected bays and inlets. There does not appear to be strong seasonal variation in abundance or distribution of killer whales, but there was substantial variability between years (Dahlheim *et al.*, 2009). 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).

No systematic studies of killer whales have been conducted in or around Tongass Narrows. Killer whales have been observed in Tongass Narrows year-round and are most common during the summer Chinook salmon run (May-July). During the Chinook salmon run, Ketchikan residents have reported pods of up to 20–30 whales (84 FR 36891; July 30, 2019). Typical pod sizes observed within the project vicinity range from 1 to 10 animals and the frequency of killer whales passing through the action area is estimated to be once per month (Frietag, 2017). Anecdotal reports suggest that large pods of killer whales (as many as 80 individuals, but generally between 25 and 40 individuals) are not uncommon in May, June, and July when the king salmon are running. During the rest of the year, killer whales occur irregularly in pods of 6 to 12 or more individuals.

Transient killer whales are often found in long-term stable social units (pods) of 1 to 16 whales. Average pod sizes in Southeast Alaska were 6.0 in spring, 5.0 in summer, and 3.9 in fall. Pod sizes of transient whales are generally smaller than those of resident social groups. Resident killer whales occur in larger pods, ranging from 7 to 70 whales that are seen in association with one another more than 50 percent of the time (Dahlheim *et al.*, 2009; NMFS, 2016a). In Southeast Alaska, resident killer whale mean pod size was approximately 21.5 in spring, 32.3 in summer, and 19.3 in fall (Dahlheim *et al.*, 2009).

Although killer whales may occur in large numbers, they generally form large pods and would incur fewer work stoppages than their numbers suggest since stoppages would correlate more with the number of pods than the number of individuals. Killer whales tend to transit through Tongass Narrows, and do not linger in the project area.

Marine mammal observations in Tongass Narrows during 2020 and 2021 support an estimate of approximately one group of killer whales a month in the Project area. During 7 months of monitoring (October 2020 February 2021; May June 2021), there were five killer whale sightings in 4 months (November, February, May, June) totaling 22 animals and sightings occurred on 5 out of 88 days of monitoring (DOT&PF, 2020, 2021a, 2021b, 2021c, 2021d). Pod sizes ranged from two to eight animals. During the COK's monitoring for the Rock Pinnacle Removal project in December 2019 and January 2020, no killer whales were observed. Over eight months of monitoring at the Ward Cove Cruise Ship Dock in 2020, killer whales were only observed on two days in March (Power Systems and Supplies of Alaska, 2020). These observations included a sighting of one pod of two killer whales and a second pod of five individuals travelling through the project area.

Pacific White-Sided Dolphin

Pacific white-sided dolphins are a pelagic species inhabiting temperate waters of the North Pacific Ocean and along the coasts of California, Oregon, Washington, and Alaska (Muto *et al.*, 2021). Despite their distribution mostly in deep, offshore waters, they may also be found over the continental shelf and near shore waters, including inland waters of Southeast Alaska (Ferrero and Walker, 1996). They are managed as two distinct stocks: The California/Oregon/Washington stock, and the North Pacific stock (north of 45 N, including Alaska). Only the North Pacific stock is found within the project area. The Pacific white-sided dolphin is distributed throughout the temperate North Pacific Ocean, north of Baja California to Alaska's southern coastline and Aleutian Islands. The North Pacific Stock ranges from Canada into Alaska (Muto *et al.*, 2021).

Pacific white-sided dolphins prey on squid and small schooling fish such as capelin, sardines, and herring (Morton, 2006). They are known to work in groups to herd schools of fish and can dive underwater for up to 6 minutes to feed (Morton, 2006). Group sizes have been reported to range from 40 to over 1,000 animals, but groups of between 10 and 100 individuals (Stacey and Baird, 1991; NMFS no date) occur most commonly. Seasonal movements of Pacific white-sided dolphins are not well understood, but there is evidence of both north-south seasonal movement (Leatherwood *et al.*, 1984) and inshore-offshore seasonal movement (Stacey and Baird, 1991).

Scientific studies and data are lacking relative to the presence or abundance of Pacific white-sided dolphins in or near Tongass Narrows. Although they generally prefer deeper and more-offshore waters, anecdotal reports suggest that Pacific white-sided dolphins have previously been observed in Tongass Narrows, although they have not been observed entering Tongass Narrows or nearby inter-island waterways in 15–20 years.

Pacific white-sided dolphins are rare in the inside passageways of Southeast Alaska. Most observations occur off the outer coast or in inland waterways near entrances to the open ocean. According to Muto *et al.* (2018), aerial surveys in 1997 sighted one group of 164 Pacific white-sided dolphins in Dixon entrance to the south of Tongass Narrows. Surveys in April and May from 1991 to 1993 identified Pacific white-sided dolphins in Revillagigedo Channel, Behm Canal, and Clarence Strait (Dahlheim and Towell 1994). These areas are contiguous with the open ocean waters of Dixon Entrance. This observational data, combined with anecdotal information, indicates there is a rare, however, slight potential for Pacific white-sided dolphins to occur in the project area.

During marine mammal monitoring of Tongass Narrows in 2020 and 2021, no Pacific white-sided dolphins were observed on 88 days of observations across 7 months (October 2020–February 2021; May–June 2021), which supports the anecdotal evidence that sightings of this species are rare (DOT&PF, 2020, 2021a, 2021b, 2021c, 2021d). There were also no sightings of Pacific white-sided dolphins during the COK Rock Pinnacle Blasting Project during monitoring surveys conducted in December 2019 and January 2020 (Sitkiewicz, 2020) or during monitoring surveys conducted between February and September 2020 as part of the Ward Cove Cruise Ship Dock (Power Systems and Supplies of Alaska, 2020).

Harbor Porpoise

In the eastern North Pacific Ocean, the harbor porpoise ranges from Point Barrow, along the Alaska coast, and down the west coast of North America to Point Conception, California. The Southeast Alaska stock ranges from Cape Suckling to the Canadian border (Muto *et al.*, 2021). Harbor porpoises frequent primarily coastal waters in Southeast Alaska (Dahlheim *et al.*, 2009) and occur most frequently in waters less than 100 m (328 ft) deep (Dahlheim *et al.*, 2015). They are not attracted to areas with elevated levels of vessel activity and noise such as Tongass Narrows.

Studies of harbor porpoises reported no evidence of seasonal changes in distribution for the inland waters of Southeast Alaska (Dahlheim *et al.,* 2009). Their small overall size, lack of a visible blow, low dorsal fins and overall low profile, and short surfacing time make them difficult to spot (Dahlheim *et al.,* 2015). Ketchikan area densities are expected to be low. This is supported by anecdotal estimates. Anecdotal reports (see IHA Application) specific to Tongass Narrows indicate that harbor porpoises are rarely observed in the action area. Harbor porpoises are expected to be present in the action area only a few times per year.

Dall's Porpoise

Dall's porpoises are found throughout the North Pacific, from southern Japan to southern California north to the Bering Sea. All Dall's porpoises in Alaska are members of the Alaska stock. This species can be found in offshore, inshore, and nearshore habitat.

Jefferson *et al.* (2019) presents historical survey data showing few sightings in the Ketchikan area. The mean group size in Southeast Alaska is estimated at approximately three individuals (Dahlheim *et al.*, 2009, Jefferson *et al.*, 2019), although Freitag (2017, as cited in 83 FR 37473) suggested group sizes near Ketchikan range from 10 to 15 individuals. Anecdotal reports suggest that Dall's porpoises are found northwest of Ketchikan near the Guard Islands, where waters are deeper, as well as in deeper waters to the southeast of Tongass Narrows. This species has a tendency to bow-ride with vessels and may occur in the action area incidentally a few times per year.

Harbor Seal

Harbor seals inhabit coastal and estuarine waters off Alaska. They haul out on rocks, reefs, beaches, and drifting glacial ice. They are opportunistic feeders and often adjust their distribution to take advantage of locally and seasonally abundant prey (Womble *et al.*, 2009, Allen and Angliss, 2015).

Harbor seals occurring in the project area belong to the Clarence Strait stock. Distribution of the Clarence Strait stock ranges from the east coast of Prince of Wales Island from Cape Chacon north through Clarence Strait to Point Baker and along the east coast of Mitkof and Kupreanof Islands north to Bay Point, including Ernest Sound, Behm Canal, and Pearse Canal (Muto *et al.,* 2021). In the project area, they tend to be more abundant during spring, summer and fall months when salmon are present in Ward Creek. Anecdotal evidence indicates that harbor seals typically occur in groups of 1–3 animals in Ward Cove with a few sightings per day (Spokely, 2019). They were not observed in Tongass Narrows during a combined 63.5 hours of marine mammal monitoring that took place in 2001 and 2016 (OSSA, 2001, Turnagain, 2016). There are no known harbor seal haulouts within the project area. According to the list of harbor seal haulout locations, the closest listed haulouts are located off the tip of Gravina Island, approximately eight km (five miles (mi)) northwest of Ward Cove (AFSC, 2018), but not in the ensonified area from this project.

Steller Sea Lion

Steller sea lions were listed as threatened range-wide under the ESA on November 26, 1990 (55 FR 49204). Steller sea lions were subsequently partitioned into the western and eastern Distinct Population Segments (DPSs; western and eastern stocks) in 1997 (62 FR 24345; May 5, 1997). The eastern DPS remained classified as threatened until it was delisted in November 2013. The current minimum abundance estimate for the eastern DPS of Steller sea lions is 43,201 individuals (Muto *et al.,* 2021). The western DPS (those individuals west of 144° W longitude or Cape Suckling, Alaska) was upgraded to endangered status following separation of the DPSs, and it remains endangered today. There is regular movement of both DPSs across this 144° W longitude boundary (Jemison *et al.,* 2013), however, due to the distance from this DPS boundary, it is likely that only eastern DPS Steller sea lions are present in the project area. Therefore, animals potentially affected by the project are assumed to be part of the eastern DPS. Sea lions from the western DPS, which is listed as endangered under the Endangered Species Act (ESA), are not likely to be affected by the proposed activity and are not discussed further.

There are several mapped and regularly monitored long-term Steller sea lion haulouts surrounding Ketchikan, such as West Rocks (36 mi/58 km) or Nose Point (37 mi/60 km), but none are known to occur within Tongass Narrows (Fritz *et al.,* 2015). The nearest known Steller sea lion haulout is located approximately 20 mi (58 km) west/northwest of Ketchikan on Grindall Island. None of these haul-outs would be affected by the proposed activity. Summer counts of adult and juvenile sea lions at this haulout since 2000 have averaged approximately 191 individuals, with a range from 6 in 2009 to 378 in 2008. Only two winter surveys of this haulout have occurred. In March 1993, a total of 239 individuals were recorded, and in December 1994, a total of 211 individuals were recorded. No sea lion pups have been observed at this haulout during surveys. Although this is a limited sample, it suggests that abundance may be consistent year-round at the Grindall Island haulout.

No systematic studies of sea lion abundance or distribution have occurred in Tongass Narrows. Anecdotal reports suggest that Steller sea lions may be found in Tongass Narrows year-round, with an increase in abundance from March to early May during the herring spawning season, and another increase in late summer associated with salmon runs. Overall sea lion presence in Tongass Narrows tends to be lower in summer than in winter (FHWA, 2017). During summer, Steller sea lions may aggregate outside the project area, at rookery and haulout sites. Monitoring during construction of the Ketchikan Ferry Terminal in summer (July 16 through August 17, 2016) did not record any Steller sea lions (ADOT&PF 2015); however, monitoring during construction of the Ward Cove Dock, located approximately 6 km northwest of the Project site, recorded 181 individual sea lions between February and September 2020 (Power Systems & Supplies of Alaska, 2020). Most sightings occurred in February (45 sightings of 88 sea lions) and March (34 sightings of 45 sea lions); the fewest number of sightings were observed in May (1 sighting of 1 sea lion) (Power Systems & Supplies of Alaska, 2020).

Sea lions are known to transit through Tongass Narrows while pursuing prey. Steller sea lions are known to follow fishing vessels, and may congregate in small numbers at seafood processing facilities and hatcheries or at the mouths of rivers and creeks containing hatcheries, where large numbers of salmon congregate in late summer. Three seafood processing facilities are located east of the proposed berth location on Revillagigedo Island, and two salmon hatcheries operated by the Alaska Department of Fish & Game (ADF&G) are located east of the project area. Steller sea lions may aggregate near the mouth of Ketchikan Creek, where a hatchery upstream supports a summer salmon run. The Creek mouth is more than 4 km (2.5 mi) from both ferry berth sites, and is positioned behind the cruise ship terminal and within the small boat harbor. In addition to these locations, anecdotal information from a local kayaking company suggests that there are Steller sea lions present at Gravina Point, near the southwest entrance to Tongass Narrows.

A total of 181 Steller sea lions were sighted on forty-four separate days during all months of Ward Cove Cruise Ship Dock construction (February through September, 2020) (Power Systems and Supplies of Alaska, 2020). Most sightings occurred in February and March and the fewest sightings were in May. Sightings were of single individuals, pairs, and herds of up to 10 individuals. They were identified as travelling, foraging, swimming, chuffing, milling, looking, sinking, spyhopping, and playing.

Marine mammal monitoring occurred near the proposed project site during 2020 and 2021 for previous construction components of the Tongass Narrows Project. Monitoring occurred from October 2020 to February 2021 and resumed in May 2021, and is still underway. Steller sea lions were observed in the Tongass Narrows Project area on 49 of 88 days between October 2020 and June 2021 (DOT&PF, 2020, 2021a, 2021b, 2021c, 2021d). They were observed in every month that observations took place (DOT&PF, 2020, 2021a, 2021b, 2021c, 2021d). Sightings of Steller sea lions were most frequent in January and February and least common in May and June (DOT&PF 2020, 2021a, 2021b, 2021c, 2021d). Sightings were primarily of single animals, but animals were also present in pairs and groups up to five sea lions (DOT&PF, 2020, 2021a, 2021b, 2021c, 2021d). This is consistent with Freitag (2017 as cited in 83 FR 22009), though groups of up to 80 individuals have been observed (HDR, Inc., 2003). On average over the course of a year, Steller sea lions occur in Tongass Narrows approximately three or four times per week (DOT&PF, 2020, 2021a, 2021b, 2021c, 2021d).

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (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. Humpback, minke and gray whales are in the low-frequency hearing group, killer whales and Pacific white-sided dolphins are in the mid-frequency hearing group, harbor and Dall's porpoises are in the high frequency hearing group, harbor seals are in the phocid group and Steller sea lions are otariids.

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

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

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

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 (ANSI 1995). The sound level of an area is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.,* waves, wind, precipitation, earthquakes, ice, atmospheric sound), biological (*e.g.,* sounds produced by marine mammals, fish, and invertebrates), and anthropogenic sound (*e.g.,* vessels, dredging, aircraft, construction).

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

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

Three types of 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). Rock socketing involves using DTH equipment to create a hole in the bedrock inside of which the pile is placed to give it lateral and longitudinal strength. 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 non-impulsive sound source types simultaneously.

The likely or possible impacts of NOAA's proposed activity on marine mammals could involve both non-acoustic and acoustic stressors. Potential non-acoustic stressors could result from the physical presence of the equipment, 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.

Acoustic Impacts

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

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

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

Temporary Threshold Shift (TTS)—A temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). Based on data from cetacean TTS measurements (see Southall *et al.,* 2007), a TTS of 6 dB is considered the minimum threshold shift clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.,* 2000; Finneran *et al.,* 2000, 2002). As described in Finneran (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 auditory masking, below). For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that takes place during a time when the animal is traveling through the open ocean, where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during 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, 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). The potential for TTS from impact pile driving exists. After exposure to playbacks of impact pile driving sounds (rate 2,760 strikes/hour) in captivity, mean TTS increased from 0 dB after 15 minute exposure to 5 dB after 360 minute exposure; recovery occurred within 60 minutes (Kastelein *et al.,* 2016). 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).

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

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

Disturbance may result in changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where sound sources are located. Pinnipeds may increase their haul-out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.*, species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.*, Richardson *et al.*, 1995; Wartzok *et al.*, 2004; Southall *et al.*, 2007; Weilgart, 2007; Archer *et al.*, 2010). Behavioral reactions can vary not only among individuals but also within an individual, depending on previous experience with a sound source, context, and numerous other factors (Ellison *et al.*, 2012), and can vary depending on characteristics associated with the sound source (*e.g.*, whether it is moving or stationary, number of sources, distance from the source). In general, pinnipeds seem more tolerant of, or at least habituate more quickly to, potentially disturbing underwater sound than do cetaceans, and generally seem to be less responsive to exposure to industrial sound than most cetaceans. Please see Appendices B and C of Southall *et al.* (2007) for a review of studies involving marine mammal behavioral responses to sound.

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

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

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

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

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

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

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. The Ketchikan area contains active commercial shipping, ferry operations, commercial fishing as well as numerous recreational and other commercial vessel and background sound levels in the area are already elevated.

Airborne Acoustic Effects—Pinnipeds that occur near the project site could be exposed to airborne sounds associated with DTH and 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. There are no haulouts near the project site. Thus, the behavioral harassment of these animals is already accounted for in these estimates of potential take. Therefore, we do not believe that authorization of incidental take resulting from airborne sound for pinnipeds is warranted, and airborne sound is not discussed further here.

Marine Mammal Habitat Effects

NOAA's construction activities could have localized, temporary impacts on marine mammal habitat and their prey by increasing in-water sound pressure levels and slightly decreasing water quality. Increased noise levels may affect acoustic habitat (see masking discussion above) and adversely affect marine mammal prey in the vicinity of the project area (see discussion below). During DTH, impact and vibratory pile driving or removal, elevated levels of underwater noise would ensonify the project area 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. Construction activities are of short duration and would likely have temporary impacts on marine mammal habitat through increases in underwater and airborne sound.

A temporary and localized increase in turbidity near the seafloor would occur in the immediate area surrounding the area where piles are installed or removed. In general, turbidity associated with pile installation is localized to about a 25-ft (7.6-m) radius around the pile (Everitt *et al.*, 1980). The sediments of the project site will settle out rapidly when disturbed. Cetaceans are not expected to be close enough to the pile driving areas to experience effects of turbidity, and any pinnipeds could avoid localized areas of turbidity. Local strong currents are anticipated to disburse any additional suspended sediments produced by project activities at moderate to rapid rates depending on tidal stage. Therefore, we expect the impact from increased turbidity levels to be discountable to marine mammals and do not discuss it further.

In-Water Construction Effects on Potential Foraging Habitat

The area likely impacted by the project is relatively small compared to the available habitat in Southeast Alaska and does not include any Biologically Important Areas or other habitat of known importance. The area is highly influenced by anthropogenic activities. The total seafloor area affected by pile installation and removal is a small area compared to the vast foraging area available to marine mammals in the area. At best, the impact area provides marginal foraging habitat for marine mammals and fishes. Furthermore, pile driving and removal at the project site would not obstruct movements or migration of marine mammals.

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

In-water Construction Effects on Potential Prey—Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (*e.g.,* crustaceans, cephalopods, fish, zooplankton). Marine mammal prey varies by species, season, and location. 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 which are especially strong and/or intermittent low-frequency sounds, and behavioral responses such as flight or avoidance are the most likely effects. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. The reaction of fish to noise depends on the physiological state of the fish, past exposures, motivation (*e.g.,* feeding, spawning, migration), and other environmental factors. Hastings and Popper (2005) identified several studies that suggest fish may relocate to avoid certain areas of sound energy. Additional studies have documented effects of pile driving on fish; several are based on studies in support of large, multiyear bridge construction projects (*e.g.,* Scholik and Yan, 2001, 2002; Popper and Hastings, 2009). Several studies have demonstrated that impulse sounds might affect the distribution and behavior of some fishes, potentially impacting foraging opportunities or increasing energetic costs (*e.g.,* Fewtrell and McCauley, 2012; Pearson *et al.,* 1992; Skalski *et al.,* 1992; Santulli *et al.,* 1999; Paxton *et al.,* 2017). However, some studies have shown no or slight reaction to impulse sounds (*e.g.,* Pena *et al.,* 2013; Wardle *et al.,* 2001; Jorgenson and Gyselman, 2009; Popper *et al.,* 2015).

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 4–6 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 DTH and pile driving and removal and construction 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, in the form of increased turbidity, have the potential to adversely affect forage fish in the project area. Forage fish form a significant prey base for many marine mammal species that occur in the project area. Increased turbidity is expected to occur in the immediate vicinity (on the order of 10 ft (3 m) or less) of construction activities. However, suspended sediments and particulates are expected to dissipate quickly within a single tidal cycle. Given the limited area affected and high tidal dilution rates any effects on forage fish are expected to be minor or negligible. Finally, exposure to turbid waters from construction activities is not expected to be different from the current exposure; fish and marine mammals in Tongass Narrows are routinely exposed to substantial levels of suspended sediment from natural and anthropogenic sources.

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

Estimated Take

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 determination.

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

Authorized takes would primarily be by Level B harassment, as use of the acoustic sources (*i.e.,* vibratory or impact pile driving and DTH) have the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result for porpoises and harbor seals because predicted auditory injury zones are larger. The proposed mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

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

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

Acoustic Thresholds

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

Level B Harassment for non-explosive sources—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.,* frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.,* 2007, Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 microPascal (μPa) (root mean square (rms)) for continuous (*e.g.,* vibratory pile-driving) and above 160 dB re 1 μPa (rms) for non-explosive impulsive (*e.g.,* impact pile driving) or intermittent (*e.g.,* scientific sonar) sources.

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

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

These thresholds are provided in Table 4. 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 1μPa, and cumulative sound exposure level (L_E) has a reference value of 1μPa^{2}s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for 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 will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

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

In order to calculate distances to the Level A harassment and Level B harassment sound thresholds for the methods and piles being used in this project, NMFS used acoustic monitoring data from other locations to develop source levels for the various pile types, sizes and methods (Table 5). Because the steel piles being removed could be removed using either a pile clipper or hydraulic saw, we use the loudest, most precautionary source level for those piles.

TABLE 5—PROJECT SOUND SOURCE LEVELS

Method	Estimated noise levels (dB)	Source
24-inch DTH-impulsive	154 SELss	Reyff & Heyvaert (2019).
24-inch DTH-non-impulsive	166 dB RMS	Denes *et al.* (2016).
24-inch Steel Impact	211.2 Pk, 183.2 SEL, 197 RMS	Caltrans (2015) Table I.2.1 90th percentile.
14-inch Timber Vibratory	157 RMS	Caltrans (2015) Table I.2.2.
14-inch Steel Small Pile Clipper	154 RMS	NAVFAC SW (2020).
20- or 24-inch Steel Large Pile Clipper	161 RMS	NAVFAC SW (2020).

Note: SEL = single strike sound exposure level; RMS = root mean square.

Level B Harassment Zones

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

TL = B * Log10 (R1/R2),

Where

TL = transmission loss in dB
B = transmission loss coefficient; for practical spreading equals 15
R1 = the distance of the modeled SPL from the driven pile, and
R2 = the distance from the driven pile of the initial measurement

The recommended TL coefficient for most nearshore environments is the practical spreading value of 15. This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, which is the most appropriate assumption for NOAA's proposed activity in the absence of specific modelling.

NOAA determined underwater noise would fall below the behavioral effects threshold of 160 dB RMS for impact driving at 2,530 m and the 120 dB rms threshold for the other methods at between 1,848 and 11,659 m (Table 6). It should be noted that based on the bathymetry and geography of the project area, sound will not reach the full distance of the harassment isopleths in all directions.

Level A Harassment Zones

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of take by Level A harassment. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources such as pile driving or removal and DTH using any of the methods discussed above, NMFS User Spreadsheet predicts the closest distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would not incur PTS. We used the User Spreadsheet to determine the Level A harassment isopleths. Inputs used in the User Spreadsheet or models are reported in Table 1 and the resulting isopleths are reported in Table 6 for each of the construction methods and scenarios.

TABLE 6—LEVEL A AND LEVEL B ISOPLETHS (METERS) FOR EACH METHOD

Method	Pile type	Low-frequency	Mid-frequency	High-frequency	Phocids	Otariids	Level B
DTH	24-inch steel	130	5	155	70	5	11,659
Impact	24-inch steel	151	5	179	81	6	2,530
Vibratory	14-inch Timber	2	0	3	1	0	2,929
Small Pile Clipper	14-inch Steel	1	0	1	1	0	1,848
Large Pile Clipper	20- or 24-inch Steel.	1	1	2	1	0	5,412

Marine Mammal Occurrence and Take Calculation and Estimation

In this section we provide the information about the presence or group dynamics of marine mammals that will inform the take calculations. No density data are available for species in the project area. Here we describe how the information provided above is brought together to produce a quantitative take estimate. The estimates below are similar to and informed by prior projects in the Ketchikan area as discussed above. A summary of proposed take is in Table 9.

Humpback Whale

Humpback whales are expected to occur in the project area no more than twice per five-day work week. Typical group size for humpback whales in the project area is two animals. The project involves 47 days (10 work weeks) of in-water work where take could occur. Therefore, we estimate total take at 2 whales × 2/week × 10 weeks = 40 takes. All of these takes are expected to be Level B harassment takes as we believe the Level A shutdown zones can be fully implemented by Protected Species Observers (PSO) because of the large size, short dive duration, and obvious behaviors of humpback whales.

Given the data in Wade *et al.* (2021) discussed above on the relative frequencies of Hawaii and Mexico DPS humpback whales in the project area the 40 takes is expected to comprise 39

Hawaii DPS animals and 1 Mexico DPS animal.

Minke Whale

As discussed above minke whales have not been seen in the project area but could occur there. They are often solitary. Therefore we conservatively propose to authorize a single take of minke whales. This one estimated take is expected to be by Level B harassment as we believe the Level A shutdown zones can be fully implemented by PSOs because of the large size, short dive duration, and obvious behaviors of minke whales.

Gray Whale

Gray whales are expected to occur in the project area no more than once per month. Typical group size for gray whales in the project area is two animals. The project involves 47 days of in-water work where take could occur. Therefore, we estimate total take at two whales × two full months = four takes. All of these takes are expected to be Level B harassment takes as we believe the Level A shutdown zones can be fully implemented by PSOs because of the large size, short dive duration, and obvious behaviors of gray whales.

Killer Whale

Killer whales are expected to occur in the project area no more than once per month. Typical group size for killer whales in the project area is conservatively estimated at 10 animals. The project involves 47 days of in-water work where take could occur. Therefore, we estimate total take at 10 whales × 2 full months = 20 takes. All of these takes are expected to be Level B harassment takes as we believe the Level A shutdown zones can be fully implemented by PSOs because of the large size, short dive duration, and obvious behaviors of killer whales and the smaller size of the shutdown zones.

Pacific White-Sided Dolphin

Pacific white-sided dolphins are expected to occur in the project area no more than once per week. Typical group size for Pacific white-sided dolphins in the project area is 20 animals. The project involves 10 work weeks of in-water work where take could occur. Therefore, we estimate total take at 20 dolphins × 10 weeks = 200 takes. All of these takes are expected to be Level B harassment takes as we believe the Level A shutdown zones can be fully implemented by PSOs because of the large group size, short dive duration, and obvious behaviors of Pacific white-sided dolphins and the smaller size of the shutdown zones.

Harbor Porpoise

Harbor porpoises are expected to occur in the project area no more than three times per month. Typical group size for harbor porpoises in the project area is 5 animals. The project involves 47 days (2 months) of in-water work where take could occur. Therefore, we estimate total take at 5 porpoises × 6/month = 30 takes. Twenty of these takes are expected to be Level B harassment takes. Because the shutdown zone is not the full size of the large Level A harassment zone, and because harbor porpoises are small and cryptic and could sometimes remain undetected within the estimated harassment zones for a duration sufficient to experience PTS, we propose to authorize 10 takes by Level A harassment.

Dall's Porpoise

Dall's porpoises are expected to occur in the project area no more than three times. Typical group size for Dall's porpoises in the project area is 20 animals. The project involves two months of in-water work where take could occur. Therefore, we estimate total take at 20 porpoises × 3 = 60 takes. Forty of these takes are expected to be Level B harassment takes. Because the shutdown zone is not the full size of the large Level A harassment zone, and because Dall's porpoises are small and cryptic and could sometimes remain undetected within the estimated harassment zones for a duration sufficient to experience PTS, we propose to authorize 20 takes by Level A harassment.

Harbor Seal

Harbor seals are expected to occur in the project area once per day. The typical number of harbor seals per day in the project area is up to 12 animals. The project involves 47 days of in-water work where take could occur. Therefore, we estimate total take at 12 seals × 47 days = 564 takes. Seventy-five percent or 423 of these takes are expected to be Level B harassment takes. Because the shutdown zone is not the full size of the large Level A harassment zone, and because harbor seals are small and cryptic and could sometimes remain undetected within the estimated harassment zones for a duration sufficient to experience PTS, we propose to authorize 141 takes by Level A harassment.

Steller Sea Lion

Steller sea lions are expected to occur in the project area once per day. The typical number of Steller sea lions per day in the project area is up to 10 animals. The project involves 47 days of in-water work where take could occur. Therefore, we estimate total take at 10 sea lions × 47 days = 470 takes. Because the shutdown zone is small and Steller sea lions are not cryptic we believe the Level A shutdown zones can be fully implemented by PSOs and no Level A harassment take is proposed.

TABLE 7—PROPOSED AUTHORIZED AMOUNT OF TAKING, BY LEVEL A HARASSMENT AND LEVEL B HARASSMENT, BY SPECIES AND STOCK AND PERCENT OF TAKE BY STOCK

Common name	Stock	Level B harassment	Level A harassment	Percent of stock
Humpback whale *	Central North Pacific	40	0	0.4
Minke whale	Alaska	1	0	<0.1
Gray whale	Eastern North Pacific	4	0	<0.1
Killer whale	Northern Resident; Alaska Resident; West Coast Transient.	20	0	<6.7
Pacific White-sided dolphin	North Pacific	200	0	0.7
Dall's porpoise	Alaska	40	20	<0.1
Harbor porpoise	Southeast Alaska	20	10	0.3
Harbor seal	Clarence Strait	423	141	2.1
Steller sea lion	Eastern DPS	470	0	1.1

* 1 take from the ESA listed Mexico DPS.

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 IHAs to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

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

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. 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, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

Because of the need for an ESA Section 7 consultation for effects of the project on ESA listed humpback whales, there are a number of mitigation measures that go beyond, or are in addition to, typical mitigation measures we would otherwise require for this sort of project. The proposed measures are however typical for actions in the Ketchikan area. Additional or revised measures may be required once the consultation is finalized. The following mitigation measures are proposed in the IHA:

- 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;
- Conduct training between construction supervisors and crews and the marine mammal monitoring team and relevant NOAA staff prior to the start of all pile driving and DTH activity and when new personnel join the work, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood;
- Pile driving activity must be halted upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the harassment zone. If an ESA listed marine mammal is determined by the PSO to have been disturbed, harassed, harmed, injured, or killed (*e.g.,* a listed marine mammal is observed entering a shutdown zone before operations can be shut down, or is injured or killed as a direct or indirect result of this action), the PSO will report the incident to within one business day to *akr.section7@noaa.gov;*
- NOAA will establish and implement the shutdown zones indicated in Table 8. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones typically vary based on the activity type and marine mammal hearing group. To simplify implementation of shutdown zones NOAA has proposed to implement a single shutdown zone size for impact pile driving and DTH activities, with the shutdown zone being the largest of the Level A harassment isopleths for any of the hearing groups for those activities (180 m). For comparison purposes, Table 8 shows both the minimum shutdown zones we would normally require and the shutdown zones NOAA proposes to implement. NMFS proposes to include the latter in the requested IHA;
- Employ PSOs and establish monitoring locations as described in the Marine Mammal Monitoring Plan and Section 5 of the IHA. The Holder must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions. For all pile driving and removal at least three PSOs must be used;
- The placement of the PSOs during all pile driving and removal and DTH activities will ensure that the entire shutdown zone is visible during pile installation. Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone will not be visible (*e.g.,* fog, heavy rain), pile driving and removal must be delayed until the PSO is confident marine mammals within the shutdown zone could be detected;
- Monitoring must take place from 30 minutes prior to initiation of pile driving activity through 30 minutes post-completion of pile driving activity. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine the shutdown zones clear of marine mammals. Pile driving may commence following 30 minutes of observation when the determination is made;
- 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 without re-detection of the animal (30 minutes for humpback whales);
- For humpback whales, if the boundaries of the harassment zone have not been monitored continuously during a work stoppage, the entire harassment zone will be surveyed again to ensure that no humpback whales have entered the harassment zone that were not previously accounted for;
- In-water activities will take place only: Between civil dawn and civil dusk when PSOs can effectively monitor for the presence of marine mammals; during conditions with a Beaufort Sea State of 4 or less; when the entire shutdown zone and adjacent waters are visible (*e.g.,* monitoring effectiveness is not reduced due to rain, fog, snow, etc.). Pile driving activities may continue for up to 30 minutes after sunset during evening civil twilight, as necessary to secure a pile for safety prior to demobilization for the evening. PSO(s) will continue to observe shutdown and monitoring zones during this time. The length of the post-activity monitoring period may be reduced if darkness precludes visibility of the shutdown and monitoring zones;
- Vessel operators will maintain a watch for marine mammals at all times while underway; stay at least 91 m (100 yards (yd)) away from listed marine mammals, except they will remain at least 460 m (500 yd) from endangered

North Pacific right whales (in the unlikely event that the species were to occur in the area); travel at less than 5 knots (9 km/hr) when within 274 m (300 yd) of a whale; avoid changes in direction and speed when within 274 m (300 yd) of whales, unless doing so is necessary for maritime safety; not position vessel(s) in the path of whales, and will not cut in front of whales in a way or at a distance that causes the whales to change their direction of travel or behavior (including breathing/surfacing pattern); check the waters immediately adjacent to the vessel(s) to ensure that no whales will be injured when the propellers are engaged; reduce vessel speed to 10 knots or less when weather conditions reduce visibility to 1.6 km (1 mi) or less; adhere to the Alaska Humpback Whale Approach Regulations when transiting to and from the project site (see 50 CFR 216.18, 223.214, and 224.103(b)); not allow lines to remain in the water, and no trash or other debris will be thrown overboard, thereby reducing the potential for marine mammal entanglement; follow established transit routes and will travel <10 knots while in the harassment zones; the speed limit within Tongass Narrows is 7 knots for vessels over 23 ft in length. If a whale's course and speed are such that it will likely cross in front of a vessel that is underway, or approach within 91 m (100 yards (yd)) of the vessel, and if maritime conditions safely allow, the engine will be put in neutral and the whale will be allowed to pass beyond the vessel, except that vessels will remain 460 m (500 yd) from North Pacific right whales; and

- NOAA must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. A soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

TABLE 8—MINIMUM REQUIRED SHUTDOWN ZONES (METERS) BY HEARING GROUP AND VOLUNTARY PLANNED SHUTDOWN ZONES FOR EACH METHOD

Method	Pile type	Low frequency	Mid-frequency	High frequency	Phocids	Otariids	All
DTH	24-inch steel	130	10	160	70	10	180
Impact	24-inch steel	160	10	180	90	10	180
Vibratory	14-inch Timber	10	10	10	10	10	10
Small Pile Clipper	14-inch Steel	10	10	10	10	10	10
Large Pile Clipper	20- or 24-inch Steel.	10	10	10	10	10	10

Note: *First five columns are what NMFS would consider appropriate in this circumstance, and the last column is what applicant has proposed and what NMFS proposes to include in the IHA.*

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

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 in the proposed action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

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

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

Visual Monitoring

Monitoring must be conducted by qualified, NMFS-approved PSOs, in accordance with the following:

- PSOs must be independent (*i.e.,* not construction personnel) and have no other assigned tasks during monitoring periods. At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued IHA. Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training. PSOs must be approved by NMFS prior to beginning any activity subject to this IHA; and
- PSOs must record all observations of marine mammals as described in the Section 5 of the IHA and the Marine Mammal Monitoring Plan, regardless of distance from the pile being driven. PSOs shall document any behavioral reactions in concert with distance from piles being driven or removed;

PSOs must have the following additional qualifications:

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

NOAA must establish the following monitoring locations. For all pile driving and DTH activities, a minimum of one PSO must be assigned to the active pile driving or DTH location to monitor the shutdown zones and as much of the Level B harassment zones as possible. For all pile driving and DTH activities, two additional PSOs are required. The additional PSOs will start at the project site and travel along Tongass Narrows, counting all humpback whales present, until they have reached the edge of the respective harassment zone. At this point, the PSOs will identify suitable observation points from which to observe the width of Tongass Narrows for the duration of pile driving activities. For the largest DTH zones these are expected to be on South Tongass Highway near Mountain Point and North Tongass Highway just northwest of the intersection with Carlanna Creek. See application Figure 11–1 for map of PSO locations. If visibility deteriorates so that the entire width of Tongass Narrows at the harassment zone boundary is not visible, additional PSOs may be positioned so that the entire width is visible, or work will be halted until the entire width is visible to ensure that any humpback whales entering or within the harassment zone are detected by PSOs.

Reporting

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

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including the number and type of piles driven or removed and by what method (*i.e.*, impact, vibratory or DTH) and the total equipment duration for vibratory removal or DTH for each pile or hole or total number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring;
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;
- Upon observation of a marine mammal, the following information: Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting; Time of sighting; Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species; Distance and bearing of each marine mammal observed relative to the pile being driven for each sighting (if pile driving was occurring at time of sighting); Estimated number of animals (min/max/best estimate); Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.); Animal's closest point of approach and estimated time spent within the harassment zone; Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- Number of marine mammals detected within the harassment zones, by species;
- Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any; and
- If visibility degrades to where the PSO(s) cannot view the entire impact or vibratory harassment zones, take of humpback whales will be extrapolated based on the estimated percentage of the monitoring zone that remains visible and the number of marine mammals observed.

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

Reporting Injured or Dead Marine Mammals

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

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

Negligible Impact Analysis and Determination

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

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

The takes from Level A and Level B harassment would be due to potential behavioral disturbance, TTS, and PTS. No serious injury or mortality is anticipated given the nature of the activity and measures designed to minimize the possibility of injury to marine mammals. The potential for harassment is minimized through the construction method and the implementation of the planned mitigation measures (see Proposed Mitigation section).

The Level A harassment zones identified in Table 6 are based upon an animal exposed to impact pile driving multiple piles per day. Considering the short duration to impact drive or vibe each pile and breaks between pile installations (to reset equipment and move pile into place), this means an animal would have to remain within the area estimated to be ensonified above the Level A harassment threshold for multiple hours. This is highly unlikely given marine mammal movement throughout the area. If an animal was exposed to accumulated sound energy, the resulting PTS would likely be small (*e.g.*, PTS onset) at lower frequencies where pile driving energy is concentrated, and unlikely to result in impacts to individual fitness, reproduction, or survival.

The nature of the pile driving project precludes the likelihood of serious injury or mortality. For all species and stocks, take would occur within a limited, confined area (adjacent to the project site) of the stock's range. Level A and Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein. Further the amount of take proposed to be authorized is extremely small when compared to stock abundance.

Behavioral responses of marine mammals to pile driving at the project site, if any, are expected to be mild and temporary. Marine mammals within the Level B harassment zone may not show any visual cues they are disturbed by activities (as noted during modification to the Kodiak Ferry Dock) or could become alert, avoid the area, leave the area, or display other mild responses that are not observable such as changes in vocalization patterns. Given the short duration of noise-generating activities per day, any harassment would be temporary. There are no other areas or times of known biological importance for any of the affected species.

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

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

- No mortality is anticipated or authorized;
- Authorized Level A harassment would be very small amounts and of low degree;
- No important habitat areas have been identified within the project area;
- For all species, Tongass Narrows is a very small and peripheral part of their range;
- NOAA would implement mitigation measures such as soft-starts, and shut downs; and
- Monitoring reports from similar work in Tongass Narrows have documented little to no effect on individuals of the same species impacted by the specified activities.

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

Small Numbers

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

The amount of take NMFS proposes to authorize is below one third of the estimated stock abundance for all species (in fact, take of individuals is less than 10 percent of the abundance of the affected stocks, see Table 7). This is likely a conservative estimate because we assume all takes are of different individual animals, which is likely not the case. Some individuals may return multiple times in a day, but PSOs would count them as separate takes if they cannot be individually identified. The Alaska stock of Dall's porpoise has no official NMFS abundance estimate for this area as the most recent estimate is greater than eight years old. Nevertheless, the most recent estimate was 83,400 animals and it is highly unlikely this number has drastically declined. Therefore, the 60 authorized takes of this stock clearly represent small numbers of this stock. Likewise, the Southeast Alaska stock of harbor porpoise has no official NMFS abundance estimate as the most recent estimate is greater than eight years old. Nevertheless, the most recent estimate was 11,146 animals (Muto *et al.,* 2021) and it is highly unlikely this number has drastically declined. Therefore, the 30 authorized takes of this stock clearly represent small numbers of this stock. There is no current or historical estimate of the Alaska minke whale stock, but there are known to be over 1,000 minke whales in the Gulf of Alaska (Muto *et al.,* 2018) so the 1 authorized take clearly represents small numbers of this stock.

Based on the analysis contained herein of the proposed activity (including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS preliminarily finds that small numbers of marine mammals will 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.

Alaska Native hunters in the Ketchikan vicinity do not traditionally harvest cetaceans (Muto *et al.*, 2021). Harbor seals are the most commonly targeted marine mammal that is hunted by Alaska Native subsistence hunters within the Ketchikan area. In 2012 an estimated 595 harbor seals were taken for subsistence uses, with 22 of those occurring in Ketchikan (Wolfe *et al.*, 2013). This is the most recent data available. The harbor seal harvest per capita in both communities was low, at 0.02 for Ketchikan. ADF&G subsistence data for Southeast Alaska shows that from 1992 through 2008, plus 2012, from zero to 19 Steller sea lions were taken by Alaska Native hunters per year with typical harvest years ranging from zero to five animals (Wolfe *et al.*, 2013). In 2012, it is estimated 9 sea lions were taken in all of Southeast Alaska and only from Hoonah and Sitka. There are no known haulout locations in the project area. Both the harbor seal and the Steller sea lion may be temporarily displaced from the action area. However, neither the local population nor any individual pinnipeds are likely to be adversely impacted by the proposed action beyond noise-induced harassment or slight injury. The proposed project is anticipated to have no long-term impact on Steller sea lion or harbor seal populations, or their habitat no long term impacts on the availability of marine mammals for subsistence uses is anticipated.

Based on the description of the specified activity, the measures described to minimize adverse effects on the availability of marine mammals for subsistence purposes, and the proposed mitigation and monitoring measures, NMFS has preliminarily determined that there will not be an unmitigable adverse impact on subsistence uses from NOAA'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, in this case with the Alaska Regional Office, whenever we propose to authorize take for endangered or threatened species.

NMFS is proposing to authorize take of Mexico DPS of humpback whales which are listed under the ESA. The NMFS Office of Protected Resources has requested initiation of Section 7 consultation with the Alaska Region 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 the NOAA to conduct the NOAA Port Facility Project in Ketchikan, Alaska from 1 February 2022 through 31 January 2023, 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 NOAA Ketchikan Port project. We also request at this time 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, one-year Renewal IHA following 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 notification is planned or (2) the activities as described in the Description of Proposed Activity section of this notification would not be completed by the time the IHA expires and a Renewal IHA would allow for completion of the activities beyond that described in the Dates and Duration section of this notification, 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 Renewal IHA expiration date cannot extend beyond one 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; and

- 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: November 26, 2021.

Kimberly Damon-Randall,

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

[FR Doc. 2021–26122 Filed 11–30–21; 8:45 am]

BILLING CODE 3510–22–P