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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XE60

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Gustavus Ferry Terminal Improvements Project.

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

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that we have issued an incidental harassment authorization (IHA) to the Alaska Department of Transportation and Public Facilities (ADOT&PF) to incidentally harass seven species of marine mammals during activities related to the implementation of a Ferry Terminal Improvements Project in Gustavus, Alaska.

DATES: This authorization is valid from December 15, 2017 through December 14, 2018.

FOR FURTHER INFORMATION CONTACT: Robert Pauline, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Availability

An electronic copy of ADOT&PF's application and supporting documents, as well as a list of the references cited in this document, may be obtained online at:

www.nmfs.noaa.gov/pr/permits/incidental/construction.htm. In case of problems accessing these

documents, please call the contact listed above (see **FOR FURTHER INFORMATION CONTACT**).

Background

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

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 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."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS' review of an application followed by a 30-day public notice and comment period on any proposed authorization for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

Except with respect to certain activities not pertinent here, 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)."

Summary of Request

On July 31, 2015, NMFS received an application from the ADOT&PF for the taking of marine mammals incidental to reconstructing the existing ferry terminal at Gustavus, Alaska, referred to as the Gustavus Ferry Terminal. On April 15, 2016, NMFS received a revised application. NMFS determined that the application was adequate and complete on April 20, 2016. ADOT&PF proposed to conduct in-water work that may incidentally harass marine mammals (*i.e.*, pile driving and removal). This IHA would be valid from December 15, 2017 through December 14, 2018.

Proposed activities included as part of the Gustavus Ferry Terminal Improvements Project with potential to affect marine mammals include vibratory pile driving and pile removal, as well as impact pile driving.

Species with the expected potential to be present during the project timeframe include harbor seal (*Phoca vitulina*), Steller sea lion (*Eumetopias jubatus*), harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*Phocoenoides dalli*), killer whale (*Orcinus orca*), humpback whale (*Megaptera novaeangliae*), and minke whale (*Balaenoptera acutorostrata*).

Description of the Specified Activity

Overview

We provided a description of the proposed action in our **Federal Register** notice announcing the proposed authorization (81 FR 40852; June 23, 2016). Please refer to that document; we provide only summary information here.

The ADOT&PF is modernizing its Gustavus Ferry Terminal in Gustavus, Alaska. The purpose of the project is to improve the vehicle transfer span and dock such that damage during heavy storms is prevented, and to improve the safety of vehicle and pedestrian transfer operations. ADOT&PF requested an IHA for work that includes removal of the existing steel bridge float and restraint structure and replacing it with two steel/concrete bridge lift towers capable of elevating the relocated steel transfer bridge above the water when not in use. Each tower would be supported by four 30-inch steel piles.

Dates and Duration

Pile installation and extraction associated with the Gustavus Ferry Terminal project will begin no sooner than December 15, 2017 and will be completed no later than December 14, 2018 (one year following IHA issuance). Project activities are proposed to occur during two time-periods. The first period will occur in spring of 2018, with pile driving/removal and in-water work occurring during the period of March 1, 2018 through May 31, 2018. The second period is scheduled for fall of 2018, with pile driving/removal and in-water work occurring during the period of September 1, 2018 through November 30, 2018.

Pile driving and removal is estimated to occur for a total of about 171 hours over the course of 16 to 50 days. For the purposes of this analysis, 50 days of driving will be assumed. Impact pile driving will take place for up to 57 hours for approximately three hours per day while vibratory driving will require up to 114 hours and require up to 6 hours per day. Fifty-

seven piles will be installed. Sixteen of these piles will be temporary and will be removed. The pile driving schedule is shown in Table 1.

Table 1. Pile driving Schedule

Description	Project Components							
	Dock Extension	Bridge Abutment	Lift Towers	Access Float	Log Float	Pile Removal	Piles Installed/ Total Piles	Installation/ Removal per Day
# of Piles	34	6	8	6	3	16	57/73	3 piles/day (maximum)
Pile Size (Diameter)	24-inch	24-inch	30-inch	30-inch	12.75-inch	12.75- inch	--	--
Total Strikes (Impact)	20,400	3,600	4,800	3,600	1,800	0	34,200	1,800 blows/day
Total Impact Time	34 hrs	6 hrs	8 hrs	6 hrs	3 hrs	0	57 hrs	3 hrs/day
Total Vibratory Time	54 hrs	9 hrs	13 hrs	9 hrs	5 hrs	24 hrs	114 hrs	6 hrs/day

Specific Geographic Region

The proposed activities will occur at the Gustavus Ferry Terminal located in Gustavus, Alaska on the Icy Passage water body in Southeast Alaska (See Figures 1 and 2 in the application).

Comments and Responses

A notice of NMFS's proposal to issue an IHA to ADOT&PF was published in the **Federal Register** on June 23, 2016 (81 FR 40852). That notice described, in detail, ADOT&PF's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. During the 30-day public comment period, NMFS received only one set of comments, from the Marine Mammal Commission (Commission); the Commission's recommendations and our responses are provided here, and the comments have been posted online at: www.nmfs.noaa.gov/pr/permits/incidental/construction.htm. Please see the

Commission's letter for background and rationale regarding the recommendations, which are listed below.

Comment 1: The Commission recommended that NMFS use a sound source level higher than the 154.3 dB re 1 μ Pa at 10 m that was recorded at Kake Harbor by ADOT&PF for deriving disturbance zone isopleths during vibratory driving of 30- inch steel piles at Gustavus. The Commission was concerned that this value was considerably lower than other sound source levels (SSLs) associated with driving piles of similar type and size.

Response: ADOT&PF implemented sound source verification (SSV) measurements at Kake Harbor, Alaska and proposed to use this information as a proxy SSL for the Gustavus Ferry Terminal project. The results determined a SSL of 154.3 dB re 1 μ Pa at 10 m. This value was further modified to 157.7 dB re 1 μ Pa after the original findings were re-analyzed to include additional data from a single restraint pile that had not been included in the initial results. NMFS agrees that this SSL is lower than others that have been documented in datasets generated from locations outside Alaska. However, ADOT&PF will be using the same types of vibratory and impact hammers at Gustavus as were used at Kake. Additionally, while the substrate at Gustavus is not identical to those at Kake, both are similarly composed of relatively fine-grained sediments. The project at Kake was also using pile types and sizes that are comparable to those planned for use at Gustavus. Finally, NMFS will require ADOT&PF to conduct SSV testing as a monitoring requirement. If the recorded SSLs at Gustavus are greater than those measured at Kake, ADOT&PF will increase the isopleths as appropriate.

Comment 2: The Commission recommended that NMFS ensure that the estimated numbers of takes are adequate if the amended Level B harassment zone calculated from a source greater than 157.7 dB re 1 μ Pa extends into Icy Strait.

Response: NMFS used a SSL of 157.7 dB re 1 μ Pa to calculate the Level B harassment isopleth, which does not extend into Icy Strait. If the Level B harassment zone needs to be increased after ADOT&PF conducts on-site SSV verification testing, NMFS will re-evaluate numbers of estimated takes as appropriate.

Comment 3: The Commission recommended that NMFS compile available *in-situ* pile driving and removal data into a central database. This would enable analysts to crosscheck data in situations like the one discussed herein, as well as in situations when applicants are having difficulty determining proxy source levels.

Response: NMFS agrees with the Commission that a database would be of value and has begun compiling underwater sound-related information.

Comment 4: The Commission recommends that NMFS require every applicant to specify the sediment composition, water depth (in terms of hydrophone placement and bathymetry), duration over which the pressure was averaged for sound pressure level root mean square (SPLrms) metrics, and median values in all future hydroacoustic monitoring reports.

Response: NMFS will require every applicant to specify the sediment composition and water depth (in terms of hydrophone placement and bathymetry) for SSV. In addition, NMFS will require the applicants to provide median and averaged values of sound source measurements. However, duration over which the pressure was averaged for SPLrms values can vary for impact pile driving since NMFS requires that SPLrms be computed using a 90 percent energy window. Therefore, NMFS will only require the applicant to provide the duration from vibratory pile driving measurements.

Comment 5: The Commission recommended that NMFS ensure consistency regarding integration of timeframes used for SPLrms measurements (*e.g.*, 1-second averages, maximum over 10 seconds, or maximum over 30 seconds) in all future hydroacoustic monitoring reports.

Response: In 2012, NMFS worked with scientists from the University of Washington and stakeholders from the Washington State Department of Transportation to develop a set of guidance for data collection methods to characterize impact and vibratory pile driving source levels relevant to marine mammals. For vibratory pile driving, the guidance recommends taking 10 second averages across the whole event and averaging all the 10 second periods to calculate the SPLrms value. For impact pile driving, the guidance recommends characterizing overall dBrms levels by integrating sound for each waveform across 90% of the acoustic energy in each wave (using the 5-95 percentiles to establish the 90% criterion) and averaging across all waves in the pile-driving event. NMFS will require these methods for vibratory and impact pile driving sound source measurements in the future.

Description of Marine Mammals in the Area of the Specified Activity

There are seven marine mammal species known to occur in the vicinity of the project area. Two of the species are known to occur near the Gustavus Ferry terminal; the harbor seal and Steller sea lion. The remaining five species may occur in Icy Passage but less frequently and farther from the ferry terminal: Harbor porpoise, Dall's porpoise, killer whale, humpback whale, and minke whale.

We reviewed ADOT&PF's detailed species descriptions, including life history information, for accuracy and completeness and refer the reader to Section 3 of ADOT&PF's application as well as our notice of proposed IHA published in the **Federal Register** (81 FR 40852; June 23, 2016).

Please also refer to NMFS' website (www.nmfs.noaa.gov/pr/species/mammals) for generalized species accounts that provide information regarding the biology and behavior of the marine resources that occur in proximity to the project area.

Table 2 lists marine mammal stocks that could occur near the project area that may be subject to harassment and summarizes key information regarding stock status and abundance. Note that the listed status of the humpback whale was updated in 2016 after NMFS conducted a global status review (81 FR 62259; September 8, 2016). The humpback whale was listed as endangered under the Endangered Species Conservation Act (ESCA) on December 2, 1970 (35 FR 18319). Congress replaced the ESCA with the Endangered Species Act (ESA) in 1973, and humpback whales continued to be listed as endangered. Under the revised listing status, NMFS identified 14 distinct population segments (DPS). Of these 14 DPSs, four remain listed as endangered, one is listed as threatened, and the remaining nine were identified as not warranted for listing. For humpback whales found in southeast Alaska, NMFS anticipates that the vast majority (approximately 94 percent) would be from the non-listed Hawaii DPS. A small proportion (approximately 6 percent) of whales occurring in southeast Alaska are expected to be of the Mexico DPS, which remains listed as threatened.

Please see NMFS' Stock Assessment Reports (SAR), available at www.nmfs.noaa.gov/pr/sars, for more detailed accounts of these stocks' status and abundance.

Table 2 . Marine Mammal Species Potentially Present in Region of Activity

Common Name	Scientific Name	Stock Abundance Estimate ¹	ESA Status	MMPA Status	Frequency of Occurrence ²
Harbor seal	<i>Phoca vitulina</i>	7,210 (Glacier Bay/Icy Strait)	Not listed	Not Strategic, non-depleted	Likely

Steller sea lion	<i>Eumetopias jubatus</i>	50,983 (western distinct population segment in Alaska)/ 71,562 (eastern stock)	Endangered (western Distinct Population Segment)	Strategic, depleted (western DPS)/ Not Strategic, non-depleted (eastern DPS)	Likely
Dall's porpoise	<i>Phocoenoides dalli</i>	83,400	Not listed	Not Strategic, non-depleted	Infrequent
Harbor porpoise	<i>Phocoena phocoena</i>	11,146 (Southeast Alaska)	Not listed	Strategic, non-depleted	Likely
Humpback whale (Central North Pacific Stock)	<i>Megaptera novaeangliae</i>	10,103	Threatened (Mexico DPS)/Not listed (Hawaii DPS)	Strategic, depleted (Mexico DPS)/Not Strategic, non-depleted (Hawaii DPS)	Infrequent
Killer whale	<i>Orcinus orca</i>	261 (Northern resident)/587 (Gulf of Alaska transient)/243 (West coast transient)	Not listed	Not strategic, non-depleted (all stocks)	Infrequent
Minke whale	<i>Balaenoptera acutorostrata</i>	Unknown	Not listed	Not Strategic/non-depleted	Infrequent

¹NMFS marine mammal stock assessment reports at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>

²Infrequent: confirmed, but irregular sightings

Likely: confirmed and regular sightings of the species in the area year-round.

Potential Effects of the Specified Activity on Marine Mammals

The effects of underwater noise from pile driving activities for the Ferry Terminal Improvements Project have the potential to result in harassment of marine mammals in the vicinity of the action area. The **Federal Register** notice for the proposed IHA (81 FR 40852, June 23, 2016) included a discussion of the effects of anthropogenic noise on marine mammals.

Therefore, that information is not repeated here; please refer to the **Federal Register** notice for that information. No instances of serious injury or mortality are expected as a result of the pile driving activities.

Anticipated Effects on Habitat

The main impact associated with the ADOT&PF project would be temporarily elevated sound levels and the associated direct effects on marine mammals. The project would not result in permanent impacts to habitats used directly by marine mammals but may have potential short-term impacts to food sources such as forage fish, and minor impacts to the immediate substrate resulting in a temporary, localized increase in turbidity. These potential effects are discussed in detail in the **Federal Register** notice for the proposed IHA (81 FR 40852, June 23, 2016), therefore that information is not repeated here; please refer to that **Federal Register** notice for that information.

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 such activity, “and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking” for certain subsistence uses. NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, their habitat (50 CFR 216.104(a)(11)). For the proposed project, ADOT&PF worked with NMFS to develop the following mitigation measures to minimize the potential impacts to marine

mammals in the project vicinity. The primary purposes of these mitigation measures are to minimize sound levels from the activities, and to shut down operations and monitor marine mammals within designated zones of influence corresponding to NMFS' current Level A and B harassment thresholds.

In addition to the measures described later in this section, ADOT&PF will employ the following standard mitigation measures:

(a) Conduct briefings between construction supervisors and crews, and marine mammal monitoring team, prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures;

(b) For in-water heavy machinery work other than pile driving (*e.g.*, standard barges, tug boats, barge-mounted excavators, or clamshell equipment used to place or remove material), if a marine mammal comes within 10 m, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions. This type of work could include the following activities: (1) movement of the barge to the pile location; or (2) positioning of the pile on the substrate via a crane (*i.e.*, stabbing the pile); and

(c) To limit the amount of waterborne noise, a vibratory hammer will be used for initial driving, followed by an impact hammer to proof the pile to required load-bearing capacity.

Establishment of Shutdown Zone—For all pile driving activities, ADOT&PF will establish a shutdown zone. The purpose of a shutdown zone is generally to define an area within which shutdown of activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). In this case, shutdown zones are intended to contain areas in which SPLs equal or exceed acoustic injury criteria, based on NMFS' new acoustic technical

guidance published in the Federal Register on August 4, 2016 (81 FR 51693). The shutdown zones vary for specific species. For impact driving, the shutdown zone extends to 550 m for humpback whale and minke whale; for harbor seal, harbor porpoise and Dall's porpoise, the zone extends to 100 m; and for killer whale and Steller sea lion, the zone is set at 25 m. Note that for harbor seal, harbor porpoise, and Dall's porpoise, the injury zones extend beyond the designated shutdown zones, resulting in potential for some Level A take for these species. This approach will allow operations to continue when animals from these three species are sighted beyond the the 100 m shutdown zone. If the shutdown zone extended out to the full PTS isopleth (282.3 m for harbor seal; 628 m for harbor porpoise and Dall's porpoise) for these species, it is likely that impact driving operations would have to be shut down continuously due to the relatively high abundance of animals in the project area. Permitting Level A take will allow the project to be completed in a relatively expedient manner while impacting a limited number of animals. For vibratory driving, the shutdown zone is 20 m for harbor porpoise, Dall's porpoise, humpback whale and minke whale. The shutdown zone for killer whale, harbor seal and Steller sea lion is 10 m during vibratory driving. The derivation of these shutdown isopleths is described in the *Estimated Take* section.

Establishment of Level A Take Zone—ADOT&PF will establish Level A take zones which are areas beyond the shutdown zones where animals may be exposed to sound levels that could result in permanent threshold shift (PTS).

Establishment of Disturbance Zones—ADOT&PF will establish Level B disturbance zones or zones of influence (ZOI) which, according to current NMFS guidance, are areas where SPLs equal or exceed 160 dB rms for impact driving and 120 dB rms for vibratory driving. Disturbance zones provide utility for monitoring by establishing monitoring protocols for areas

adjacent to the shutdown zones. Monitoring of disturbance zones enables observers to be aware of and communicate the presence of marine mammals in the project area but outside the shutdown zone and thus prepare for potential shutdowns of activity.

Temporal and Seasonal Restrictions —The following restrictions will apply to all pile driving activities:

(a) Work may only occur during daylight hours, when visual monitoring of marine mammals can be conducted;

(b) All in-water construction will be limited to the periods between March 1 and May 31, 2018, and September 1 and November 30, 2018; and

(c) Starting March 1, 2018 through May 31, 2018 and September 1, 2018, through September 30, 2018, all pile driving operations will end at 4 pm as charter fishing vessels return to the dock. Steller sea lions are attracted and habituated to the project area to forage on scraps from the charter boats that are returning to the dock and cleaning fish in the late afternoon (pers. Comm. Chris Gabriele (Hart Crowser 2015)). Late afternoon is likely to be the period of the day when the highest numbers of sea lions are present in the action area, so stopping operations will limit exposure to concentrated higher numbers of Steller sea lions. Because different numbers of fishing charter vessels may be operating each day and returning at various times, pile driving will stop if 5 or more Steller sea lions are observed following charter fishing vessels to the dock prior to 4pm;

Soft Start—The use of a soft-start procedure is believed to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors will be required to provide an initial set of strikes from the hammer at 40 percent energy, each strike

followed by no less than a 30-second waiting period. This procedure will be conducted a total of three times before impact pile driving begins. Soft start will also be conducted whenever impact driving commences after 30 or more minutes since the last impact pile driving action.

Sound Attenuation Devices—During impact pile driving, contractors will be required to use pile caps. Pile caps reduce the sound generated by the pile, although the level of reduction can vary.

Mitigation Conclusions

We have carefully evaluated ADOT&PF's mitigation measures and considered their effectiveness in past implementation to determine whether they are likely to effect the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: (1) The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals, (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and (3) the practicability of the measure for applicant implementation.

Any mitigation measure(s) we prescribe should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

(1) Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal);

(2) A reduction in the number (total number or number at biologically important time or location) of individual marine mammals exposed to stimuli expected to result in incidental take (this goal may contribute to 1 above);

(3) A reduction in the number (total number or number at biologically important time or location) of times any individual marine mammal would be exposed to stimuli expected to result in incidental take (this goal may contribute to 1 above);

(4) A reduction in the intensity of exposure to stimuli expected to result in incidental take (this goal may contribute to 1 above);

(5) Avoidance or minimization of adverse effects to marine mammal habitat, paying particular attention to the prey base, blockage or limitation of passage to or from biologically important areas, permanent destruction of habitat, or temporary disturbance of habitat during a biologically important time; and

(6) For monitoring directly related to mitigation, an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of ADOT&PF's measures, including information from monitoring of implementation of mitigation measures very similar to those described here under previous IHAs from other marine construction projects, we have determined that the mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth “requirements pertaining to the monitoring and reporting of such taking.” The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for incidental take 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 action area. ADOT&PF submitted a marine mammal monitoring plan as part of the IHA application. It can be found in Appendix B of the Application.

Any monitoring requirement we prescribe should improve our understanding of one or more of the following:

- Occurrence of marine mammal species in action area (*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 responses to acute stressors, or impacts of chronic exposures (behavioral or physiological);
- How anticipated responses to stressors impact either: (1) Long-term fitness and survival of an individual; or (2) Population, species, or stock; and
- Effects on marine mammal habitat and resultant impacts to marine mammals.
- Mitigation and monitoring effectiveness.

Monitoring Measures

The monitoring measures described below for the Final IHA have been updated somewhat from those listed in the notice of proposed authorization, to reflect NMFS' current

standard monitoring measures for applicable IHAs. These updates do not change the substance, scope, or anticipated effectiveness of the monitoring measures.

Monitoring Protocols—Monitoring will be conducted by qualified marine mammal observers (MMOs), who are trained biologists, with the following minimum qualifications:

- Independent observers (i.e., not construction personnel) are required;
- At least one observer must have prior experience working as an observer;
- Other observers may substitute education (undergraduate degree in biological science or related field) or training for experience;
- 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 and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior;
- 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; and
- NMFS will require submission and approval of observer CVs.

In order to effectively monitor the pile driving monitoring zones, the MMOs will be positioned at the best practical vantage points. The monitoring position may vary based on pile driving activities and the locations of the piles and driving equipment. These may include the catwalk at the ferry terminal, the contractor barge, on a vessel, or another location deemed to be more advantageous. The monitoring location will be identified with the following characteristics: (1) Unobstructed view of pile being driven; (2) Unobstructed view of all water within a 3,265 m (vibratory driving) and 2,090 m (impact driving) radius of each pile, although it is understood that monitoring may be impaired at longer distances; (3) Clear view of pile driving operator or construction foreman in the event of radio failure; and; (4) Safe distance from pile driving activities in the construction area.

A total of two observers will be on site and actively observing the shutdown and disturbance zones during all pile driving and extraction activities. Observers will use their naked eye with the aid of big-eye binoculars and a spotting scope to search continuously for marine mammals during all pile driving and extraction activities. One observer will always be positioned on the dock looking out to monitor the zone that is currently in effect. A second observer will be located on either the dock supplementing efforts of the first observer in monitoring from that point, or, when weather and safety conditions permit, on a vessel transiting the observation zones. In the **Federal Register** notice for the proposed IHA, NMFS had recommended that ADOT&PF coordinate with the NPS and whale-watching charters to augment their land-based monitoring with information from boats in Icy Strait/Passage. However, most NPS surveys and whale-watching charters occur outside of the designated work windows for this project (*i.e.*, September through November and March through May). Therefore, this protocol has been removed as a monitoring requirement under this IHA. However, monitoring will be augmented

through the use of two on-site observers, rather than the one on-site observer required under the proposed IHA.

The following additional measures apply to visual monitoring:

- Monitoring will begin 30 minutes prior to pile driving. This will ensure that all marine mammals in the monitoring zone are documented and that no marine mammals are present in the injury zone;
- If a marine mammal comes within or approaches the shutdown zone, pile driving operations shall cease. Pile driving will only commence once observers have declared the shutdown zone clear of the marine mammals or if it has not been seen in the shutdown zone for 30 minutes for cetaceans or 15 minutes for pinnipeds. Their behavior will be monitored and documented. The shutdown zone may only be declared clear, and pile driving started, when the entire shutdown zone is visible (*i.e.*, when not obscured by dark, rain, fog, etc.);
- When a marine mammal is observed, its location will be determined using a rangefinder to verify distance and a GPS or compass to verify heading;
- The MMOs will record any cetacean or pinniped present in the injury zone. The Level A zone extends out to 630 m from the site of impact pile driving activity for harbor porpoise and Dall's porpoise. The Level A zone for harbor seals during impact driving is set at 285 m. There are no Level A take zones applicable to other species for which take is authorized.
- The MMOs will record any cetacean or pinniped present in the disturbance zone. For impact driving the Level B harassment area encompasses a radius of 2,090 m from the site of pile driving. During vibratory driving radius of the Level B harassment area extends to 3,265 m.

- At the end of the pile driving day, post-construction monitoring will be conducted for 30 minutes beyond the cessation of pile driving;
- If any marine mammal species are encountered during activities that are not listed in Table 1 for authorized taking and are likely to be exposed to SPLs greater than or equal to 160 dB re 1 μ Pa (rms) for impact driving and 120 dB re 1 μ Pa (rms) for vibratory driving, then the ADOT&PF must stop pile driving activities and report observations to NMFS' Office of Protected Resources;
- If waters exceed a sea-state which restricts the observers' ability to make observations within the marine mammal shutdown zone (*e.g.*, excessive wind or fog), pile installation and removal will cease. Pile driving will not be initiated until the entire shutdown zone is visible.

Data Collection

Observers are required to use approved data forms. Among other pieces of information, ADOT&PF will record detailed information about any implementation of shutdowns, including the distance of animals to the pile and description of specific actions that ensued and resulting behavior of the animal, if any. In addition, the ADOT&PF will attempt to distinguish between the number of individual animals taken and the number of incidents of take. At a minimum, the following information will be collected on the sighting forms:

- Date and time that monitored activity begins or ends;
- Construction activities occurring during each observation period;

- Detailed information about any implementation of shutdowns, including the distance of animals to the pile and description of specific actions that ensued and resulting behavior of the animal, if any;
- Weather parameters (*e.g.*, percent cover, visibility);
- Water conditions (*e.g.*, sea state, tide state);
- Species, numbers, and, if possible, sex and age class of marine mammals;
- Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from pile driving activity;
- Distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point;
- Locations of all marine mammal observations; and
- Other human activity in the area.

Sound Source Verification

SSV testing of impact and vibratory pile driving will be conducted for this project within seven days of initiating underwater pile driving work. The monitoring plan will be in agreement with a NMFS document titled “Guidance Document: Data Collection Methods to Characterize Impact and Vibratory Pile Driving Source Levels Relevant to Marine Mammals” dated January 31, 2012. The SSV will be conducted by an acoustical firm with prior experience conducting SSV tests in Alaska. NMFS must approve the acoustic monitoring plan. Results will be sent to NMFS no later than 14 days after field-testing has been completed. If necessary, the shutdown, Level A, and Level B harassment zones will be adjusted to meet MMPA requirements within 7 days of NMFS receiving field results.

Reporting

ADOT&PF will notify NMFS prior to the initiation of the pile driving activities and will provide NMFS with a draft monitoring report within 90 days of the conclusion of the construction work. This report will detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed. If no comments are received from NMFS within 30 days of submission of the draft final report, the draft final report will constitute the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.

Estimated Take

This section includes an estimate of the number of incidental “takes” proposed for authorization pursuant to this IHA, which will inform both NMFS’ consideration of whether the number of takes is “small” and the negligible impact determination.

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).”

No serious injury or mortality is anticipated to result from this activity. Limited take of three species of marine mammal (*i.e.*, harbor seal, harbor porpoise, and Dall’s porpoise) by Level A harassment (injury) is authorized due to potential auditory injury that cannot reasonably be prevented through mitigation. Mitigation zones are expected to reduce Level A harassment for these three species and prevent Level A harassment for all other species. Level B harassment

(behavioral disturbance) is expected to occur and take is authorized for the numbers identified below.

Given the many uncertainties in predicting the quantity and types of impacts of sound on marine mammals, it is common practice to estimate how many animals are likely to be present within a particular distance of a given activity, or exposed to a particular level of sound.

ADOT&PF has requested authorization for the incidental taking of small numbers of marine mammals near the Gustavus Ferry Terminal that may result from impact pile driving, vibratory pile driving and vibratory pile removal. In order to estimate the potential incidents of take that may occur incidental to the specified activity, we must first estimate the extent of the sound field that may be produced by the activity and then consider in combination with information about marine mammal density or abundance in the project area. We first provide information on applicable sound thresholds for determining effects to marine mammals before describing the information used in estimating the sound fields, the available marine mammal density or abundance information, and the method of estimating potential incidences of take.

Sound Thresholds

We use sound exposure thresholds to determine when an activity that produces sound might result in impacts to a marine mammal such that a take by injury or behavioral harassment might occur. These thresholds are used to estimate when injury or harassment may occur.

Distance to Sound Thresholds

The sound field in the project area is the existing ambient noise plus additional construction noise from the project. The primary components of the project expected to affect marine mammals are the sounds generated by impact pile driving, vibratory pile driving, and vibratory pile removal.

In order to calculate distances to the Level A and Level B sound thresholds, NMFS used acoustic monitoring data that had been collected at the Kake Ferry Terminal by ADOT&PF. ADOT&PF implemented SSV measurements at Kake Harbor, Alaska and used this information as a proxy SSL for the Gustavus Ferry Terminal project. The results determined a SSL of 157.7 dB re 1 μ Pa rms at 10 m for vibratory driving, 194.8 dB re 1 μ Pa rms at 10 m for impact driving, and single strike/shot sound exposure level (SEL) of 179.3 dB. These SSLs are different than those found in the notice of proposed authorization. The Kake Harbor findings were re-analyzed to include additional data from a single restraint pile that had not been included in the original notice, resulting in elevated SSLs and larger Level A and Level B isopleths associated with the planned impact and vibratory driving.

The formula below is used to calculate underwater sound propagation. 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:

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

Where:

TL = transmission loss in dB

B = transmission loss coefficient; for practical spreading equals 15

R_1 = the distance of the modeled SPL from the driven pile, and

R_2 = the distance from the driven pile of the initial measurement.

NMFS typically recommends a default practical spreading loss of 15 dB per tenfold increase in distance. ADOT&PF analyzed the available underwater acoustic data utilizing the practical spreading loss model.

On August 4, 2016, NMFS released its Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Guidance, available at <http://www.nmfs.noaa.gov/pr/acoustics/guidelines.htm>). This new guidance established new thresholds for predicting auditory injury, which equates to Level A harassment under the MMPA. In the **Federal Register** notice (81 FR 51694), NMFS explained the approach it would take during a transition period, wherein we balance the need to consider this new best available science with the fact that some applicants have already committed time and resources to the development of analyses based on our previous guidance and have constraints that preclude the recalculation of take estimates, as well as where the action is in the agency's decision-making pipeline. In that Notice, we included a non-exhaustive list of factors that would inform the most appropriate approach for considering the new Guidance, including: the scope of effects; how far in the process the applicant has progressed; when the authorization is needed; the cost and complexity of the analysis; and the degree to which the guidance is expected to affect our analysis. In this case, ADOT&PF initially submitted a request for authorization on June 30, 2015. A revised application was submitted on April 15, 2016. A **Federal Register** notice announcing the proposed authorization was published on June 23, 2016 (81 FR 40852). Under the new Guidance, NMFS determined that there is a greater likelihood of auditory injury for low-frequency cetaceans (*i.e.*, humpback whale, minke whale); high-frequency cetaceans (*i.e.*, harbor porpoise, Dall's porpoise); and Phocid pinnipeds (*i.e.*, harbor seals) during impact driving than was considered in our notice of proposed authorization (81 FR 40852). In order to address this

likelihood, we increased the required shutdown zones for humpback and minke whales, harbor porpoise, Dall's porpoise, and harbor seals. In addition, to account for the potential that harbor seals, harbor porpoises and Dall's porpoises may enter into the Level A take zones that exists beyond the designated shutdown zone, we authorize the taking by Level A harassment of limited numbers of these species. In summary, we have considered the new Guidance and believe that the likelihood of injury is adequately addressed in the analysis contained herein and appropriate protective measures are in place in the IHA.

The calculation of the Level A harassment zones utilized the methods presented in Appendix D of the Guidance, and the accompanying User Spreadsheet. The Guidance provides updated PTS onset thresholds using the cumulative SEL (SEL_{cum}) metric, which incorporates marine mammal auditory weighting functions, to identify the received levels, or acoustic thresholds, at which individual marine mammals are predicted to experience changes in their hearing sensitivity for acute, incidental exposure to all underwater anthropogenic sound sources. The Guidance (Appendix D) and its companion User Spreadsheet provide alternative methodology for incorporating these more complex thresholds and associated weighting functions.

The User Spreadsheet accounts for effective hearing ranges using Weighting Factor Adjustments (WFAs), and ADOT&PF's application uses the recommended values for vibratory and impact driving therein. NMFS' new acoustic thresholds use dual metrics of SEL_{cum} and peak sound level (PK) for impulsive sounds (*e.g.*, impact pile driving) and SEL_{cum} for non-impulsive sounds (*e.g.*, vibratory pile driving) (Table 3). ADOT&PF used source level measurements from similar pile driving events and, using the User Spreadsheet, applied the updated PTS onset thresholds for impulsive PK and SEL_{cum} assuming 600 strikes per pile and

installation of 3 piles per day to determine distance to the isopleths for PTS onset for impact pile driving. For vibratory pile driving, ADOT&PF used the User Spreadsheet to determine isopleth estimates for PTS onset using the cumulative sound exposure level metric (L_E) assuming a driving time of up to 6 hours per day. In determining the cumulative sound exposure levels, the Guidance considers the duration of the activity, the sound exposure level produced by the source during one working day, and the effective hearing range of the receiving species. In the case of the dual metric acoustic thresholds (L_{pk} and L_E) for impulsive sound, the larger of the two isopleths for calculating PTS onset is used. These values were then used to develop mitigation measures for proposed pile driving activities (Table 3).

NMFS’s new acoustic guidance established new thresholds for predicting auditory injury (Level A Harassment). The Guidance indicates that there is a greater likelihood of auditory injury for low-frequency cetaceans, high-frequency cetaceans, and Phocid pinnipeds than was considered in our notice of proposed authorization. The practical spreading loss model estimates injury zones for functional hearing groups for which take is authorized for pulsed sound generated during impact pile driving (Table 4) and non-pulsed sound during vibratory pile driving (Table 5).

Table 3. Summary of PTS onset acoustic thresholds.

	PTS Onset Acoustic Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	$L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	$L_{E,LF,24h}$: 199 dB

Mid-Frequency (MF) Cetaceans	L _{pk,flat} : 230 dB L _{E,MF,24h} : 185 dB	LE,MF,24h: 198 dB
High-Frequency (HF) Cetaceans	L _{pk,flat} : 202 dB L _{E,HF,24h} : 155 dB	LE,HF,24h: 173 dB
Phocid Pinnipeds (PW) (Underwater)	L _{pk,flat} : 218 dB L _{E,PW,24h} : 185 dB	L _{E,PW,24h} : 201 dB
Otariid Pinnipeds (OW) (Underwater)	L _{pk,flat} : 232 dB L _{E,OW,24h} : 203 dB	LE,OW,24h: 219 dB
<p>* 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.</p> <p>Note: Peak sound pressure (L_{pk}) has a reference value of 1 μPa, and cumulative sound exposure level (L_E) has a reference value of 1 $\mu\text{Pa}^2\text{s}$. 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>i.e.</i>, 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.</p>		

Table 4. Underwater Level A Injury Threshold Decibel Levels and Corresponding Isopleths for Functional Hearing Groups During Impact Driving

Hearing Group	Low-Frequency Cetaceans (humpback whale, minke whale)	Mid-Frequency Cetaceans (killer whale)	High-Frequency Cetaceans (harbor porpoise, Dall's porpoise)	Phocid Pinnipeds (harbor seal)	Otariid Pinnipeds (Steller sea lion)
SEL _{cum} Threshold	183	185	155	185	203
PTS Isopleth to threshold (m)/ Impact Driving	527.5	18.8	628.3	282.3	20.6

*All decibel levels referenced to 1 μ Pa. Note all thresholds are based off root mean square (rms) levels
 ** PTS=Permanent Threshold Shift.

Based on this data NMFS will require shutdown zones that extend to 550 m for humpback whale and minke whale; 100 m for harbor seal, harbor porpoise and Dall’s porpoise; and 25 m for killer whale and Steller sea lion. NMFS will also require Level A take zones which are areas beyond the shutdown zones where animals may be exposed to sound levels that could result in permanent threshold shift (PTS). The Level A zone of 628.3 m will be rounded to a zone of 630 m for harbor porpoise and Dall’s porpoise for monitoring purposes while the Level A zone of 282.3 for harbor seals will be rounded to 285 m. There are no Level A take zones applicable to other species for which take is authorized.

Table 5. Underwater Level A Harassment Threshold Decibel Levels and Corresponding Isoleths for Functional Hearing Groups During Vibratory Driving

Hearing Group	Low-Frequency Cetaceans (humpback whale, minke whale)	Mid-Frequency Cetaceans (killer whale)	High-Frequency Cetaceans (harbor porpoise, Dall’s porpoise)	Phocid Pinnipeds (harbor seal)	Otariid Pinnipeds (Steller sea lion)
SEL _{cum} Threshold	183	185	155	185	203
PTS Isoleth to threshold (m)/ Impact Driving	13.6	1.2	20.1	8.3	0.6

*All decibel levels referenced to 1 μ Pa. Note all thresholds are based off root mean square (rms) levels
 ** PTS=Permanent Threshold Shift.

Based on these results NMFS will require a shutdown zone during vibratory driving of 20 m for harbor porpoise, Dall’s porpoise, humpback whale and minke whale. A standard 10 m zone for killer whale, harbor seal and Steller sea lion will also be implemented during vibratory driving.

The disturbance zone for impact pile driving is approximately 2,090 m from the driven pile for all marine mammals. The disturbance zone for continuous noise generated by a vibratory hammer is larger, predicted to extend for 3,265 m from the pile. Table 6 illustrates thresholds and isopleths for this activity that might result in Level B harassment impacts to a marine mammal.

Table 6. Underwater Level B Disturbance Threshold Decibel Levels for Marine Mammals and Corresponding Isopleths for Impact and Vibratory Pile Driving.

Type of Sound Source	Behavioral disruption for impulse noise (e.g., impact pile driving)	Behavioral disruption for non-pulse noise (e.g., vibratory pile driving, drilling)
Threshold	160 dB rms	120 dB
Isopleth to threshold (m)	2,090 m	3,265 m

*All decibel levels referenced to 1 μ Pa. Note all thresholds are based off root mean square (rms) levels

The method used for calculating potential exposures to impact and vibratory pile driving noise for each threshold uses local marine mammal data sets and data from an IHA monitoring report from a similar project in the area. It is assumed that all pilings installed at each site would have an underwater noise disturbance equal to the piling that causes the greatest noise disturbance (*i.e.*, the piling furthest from shore) installed with the method that has the largest ZOI. The largest underwater disturbance ZOI would be produced by vibratory driving steel piles. Note that the ZOIs for each threshold are not spherical and are truncated by land masses on either side of the channel which would dissipate sound pressure waves.

Since density information was not available for marine mammal species near Gustavus, NMFS relied on two observational data sets. For the first study, ADOT&PF hired two observers to visit the Gustavus dock twice every day between March 7, 2016 and May 15, 2016. They scanned for marine mammals within 2000 m for at least 30 minutes on each visit and recorded observations. Because these data are at the project location at the same time of year as the Spring

phase of work for this project, and in the absence of survey data, NMFS considers these data best available for March through May.

Similar data are not available for the September through November work phase. However, a nearby ferry terminal reconstruction project took place in Hoonah, Alaska in the Fall of 2015. Hoonah is located 32 kilometers (km) southeast of Gustavus. An IHA was issued for the Hoonah project which required submission of a marine mammal monitoring report after project completion (BerberABAM 2016). The Hoonah project required the use of both land and vessel-based observers to monitor waters that spanned the width of Icy Strait, reaching as far north as the southern shore of Pleasant Island. The ZOI for the Gustavus project extends to the northern shores of Pleasant Island and westward into Icy Strait. While the ZOIs of the Hoonah and Gustavus projects do not directly overlap, NMFS felt that marine mammals are likely to traverse both ZOIs in comparable numbers. Note that opportunistic sightings are not considered abundance estimates and do not account for unseen animals in the area and in the water. Opportunistic surveys do not have a correction factor for those uncounted animals. Nevertheless, NMFS considers the data from the 2016 ADOT&PF study and 2015 Hoonah monitoring report to be the best data available, respectively, for the March through May and September through November periods.

In order to estimate take, NMFS assumed the following:

- 50 days of pile driving are assumed to occur in this exposure analysis (ADOT&PF states that between 16 and 50 days of pile driving activity could occur).
- 33 days of pile driving will occur in March, April, October, and November (non-charter season) and 17 days of pile driving will occur in May and September (charter season).

- 33 days in 4 non-charter months = 8.25 days/month outside of the charter season
- 17 days in 2 charter months = 8.5 days/month during the charter season
- The highest number of observed animals on any one day of the month will be utilized.

The calculation for marine mammal exposures, except for Dall's porpoise, was estimated as follows:

(the highest number of animals observed per day in a given month) × (number of days of pile driving/removal activity in that month). The monthly totals were added to arrive at a final estimate.

Note that with the exception of Dall's porpoise, the estimated numbers of animal exposures in the proposed IHA **Federal Register** Notice (81 FR 40852) are different from those listed in this Final IHA Notice of Issuance. NMFS determined that the new site-specific information contained in the 2016 ADOT&PF and 2015 Hoonah surveys was the best available and incorporated it as part of the methodology described above in the Final IHA. Additionally, the proposed IHA indicated that the first period of construction would occur from September through November of 2017 while the second period was scheduled for March through May of 2018. The applicant opted to delay the start date until 2018. Therefore, the Final IHA authorizes take during the first construction period from March through May of 2018 as well as the second construction period running from September through November of 2018.

Steller Sea lion

There are numerous Steller sea lion haulouts in Icy Strait but none occurring in Icy Passage (Mathews *et al.*, 2011; Tod Sebens, CSE, Stephen Vanderhoff, SWE, Janet Neilson, NPS, personal communication). The nearest Steller sea lion haulout sites are located on Black Rock on the south side of Pleasant Island and Point Carolus west across the Strait from Point

Gustavus (Mathews *et al.*, 2011). Both haulouts are over 16 km from the Gustavus Ferry Terminal.

Steller sea lions are common in the ferry terminal area during the charter fishing season (May to September) and are known to haul out on the public dock (Tod Sebens, CSE, Stephen Vanderhoff, SWE, Janet Neilson, NPS, personal communication Bruce Kruger, ADF&G, personal communication). During the charter fishing season, Steller sea lions begin arriving at the ferry terminal as early as 2:00 p.m. local time, reaching maximum abundance when the charter boats return at approximately 5:00 p.m. local time. The sea lions forage on the carcasses of the sport fish catch and then vacate the area.

There are no density estimates of Steller sea lions available in the action area. The best available information on the distribution of these marine mammals in the study area comes from the 2016 ADOT&PF study and the 2015 Hoonah monitoring report. Individuals taken would likely be a mix of solitary adult males and females. NMFS does not anticipate exposure of Steller sea lion pups, as there are no rookeries within the action area.

NMFS has classified Steller sea lions as two distinct population segments under the ESA—the western and eastern stocks. The western DPS, extending from Japan around the Pacific Rim to Cape Suckling in Alaska (144° W), was listed as endangered due to its continued decline and lack of recovery. The eastern DPS, extending from Cape Suckling (144° W) east to British Columbia and south to California, was previously listed as threatened under the ESA. NMFS has removed the eastern DPS from the list of threatened species, while the western DPS remains listed as endangered. Note that since the actual percentage of western DPS versus eastern DPS of Steller sea lions in the project area is unknown, NMFS will conservatively estimate that all individuals are from the endangered western DPS.

Based on the information presented in Table 7, NMFS has authorized 709 Level B harassment takes of Steller sea lions. No Level A takes are authorized since the shutdown zone for Steller sea lions during impact or vibratory pile driving is larger than the PTS isopleth.

Table 7. Estimated Monthly Total Number of Steller Sea Lions Exposed to Continuous and Impact Sourced Sounds From Pile Driving.

Month/Year	Project Activity Occurring	Charter season	Number of Days of pile driving	Maximum Number of Animals Observed on a Single Day	Estimated Monthly Total Number of Exposed Animals
March 2018	Construction	No	8.25	4 ²	33
April 2018	Construction	No	8.25	7 ²	57.75
May 2018	Construction	Yes	8.5	6 ²	51
September 2018	Construction	Yes	8.5	26 ¹	221
October 2018	Construction	No	8.25	33 ¹	272.25
November 2018	Construction	No	8.25	9 ²	74.25
Total					709.25 709 (rounded)

¹These estimates come from observations made at the dock during March-May of 2016.

²These estimates are from monitoring in nearby Icy Strait in 2015.

Note that the final take numbers for Steller sea lion calculated in this Notice as well as the Environmental Assessment (EA) were slightly different than those included in the Biological Opinion which was drafted under the ESA. In the Biological Opinion, a total of 708 takes were calculated while 709 were estimated for this Notice and the EA. This occurred because the EA calculated takes based on 8.25 or 8.5 days of pile driving per month, as applicable, while the Biological Opinion used a single average value of 8.33 days per month, resulting in a slightly different final take number. However, this small discrepancy will have no practical impacts because the numbers are so close and the take numbers were calculated using conservative

assumptions, so NMFS does not anticipate the applicant taking anywhere close to the authorized number of takes.

Humpback Whale

NMFS used humpback whale data collected from the 2016 ADOT&PF study and 2015 Hoonah monitoring report to estimate take using the methodology described above. Based on the information presented in Table 8, NMFS has authorized 600 Level B harassment takes of humpback whales. No Level A takes are authorized since the shutdown zones are larger than the PTS isopleths.

Table 8. Estimated Monthly Total Number of Humpback Whales Exposed to Continuous and Impact Sourced Sounds from Pile Driving.

Month/Year	Number of Days of pile driving	Maximum Number of Animals Observed on a Single Day	Estimated Monthly Total Number of Exposed Animals
March 2018	8.25	6 ¹	49.5
April 2018	8.25	22 ¹	181.5
May 2018	8.5	10 ¹	85
September 2018	8.5	15 ²	127.5
October 2018	8.25	18 ²	148.5
November 2018	8.25	1 ²	8.25
Total			600.25 600 (rounded)

¹These estimates come from observations made at the dock during March-May of 2016.

²These estimates are from monitoring in nearby Icy Strait in 2015.

Harbor Seal

There are no documented haulout sites for harbor seals in the vicinity of the project. The nearest haulouts, rookeries, and pupping grounds occur in Glacier Bay over 32 km from the ferry terminal. However, occasionally an individual will haul out on rocks on the north side of Pleasant Island (Stephen Vanderhoff, SWE, personal communication). A recent study of post-breeding harbor seal migrations from Glacier Bay demonstrates that some harbor seals traveled extensively beyond the boundaries of Glacier Bay during the post-breeding season (Womble and Gende 2013). Strong fidelity of individuals for haulout sites during the breeding season was documented in this study as well. Harbor seals are also documented in Icy Passage in the winter and early spring (Womble and Gende 2013). Using the 2016 ADOT&PF and 2015 Hoonah data, NMFS has authorized 675 total takes of harbor seals as shown in Table 9. Since the PTS isopleth (282.3 m) during impact driving is greater than the shutdown zones (100 m) NMFS is authorizing Level A take using the following calculation:

Level A takes = (PTS isopleth – Shutdown zone)/Level B Isopleth (3,265 m) * Total Takes;

Animals in Shutdown Zone = (Shutdown zone isopleth/Level B Isopleth) * Total Takes; and

Level B takes = Total Takes – Level A Takes – Shutdown Takes

Using these calculations, NMFS is authorizing 38 Level A and 616 Level B harbor seal takes as shown in Table 9.

Table 9. Estimated Monthly Total Number of Harbor Seals Exposed to Continuous and Impact Sourced Sounds from Pile Driving.

Month/Year	Number of Days of pile driving	Maximum Number of Animals Observed on a Single Day	Estimated Monthly Total Number of Exposed Animals
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March 2018	8.25	20 ¹	165
April 2018	8.25	16 ¹	132
May 2018	8.5	7 ¹	59
September 2018	8.5	22 ²	187
October 2018	8.25	16 ²	132
November 2018	8.25	0 ²	0
Total			675 21 Shutdown Zone 38 Level A 616 Level B 654 TOTAL

¹These estimates come from observations made at the dock during March-May of 2016.

²These estimates are from monitoring in nearby Icy Strait in 2015.

Harbor Porpoise

Harbor porpoise are common in Icy Strait. Concentrations of harbor porpoise were consistently found in varying habitats surrounding Zarembo Island and Wrangell Island, and throughout the Glacier Bay and Icy Strait regions (Dahlheim *et al.*, 2009). These concentrations persisted throughout the three seasons sampled. Dahlheim (2015) indicated that 332 resident harbor porpoises occur in the Icy Strait area, though the population has been declining across Southeast Alaska since the early 1990's (Dahlheim *et al.*, 2012). During a 2014 survey, Barlow *et al.* (in press) observed 462 harbor porpoises in the Glacier Bay and Icy Strait area during a three-month summer survey period. It is estimated that harbor porpoise are observed on at least 75 percent of whale watch excursions (75 of 100 days) during the May through September months (Tod Sebens, CSE, Stephen Vanderhoff, SWE, personal communication).

Using the 2016 ADOT&PF and 2015 Hoonah data, NMFS has authorized 158 total takes of harbor porpoise as shown in Table 10. Since the PTS isopleth (628.3 m) is greater than the shutdown zone (100 m), NMFS is authorizing Level A take. Using the same calculation utilized to derive harbor seal takes, NMFS is authorizing 26 Level A and 127 Level B harbor porpoise takes.

Table 10. Estimated Monthly Total Number of Harbor Porpoise Exposed to Continuous and Impact Sourced Sounds from Pile Driving.

Month/Year	Number of Days of pile driving	Maximum Number of Animals Observed on a Single Day	Estimated Monthly Total Number of Exposed Animals
March 2018	8.25	7 ¹	57.75
April 2018	8.25	4 ¹	33
May 2018	8.5	3 ¹	25.5
September 2018	8.5	2 ²	17
October 2018	8.25	3 ²	24.75
November 2018	8.25	0 ²	0
Total			158 5 Shutdown 26 Level A 127 Level B 153 Total

¹These estimates come from observations made at the dock during March-May of 2016.

²These estimates are from monitoring in nearby Icy Strait in 2015.

Killer whale

Based on observations of local marine mammal specialists, the probability of killer whales occurring in Icy Passage is low. However, they do occur in Icy Strait and have been observed in Icy Passage. Since there is no density information available for killer whales in this area, NMFS used the 2016 ADOT&PF and 2015 Hoonah data sources to estimate killer whale

exposures. NMFS has authorized 126 Level B harassment takes of killer whales as shown in Table 11. No Level A takes are authorized since the shutdown zones for killer whales are larger than the PTS isopleths.

Table 11. Estimated Monthly Total Number of Killer Whales Exposed to Continuous and Impact Sourced Sounds from Pile Driving.

Month/Year	Number of Days of pile driving	Maximum Number of Animals Observed on a Single Day	Estimated Monthly Total Number of Exposed Animals
March 2018	8.25	0 ¹	0
April 2018	8.25	7 ¹	57.75
May 2018	8.5	0 ¹	0
September 2018	8.5	8 ²	68
October 2018	8.25	0 ²	0
November 2018	8.25	0 ²	0
Total			125.75 126 (rounded)

¹These estimates come from observations made at the dock during March-May of 2016.

²These estimates are from monitoring in nearby Icy Strait in 2015.

Minke Whale

Based on observations of local marine mammal specialists, the probability of minke whales occurring in Icy Passage is low. However, they have been documented in Icy Strait and Icy Passage and could potentially transit through the disturbance zone. The 2015 Hoonah survey conducted from September through November did not document any minke whales. However, results from the 2016 ADOT&PF March through May survey showed a monthly high of one minke whale sighting per day in April and two minke whales per day in May. An assumption of 8.25 days of driving in April (8.25 * 1 whale) and 8.5 days in May (8.5 * 2 whales) results in 25

minke whale exposures. NMFS will also conservatively assume that two whales may be exposed per day of driving in March (8.25 * 2 whales). Based on these assumptions NMFS is authorizing Level B harassment take of 42 minke whales as is shown in Table 12. No Level A takes are authorized since the shutdown zones for minke whales are larger than the PTS isopleth.

Table 12. Estimated Monthly Total Number of Minke Whales Exposed to Continuous and Impact Sourced Sounds from Pile Driving.

Month/Year	Number of Days of pile driving	Maximum Number of Animals Observed on a Single Day	Estimated Monthly Total Number of Exposed Animals
March 2018	8.25	2	16.5
April 2018	8.25	1 ¹	8.25
May 2018	8.5	2 ¹	17
September 2018	8.5	0 ²	0
October 2018	8.25	0 ²	0
November 2018	8.25	0 ²	0
Total			41.75 42 (rounded)

¹These estimates come from observations made at the dock during March-May of 2016.

²These estimates are from monitoring in nearby Icy Strait in 2015.

Dall's Porpoise

Dall's porpoise are documented in Icy Strait but not Icy Passage. Dahlheim *et al.*, (2009) found Dall's porpoise throughout Southeast Alaska, with concentrations of animals consistently found in Icy Strait, Lynn Canal, Stephens Passage, upper Chatham Strait, Frederick Sound, and Clarence Strait. It is estimated that there are anywhere from 4 to 12 sightings of Dall's porpoise in Icy Strait per season during the May through September whale watching charter months (Todd Sebens, CSE, Stephen Vanderhoff, SWE, personal communication). NPS documented seven

sightings in Icy Strait since 1993 in September, October, November, April, and May. The mean group size of Dall's porpoise in Southeast Alaska is estimated at three individuals (Dahlheim *et al.*, 2009).

The 2016 ADOT&PF and 2015 Hoonah studies did not record any sightings of Dall's porpoise. However, they are occasionally sighted by whale watching tours in Icy Strait and could potentially transit from the Strait into the ZOI in Icy Passage. For this analysis, NMFS conservatively assumes a maximum number of 12 group sightings per season between May and September, which equates to 2.4 sightings per month. Using this number it is estimated that the following number of Dall's porpoise may be present in the disturbance zone:

Underwater exposure estimate: $2.4 \text{ group sightings/month} \times 3 \text{ animals/group} \times 6 \text{ months of pile driving activity (March – May; September – November)} = 43.2$

Since the PTS isopleth during impact driving (628.3 m) is greater than the shutdown zone (100 m) NMFS is authorizing Level A take. Using the same calculation utilized to derive harbor seal takes, NMFS is authorizing take of 42 Dall's porpoise, with 7 Level A and 35 Level B takes. According to this calculation, one porpoise would theoretically occur in the shutdown zone and, therefore, is not counted as a take.

Analyses and Determinations

Negligible Impact Analysis

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 the authorized 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, etc.), and effects on habitat, the status of the affected stocks, and the likely effectiveness of the mitigation. 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 these analyses 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).

To avoid repetition, the discussion of our analyses applies to all the species listed in Table 1. There is little information about the nature of severity of the impacts or the size, status, or structure of any species or stock that would lead to a different analysis for this activity. Pile driving and pile extraction activities associated with the Gustavus Ferry Terminal Improvements Project, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in Level B harassment (behavioral disturbance) for all species authorized for take, from underwater sound generated from pile driving and removal. Level A injury may also occur to a limited number of harbor seal, harbor porpoise and Dall’s porpoise. Potential takes could occur if individuals of these species are present in the Level A and Level B ensonified zones when pile driving is under way.

No serious injury or mortality is anticipated to result from this activity. Limited take of three species of marine mammal by Level A harassment (injury) is authorized due to potential auditory injury that cannot reasonably be prevented through mitigation. Any take by Level A

harassment will potentially be in the form of PTS and may affect small numbers of harbor seal, harbor porpoise and Dall's porpoise. ADOT&PF will enact required mitigation measures to minimize Level A take. ADOT&PF will also record all occurrences of marine mammals in specified Level A zones. In this analysis, we considered the potential for small numbers of three species to incur auditory injury and found that it would not impact our preliminary determinations.

Any takes from Level B harassment will be due to behavioral disturbance and TTS. As part of required mitigation, ADOT&PF will employ soft start techniques during pile driving operations to allow marine mammals to vacate the area prior to commencement of full power driving. Pile caps will also be employed during impact pile driving to reduce underwater noise levels.

ADOT&PF's proposed activities are localized and of relatively short duration. The entire project area is limited to the Gustavus Ferry Terminal area and its immediate surroundings. Specifically, the use of impact driving will be limited to an estimated maximum of 57 hours over the course of 16 to 50 days of construction. Total vibratory pile driving time is estimated at 114 hours over the same period. While impact driving does have the potential to cause injury to marine mammals, mitigation in the form of shutdown zones should limit exposure to Level A thresholds. Vibratory driving does not have significant potential to cause injury to marine mammals due to the relatively low source levels produced and the lack of potentially injurious source characteristics. Additionally, no important feeding and/or reproductive areas for marine mammals are known to be within the ensonified areas during the construction timeframe.

The project also is not expected to have significant adverse effects on affected marine mammals' habitat. The project activities are limited in time and would not modify existing

marine mammal habitat. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a portion of the foraging range. However, a relatively small area of habitat may be affected, so the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.*, Thorson and Reyff 2006; Lerma 2014). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. In response to vibratory driving, pinnipeds (which may become somewhat habituated to human activity in industrial or urban waterways) have been observed to orient towards and sometimes move towards the sound. The pile extraction and driving activities analyzed here are similar to, or less impactful than, numerous construction activities conducted in other similar locations, which have taken place with no reported serious injuries or mortality to marine mammals, and no known long-term adverse consequences from behavioral harassment. Repeated exposures of individuals to levels of sound that may cause Level B harassment are unlikely to result in hearing impairment or to significantly disrupt foraging behavior. Thus, even repeated Level B harassment of some small subset of the overall stock is unlikely to result in any significant realized decrease in fitness for the affected individuals, and would not result in any adverse impact to the stock as a whole.

For pinnipeds, no rookeries are present in the project area. Furthermore, the project area is not known to provide foraging habitat of any special importance (other than is afforded by the known migration of salmonids).

In summary, this negligible impact analysis is founded on the following factors: (1) The possibility of serious injury or mortality to authorized species may reasonably be considered discountable; (2) the limited temporal and spatial impacts to marine mammal habitat; (3) the absence of any major rookeries near the project area; and (4) the presumed efficacy of the planned mitigation measures in reducing the effects of the specified activity to the level of effecting the least practicable impact upon the affected species. 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 activity will have only short-term effects on individuals. The specified activity is not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the planned monitoring and mitigation measures, NMFS finds that the total marine mammal take from ADOT&PF's Gustavus Ferry Terminal Improvements Project will have a negligible impact on all affected marine mammal species or stocks.

Table 13. Estimated Number of Exposures and Percentage of Stocks that May Be Subject to Level A and Level B Harassment

Species	Level A Authorized Takes	Level B Authorized Takes	Total Proposed Authorized Takes	Stock(s) Abundance Estimate	Percentage of Total Stock
Steller Sea Lion	0	709	709	50,983 (western distinct population)	1.43%/ 1.39%

				segment in Alaska)/ 71,562 (eastern stock)	
Humpback whale	0	600/ (36*)	600/ (36*)	10,103 (Central North Pacific Stock)/3,264 (Mexico DPS)	5.93%/1.1%
Harbor Seal	38	616	654	7,210 (Glacier Bay/Icy Strait)	9.07%
Harbor Porpoise	26	127	153	11,146 (Southeast Alaska)	1.37%
Killer whale	0	126	126	261 (Northern resident)/ 587 (Gulf of Alaska transient)/ 243 (West Coast transient)	48.2% 21.4% 51.8%
Minke whale	0	42	42	Unknown	Unknown
Dall's Porpoise	7	35	42	83,400	<0.01%

*6.1 percent of humpbacks whales in southeast Alaska (36) are from Mexico DPS (Wade *et al.* 2016)

Small Numbers Analysis

Table 13 depicts the number of animals that could be exposed to received noise levels that could cause Level A or Level B harassment for the proposed work at the Gustavus Ferry Terminal project. The analyses provided above represent between <0.01 and 51.8 percent of the populations of these stocks that could be affected by harassment, except for Minke whales since their population number is unknown. While the Northern resident and West Coast transient killer whale takes and percentages of stock affected appears high (48.2 percent and 51.8 percent), in reality 126 Northern resident or West Coast transient killer whale individuals are not likely to be harassed. Instead, it is more likely that there will be multiple takes of a smaller number of individuals.

NMFS believes that small numbers of the West coast transient killer whale stock would be taken based on the limited region of exposure in comparison with the known distribution of

the transient stock. The West coast transient stock ranges from Southeast Alaska to California, while the proposed project activity would be stationary. A notable percentage of West coast transient whales have never been observed in Southeast Alaska. Only 155 West coast transient killer whales have been identified as occurring in Southeast Alaska according to Dahlheim and White (2010). The same study identified three pods of transients, equivalent to 19 animals that remained almost exclusively in the southern part of Southeast Alaska (*i.e.* Clarence Strait and Sumner Strait). This information indicates that only a small subset of the entire West coast Transient stock would be at risk for take in the Icy Passage area because a sizable portion of the stock has either not been observed in Southeast Alaska or consistently remains far south of Icy Passage.

The Northern resident killer whale stock are most commonly seen in the waters around the northern end of Vancouver Island, and in sheltered inlets along B.C.'s Central and North Coasts. They also range northward into Southeast Alaska in the winter months. Pile driving operations are not permitted under the IHA from December through February. It is also unlikely that such a large portion of Northern resident killer whales with ranges of this magnitude would be concentrated in and around Icy Passage.

There is no current abundance estimate for minke whale since population data on this species is dated. However, the proposed take of 42 minke whales may be considered small. A visual survey for cetaceans was conducted in the central-eastern Bering Sea in July-August 1999, and in the southeastern Bering Sea in 2000. Results of the surveys in 1999 and 2000 provide provisional abundance estimates of 810 and 1,003 minke whales in the central-eastern and southeastern Bering Sea, respectively (Moore *et al.*, 2002). Additionally, line-transect surveys were conducted in shelf and nearshore waters in 2001-2003 from the Kenai Fjords in the Gulf of

Alaska to the central Aleutian Islands. Minke whale abundance was estimated to be 1,233 for this area (Zerbini *et al.*, 2006). However, these estimates cannot be used as an estimate of the entire Alaska stock of minke whales because only a portion of the stock's range was surveyed. (Allen and Anglis 2012). Clearly, 42 authorized takes should be considered a small number, as it constitutes only 5.2 percent of the smallest abundance estimate generated during the surveys just described and each of these surveys represented only a portion of the minke whale range.

Note that the numbers of animals authorized to be taken for all species, with the exception of Northern resident and West coast transient killer whales, would be considered small relative to the relevant stocks or populations even if each estimated taking occurred to a new individual—an extremely unlikely scenario.

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 mitigation and monitoring measures, which are expected to reduce the number of marine mammals potentially affected by the proposed action, NMFS finds that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

The proposed Gustavus Ferry Terminal improvements project will occur near but not overlap the subsistence area used by the villages of Hoonah and Angoon (Wolfe *et al.*, 2013). Harbor seals and Steller sea lions are available for subsistence harvest in this area (Wolfe *et al.*, 2013). There are no harvest quotas for other marine mammals found there. The project is likely to result only in short-term, temporary impacts to pinnipeds in the form of possible behavior changes, and is not expected to result in the serious injury or death of any marine mammal. Since all project activities will take place within the immediate vicinity of the Gustavus Ferry

Terminal, the project will not have an adverse impact on the availability of marine mammals for subsistence use at locations farther away. No disturbance or displacement of harbor seals or sea lions from traditional hunting areas by activities associated with the project is expected.

Based on the description of the specified activity and the proposed mitigation and monitoring measures, NMFS has determined that there will not be an unmitigable adverse impact on subsistence uses from ADOT&PF's proposed activities.

National Environmental Policy Act

NMFS prepared an Environmental Assessment (EA) and analyzed the potential impacts to marine mammals that would result from the Gustavus Ferry Terminal construction project. A Finding of No Significant Impact (FONSI) was signed on December 20, 2016. A copy of the EA and FONSI is available upon request (see **ADDRESSES**).

Endangered Species Act (ESA)

There are two marine mammal species that are listed under the ESA with confirmed or possible occurrence in the study area. The Mexico DPS of humpback whale is listed as threatened and the western DPS of Steller sea lion is listed as endangered under the Endangered Species Act. The NMFS Alaska Regional Office Protected Resources Division issued a Biological Opinion under section 7 of the ESA, on the issuance of an IHA to ADOT&PF under section 101(a)(5)(D) of the MMPA by the NMFS Permits and Conservation Division. The Biological Opinion concluded that the proposed action is not likely to jeopardize the continued existence of Mexico DPS humpback whales or western DPS Steller sea lions, and is not likely to destroy or adversely modify western DPS Steller sea lion critical habitat.

Authorization

NMFS has issued an IHA to ADOT&PF for reconstructing the existing Gustavus Ferry Terminal located in Gustavus, Alaska, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: April 4, 2017.

Donna S. Wieting,

Director,

Office of Protected Resources,

National Marine Fisheries Service.

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