BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XG874

Taking of Marine Mammals Incidental to Specific Activities; Taking of Marine Mammals Incidental to Pile Driving and Removal Activities During Construction of a Cruise Ship Berth, Hoonah, Alaska

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 NMFS has issued an incidental harassment authorization (IHA) to Duck Point Development II, LLC. (DPD) to incidentally harass, by Level A and B harassment, marine mammals during construction of a second cruise ship berth and new lightering float at Cannery Point (Icy Strait) on Chichagof Island near Hoonah, Alaska.

DATES: This Authorization is effective from June 3, 2019 through June 2, 2020.

FOR FURTHER INFORMATION CONTACT: Stephanie Egger, 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 incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such 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 such takings are set forth.

Summary of Request

On December 28, 2018, NMFS received a request DPD for an IHA to take marine mammals incidental to pile driving and removal activities during construction of a second cruise ship berth and new lightering float at Cannery Point (Icy Strait) on Chichagof Island near Hoonah, Alaska. The application was deemed adequate and complete on April 3, 2019. DPD

requested take of nine species of marine mammals by Level B harassment and three species by Level A harassment. Neither DPD nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate. NMFS previously issued an IHA to the Huna Totem Corporation for the first cruise ship berth in Hoonah, AK in 2015 (80 FR 31352; June 2, 2015).

Description of Specified Activity

DPD proposed to construct a second cruise ship berth and new lightering float at Cannery Point (Icy Strait) on Chichagof Island near Hoonah, Alaska, in order to accommodate the increase in cruise ship and visitor traffic since completion of the first permanent cruise ship berth completion in 2016 (80 FR 31352; June 2, 2015). The in-water sound from the pile driving and removal activities, may incidentally take marine mammals by Level A and B harassment. A detailed description of the planned Hoonah Berth II project is provided in the *Federal Register* notice for the proposed IHA (84 FR 18495; May 1, 2019).

Pile driving and removal is expected to occur over 75 working days (not necessarily consecutive) beginning June 3, 2019 and extending into November 2019 as needed. Approximately 39 days of vibratory and 8 days of impact hammering will occur. An additional 14 days of socketing and 14 days of anchoring will occur to stabilize the piles. As a contingency, the IHA is effective for a period of one year, from June 3, 2019 through June 2, 2020.

To construct a new cruise ship berth (Berth II), lightering float, associated support structures, and pedestrian walkway connections to shore, the project would require the following (see also Table 1):

- Installation of 62 temporary 30-inch (in) diameter steel piles as templates to guide proper installation of permanent piles (these piles would be removed prior to project completion);
- Installation of 8 permanent 42-in diameter steel piles, 16 permanent 36-in diameter steel piles, and 18 permanent 24-in diameter steel piles to support a new 500 feet (ft) x 50 ft floating pontoon dock, its attached 400 ft x 12 ft small craft float, mooring structures, and shore-access fixed-pier walkway (Figure 6 of the application)
- Installation of three permanent 30-in diameter steel piles to support a 120 ft x 20 ft lightering float, and four permanent 16-in diameter steel piles above the high tide line to construct a 12 ft x 40 ft fixed pier for lightering float shore access (Figure 7 of the application);
- Installation of bull rail, floating fenders, mooring cleats, and mast lights. (Note: these components would be installed out of the water.)
- Socketing and rock anchoring to stabilize the piles.

Table 1. Pile driving and removal activities required for the Hoonah Berth II and lightering float.

Description	Project Component					
	Temporary Pile Installation	Temporary Pile Removal	Permanent Pile Installation	Permanent Pile Installation	Permanent Pile Installation	Permanent Pile Installation
Diameter of Steel Pile (inches)	30	30	24	30	36	42
# of Piles	62	62	18	3	16	8
Vibratory Pile Driving						
Total Quantity	62	62	18	3	16	8
Max # Piles Vibrated per Day	6	6	4	2	2	2
Impact Pile Driving						
Total Quantity	0	0	0	0	16	8

Max # Piles Impacted per Day	0	0	0	0	4	2
Socketed Pile Installation (Down-Hole Drilling)						
Total Quantity	10	0	18	0	0	0
Max # Piles Socketed per Day	2	0	2	0	0	0
Rock Anchor Installation (Drilled Shaft)						
Total Quantity	0	0	2	0	16	8
Diameter of Anchor	--	--	8	0	33	33
Max # Piles Anchored per Day	0	0	1	0	2	2

In addition to the activities described above, the planned action will involve other in-water construction and heavy machinery activities. Other types of in-water work including with heavy machinery will occur using standard barges, tug boats, barge-mounted excavators, or clamshell equipment to place or remove material; and positioning piles on the substrate via a crane (*i.e.*, "stabbing the pile"). Workers will be transported from shore to the barge work platform by a 25-ft skiff with a 125–250 horsepower motor in the morning and at the end of the work day. The travel distance will be less than 300 ft. There could be multiple (up to eight) shore-to-barge trips during the day; however, the area of travel will be relatively small and close to shore. We do not expect any of these other in-water construction and heavy machinery activities to take marine mammals as these activities occur close to the shoreline (less than 300 ft), but as additional mitigation, DPD is proposing a 10 m shutdown zone for these additional in-water activities. Therefore, these other in-water construction and heavy machinery activities will not be discussed further.

Further details of the planned DPD project is provided in the **Federal Register** notice for the proposed IHA (84 FR 18495; May 1, 2019).

Comments and Responses

A notice of NMFS's proposal to issue an IHA to DPD was published in the *Federal Register* on May 1, 2019 (84 FR 18495). That notice described, in detail, DPD'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 comments from the Marine Mammal Commission (Commission). The Commission recommended that NMFS issue the IHA, subject to inclusion of the proposed mitigation, monitoring, and reporting measures.

Comment: The Commission questioned whether the public notice provisions for IHA Renewals fully satisfy the public notice and comment provision in the MMPA and discussed the potential burden on reviewers of reviewing key documents and developing comments quickly. Additionally, the Commission recommended that NMFS use the IHA Renewal process sparingly and selectively for activities expected to have the lowest levels of impacts to marine mammals and that require less complex analysis.

Response: NMFS has taken a number of steps to ensure the public has adequate notice, time, and information to be able to comment effectively on IHA Renewals within the limitations of processing IHA applications efficiently. The *Federal Register* notice for the initial proposed IHA (84 FR 18495; May 1, 2019) previously identified the conditions under which a one-year Renewal IHA might be appropriate. This information is presented in the Request for Public Comments section of the initial proposed IHA and thus encourages submission of comments on the potential of a one-year renewal as well as the initial IHA during the 30-day comment period. In addition, when we receive an application for a Renewal IHA, we publish a notice of the proposed IHA Renewal in the *Federal Register* and provide an additional 15 days for public

comment, for a total of 45 days of public comment. We will also directly contact all commenters on the initial IHA by email, phone, or, if the commenter did not provide email or phone information, by postal service to provide them the opportunity to submit any additional comments on the proposed Renewal IHA.

NMFS also strives to ensure the public has access to key information needed to submit comments on a proposed IHA, whether an initial IHA or a Renewal IHA. The agency's web site includes information for all projects under consideration, including the application, references, and other supporting documents. Each *Federal Register* notice also includes contact information in the event a commenter has questions or cannot find the information they seek.

Regarding the Commission's comment that Renewal IHAs should be limited to certain types of projects, NMFS has explained on its web site and in individual *Federal Register* notices that Renewal IHAs are appropriate where the continuing activities are identical, nearly identical, or a subset of the activities for which the initial 30-day comment period applied. Where the commenter has likely already reviewed and commented on the initial proposed IHA for these activities, the abbreviated additional comment period is sufficient for consideration of the results of the preliminary monitoring report and new information (if any) from the past year.

Change from the Proposed IHA to Final IHA

As described in the *Federal Register* notice for the proposed IHA (84 FR 18495; May 1, 2019), a small amount of take by Level A harassment take was proposed for Steller sea lions (*Eumetopias jubatus*). However, after further consideration and additional conversations with species experts in Alaska, NMFS has determined that take by Level A harassment is unlikely and will not be authorized. Originally, NMFS anticipated that Steller sea lions may appear within the Level A harassment isopleth without being seen in time to shut down pile driving activities,

resulting in Level A harassment. They are smaller in size and difficult to detect in bad weather, can approach closely driven by curiosity, and are becoming habituated to feeding on fish waste and known to follow charter boats into the docks around southeast Alaska. In some cases, they are undeterred by noise, other vessels, and other forms of deterrence. The location of the new cruise ship dock construction site is not located near the fishing vessel docks, and faces the open waters of Icy Strait instead of the internal waters of Port Frederick (where habituation is more likely to occur). Because of this spatial separation, NMFS expects that Steller sea lions will not have the same motivation to come into the Level A harassment isopleth, and does not predict take by Level A harassment of Steller sea lions as a result of this project. Therefore, the *Estimated Take* section has been revised to reflect this change.

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 ESA and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2016). 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' U.S. Pacific and Alaska SARs (Carretta *et al.*, 2018; Muto *et al.*, 2018). All values presented in Table 2 are the most recent available at the time of publication (draft SARS available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

Table 2. Marine Mammals Occurrence in the Project Area.

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[1]	Stock abundance (CV, N_{min}, most recent abundance survey)[2]	PBR	Annual M/SI[3]
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray Whale	*Eschrichtius robustus*	Eastern N Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	138
Family Balaenopteridae (rorquals)						
Minke Whale	*Balaenoptera acutorostrata*	Alaska	-, -, N	N/A (see SAR, N/A, see SAR)	UND	0
Humpback Whale	*Megaptera novaeangliae*	Central N Pacific (Hawaii and Mexico DPS)	-, -, Y	10,103 (0.3, 7,890, 2006) (Hawaii DPS 9,487[a] Mexico DPS	83	25

				606 [a])		
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Physeteridae						
Sperm whale	*Physeter macrocephalus*	North Pacific	E, D, Y	N/A (see SAR, N/A, 2015)	See SAR	4.4
Family Delphinidae						
Killer Whale	*Orcinus orca*	Alaska Resident	-, -, N	2,347 c (N/A, 2347, 2012)	24	1
		Northern Resident	-, -, N	261 c (N/A, 261, 2011)	1.96	0
		West Coast Transient	-, -, N	243 c (N/A, 243, 2009)	2.4	0
Pacific White-Sided Dolphin	*Lagenorhynchus obliquidens*	N Pacific	-, -, N	26,880 (N/A, N/A, 1990)	UND	0
Family Phocoenidae (porpoises)						
Dall's Porpoise	*Phocoenoides dalli*	AK	-, -, N	83,400 (0.097, N/A, 1991)	UND	38
Harbor Porpoise	*Phocoena phocoena*	Southeast Alaska	-, -, Y	see SAR (see SAR, see SAR, 2012)	8.9	34
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
Steller Sea Lion	*Eumetopias jubatus*	Western DPS	E, D, Y	54,267 a (see SAR, 54,267, 2017)	326	252
		Eastern DPS	T, D, Y	41,638 a (see SAR, 41,638, 2015)	2498	108
Family Phocidae (earless seals)						
Harbor Seal	*Phoca vitulina*	Glacier Bay/Icy Strait	-, -, N	7,210 (see SAR, 5,647, 2011)	169	104

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: www.nmfs.noaa.gov/pr/sars/. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable [explain if this is the case]

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

NOTE - Italicized species are not expected to be taken or planned for authorization

[a] Under the MMPA humpback whales are considered a single stock (Central North Pacific); however, we have divided them here to account for distinct population segments (DPSs) listed under the ESA. Using the stock assessment from Muto *et al*. 2018 for the Central North Pacific stock (10,103) and calculations in Wade *et al*. 2016, 93.9% of the humpback whales in Southeast Alaska are expected to be from the Hawaii DPS and 6.1% are expected to be from the Mexico DPS.

A detailed description of the of the species likely to be affected by the DPD project, including brief introductions to the species and relevant stocks as well as available information

regarding population trends and threats, and information regarding local occurrence, were provided in the *Federal Register* notice for the proposed IHA (84 FR 18495; May 1, 2019) since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that *Federal Register* notice for these descriptions. Please also refer to NMFS' website (*https://www.fisheries.noaa.gov/find-species*) for generalized species accounts.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

Acoustic effects on marine mammals during the specified activity can occur from vibratory and impact pile driving as well as during socketing and anchoring of the piles. The effects of underwater noise from DPD's planned activities have the potential to result in Level A and B harassment of marine mammals in the vicinity of the action area. The effects of pile driving on marine mammals are dependent on several factors, including the size, type, and depth of the animal; the depth, intensity, and duration of the pile driving sound; the depth of the water column; the substrate of the habitat; the standoff distance between the pile and the animal; and the sound propagation properties of the environment. With both types, it is likely that the pile driving could result in temporary, short term changes in an animal's typical behavioral patterns and/or avoidance of the affected area. The *Federal Register* notice for the proposed IHA (84 FR 18495; May 1, 2019) 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 (84 FR 18495; May 1, 2019).

Anticipated Effects on Marine Mammal Habitat

The main impact issue associated with the planned activity would be temporarily elevated sound levels and the associated direct effects on marine mammals. The most likely impact to

marine mammal habitat occurs from pile driving effects on likely marine mammal prey (*i.e.*, fish) near where the piles are installed. Impacts to the immediate substrate during installation and removal of piles are anticipated, but these would be limited to minor, temporary suspension of sediments, which could impact water quality and visibility for a short amount of time, but which would not be expected to have any effects on individual marine mammals. Impacts to substrate are therefore not discussed further. These potential effects are discussed in detail in the *Federal Register* notice for the proposed IHA (84 FR 18495; May 1, 2019), therefore that information is not repeated here; please refer to that *Federal Register* notice for that information.

Estimated Take

This section provides an estimate of the number of incidental takes authorized through this IHA, which informed both NMFS' consideration of "small numbers" 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).

Take of marine mammals incidental to DPD's pile driving and removal activities (as well as during socketing and anchoring) could occur as a result of Level A and Level B harassment. Below we describe how the potential take is estimated. As described previously, no mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

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

Acoustic Thresholds

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

Level B Harassment – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.*, 2007, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we

consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 µPa (rms) for continuous (*e.g.*, vibratory pile driving) and above 160 dB re 1 µPa (rms) for impulsive sources (*e.g.*, impact pile driving). DPD's planned activity includes the use of continuous (vibratory pile driving) and impulsive (impact pile driving) sources, and therefore the 120 and 160 dB re 1 µPa (rms) are applicable.

Level A harassment - NMFS' *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing* (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise. The technical guidance identifies the received levels, or thresholds, above which individual marine mammals are predicted to experience changes in their hearing sensitivity for all underwater anthropogenic sound sources, and reflects the best available science on the potential for noise to affect auditory sensitivity by:

- Dividing sound sources into two groups (*i.e.*, impulsive and non-impulsive) based on their potential to affect hearing sensitivity;
- Choosing metrics that best address the impacts of noise on hearing sensitivity, *i.e.*, sound pressure level (peak SPL) and sound exposure level (SEL) (also accounts for duration of exposure); and
- Dividing marine mammals into hearing groups and developing auditory weighting functions based on the science supporting that not all marine mammals hear and use sound in the same manner.

These thresholds were developed by compiling and synthesizing the best available science, and are provided in Table 3 below. The references, analysis, and methodology used in

the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance*.

DPD's pile driving and removal activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving and removal) sources.

Table 3. Thresholds identifying the onset of Permanent Threshold Shift (Auditory Injury).

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

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

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa^{2}s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for 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.

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

B = transmission loss coefficient (assumed to be 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.

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field) environment not limited by depth or water surface, resulting in a 6 dB reduction in sound level for each doubling of distance from the source (20*log(range)). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling of distance from the source (10*log(range)). As is common practice in coastal waters, here we assume practical spreading loss (4.5 dB reduction in sound level for each doubling of distance). Practical spreading is a compromise that is often used under conditions

where water depth increases as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions.

Sound Source Levels

The intensity of pile driving sounds is greatly influenced by factors such as the type of piles, hammers, and the physical environment in which the activity takes place. There are source level measurements available for certain pile types and sizes from the similar environments recorded from underwater pile driving projects in Alaska (*e.g.*, JASCO Reports - Denes *et al.*, 2017 and Austin *et al.*, 2016).) that were evaluated and used as proxy sound source levels to determine reasonable sound source levels likely result from DPD's pile driving and removal activities (Table 4). Many source levels used were more conservation as the values were from larger pile sizes.

Table 4. Assumed Sound Source Levels.

Activity	Sound Source Level at 10 meters	Sound Source
Vibratory Pile Driving/Removal		
24-in steel pile permanent	161.9 SPL	The 24-in-diameter source level for vibratory driving are proxy from median measured source levels from pile driving of 30-in-diameter piles to construct the Ketchikan Ferry Terminal (Denes *et al*. 2016, Table 72).
30-in steel pile temporary installation	161.9 SPL	
30-in steel pile removal	161.9 SPL	
30-in steel pile permanent installation	161.9 SPL	
36-in steel pile permanent	168.2 SPL	The 36-in And 42-in pile source level is a proxy from median measured source level from vibratory hammering of 48-in piles for the Port of Anchorage test pile project (Austin *et al*., 2016).
42-in steel pile permanent	168.2 SPL	
Impact Pile Driving		
36-in steel pile permanent	186.7 SEL/ 198.6 SPL	The 36-inch and 42-inch diameter pile source level is a proxy from median measured source level from impact hammering of 48-in piles for the Port of Anchorage test pile project (Austin *et al*., 2016).
42-in steel pile permanent	186.7 SEL/ 198.6 SPL	
Socketed Pile Installation		
24-in steel pile permanent	166.2 SPL	The socketing and rock anchor source level is a proxy from median measured source level from down-hole drilling of 24-in-diameter piles to construct the Kodiak Ferry Terminal (Denes *et al*., 2016, Table 72).
30-in steel pile temporary	166.2 SPL	
Rock Anchor Installation		

8-in anchor permanent (for 24-inch piles)	166.2 SPL	The socketing and rock anchor source level is a proxy from median measured source level from down-hole drilling of 24-in-diameter piles to construct the Kodiak Ferry Terminal (Denes *et al*., 2016, Table 72).
33-in anchor permanent (for 36-inch piles)	166.2 SPL	
33-in anchor permanent (for 42-inch piles)	166.2 SPL	

Notes: Denes *et al*., 2016 - *Alaska Department of Transportation's Hydroacoustic Pile Driving Noise Study - Comprehensive Report* and Austin *et al*., 2016 - *Hydroacoustic Monitoring Report: Anchorage Port Modernization Project Test Pile Program. Version 3.0. Technical report by JASCO Applied Sciences for Kiewit Infrastructure West Co*.

Level A Harassment

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 from impact and vibratory pile driving), 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 incur PTS. Inputs used in the User Spreadsheet (Tables 5 and 6), and the resulting isopleths are reported below (Table 7).

Table 5. NMFS Technical Guidance (2018) User Spreadsheet Input to Calculate PTS Isopleths for Vibratory Pile Driving.

USER SPREADSHEET INPUT – Vibratory Pile Driving/Anchoring and Socketing **Spreadsheet Tab A.1 Vibratory Pile Driving Used.**									
	24-in piles			**30-in piles**	**36-in piles**				

	(permanent)	30-in piles (temporary install)	30-in piles (temporary removal)	(permanent)	(permanent)	42-in piles (permanent)	8-in anchoring	33-in anchoring	24-in and 30-in socketing
Source Level (RMS SPL)	161.9	161.9	161.9	161.9	168.2	168.2	166.2	166.2	166.2
Weighting Factor Adjustment (kHz)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Number of piles within 24-hr period	4	6	6	2	2	2	1	2	2
Duration to drive a single pile (min)	10	20	10	30	30	60	60	240	60
Propagation (xLogR)	15	15	15	15	15	15	15	15	15
Distance of source level measurement (meters)+	10	10	10	10	10	10	10	10	10

Table 6. NMFS Technical Guidance (2018) User Spreadsheet Input to Calculate PTS Isopleths for Impact Pile Driving.

USER SPREADSHEET INPUT – Impact Pile Driving Spreadsheet Tab E.1 Impact Pile Driving Used.		
	36-in piles (permanent)	42-in piles (permanent)
Source Level (Single Strike/shot SEL)	186.7	186.7
Weighting Factor Adjustment (kHz)	2	2
Number of strikes per pile	100	135
Number of piles per day	4	2
Propagation (xLogR)	15	15
Distance of source level measurement (meters)+	10	10

Table 7. NMFS Technical Guidance (2018) User Spreadsheet Outputs to Calculate Level A Harassment PTS Isopleths.

USER SPREADSHEET OUTPUT		PTS isopleths (meters)				
Activity	Sound Source Level at 10 m	Level A harassment				
		Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid	Otariid
Vibratory Pile Driving/Removal						
24-in steel installation	161.9 SPL[1]	6.0	0.5	8.8	3.6	0.3
30-in steel temporary installation	161.9 SPL[1]	12.4	1.1	18.4	7.6	0.5
30-in steel removal	161.9 SPL[1]	7.8	0.7	11.6	4.8	0.3
30-in steel permanent installation	161.9 SPL[1]	7.8	0.7	11.6	4.8	0.3
36-in steel permanent installation	168.2 SPL[2]	20.6	1.8	30.5	12.5	0.9

42-in steel permanent installation	168.2 SPL[2]	32.7	2.9	48.4	19.9	1.4
Impact Pile Driving						
36-in steel permanent installation	186.7 SEL/ 198.6 SPL[2]	956.7	34.0	1,139.6	512.0	37.3
42-in steel permanent installation	186.7 SEL/ 198.6 SPL[2]	736.2	26.2	876.9	394.0	28.7
Socketed Pile Installation						
24-in steel permanent installation	166.2 SPL[3]	24.1	2.1	35.6	14.6	1.0
30-in steel temporary installation	166.2 SPL[3]	24.1	2.1	35.6	14.6	1.0
Rock Anchor Installation						
8-in anchor permanent installation (for 24-in piles	166.2 SPL[3]	15.2	1.3	22.4	9.2	0.6
33-in anchor permanent installation (for 36-in piles)	166.2 SPL[3]	60.7	5.4	89.7	36.9	2.6
33-in anchor permanent installation (for 42-in piles)	166.2 SPL[3]	60.7	5.4	89.7	36.9	2.6

[1] The 24-in and 30-in-diameter source levels for vibratory driving are proxy from median measured source levels from pile driving of 30-in-diameter piles to construct the Ketchikan Ferry Terminal (Denes *et al*. 2016, Table 72).
[2] The 36-in and 42-in-diameter pile source levels are proxy from median measured source levels from pile driving (vibratory and impact hammering) of 48-in piles for the Port of Anchorage test pile project (Austin *et al*. 2016, Tables 9 and 16). We calculated the distances to impact pile driving Level A harassment thresholds for 36-in piles assuming 100 strikes per pile and a maximum of 4 piles installed in 24 hours; for 42-in piles we assumed 135 strikes per pile and a maximum of 2 piles installed in 24 hours.
[3] The socketing and rock anchoring source level is proxy from median measured sources levels from down-hole drilling of 24-in-diameter piles to construct the Kodiak Ferry Terminal (Denes *et al*. 2016, Table 72).

Level B Harassment

Utilizing the practical spreading loss model, DPD determined underwater noise will fall below the behavioral effects threshold of 120 dB rms for marine mammals at the distances shown in Table 8 for vibratory pile driving/removal, socketing, and rock anchoring. With these radial distances, and due to the occurrence of landforms (See Figure 8, 12, 13 of the application, the largest Level B Harassment Zone calculated for vibratory pile driving for 36-in and 42-in steel piles equaled 193 km^2 and socket and rock anchoring equaled 116 km^2. For calculating the Level B Harassment Zone for impact driving, the practical spreading loss model was used with a behavioral threshold of 160 dB rms. The maximum radial distance of the Level B Harassment

Zone for impact piling equaled 3,744 m. At this radial distance, the entire Level B Harassment Zone for impact piling equaled 19 km^2. Table 8 below provides all Level B Harassment radial distances (m) and their corresponding areas (km^2) during DPD's planned activities.

Table 8. Radial Distances (meters) to Relevant Behavioral Isopleths and Associated Ensonified Areas (square kilometers (km^2)) Using the Practice Spreading Model.

Activity	Received Level at 10 meters	Level B Harassment Zone (m)*	Level B Harassment Zone (km^2)
Vibratory Pile Driving/Removal			
24-in steel installation	161.9 SPL	6,215 (calculated 6,213)	39 km^2
30-in steel temporary installation	161.9 SPL	6,215 (calculated 6,213)	
30-in steel removal	161.9 SPL	6,215 (calculated 6,213)	
30-in steel permanent installation	161.9 SPL	6,215 (calculated 6,213)	
36-in steel permanent installation	168.2 SPL	16,345 (calculated 16,343)	193 km^2
42-in steel permanent installation	168.2 SPL	16,345 (calculated 16,343)	
Impact Pile Driving			
36-in steel permanent installation	186.7 SEL/ 198.6 SPL	3,745 (calculated 3,744)	19 km^2
42-in steel permanent installation	186.7 SEL/ 198.6 SPL	3,745 (calculated 3,744)	
Socketed Pile Installation			
24-in steel permanent installation	166.2 SPL	12,025 (calculated 12,023)	116 km^2
30-in steel temporary installation	166.2 SPL	12,025 (calculated 12,023)	
Rock Anchor Installation			
8-in anchor permanent installation (for 24-in piles	166.2 SPL	12,025 (calculated 12,023)	116 km^2
33-in anchor permanent installation (for 36-in piles)	166.2 SPL	12,025 (calculated 12,023)	
33-in anchor permanent installation (for 42-in piles)	166.2 SPL	12,025 (calculated 12,023)	

*Numbers rounded up to nearest 5 meters.

Marine Mammal Occurrence and Take Calculation and Estimation

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations. Potential exposures to impact pile driving, vibratory pile driving/removal and socketing/rock anchoring noises for each acoustic threshold were estimated using group size estimates and local observational data. As previously stated, take by Level B harassment as well as small numbers of take by Level A harassment will be will be considered for this action. Take by Level B and Level A harassment are calculated differently for some species based on monthly or daily sightings data and average group sizes within the action area using the best available data. Take by Level A harassment is planned for two species where the Level A harassment isopleths are very large during impact pile driving (harbor porpoise and harbor seal), and is based on average group size multiplied by the number of days of impact pile driving. Distances to Level A harassment thresholds for other project activities (vibratory pile driving/removal, socketing, rock anchoring) are considerably smaller compared to impact pile driving, and mitigation is expected to avoid Level A harassment from these other activities.

Minke whales

There are no density estimates of minke whales available in the project area. These whales are usually sighted individually or in small groups of 2-3, but there are reports of loose aggregations of hundreds of animals (NMFS 2018). There was one sighting of a minke whale during the135 days of monitoring during the Huna Berth I construction project (June 2015 through January 2016) (BergerABAM 2016). To be conservative, we predict that three minke whales in a group could be sighted 3 times over the 6-month project period for a total of 9 minke whales authorized to be taken by Level B harassment.

Humpback whales

There are no density estimates of humpback whales available in the project area. Humpback whale presence in the action area is likely steady through the work period until November, when most humpbacks migrate back to Hawaii or Mexico. NMFS has received a few reports of humpback whales over-wintering in Southeast Alaska, but numbers of animals and exact locations are very hard to predict, and NMFS assumes the presence of much fewer humpbacks in the action area in November and later winter months. During the previous Huna Berth I project, humpback whales were observed on 84 of the 135 days of monitoring; most often in September and October (BergerABAM 2016). The best available information on the distribution of humpbacks in the project area was obtained from several sources including: Icy Strait observations from 2015 (BergerABAM 2016), Glacier Bay/Icy Strait NPS Survey data 2014-2018 (provided by NPS, March 2019), Whale Alert opportunistic reported sightings 2016-2018, and reported HB whale bubble-net feeding group to NPS, 2015-2018 (provided by NPS, March 2019).

The National Park Service Glacier Bay/Icy Strait survey is designed to observe humpback whales and has regular effort in June, July, and August. This is the primary data source used to estimate exposures of humpback whales in the action area during those months, except for when a maximum group size reported in Whale Alert data was greater, then the Whale Alert number was used (June and July maximum group size). The on-site marine mammal monitoring data from BergerABAM (2016) was used to estimate takes in September and October and Whale Alert data was the only data source available in November and could represent a minimum number of observations due to fewer opportunistic sightings recorded in that month.

In addition, a single group of bubble-net feeding humpbacks of 10 animals was added to the total estimated exposures for June and October, based on anecdotal data provided by NPS of bubble-net feeding groups of humpbacks in the action area in those months of construction.

To estimate the number of exposures, NMFS looked at the proportion of days of the month when the numbers of animals observed were within one standard deviation of that month's average daily sightings. That proportion was 0.7. The average number of sightings was estimated as exposures on those days. For the remaining 30 percent of work days, the maximum number of observations on any single day were estimated to be exposed on those days. For example, in June, the average number of daily observations (1.31) was estimated to occur on 70 percent of the 17 work days, which resulted in 15.59 exposures. On the other 30 percent of the 17 work days, the maximum number of observations on any day (10) resulted in 51 estimated exposures. In addition, in June, NMFS estimates that one bubble-net feeding group of 10 individuals could be exposed, due to anecdotal evidence of this feeding activity occurring inside the planned action area. NMFS estimates a total of 76.59 humpback whales could be exposed in June. Humpback whales could be in larger groups when large amounts of prey are available, but this is difficult to predict with any precision. Although we are not proposing to authorize takes by month, we are demonstrating how the total take was calculated. The total number of exposures per month was calculated to be 76.59 (June), 68.02 (July), 71.93 (August), 132.07 (September), 78.82 (October), and 6.20 (November). The total number of whales authorized to be taken by Level B harassment from June to November is 434 (433.63) humpback whales with 26 (26.061) of those whales anticipated being from the Mexico DPS (0.0601 percentage of the total animals).

Gray whales

There are no density estimates of gray whales available in the project area. Gray whales travel alone or in small, unstable groups, although large aggregations may be seen in feeding and breeding grounds (NMFS 2018e). Observations in Glacier Bay and nearby waters recorded two gray whales documented over a 10-year period (Keller *et al.*, 2017). None were observed during Huna Berth I project monitoring (BergerABAM 2016). We conservatively estimate a small group to be 3 gray whales x 1 sighting over the 6-month work period for a total of three gray whales authorized to be taken by Level B harassment.

Killer whales

There are no density estimates of killer whales available in the project area. Killer whales occur commonly in the waters of the project area, and could include members of several designated stocks that may occur in the vicinity of the planned project area. Whales are known to use the Icy Strait corridor to enter and exit inland waters and are observed in every month of the year, with certain pods being observed inside Port Frederick passing directly in front of Hoonah. Group size of resident killer whale pods in the Icy Strait area ranges from 42 to 79 and occur in every month of the year (Dahlheim pers. comm. to NMFS 2015). As determined during a line-transect survey by Dalheim *et al.* (2008), the greatest number of transient killer whale observed occurred in 1993 with 32 animals seen over two months for an average of 16 sightings per month. NMFS estimates that group size of 79 resident killer whales and 16 transient killer whales could occur each month during the 6-month project period for a total of 570 takes authorized by Level B harassment.

Pacific white-sided dolphin

There are no density estimates of Pacific white-sided dolphins available in the project area. Pacific white-sided dolphins have been observed in Alaska waters in groups ranging from

20 to 164 animals, with the sighting of 164 animals occurring in Southeast Alaska near Dixon Entrance (Muto *et al.*, 2018). There were no Pacific white-sided dolphins observed during the 135-day monitoring period during the Huna Berth I project. However, to be conservative NMFS estimates 164 Pacific white-sided dolphins may be seen once over the 6-month project period for a total of 164 takes authorized by Level B harassment.

Dall's porpoise

Little information is available on the abundance of Dall's porpoise in the inland waters of Southeast Alaska. Dall's porpoise are most abundant in spring, observed with lower numbers in the summer, and lowest numbers in fall. Jefferson *et al.*, 2019 presents the first abundance estimates for Dall's porpoise in these waters and found the abundance in summer (N = 2,680, CV = 19.6 percent), and lowest in fall (N = 1,637, CV = 23.3 percent). Dall's porpoise are common in Icy Strait and sporadic with very low densities in Port Frederick (Jefferson *et al.*, 2019). Dahlheim *et al.* (2008) observed 346 Dall's porpoise in Southeast Alaska (inclusive of Icy Strait) during the summer (June/July) of 2007 for an average of 173 animals per month as part of a 17-year study period. During the previous Huna Berth I project, only two Dall's porpoise were observed, and were transiting within the waters of Port Frederick in the vicinity of Halibut Island. Therefore, NMFS' estimates 173 Dall's porpoise per month may be seen each month of the 6-month project period for a total of 1,038 takes authorized by Level B harassment.

Harbor porpoise

Dahlheim *et al.* (2015) observed 332 resident harbor porpoises occurred in the Icy Strait area, and harbor porpoise are known to use the Port Frederick area as part of their core range. During the Huna Berth I project monitoring, a total of 32 harbor porpoise were observed over 19 days during the 4-month project. The harbor porpoises were observed in small groups with the

largest group size reported was four individuals and most group sizes consisting of three or fewer animals. NMFS conservatively estimates that 332 harbor porpoises could occur in the project area each month over the 6-month project period for a total of 1,992 takes authorized by Level B harassment. Because the Level A harassment zone is significantly larger than the shutdown zone during impact pile driving, NMFS predicts that some take by Level A harassment may occur. Based on the previous monitoring results, we estimate that a group size of four harbor porpoises multiplied by 1 group per day over 8 days of impact pile driving would yield a total of 32 takes authorized by Level A harassment.

Harbor Seal

There are no density estimates of harbor seals available in the project area. Keller *et al.* (2017) observed an average of 26 harbor seal sightings each month between June and August of 2014 in Glacier Bay and Icy Strait. During the monitoring of the Huna Berth I project, harbor seals typically occur in groups of one to four animals and a total of 63 seals were observed during 19 days of the 135-day monitoring period. NMFS conservatively estimate that 26 harbor seals could occur in the project area each month during the 6-month project period for a total of 156 takes by Level B harassment. Because the Level A harassment zone is significantly larger than the shutdown zone during impact pile driving, NMFS predicts that some take by Level A harassment may occur. Based on the previous monitoring results, we estimate that a group size of two harbor seals multiplied by 1 group per day over 8 days of impact pile driving would yield a total of 16 takes authorized by Level A harassment.

Steller sea lion

There are no density estimates of Steller sea lions available in the project area. NMFS expects that Steller sea lion presence in the action area will vary due to prey resources and the

spatial distribution of breeding versus non-breeding season. In April and May, Steller sea lions are likely feeding on herring spawn in the action area. Then, most Steller sea lions likely move to the rookeries along the outside coast (away from the action area) during breeding season, and would be in the action area in greater numbers in August and later months (J. Womble, NPS, pers. comm. to NMFS AK Regional Office, March 2019). However, Steller sea lions are also opportunistic predators and their presence can be hard to predict.

Steller sea lions typically occur in groups of 1-10 animals, but may congregate in larger groups near rookeries and haulouts. The previous Huna Berth I project observed a total of 180 Steller sea lion sightings over 135 days in 2015, amounting to an average of 1.3 sightings per day (BergerABAM 2016). During a test pile program performed at the project location by the Hoonah Cruise Ship Dock Company in May 2018, a total of 15 Steller sea lions were seen over the course of 7 hours in one day (SolsticeAK 2018).

We used the same process to calculate Steller sea lion take as explained above or humpback whales, except that 79 percent of the work days in each month are expected to expose the average number of animals, and 21 percent of the work days would expose the maximum number of animals. For example, in June, the average number of daily observations (1.6) was estimated to occur on 13.43 work days, which would result in 21.48 exposures. On the other 21 percent of the 17 work days, the maximum number of observations on any day (26) could result in 92.82 estimated exposures. NMFS estimates a total of 114.31 Steller sea lions could be exposed in June. Although we are not proposing to authorize takes by month, we are demonstrating how the total take was calculated. The total number of exposures per month was calculated to be 114.31 (June), 57.19 (July), 92.89 (August), 199.23 (September), 79.10 (October), and 16.57 (November). Therefore, the total number of Steller sea lions authorized to

be taken by Level B harassment from June to November is 559 (559.29) Steller sea lions with 39 (39.32) of those sea lions anticipated being from the Western DPS (0.0703 percentage of the total animals (L. Jemison draft unpublished Steller sea lion data, 2019).

Table 9 below summarizes the authorized take by Level A and B harassment for all the species described above as a percentage of stock abundance.

Table 9. Take Estimates as a Percentage of Stock Abundance.

Species	Stock (N_{EST})	Authorized Level A Harassment	Authorized Level B Harassment	Percent of Stock
Minke Whale	N/A	0	9	N/A
Humpback Whale	Hawaii DPS (9,487) [a] Mexico DPS (606) [a]	0	408 26 (Total 434)	4.3 4.5
Gray Whale	Eastern North Pacific (26,960)	0	3	Less than 1 percent
Killer Whale	Alaska Resident (2,347) Northern Resident (261) West Coast Transient (243)	0	469 52 49 (Total 570)	19.9 [b] 19.9 [b] 20.2 [b]
Pacific White-Sided Dolphin	North Pacific (26,880)	0	164	Less than 1 percent
Dall's Porpoise	Alaska (83,400) [c]	0	1,038	1.2
Harbor Porpoise	NA	32	1,992	NA
Harbor Seal	Glacier Bay/Icy Strait (7,210)	16	156	2.16
Steller Sea Lion	Eastern U.S. (41,638) Western U.S. (53,303)	0	520 39 (Total 559)	1.25 Less than 1 percent

[a] Under the MMPA humpback whales are considered a single stock (Central North Pacific); however, we have divided them here to account for DPSs listed under the ESA. Using the stock assessment from Muto *et al*., 2018 for the Central North Pacific stock (10,103 whales) and calculations in Wade *et al*., 2016; 9,487 whales are expected to be from the Hawaii DPS and 606 from the Mexico DPS.

[b] Take estimates are weighted based on calculated percentages of population for each distinct stock, assuming animals present would follow same probability of presence in project area.

[c] Jefferson *et al*., 2019 presents the first abundance estimates for Dall's porpoise in the waters of Southeast Alaska with highest abundance recorded in spring (N=5,381, CV= 25.4 percent), lower numbers in summer (N=2,680, CV=19.6 percent), and lowest in fall (N=1,637, CV=23.3 percent). However, NMFS currently recognizes a single stock of Dall's porpoise in Alaskan waters and an estimate of 83,400 Dall's porpoises is used by NMFS for the entire stock (Muto *et al*., 2018).

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 (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such 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.

The following mitigation measures are planned in the IHA:

Timing Restrictions

All work will be conducted during daylight hours. If poor environmental conditions restrict visibility full visibility of the shutdown zone, pile installation would be delayed.

Sound Attenuation

To minimize noise during impact pile driving, pile caps (pile softening material) will be used. DPD will use high-density polyethylene (HDPE) or ultra-high-molecular-weight polyethylene (UHMW) softening material on all templates to eliminate steel on steel noise generation.

Shutdown Zone for in-water Heavy Machinery Work

For in-water heavy machinery work (using, *e.g.*, movement of the barge to the pile location; positioning of the pile on the substrate via a crane (*i.e.*, stabling the pile), removal of the pile from the water column/substrate via a crane (*i.e.*, deadpull); or placement of sound attenuation devices around the piles.) If a marine mammal comes within 10 m of such operations, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions.

Shutdown Zones

For all pile driving/removal and drilling activities, DPD will establish a shutdown zone for a marine mammal species that is greater than its corresponding Level A harassment zone; except for a few circumstances during impact pile driving, over the course of 8 days, where the shutdown zone is smaller than the Level A harassment zone for high frequency cetaceans and

phocids due to the practicability of shutdowns on the applicant and to the potential difficulty of observing these animals in the large Level A harassment zones. The calculated PTS isopleths were rounded up to a whole number to determine the actual shutdown zones that the applicant will operate under (Table 10). 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).

Table 10. Pile Driving Shutdown Zones during Project Activities.

Source	Shutdown Zones (radial distance in meters, area in km^2)				
	Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocids	Otariids
In-Water Construction Activities					
Barge movements, pile positioning, sound attenuation placement*	10 m (0.00093 km^2)	10 m (0.00093 km^2)	10 m (0.00093 km^2)	10 m (0.00093 km^2)	10 m (0.00093 km^2)
Vibratory Pile Driving/Removal					
24-in steel installation (18 piles; ~40 min per day on 4.5 days)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	10 m (0.00093 km^2)
30-in steel temporary installation (62 piles; ~2 hours per day on 10.5 days)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	10 m (0.00093 km^2)
30-in steel removal (62 piles; ~1 hour per day on 10.5 days)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	10 m (0.00093 km^2)
30-in steel permanent installation (3 piles; ~1 hour per day on 1.5 days)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	10 m (0.00093 km^2)
36-in steel permanent installation (16 piles; ~1 hour per day on 8 days)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	50 m (0.02307 km^2)	25 m (0.005763 km^2)	10 m (0.00093 km^2)
42-in steel permanent installation (8 piles; ~2 hours per day on 4 days)	50 m (0.02307 km^2)	10 m (0.00093 km^2)	50 m (0.02307 km^2)	25 m (0.005763 km^2)	10 m (0.00093 km^2)
Impact Pile Driving					
36-in steel permanent installation (16 piles; ~10 min per day on 4 days)	1,000 m (2.31 km^2)	50 m (0.02307 km^2)	100 m* (0.0875 km^2)	50 m* (0.02307 km^2)	50 m (0.02307 km^2)

42-in steel permanent installation (8 piles; ~6 min per day on 4 days)	750 m (1.44 km^2)	50 m (0.02307 km^2)	100 m* (0.0875 km^2)	50 m* (0.02307 km^2)	50 m (0.02307 km^2)
Socketed Pile Installation					
24-in steel permanent installation (18 piles; ~2 hours per day on 9 days)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	50 m (0.02307 km^2)	15 m (0.0021 km^2)	10 m (0.00093 km^2)
30-in steel temporary installation (up to 10 piles; ~2 hours per day on 5 days)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	50 m (0.02307 km^2)	15 m (0.0021 km^2)	10 m (0.00093 km^2)
Rock Anchor Installation					
8-in anchor permanent installation (for 24-in piles, 2 anchors; ~1 hour per day on 2 days)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	25 m (0.005763 km^2)	10 m (0.00093 km^2)	10 m (0.00093 km^2)
33-in anchor permanent installation (for 36- and 42-in piles, 24 anchors; ~8 hours per day on 12 days)	100 m (0.0875 km^2)	10 m (0.00093 km^2)	100 m (0.0875 km^2)	50 m (0.02307 km^2)	10 m (0.00093 km^2)

*Due to practicability of the applicant to shutdown and the difficulty of observing some species and low occurrence of some species in the project area, such as high frequency cetaceans or pinnipeds out to this distance, the shutdown zones were reduced and Level A harassment takes were requested.

Non-authorized Take Prohibited

If a species enters or approaches the Level B harassment zone and that species is either not authorized for take or its authorized takes are met, pile driving and removal activities must shut down immediately using delay and shut-down procedures. Activities must not resume until the animal has been confirmed to have left the area or an observation time period of 15 minutes (min) has elapsed for pinnipeds and small cetaceans and 30 min for large whales.

Soft Start

The use of a soft-start procedure are believed to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the impact hammer operating at full capacity. For impact pile driving, contractors will be required to provide an initial set of three strikes from the hammer at 40 percent energy, followed by a 1-min waiting period. Then two subsequent three strike sets would occur. Soft Start is not required during vibratory pile driving and removal activities.

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

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 planned 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.

DPD Briefings

DPD is will conduct briefings between construction supervisors and crews, marine mammal monitoring team, and DPD staff prior to the start of all pile driving activities and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures. The crew will be requested to alert the PSO when a marine mammal is spotted in the action area.

Protected Species Observer Check-in with Construction Crew

Each day prior to commencing pile driving activities, the lead NMFS approved Protected Species Observer (PSO) will conduct a radio check with the construction foreman or superintendent to confirm the activities and zones to be monitored that day. The construction foreman and lead PSO will maintain radio communications throughout the day so that the PSOs may be alerted to any changes in the planned construction activities and zones to be monitored.

Pre-Activity Monitoring

Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 min or longer occurs, PSOs will observe the shutdown and monitoring zones for a

period of 30 min. The shutdown zone will be cleared when a marine mammal has not been observed within the zone for that 30-min period. If a marine mammal is observed within the shutdown zone, pile driving activities will not begin until the animal has left the shutdown zone or has not been observed for 15 min. If the Level B Harassment Monitoring Zone has been observed for 30 min and no marine mammals (for which take has not been authorized) are present within the zone, work can continue even if visibility becomes impaired within the Monitoring Zone. When a marine mammal permitted for Level B harassment take has been permitted is present in the Monitoring zone, piling activities may begin and Level B harassment take will be recorded.

Monitoring Zones

DPD will establish and observe monitoring zones for Level B harassment as presented in Table 8. The monitoring zones for this project are areas where SPLs are equal to or exceed 120 dB rms (for vibratory pile driving/removal and socketing/rock anchoring) and 160 dB rms (for impact pile driving). These zones provide utility for monitoring conducted for mitigation purposes (*i.e.*, shutdown zone monitoring) by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring of the Level B harassment 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.

Visual Monitoring

Monitoring would be conducted 30 min before, during, and 30 min after all pile driving/removal and socking/rock anchoring activities. In addition, PSO shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven/removed or during

socketing and rock anchoring. Pile driving/removal and socketing/anchoring activities include the time to install, remove, or socket/rock anchor a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 min.

Monitoring will be conducted by PSOs from on land and from a vessel. The number of PSOs will vary from three to four, depending on the type of pile driving, method of pile driving and size of pile, all of which determines the size of the harassment zones. Monitoring locations will be selected to provide an unobstructed view of all water within the shutdown zone and as much of the Level B harassment zone as possible for pile driving activities. Three PSOs will monitor during all impact pile driving activity at the lightering float project site. Three PSOs will monitor during all impact pile driving activities at the Berth II project site. Three PSOs will monitor during vibratory pile driving of 24-in and 30-in steel piles. Four PSOs will monitor during vibratory pile driving of 36-in and 42-in steel piles and during all socketing/rock anchoring activities.

Three PSOs will monitor during all pile driving activities at the lightering float project site, with locations as follows: PSO #1: stationed at or near the site of pile driving; PSO #2: stationed on Long Island (southwest of Hoonah in Port Frederick Inlet) and positioned to be able to view west into Port Frederick Inlet and north towards the project area; and PSO #3: stationed on a vessel traveling a circuitous route through the Level B harassment monitoring zone.

Three PSOs will monitor during all impact pile driving activities at the Berth II project site, with locations as follows: PSO #1: stationed at or near the site of pile driving; PSO #2: stationed on Halibut Island (northwest of the project site in Port Frederick Inlet) and positioned to be able to view east towards Icy Strait and southeast towards the project area; and PSO #3: stationed on a vessel traveling a circuitous route through the Level B monitoring zone.

Three PSOs will monitoring during vibratory pile driving of 24- and 30-in steel piles at the Berth II project site, with locations as follows PSO #1: stationed at or near the site of pile driving; PSO #2: stationed on Scraggy Island (northwest of the project site in Port Frederick Inlet) an positioned to be able to view south towards the project area; and PSO#3: stationed on a vessel traveling a circuitous route through the Level B harassment monitoring zone.

Four PSOs will monitor during vibratory pile driving of 36-in and 42-in steel piles and during all socketing/rock anchoring activities with locations as follows: PSO #1: stationed at or near the site of pile driving; PSO #2: stationed on Hoonah Island (northwest of the project site in Port Frederick Inlet) and positioned to be able to view south towards the project site; PSO #3: stationed across Icy Strait north of the project site (on the mainland or the Porpoise Islands) and positioned to be able to view west into Icy Strait and southwest towards the project site; and PSO #4: stationed on a vessel traveling a circuitous route through the Level B monitoring zone.

In addition, PSOs will work in shifts lasting no longer than 4 hours with at least a 1-hour break between shifts, and will not perform duties as a PSO for more than 12 hours in a 24- hour period (to reduce PSO fatigue).

Monitoring of pile driving shall be conducted by qualified, NMFS-approved PSOs, who shall have no other assigned tasks during monitoring periods. DPD shall adhere to the following conditions when selecting PSOs:

- Independent PSOs shall be used (*i.e.*, not construction personnel);
- At least one PSO must have prior experience working as a marine mammal observer during construction activities;
- Other PSOs may substitute education (degree in biological science or related field) or training for experience;

- Where a team of three or more PSOs are required, a lead observer or monitoring coordinator shall be designated. The lead observer must have prior experience working as a marine mammal observer during construction; and
- DPD shall submit PSO CVs for approval by NMFS for all observers prior to monitoring.

DPD shall ensure that the PSOs have the following additional qualifications:

- Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;
- Experience and 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;
- 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
- Sufficient training, orientation, or experience with the construction operations to provide for personal safety during observations.

Notification of intent to commence construction

DPD shall inform NMFS OPR and the NMFS Alaska Region Protected Resources Division one week prior to commencing construction activities.

Reporting of injured or dead marine mammals

In the unanticipated event that the planned activity clearly causes the take of a marine mammal in a manner prohibited by the IHA, such as serious injury, or mortality, DPD must immediately cease the specified activities and report the incident to the NMFS Office of Protected Resources and the Alaska Region Stranding Coordinator. The report must include the following information:

- Time and date of the incident;
- Description of the incident;
- Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- Description of all marine mammal observations and active sound source use in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s).

Activities must not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with DPD to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. DPD may not resume their activities until notified by NMFS.

In the event DPD discovers an injured or dead marine mammal, and the lead observer determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition), DPD must immediately report the incident to the Office of Protected Resources, NMFS, and the Alaska Region Stranding Coordinator, NMFS. The report must include the same information as the bullets described above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with DPD to determine whether additional mitigation measures or modifications to the activities are appropriate.

In the event that DPD discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the specified activities (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), DPD must report the incident to the Office of Protected Resources, NMFS, and the Alaska Region Stranding Coordinator, NMFS, within 24 hours of the discovery.

Interim monthly reports

During construction, DPD will submit brief, monthly reports to the NMFS Alaska Region Protected Resources Division that summarize PSO observations and recorded takes. Monthly reporting will allow NMFS to track the amount of take (including extrapolated takes), to allow reinitiation of consultation in a timely manner, if necessary. The monthly reports will be submitted by email to a NMFS representative. The reporting period for each monthly PSO report will be the entire calendar month, and reports will be submitted by close of business on the fifth day of the month following the end of the reporting period (*e.g.*, the monthly report covering September 1–30, 2019, would be submitted to the NMFS by close of business on October 5, 2019).

Final report

DPD shall submit a draft report to NMFS no later than 90 days following the end of construction activities or 60 days prior to the issuance of any subsequent IHA for the project. DPD shall provide a final report within 30 days following resolution of NMFS' comments on the draft report. Reports shall contain, at minimum, the following:

- Date and time that monitored activity begins and ends for each day conducted (monitoring period);
- Construction activities occurring during each daily observation period, including how many and what type of piles driven;
- Deviation from initial proposal in pile numbers, pile types, average driving times, etc.;
- Weather parameters in each monitoring period (*e.g.*, wind speed, percent cloud cover, visibility);
- Water conditions in each monitoring period (*e.g.*, sea state, tide state);
- For each marine mammal sighting:
  - 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;
  - Type of construction activity that was taking place at the time of sighting;
  - Location and distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point;
  - If shutdown was implemented, behavioral reactions noted and if they occurred before or after shutdown.

- Estimated amount of time that the animals remained in the Level A or B Harassment Zone.

- Description of implementation of mitigation measures within each monitoring period (*e.g.*, shutdown or delay);

- Other human activity in the area within each monitoring period

- A summary of the following:

- Total number of individuals of each species detected within the Level B Harassment Zone, and estimated as taken if correction factor appropriate.

- Total number of individuals of each species detected within the Level A Harassment Zone and the average amount of time that they remained in that zone.

- Daily average number of individuals of each species (differentiated by month as appropriate) detected within the Level B Harassment Zone, and estimated as taken, if appropriate.

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).

As stated in the mitigation section, shutdown zones that are larger than the Level A harassment zones will be implemented in the majority of construction days, which, in combination with the fact that the zones are so small to begin with, is expected avoid the likelihood of Level A harassment for seven of the nine species. For the other two species (harbor seals and harbor porpoises), a small amount of Level A harassment has been conservatively authorized because the Level A harassment zones are larger than the planned shutdown zones. However, we expect, given the relatively short duration of the sound source (minutes a day during impact pile driving) that these animals may potentially be exposed to, could result in only a small degree of PTS that would impact the fitness of any individual animals.

Exposures to elevated sound levels produced during pile driving activities may cause behavioral responses by an animal, but they are expected to be mild and temporary. 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. These reactions and behavioral changes are expected to subside quickly when the exposures cease.

To minimize noise during pile driving, DPC will use pile caps (pile softening material). Much of the noise generated during pile installation comes from contact between the pile being driven and the steel template used to hold the pile in place. The contractor will use high-density polyethylene (HDPE) or ultra-high-molecular- weight polyethylene (UHMW) softening material on all templates to eliminate steel on steel noise generation.

During all impact driving, implementation of soft start procedures and monitoring of established shutdown zones will be required, significantly reducing the possibility of injury. Given sufficient notice through use of soft start (for impact driving), marine mammals are expected to move away from an irritating sound source prior to it becoming potentially injurious. In addition, PSOs will be stationed within the action area whenever pile driving/removal and socketing/rock anchoring activities are underway. Depending on the activity, DDP will employ the use of three to four PSOs to ensure all monitoring and shutdown zones are properly observed. Although the expansion of Berth facilities would have some permanent removal of habitat available to marine mammals, the area lost would be small, approximately equal to the area of the cruise ship berth and associated pile placements. The planned design would not impede migration of marine mammals through the planned action area. The small lightering facility nearer to the cannery would likely not impact any marine mammal habitat since its planned location is in between two existing, heavily-traveled docks, and within an active marine commercial and tourist area. There are no known pinniped haulouts or other biologically important areas for marine mammals near the action area.

In addition, impacts to marine mammal prey species are expected to be minor and temporary. Overall, the area impacted by the project is very small compared to the available habitat around Hoonah. The most likely impact to prey will be temporary behavioral avoidance of the immediate area. During pile driving/removal and socketing/rock anchoring activities, it is expected that fish and marine mammals would temporarily move to nearby locations and return to the area following cessation of in-water construction activities. Therefore, indirect effects on marine mammal prey during the construction are not expected to be substantial.

In summary and as described above, the following factors primarily support our 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;
- Anticipated incidents of Level A harassment are very small in number and would consist of no more than a small degree of PTS;
- Anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior; and
- There are no rookeries, or other known areas or features of special significance for foraging or reproduction in the project area;
- Minimal impacts to marine mammal habitat are expected;
- The action area is located and within an active marine commercial and tourist area;
- The required mitigation measures (*i.e.* shutdown zones and pile caps) are expected to be effective in reducing the effects of the specified activity.

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 the planned 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. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The authorized take for six of the nine marine mammal stocks comprises less than five percent of the stock abundance. For Alaska resident, northern resident and transient killer whales, the number of instances of take as compared to the stock abundance are 19.9 percent, 19.9, and 20.2 percent, respectively. However, since three stocks of killer whales could occur in the action area, the 570 total killer whale takes are likely split among the three stocks. Nonetheless, since NMFS does not have a good way to predict exactly how take will be split, NMFS looked at the most conservative scenario, which is that all 570 takes could potentially be distributed to each of the three stocks. This is a highly unlikely scenario to occur and the percentages of each stock taken are predicted to be significantly lower. Further, these

percentages do not take into consideration that some number of these take instances are likely repeat takes incurred by the same individuals, thereby lowering the number of individuals.

There are no official stock abundances for harbor porpoise and minke whales; however, as discussed in greater detail in the "Description of Marine Mammals in the Area of Specified Activities," we believe for the abundance information that is available, the estimated takes are likely small percentages of the stock abundance. For harbor porpoise, the abundance for the Southeast Alaska stock is likely more represented by the aerial surveys that were conducted as these surveys had better coverage and were corrected for observer bias. Based on this data, the estimated take could potentially be approximately 17 percent of the stock abundance. However, this is unlikely and the percentage of the stock taken is likely lower as the take estimates are conservative and the project occurs in a small footprint compared to the available habitat in Southeast Alaska. For minke whales, in the northern part of their range they are believed to be migratory and so few minke whales have been seen during three offshore Gulf of Alaska surveys that a population estimate could not be determined. With only nine planned takes for this species, the percentage of take in relation to the stock abundance is likely to be very small.

Based on the analysis contained herein of the planned activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS 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 September 2018, DPD contacted the Indigenous People's Council for Marine Mammals (IPCoMM), the Alaska Sea Otter and Steller Sea Lion Commission, and the Hoonah Indian Association (HIA) to determine potential project impacts on local subsistence activities.

No comments were received from IPCoMM or the Alaska Sea Otter and Steller Sea Lion Commission. On October 23, 2018, a conference call between representatives from DPD, Turnagain Marine Construction, SolsticeAK, and the HIA were held to discuss tribal concerns regarding subsistence impacts. The tribe confirmed that Steller sea lions and harbor seals are harvested in and around the project area. The HIA referenced the 2012 subsistence technical paper by Wolf *et al.* (2013) as the most recent information available on marine mammal harvesting in Hoonah and agreed that the planned construction activities are unlikely to have significant impacts to marine mammals as they are used in subsistence applications. Information on the timing of the IHA issuance was provided by DPD via email to the tribe on October 23, 2018. There have been no further comments on this project.

Therefore, we believe there are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

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 incidental harassment authorization) with respect to potential impacts on the human environment. This action is consistent with categories of activities identified in Categorical Exclusion B4 (incidental harassment authorizations 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 determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act of 1973 (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 (AKRO) whenever we propose to authorize take for endangered or threatened species.

NMFS is authorizing take of Mexico DPS humpback whales, which are listed and Western DPS Steller sea lions under the ESA. The Permit and Conservation Division completed a Section 7 consultation with the Alaska Regional Office for the issuance of this IHA. The Alaska Regional Office's biological opinion states that the action is not likely to jeopardize the continued existence of Western DPS Steller sea lions or Mexico DPS humpback whales.

Authorization

As a result of these determinations, NMFS authorizes an IHA to DPD for conducting pile driving and removal activities for the construction of the Hoonah Berth II cruise ship terminal and lightering float, Icy Strait, Hoonah Alaska provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: June 6, 2019.

_____

Donna S. Wieting,

Director, Office of Protected Resources,

National Marine Fisheries Service.

[FR Doc. 2019-12318 Filed: 6/11/2019 8:45 am; Publication Date: 6/12/2019]