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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XD808

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to a Cruise Ship Terminal Project

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

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that we have issued an incidental harassment authorization (IHA) to the Huna Totem Corporation (HTC) of Hoonah, Alaska to incidentally harass, by Level B harassment only, nine species of marine mammals during construction activities associated with the re-development of the cruise ship terminal at Hoonah, Alaska.

DATES: This authorization is effective from June 1, 2015 through October 31, 2015.

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

SUPPLEMENTARY INFORMATION:

Availability

An electronic copy of HTC's application and supporting documents, as well as a list of the references cited in this document, may be obtained by visiting the Internet at:

www.nmfs.noaa.gov/pr/permits/incidental/construction.htm. In case of problems accessing these documents, please call the contact listed above (see FOR FURTHER INFORMATION CONTACT).

Background

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

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

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

the comment period, NMFS must either issue or deny the authorization. Except with respect to certain activities not pertinent here, the MMPA defines "harassment" as "any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment]."

Summary of Request

On June 23, 2014 we received a request from HTC for the taking of marine mammals incidental to pile driving and falsework pile extraction associated with the re-development of the Icy Strait Point Cruise Ship Terminal in Hoonah, Alaska. HTC submitted a revised application on September 9, 2014. On February 26, 2015 the applicant submitted an addendum to the application describing modifications to the specified activity. NMFS determined that the application was adequate and complete on February 27, 2015. HTC proposes to conduct in-water work that may incidentally harass marine mammals (i.e., pile driving and falsework removal). In addition, the project would include associated upland improvements, which are not anticipated to have the potential to result in incidental take of marine mammals. This IHA would be valid from June 1 through October 31, 2015. However, all pile driving is expected to be completed by the end of September. October has been included only to cover any contingencies that may arise. Hereafter, use of the generic term "pile driving" may refer to both pile installation and falsework removal unless otherwise noted.

The use of vibratory pile driving is expected to produce underwater sound at levels that have the potential to result in behavioral harassment of marine mammals. Species with the expected potential to be present during the project timeframe include the humpback whale

(*Megaptera novaeangliae),* Steller sea lion (*Eumatopius jubatus*), harbor seal (*Phoca vitulina*), Dall's porpoise (*Phocoenoides dalli*), gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), killer whale (*Orcinus orca*), minke whale (*Balaenoptera acutorostrata*), and Pacific white-sided dolphin (*Lagenorhynchus obliquidens*).

Description of the Specified Activity

Overview

The project would construct a new cruise ship berth terminal and associated upland improvements at the existing facility in order to streamline cruise ship operations at the site by constructing a permanent cruise ship berth, renovating existing tourist facilities and constructing additional tourist facilities to support cruise ship terminal operations at the site. The existing facility requires the vessel to anchor offshore, and requires passengers to be lightered (ferried in a smaller boat) to shore, which causes a bottleneck in operations. The new terminal has been designed as a floating platform to disembark/embark passengers so that there is a fixed elevation between the dock surface and the ships gangways, and to provide passengers with direct access to shore.

The project will require the installation of 104 steel pipe piles of varying diameters below the MHHW by impact driving, down-hole drilling and vibratory hammer. Piles will be set by vibratory hammer that will cease operation as soon as bedrock is encountered. Vibratory hammer time should be between 10 and 30 minutes per pile. It is estimated that each pile will need to be driven approximately 50 feet to hit bedrock. Piles will then be drilled into bedrock using a down-hole drilling system with an under reaming bit for approximately 15 feet. This process will take an estimated 3 hours. This is a low energy air-powered system that releases

decreased acoustic energy compared to impact driving. Proofing or seating of the pile into the drilled socket would occur with either a vibratory or impact hammer depending on the rock encountered and will be selected in the field based on actual sub surface conditions.

Dates and Duration

In-water work, which is work occurring below the mean higher high water (MHHW) will be limited to pile installation and falsework pile extraction. These activities will be limited to the period between June 1 and October 31, 2015 to avoid the period (15 April to 31 May) when spawning herring are most likely to be present within the project area. HTC expects pile driving will occur on up to 103 days. However, all pile driving is expected to be completed by the end of September. October has been included only to cover any contingencies that may arise. The overall project, including work not anticipated to result in incidental take, was initiated in September 2014 and will run through May 2016.

Specific Geographic Region

The existing Icy Strait Point site is located in Hoonah, Alaska. The project site is located at the junction of Icy Strait and Port Frederick, in the Baranof-Chichagof Islands watershed (HUC #19010203). Please see Sheet 1 of Appendix A in the HTC application for details.

Detailed Description of Activities

We provided a detailed description of the proposed action in our **Federal Register** notice announcing the proposed authorization (80 FR 14945; March 20, 2015). Please refer to that document; we provide only summary information here. The proposed action would involve

construction of a new cruise ship berth terminal and associated upland improvements at the existing facility. The existing facility is served by an approximately 100-foot by 25-foot excursion dock, with an approximately 140-foot walkway connecting to shoreline. There is also an existing 40-foot by 80-foot fishing pier which is connected to the shore by an approximately 120-foot walkway. The new terminal would consist of a floating pontoon, which would be connected to the shore via a new trestle and transfer span. The new terminal would also include two new mooring dolphins, two new breasting dolphins, and three or more new reaction dolphins. Each of these would be interconnected via pile-supported catwalks.

In-water work (work below the MHHW) will be limited to pile installation. Over-water work will include construction and installation of the steel trestle and transfer span, construction of the over-water portions of the mooring, breasting, and reaction dolphins, and construction of the catwalk spans. The floating pontoon will be fabricated in a dry dock and floated into position. In-water and over-water components of the project would be constructed in areas with water depths ranging between MHHW and approximately -60 feet mean lower low water (MLLW). The majority of the in-water and over-water work including construction of the mooring, breasting, and reaction dolphins; catwalks, a portion of the transfer span and floating pontoon will be completed between approximately -25 feet and -60 feet MLLW. A detailed description of in-water and over-water project components may be found in Table 1 of the HTC Application.

Comments and Responses

A notice of HTC's proposal to issue an IHA was published in the **Federal Register** on March 20, 2014 (80 FR 14945). During the 30-day public comment period, both the Marine Mammal Commission and the National Park Service submitted letters. These letters are

available on the Internet *www.nmfs.noaa.gov/pr/permits/incidental/construction.htm*. All comments specific to HTC's application that address the statutory and regulatory requirements or findings NMFS must make to issue an IHA are addressed in this section of the **Federal Register** notice.

Comment 1: The Commission noted that NMFS did not provide estimated sound source levels and potential takings associated with the down-hole drilling system proposed by HTC. The Commission recommends that NMFS include the down-the-hole drilling system in its incidental harassment authorization and consult with either ME DOT or the associated NMFS analyst regarding the appropriate Level A and B harassment zones, which may have been updated with in-situ measurements and take a consistent approach for activities it proposes to authorize in the future, including the use of down-the-hole drilling systems and down-hole hammers.

Response 1: Down-hole drilling is an uncommon activity that has not usually been included as part of IHA applications or authorizations. The ME DOT project referenced above utilized a down-hole hammer which is a separate and distinct methodology from down-hole drilling. While down-hole drilling is a common pile installation methodology in cases where piles must be seated in difficult geologic substrates, there is no published literature NMFS is aware of regarding the underwater noise generated during this type of procedure. As part of a 2013 ESA consultation for a proposed Alaska Department of Transportation Kodiak Ferry Dock Reconstruction project (PCTS# AKR-2013-9277), NMFS estimated that underwater noise levels associated with down-hole drilling would be analogous to use of a hydraulic hammer (hydro-hammer), and estimated a maximum underwater noise generation of 165 dB (re: 1 μPa at

200 Hz) associated with these devices. However, this analysis did not take into account any additional noise-attenuating conditions associated with the activity.

The operation of the down-hole drill at the Icy Strait point project area will occur within the enclosed pile at depths between 5 and 35 feet below the mudline and the pile interior will be filled with air which will further attenuate any underwater noise generation. Based on the best available information, NMFS concludes that down-hole drilling is not expected to result in underwater noise that would result in Level B harassment of marine mammals and, therefore, need not be included as part of this incidental harassment authorization.

NMFS is aware of in situ studies planned for the future which will include hydroacoustic sound measurement sound associated with down-hole drilling. As this data becomes available it will be consistently incorporated into future authorizations.

Comment 2: The Commission expressed concern that the most pertinent *in-situ* source level information was not used as part of the exposure analysis. It was noted more recent data from the Washington Department of Transportation (WSDOT) may be applicable to this proposed authorization.

Response 2: NMFS has reviewed the available information and is satisfied that the referenced measurements from the California Department of Transportation (Caltrans) adequately represent the project and site characteristics. The Commission freely acknowledged that the extent of the Level B harassment zone will not likely be affected by use of a greater source level, given that the zone is constrained by surrounding land before reaching its maximum extent. Since the Level B harassment zone would remain unchanged, NMFS does not believe additional analysis is warranted.

Comment 3: The Commission and NPS noted that older data were used to estimate the numbers of marine mammals that would be taken during the proposed activities. However, the Commission and NPS believe that more recent sources of data are available, and these sources should be considered. Further, to provide a more accurate assessment of the numbers of marine mammals that could potentially be harassed in the area, the Commission and NPS recommended that NMFS re-estimate the numbers of takes for humpback whales, Steller sea lions, harbor porpoises, harbor seals, killer whales, and Dall's porpoises.

Response 3: NMFS has reviewed the more recent data and has revised its take estimates for the humpback whale, Steller sea lion, harbor porpoise, killer whale, and Dall's porpoise. See "Estimated Take by Incidental Harassment" section below. NMFS thanks NPS and the Commission for the information and will include the information when evaluating future IHA applications and issuing authorizations.

Comment 4: The Commission noted that the numbers of takes were estimated for a four-month work window with pile driving occurring on only 20 days. However, a modification of the scheduling plan now shows that pile driving may occur on up to 103 days. The Commission expressed concern that, while some of the take estimates may be reasonable for 20 days of pile driving, 103 days of driving would result in vastly underestimated take estimates.

Response 4: The proposed notice of authorization published on March 20, 2015 (80 FR 14945) indicated that in-water down-hole drilling and pile driving would occur on an estimated 20 days during the four month authorization period. It was estimated that there would be a maximum of 100 hours of vibratory drilling time and 10 hours of impact hammer time for a total in-water work time of 110 hours. The applicant modified its schedule, resulting in up to 103 in-water work days. This means that the amount of drilling per day could range from 5.5 hours for

20 days of drilling to 1.07 hours over 103 days. However, the potential exposure time over the course of the project remains unchanged at 110 hours. Note that in this case, potential takes were assessed on the basis of the number of animals reasonably believed to be potentially present in the region during the planned four-month period. So, takes were not assessed on basis of 20 days and, therefore, an expansion to 103 days does not change the calculus.

Comment 5: The Commission wrote that in situations where the estimated takes are less than the mean group size, takes should be increased to a minimum of mean group size. This approach is most pertinent to take estimates for gray whales and pacific white-sided dolphins.

Response 5: NMFS agrees with this assessment and has revised the section containing take estimates accordingly.

Comment 6: The Commission recommends NMFS review recent sightings and group size data for killer whales and Dall's porpoises and increase the number of takes for these two species appropriately.

Response 6: NMFS agrees with the recommendation and has made revisions in the section containing updated take estimates.

Comment 7: In the proposed authorization, NMFS required observers to monitor the Level A and B harassment zones 20 minutes before, during, and 30 minutes after pile driving and removal. It also required that operators implement delay, power-down, or shut-down procedures during pile removal or driving if an animal approaches the Level A harassment zone. The Commission recommends that NMFS require HTC to (1) monitor the harassment zones at least 30 minutes before, during, and 30 minutes after the proposed pile-driving and -removal activities and (2) that after a delay, power down, or shutdown, not resume activities until the marine mammal (a) is observed to have left the Level A harassment zone or (2) has not been seen or

otherwise detected within the Level A harassment zone for 15 minutes for small odontocetes and 30 minutes for large and medium-sized whales.

Response 7: NMFS agrees and has incorporated these changes into the section below on Mitigation and Monitoring.

Comment 8: The proposed marine mammal monitoring protocol states: "If waters exceed a sea-state which restricts the observers' ability to make observations within the marine mammal buffer zone (the 100 meter radius) (e.g., excessive wind or fog), impact pile installation will cease until conditions allow the resumption of monitoring." NPS notes that there is no similar allowance to cease operations if sea conditions/wind/visibility restrict observers' ability to make observations in the Level B harassment zone, and that observers may be unable to document Level B takes accurately if conditions are too poor to see the animal.

Response 8: Level A harassment is not authorized in this case, and is practicably preventable under conditions where the sea-state does not restrict the ability to make observations. Therefore, we cannot allow impact driving to occur when a reasonably observable zone cannot be observed because of conditions. Given the sizable Level B harassment zone, there is no expectation that all Level B harassment would be observable or observed even under favorable sea-state conditions. Furthermore, shutting down operations every time a marine mammal is sighted in the larger Level B harassment zone is likely to significantly extend the length of certain projects, especially those situated in areas that frequently feature inclement weather and extension of a project timeline may expose marine mammals to additional risk of both Level A and Level B harassment.

Comment 9: NPS notes that the Central North Pacific Stock of humpback whales is estimated at 10,103 individuals. This is the best estimate for Hawaii only and should be revised.

Response 9: NMFS has incorporated the correct number (5,833) of humpback whales in the revised section on take estimates. where necessary.

Comment 10: NPS notes that HTC's monitoring plan calls for a third observer who will "monitor from a boat that is conducting a transect along the 2,150 meter limit of the Level B harassment zone," However, Appendix B, Fig B-3 of the Huna Totem application shows the boat transect covering a much broader area (all the way to the mouth of Excursion Inlet, also including Homeshore and all of Port Frederick). Why will the vessel-based observer monitor this broad area? It extends beyond the project area and may detract from the observer's ability to detect animals within the project area.

Response 10: The Level B harassment zone for impact driving is 2,154 m while the same zone for vibratory driving extends to 21.5 km. Figure B-2 accurately depicts the Level B harassment zone boundary for impact pile driving activities.

Comment 11: NPS states that there is no data source, analysis, or modelling used to reach NMFS' conclusion that the potential for increased vessel interaction or collisions associated with the proposed action are expected to be insignificant.

Response 11: There is little data available that could be used to model vessel interactions and strikes and these statements were provided as background information. The IHA is specifically concerned with only the proposed activity (in-water construction). Discussion of long-term increased potential for strike due to increased cruise ship traffic at the new terminal is outside the scope of analysis here.

Description of Marine Mammals in the Area of the Specified Activity

There are nine marine mammal species known to occur in the Icy Strait region of SE Alaska during the project's timeframe. These include the humpback whale, Steller sea lion, harbor seal, Dall's porpoise, gray whale, harbor porpoise, killer whale, minke whale, and Pacific white-sided dolphin.

We have reviewed HTC's detailed species descriptions, including life history information, for accuracy and completeness and refer the reader to Section 3 of HTC's application as well as the proposed incidental harassment authorization published in the **Federal Register** (80 FR 14945) instead of reprinting the information here. Please also refer to NMFS' website (*www.nmfs.noaa.gov/pr/species/mammals*) for generalized species accounts which provide information regarding the biology and behavior of the marine resources that occur in SE Alaska. We provided additional information for the potentially affected stocks, including details of stock-wide status, trends, and threats, in our **Federal Register** notice of proposed authorization (80 FR 14945, March 20, 2015). Note that the estimated population of humpback whales has been updated from 10,103 to 5,833 to reflect more recent stock assessment report data.

Table 1 lists the twelve marine mammal stocks that could occur in the vicinity of Icy Strait Point during the project timeframe and summarizes key information regarding stock status and abundance. Taxonomically, we follow Committee on Taxonomy (2014). Please see NMFS' Stock Assessment Reports (SAR), available at *www.nmfs.noaa.gov/pr/sars*, for more detailed accounts of these stocks' status and abundance.

Table 1. List of Marine Mammal Species under NMFS Jurisdiction that Occur in the Vicinity of the HTC Cruise Ship Terminal Re-Development Project*

Common Name	Stock	Scientific Name	ESA Status; Strategic Y/N[1]	Stock Abundance(CV,	Relative

				N_{min}, most recent abundance survey)*	Occurrence
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)					
Family Eschrichtiidae					
Gray whale	Eastern North Pacific Stock	*Eschrichtius robustus*	Not listed/N	19,126 (0.071; 18,017; 2007)	Uncommon
Family Balaenopteridae (rorquals)					
Humpback whale	Entire Central North Pacific Stock	*Megaptera novaeangliae*	Endangered/Y	5,833	Common
Minke whale	Gulf of Alaska and Western Aleutians	*Balaenoptera acutorostrata)*	Not listed/N	1,233	Uncommon
Order Cetartiodactyla – Cetacea – Superfamily Odontoceti (toothed whales, dolphins, and porpoises)					
Family Delphinidae					
Pacific white-sided dolphin	entire North Pacific Stock	*Lagenorhynchus obliquidens*	Not listed/N	26,880 (N/A; N/A; 1990)	Uncommon
Killer whale	AK Resident Stock	*Orcinus orca*	Not listed/N	2,347 (N/A; 2,3477; 2012)	Common
	GOA, Bering Sea, Aleutian Transient Stock			587 (N/A; 587; 2012)	Uncommon
	West Coat Transient Stock			354 (N/A; 243; 2009)	Uncommon
Family Phocoenidae (porpoises)					
Harbor porpoise	Southeast Alaskan Stock	*Phocoena phocoena*	Not listed/S	11,146 (0.242; 9,116; 1997)	Common
Dall's porpoise	Alaska	*Phocoenoides dalli*	Not listed/NS	83,000 (0.097; N/A; 1993)	Common
Order Carnivora – Superfamily Pinnipedia					
Family Otariidae (eared seals and sea lions)					
Steller Sea Lion	Eastern DPS	*Eumatopius jubatus*	Not Listed[2]/S	60,131-74,448(36,551; 2013)	Common
	Western			55,422 (48,676;	Common

	DPS		Endangered/S	2013)	
Family Phocidae (earless seals)					
Harbor seal	Glacier Bay/Icy Strait Stock	*Phoca vitulina*	Not listed/NS	5,042(4,735;2007)	Common

*Estimated abundance numbers come primarily from NMFS 2014 Draft Alaska Marine Mammal Stock Assessment Report (Allen and Angliss 2014), with the exception of the abundance data for gray whale, which comes from the Draft 2013 Pacific Region Marine Mammal Stock Assessment Report (Carretta *et al.* 2013).

[1] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds potential biological removal (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]The eastern distinct population segment of the Steller sea lion, previously listed under the ESA as threatened, was delisted on December 4, 2013 (78 FR 66140; November 4, 2013). This delisting action implies that the stock is no longer designated as depleted or as a strategic stock under the MMPA.

Potential Effects of the Specified Activity on Marine Mammals

The **Federal Register** notice of proposed authorization (80 FR 14945, March 20, 2015), incorporated here by reference, provides a general background on sound relevant to the specified activity as well as a detailed description of marine mammal hearing and of the potential effects of these construction activities on marine mammals.

Anticipated Effects on Habitat

We described potential impacts to marine mammal habitat in detail in our **Federal Register** notice of proposed authorization (80 FR 14945, March 20, 2015). In summary, the project activities would not modify existing marine mammal habitat. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences for individual marine mammals or their populations

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.

Measurements from similar pile driving events were coupled with practical spreading loss to estimate zones of influence (ZOI; see "Estimated Take by Incidental Harassment"). ZOIs are often used to establish a mitigation zone around each pile (when deemed practicable) to prevent Level A harassment to marine mammals, and also provide estimates of the areas within which Level B harassment might occur. ZOIs may vary between different diameter piles and types of installation methods. In addition to the measures described later in this section, HTC will employ the following standard mitigation measures:

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

(b) For in-water heavy machinery work other than pile driving (using, e.g., standard barges, tug boats, barge-mounted excavators, or clamshell equipment used to place or remove material), if a marine mammal comes within 10 m, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions.

This type of work could include the following activities: (1) movement of the barge to the pile location or (2) positioning of the pile on the substrate via a crane (i.e., stabbing the pile).

Monitoring and Shutdown for Pile Driving

The following measures apply to HTC's mitigation through shutdown and disturbance zones:

Shutdown Zone – For all pile driving activities, HTC will establish a shutdown zone. Shutdown zones are intended to contain the area in which SPLs equal or exceed the 180/190 dB rms acoustic injury criteria, with the purpose being to define an area within which shutdown of activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area), thus preventing injury of marine mammals. For vibratory driving, HTC's activities are not expected to produce sound at or above the 180 dB rms injury criterion (see "Estimated Take by Incidental Harassment"). As described above, HTC would, however, implement a minimum shutdown zone of 10 m radius for all marine mammals around all vibratory pile driving and removal activity and 100 m radius around impact pile driving activity. These precautionary measures are intended to further reduce the unlikely possibility of injury from direct physical interaction with construction operations.

Disturbance Zone – Disturbance zones are the areas in which SPLs equal or exceed 120 dB rms (for continuous sound) for pile driving installation and removal. Disturbance 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 disturbance zones enables observers to be aware of and communicate the presence of marine mammals in the project area but outside the shutdown zone and thus prepare for

potential shutdowns of activity. However, the primary purpose of disturbance zone monitoring is for documenting incidents of Level B harassment; disturbance zone monitoring is discussed in greater detail later (see "Monitoring and Reporting"). Nominal radial distances for disturbance zones are shown in Table 2. Given the size of the disturbance zone for vibratory pile driving, it is impossible to guarantee that all animals would be observed or to make comprehensive observations of fine-scale behavioral reactions to sound. We discuss monitoring objectives and protocols in greater depth in "Monitoring and Reporting."

In order to document observed incidents of harassment, monitors record all marine mammal observations, regardless of location. The observer's location, as well as the location of the pile being driven, is known from a GPS. The location of the animal is estimated as a distance from the observer, which is then compared to the location from the pile and the estimated ZOIs for relevant activities (i.e., pile installation and removal). This information may then be used to extrapolate observed takes to reach an approximate understanding of actual total takes.

Time Restrictions - Work would occur only during daylight hours, when visual monitoring of marine mammals can be conducted. In addition, all in-water construction will be limited to the period between June 1 and October 31, 2015. However, all pile driving is expected to be completed by the end of September. October has only been included to cover any contingencies that may arise.

Soft Start - The use of a soft start procedure is believed to provide additional protection to marine mammals by warning or providing a chance to leave the area prior to the hammer operating at full capacity, and typically involves a requirement to initiate sound from the hammer at reduced energy followed by a waiting period. This procedure is repeated two additional times.

It is difficult to specify the reduction in energy for any given hammer because of variation across drivers and, for impact hammers, the actual number of strikes at reduced energy will vary because operating the hammer at less than full power results in "bouncing" of the hammer as it strikes the pile, resulting in multiple "strikes." The project will utilize soft start techniques for both impact and vibratory pile driving. We require HTC to initiate sound from vibratory hammers for fifteen seconds at reduced energy followed by a thirty-second waiting period, with the procedure repeated two additional times. For impact driving, we require an initial set of three strikes from the impact hammer at reduced energy, followed by a thirty-second waiting period, then two subsequent three strike sets. Soft start will be required at the beginning of each day's pile driving work and at any time following a cessation of pile driving of 20 minutes or longer (specific to either vibratory or impact driving).

Monitoring Protocols – Monitoring would be conducted before, during, and after pile driving and removal activities. In addition, observers 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. Observations made outside the shutdown zone will not result in shutdown; that pile segment would be completed without cessation, unless the animal approaches or enters the shutdown zone, at which point all pile driving activities would be halted. Monitoring will take place from thirty minutes prior to initiation through thirty minutes post-completion of pile driving activities. Pile driving activities include the time to remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than thirty minutes. Please see the Marine Mammal

Monitoring Plan (available at *www.nmfs.noaa.gov/pr/permits/incidental/construction.htm*), developed by HTC with our approval, for full details of the monitoring protocols.

The following additional measures apply to visual monitoring:

(1) Monitoring will be conducted by qualified observers, who will be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator. Qualified observers are trained biologists, with the following minimum qualifications:

(a) 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;

(b) Advanced education in biological science or related field (undergraduate degree or higher required);

(c) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience);

(d) Experience or training in the field identification of marine mammals, including the identification of behaviors;

(e) Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

(f) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior; and

(g) 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.

(2) Prior to the start of pile driving activity, the shutdown zone will be monitored for 30 minutes to ensure that it is clear of marine mammals. Pile driving will only commence once observers have declared the shutdown zone clear of marine mammals; animals will be allowed to remain in the shutdown zone (i.e., must leave of their own volition) and their behavior will be monitored and documented. The shutdown zone may only be declared clear, and pile driving started, when the entire shutdown zone is visible (i.e., when not obscured by dark, rain, fog, etc.). In addition, if such conditions should arise during impact pile driving that is already underway, the activity would be halted.

If a marine mammal approaches or enters the shutdown zone during the course of pile driving operations, activity will be halted and delayed until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed for small odontocetes and pinnipeds and 30 minutes have passed for large and medium-sized whales without re-detection of the animal. Monitoring will be conducted throughout the time required to drive a pile.

(3) The area within the Level B harassment threshold for impact driving (shown in Figure B-2 of Appendix B of the revised marine mammal monitoring plan) will be monitored by the field monitor stationed either on the pile driving rig or in the vicinity, and by a second qualified field monitor stationed on or in the vicinity of Halibut Island near the 2,154 meter limit of the Level B harassment zone for impact driving. A third qualified observer will also monitor from a boat that is conducting a transect along the 21,500 meter limit of the Level B harassment zone for vibratory driving. Marine mammal presence within this Level B harassment zone, if any, will

be monitored, but impact pile driving activity will not be stopped if marine mammals are found to be present. Any marine mammal documented within the Level B harassment zone during impact driving would constitute a Level B take (harassment), and will be recorded and reported as such.

Mitigation

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

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

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

(2) A reduction in the number (total number or number at biologically important time or location) of individual marine mammals exposed to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing takes by behavioral harassment only).

(3) A reduction in the number (total number or number at biologically important time or location) of times any individual marine mammal would be exposed to stimuli expected to

result in incidental take (this goal may contribute to 1, above, or to reducing takes by behavioral harassment only).

(4) A reduction in the intensity of exposure to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing the severity of behavioral harassment only).

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

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

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

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for incidental take authorizations must include the suggested means of accomplishing the necessary

monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

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

(1) An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the analyses mentioned below;

(2) An increase in our understanding of how many marine mammals are likely to be exposed to levels of pile driving that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS;

(3) An increase in our understanding of how marine mammals respond to stimuli expected to result in take and how anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival) through any of the following methods:

- Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
- Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);

- Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;

(4) An increased knowledge of the affected species; and

(5) An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

HTC submitted a marine mammal monitoring plan as part of the IHA application for this project, which can be found on the Internet at *www.nmfs.noaa.gov/pr/permits/incidental/construction.htm*. The plan may be modified or supplemented based on comments or new information received from the public during the public comment period.

Visual Marine Mammal Observations

- Three individuals meeting the minimum qualifications identified in Appendix B of the monitoring plan submitted by HTC will monitor the Level A and B harassment zones during impact pile driving, and the Level B harassment zone during vibratory pile driving.
- During impact pile driving, the area within 100 meters of pile driving activity will be monitored and maintained as marine mammal buffer area in which pile installation will not commence or will be suspended temporarily if any marine mammals are observed within or approaching the area of potential disturbance. This area will be monitored by one qualified field monitor stationed either on the pile driving rig or in the immediate vicinity.

- The area within the Level B harassment threshold for impact driving (shown in Figure B-2 of Appendix B of the revised marine mammal monitoring plan) will be monitored by the field monitor stationed either on the pile driving rig or in the vicinity, and by a second qualified field monitor stationed on or in the vicinity of Halibut Island near the 2,150 meter limit of the Level B harassment zone. A third qualified observer will also monitor from a boat that is conducting a transect along the 2,154 meter limit of the Level B harassment zone. Marine mammal presence within this Level B harassment zone, if any, will be monitored, but impact pile driving activity will not be stopped if marine mammals are found to be present. Any marine mammal documented within the Level B harassment zone during impact driving would constitute a Level B take (harassment), and will be recorded and reported as such.
- During vibratory pile driving, the area within 10 meters of pile driving activity will be monitored and maintained as a marine mammal buffer area in which pile installation will not commence or will be suspended temporarily if any marine mammals are observed within or approaching the area of potential disturbance. The Level B harassment area will be monitored by three qualified observers (Figure B-3). One individual will be stationed either on the pile driving rig or in the immediate vicinity, a second individual will be stationed on either Halibut Island or a location in the vicinity, and a third observer will be located on a vessel that is conducting meander transects throughout the Level B harassment zone. The monitoring staff will record any presence of marine mammals by species, will document any behavioral responses noted, and record Level B takes when sightings overlap with pile installation activities.

- The individuals will scan the waters within each monitoring zone activity using binoculars (Vector 10X42 or equivalent), spotting scopes (Swarovski 20-60 zoom or equivalent), and visual observation.
- The area within which the Level A harassment thresholds could be exceeded (the 100 meter radius) will be maintained as a marine mammal exclusion zone, in which impact pile driving will be shut down immediately if any marine mammal is observed with the area.
- The area within which the Level B harassment thresholds could be exceeded during impact pile driving (Figure B-2) and vibratory pile driving (Figure B-3) will also be monitored for the presence of marine mammals during all impact and vibratory pile driving. Marine mammal presence within these zones, if any, will be monitored but pile driving activity will not be stopped if marine mammals were found to be present. Any marine mammal documented within the Level B harassment zone will constitute a Level B take, and will be recorded and used to document the number of take incidents.
- If waters exceed a sea-state which restricts the observers' ability to make observations within the marine mammal buffer zone (the 100 meter radius) (e.g. excessive wind or fog), impact pile installation will cease until conditions allow the resumption of monitoring.
- The waters will be scanned for 30 minutes before, during, and 30 minutes after any and all pile driving and removal activities.
- If marine mammals enter or are observed within the designated marine mammal buffer zone (the 100m radius) during or 30 minutes prior to pile driving, the monitors will notify

the on-site construction manager to not begin until the animal has moved outside the designated radius.

- If a marine mammal approaches the Level A harassment zone, HTC must implement delay, power-down, or shut-down procedures during pile driving and removal. After a delay, power down, or shutdown, pile driving and removal activities will not resume until the marine mammal (a) is observed to have left the Level A harassment zone or (b) has not been seen or otherwise detected within the Level A harassment zone for 15 minutes for small odontocetes and pinnipeds and 30 minutes for large and medium-sized whales.
- The waters will continue to be scanned for at least 30 minutes after pile driving has completed each day, and after each stoppage of 30 minutes or greater.

Data Collection

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

- Date and time that monitored activity begins or ends;

- Construction activities occurring during each observation period;
- Weather parameters (e.g., percent cover, visibility);
- Water conditions (e.g., sea state, tide state);
- Species, numbers, and, if possible, sex and age class of marine mammals;
- Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from pile driving activity;
- Distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point;
- Locations of all marine mammal observations; and
- Other human activity in the area.

Reporting

HTC would provide NMFS with a draft monitoring report within 90 days of the conclusion of the proposed construction work. This report will detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed. If no comments are received from NMFS within 30 days, the draft final report will constitute the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.

Estimated Take by Incidental Harassment

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]."

All anticipated takes would be by Level B harassment resulting from impact and vibratory pile driving/removal and involving temporary changes in behavior. Injurious or lethal takes are not expected due to the expected source levels and sound source characteristics associated with the activity, and the planned mitigation and monitoring measures are expected to further minimize the possibility of such take.

If a marine mammal responds to a stimulus by changing its behavior (e.g., through relatively minor changes in locomotion direction/speed or vocalization behavior), the response may or may not constitute taking at the individual level, and is unlikely to affect the stock or the species as a whole. However, if a sound source displaces marine mammals from an important feeding or breeding area for a prolonged period, impacts on animals or on the stock or species could potentially be significant (e.g., Lusseau and Bejder, 2007; Weilgart, 2007). Given the many uncertainties in predicting the quantity and types of impacts of sound on marine mammals, it is common practice to estimate how many animals are likely to be present within a particular distance of a given activity, or exposed to a particular level of sound.

This practice potentially overestimates the numbers of marine mammals taken because it is often difficult to distinguish between the individuals harassed and incidences of harassment. In particular, for stationary activities, it is more likely that some smaller number of individuals may

accrue a number of incidences of harassment per individual than for each incidence to accrue to a new individual, especially if those individuals display some degree of residency or site fidelity and the impetus to use the site (e.g., because of foraging opportunities) is stronger than the deterrence presented by the harassing activity.

HTC has requested authorization for the incidental taking of small numbers of humpback whale, Steller sea lion, harbor seal, Dall's porpoise, gray whale, harbor porpoise, killer whale (*Orcinus orca*), minke whale, and Pacific white-sided dolphin near Icy Strait Point that may result from vibratory and impact pile driving during construction activities associated with the re-development of the cruise ship terminal described previously in this document.

In order to estimate the potential incidents of take that may occur incidental to the specified activity, we must first estimate the extent of the sound field that may be produced by the activity and then consider in combination with information about marine mammal density or abundance in the project area. We first provide information on applicable sound thresholds for determining effects to marine mammals before describing the information used in estimating the sound fields, the available marine mammal density or abundance information, and the method of estimating potential incidences of take. We provided detailed information on applicable sound thresholds for determining effects to marine mammals as well as describing the information used in estimating the sound fields, the available marine mammal density or abundance information, and the method of estimating potential incidences of take, in our **Federal Register** notice of proposed authorization (80 FR 14945; March 20, 2015). Due to more recent population and abundance estimates pointed out by the Commission and NPS, some of the take estimates have been revised and are described below (see also "Comments and Responses" above).

Table 2 - Distances to Relevant Sound Thresholds*

Distance to Threshold	190 dB	180 dB	160 dB	120 dB
Vibratory Driving			n/a	21.5 km
Impact Driving	21.5 m	100 m	2,154 m	

*SPLs used for calculations were: 195 dB for impact driving, 170 dB for vibratory diving.

According to the Caltrans (2012) compendium, there is an average sound pressure level of 195 dB rms for impact driving of 60-in pile and 170 dB rms reported for 72-in steel pipe pile vibratory driving. Based on the formula listed above, it has been determined that the 190 dB rms Level A harassment (injury) threshold for underwater noise for pinniped species could be exceeded at a distance of up to approximately 22 meters during impact pile driving activities, and the 180 dB rms Level A harassment (injury) threshold for cetacean species could be exceeded at a distance of up to approximately 100 meters during impact pile driving activities. Additionally, the 160 dB rms Level B harassment (behavioral disruption) threshold for impulsive source underwater noise for pinniped and cetacean species could be exceeded at a distance of up to approximately 2,150 meters during impact pile driving and the 120 dB Level B harassment threshold could be exceeded at 21,544 meters during vibratory driving as is shown in Table 2.

Note that the actual area ensonified by pile driving activities is significantly constrained by local topography relative to the threshold radius depicted in Table 2. This is represented in in the monitoring plan submitted by HTC in Appendix B, Figure B-1.

The estimated takes for several species has been revised after receiving comments from the Commission and NPS and these revisions are described below.

Humpback whale - There are no density estimates of humpback whales available in the action area. The best available information on the distribution of these marine mammals in the study area is data obtained from a National Park Service humpback whale study. Neilson *et al.* (2014) documented a total of 237 individual humpback whales (including 10 mother-calf pairs) in Glacier Bay and adjacent waters of Icy Strait in the 2013 peak survey period between June and August. This is the highest yearly count of individual humpback whales since the survey began in 1985. Of these 237 whales, 148 were documented as remaining in the vicinity for a period greater than 20 days. One year later in the Icy Strait sub-area of the 2014 NPS survey, 202 humpback whales were counted. Because whales move freely back and forth between Glacier Bay and Icy Strait, NMFS used the higher total survey count of 237 whales from 2013, or an average of almost 79 whales per month, to estimate exposure. . Given that the period of active pile driving will be up to four months (June through September), a worst-case estimate would predict that up to 316 (79*4) Level B takes of humpback whale could occur as a result of the proposed action. This estimate is likely conservative given that action area for this project is smaller than the overall survey area and smaller than the portion of the survey conducted in Icy Strait.

Steller sea lion - Womble *et al*. (2009) conducted mean monthly counted of Steller sea lions at multiple haulout sites in Southeast Alaska between 2001 and 2004. The haulout site nearest to Hoonah was Rocky Island which featured monthly averages of 2 sea lions or less for June, July and August while 174 were sighted in September. Barlow *et al*. (in press) reported number of sightings, numbers of individuals, and sightings per unit effort data from opportunistic marine mammal surveys conducted in Glacier Bay and Icy Strait between 2005 and 2014. Steller sea lions were observed at relatively high densities around Point Adolphus and other

locations in Icy Strait and in various places inside Glacier Bay. The highest count of observed individuals was 395 sea lions between June and August of 2008, which equates to 132 sightings per month. Since the authorization period is four months, this estimate would mean that up to 528 (132*4) individual Level B takes of Steller sea lions could occur as a result of pile driving activities. This figure is within the range of findings published in the 2009 study by Womble *et al*.

Harbor seal – A recent study by Barlow *et al.* (in press) of Glacier Bay and Icy Strait determined that an average of 26 sightings occurred each month between June and August of 2014. This would result in an estimated 104 takes during the July through August authorization period. While the harbor seal population has notably declined in the Glacier Bay area between 1992 and 2009 (Womble *et al.* 2013, 2010), these seals are not uncommon in the Icy Strait and Port Frederick area. As such, there exists the possibility of numerous repeated takes of the same animal. Therefore, NMFS believes that the original conservative estimate of 480 harbor seal takes is more realistic for this species.

Dall's porpoise – The Barlow *et al.* (in press) study documented 9 individual Dall's porpoises in Glacier Bay across three months in 2007, for an average of 3 sightings per month. Based on this data, a worst-case estimate would mean that up to 12 (3*4) individual Level B takes of Dall's porpoise could occur as a result of pile driving activities. However, Dahlheim *et al.* (2008) recorded 346 sightings of Dall's porpoise in Southeast Alaska during the summer (June/July) of 2007, resulting in an average of 173 observations per month. Over a four-month activity period (4*173) this would result in an estimated 692 takes during the authorization period. Dahlheim *et al.* (2008) also reported that high concentrations of this porpoise were encountered in Icy Strait. Given the broader geographic focus of Barlow *et al.* (in press) and the

high concentrations of Dall's porpoise reported in the Icy Strait area by Dahlheim *et al.* (2008), NMFS believes that an estimate of 692 takes of Dall's porpoise is based on the best available information and is appropriate for this authorization.

Gray whale – Gray whales are not common in Icy Strait during the summer months. The Barlow *et al.* (in press) study documented only 3 whales, each occurring in a different year, over the course of the ten year study period. The Commission suggested NMFS increase allowed take to reflect the mean group size. Gray whales usually occur in groups of 1 to 3. NMFS will conservatively assume that during every month of the activity period a single group of 3 whales may occur in the Level B harassment zone (3*4), which would result in a conservative estimate of 12 gray whale takes during the Authorization.

Harbor porpoise - Harbor porpoises are known to occur regularly in the Icy Strait area. Dahlheim (2015) indicated that 332 resident harbor porpoises occur in the Icy Strait area, and are known to use the Port Frederick area as part of their core range. The population has been declining across Southeast Alaska since the early 1990's (Dahlheim *et al.* 2012). During a 2014 survey Barlow *et al*. (in press) observed 462 harbor porpoises in the Glacier Bay and Icy Strait area during a three-month summer survey period. This was the highest number observed during the 10 year study, with an average of 154 porpoise per month. Given that harbor porpoise are known to frequent this area, NMFS has revised its take estimates. NMFS will assume that all 322 resident harbor porpoises will occur in the Level B harassment area each month (322*4) resulting in 1,288 takes.

Killer whale - Killer whales occur commonly in the waters of the action area, and could include members of several designated stocks that may occur in the vicinity of the proposed 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 (Dahlheim 2015).

NMFS examined only summer and fall (no spring) results from a line-transect survey by Dalheim *et al.* (2008) and determined the maximum number of combined resident and transient killer whales. During a single two-month survey period (September/October) of 1992, 173 resident whales were observed, or an average of 87 per month. The greatest number of transient sightings occurred in 1993 with 32 sightings over two months for an average of 16 sightings per month. Combining maximum resident and transient whales sighting per month (87+16) results in a monthly average of 103 and a total take estimate of (103*4) 412 killer whales over the 4 month activity period. Mean group size for resident killer whales in summer was greatest in 2004 at 45. For transients the mean group average also peaked during the same year at 15. Recent information provided by Dahlheim (2015) indicated that group sizes for specific resident killer whale pods found in the Icy Strait area ranged from 42 to 79. Using the best information available, NMFS has estimated take at 412 killer whales which allows for Level B take of several large pods of killer whales during the authorization period and also account for multiple repeated counts of pods.

Minke whale – The original take estimate provided in the **Federal Register** (80 FR 14945) requesting public comments remains unchanged as no comments were received regarding Minke whales.

Pacific white-sided dolphin – Dalheim *et al.* 2008 did not observe Pacific white-sided dolphins during the summer season during the final years (2006, 2007) of a survey run in the years 1991 through 2007. These dolphins were observed intermittently during the years 1992 and 1993 when there were 39 and 122 sightings, respectively. However, members of this species have not been observed in Frederick Strait since the early 1990's. The Commission

recommended utilizing a mean group size when estimating take for this species if it is anticipated to be encountered in low numbers. The mean group size ranged from 19.5 (1992) to 152.5(1996). As part of a conservative approach, NMFS will authorize Level B take of 153 white-sided dolphins.

Table 3. Estimated Numbers of Incidences that Marine Mammals May Be Exposed to Level B Harassment

Species	Total proposed authorized takes***	Abundance	Percentage of total stock
Humpback whale -CNP Stock (Southeast Alaska aggregation)	316	5,833 (2,251)	5.4% (14.0%)
Steller sea lion (Eastern DPS)	528	36,551	14.4%*
Steller sea lion (Western DPS)		48,676	1.1%*
Harbor seal	480	5,042	9.5%
Dall's porpoise	692	83,400	<0.01%
Gray whale	12	19,126	<0.01%
Harbor porpoise	1288	11,146	11.5%
Killer whale (AK Resident Stock; GOA, Aleutian Islands, Bering Sea Transient Stock; West Coast Transient Stock)	412	3,288**	12.5%+
Minke whale	8	1,233	<0.01%
Pacific white-sided dolphin	153	26,880	<0.01%

*These percentages assume a worst-case, unlikely scenario in which all 528 estimated takes accrue to a single Steller sea lion DPSs.

** Combined populations of AK Resident Stock; GOA, Aleutian Islands, Bering Sea Transient Stock; and West Coast Transient Stock.

[***]Note that these numbers assume that every modeled take happens to a different animal, which is unlikely, as both individuals and groups of marine mammals are observed utilizing the same geographic location repeatedly.
[+]See Small Numbers section for further explanation.

Analyses and Determinations

Negligible Impact Analysis

Negligible impact is "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 Level B harassment 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 behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, effects on habitat, and the status of the species.

To avoid repetition, the discussion of our analyses applies to all the species listed in Table 3, given that the anticipated effects of this pile driving project on marine mammals are expected to be relatively similar in nature. There is no information about the size, status, or structure of any species or stock that would lead to a different analysis for this activity, else species-specific factors would be identified and analyzed.

Pile driving activities associated with the cruise ship terminal re-development, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level B harassment (behavioral disturbance) only, from underwater sounds generated from pile driving. Potential takes could occur if individuals of these species are present in the ensonified zone when pile driving is happening.

No injury, serious injury, or mortality is anticipated given the nature of the activity and measures designed to minimize the possibility of injury to marine mammals. The potential for these outcomes is minimized through the construction method and the implementation of the planned mitigation measures. Specifically, vibratory hammers will be the primary method of installation, though impact driving may be used for brief, irregular periods. Vibratory driving does not have significant potential to cause injury to marine mammals due to the relatively low source levels produced (site-specific acoustic monitoring data show no source level measurements above 180 dB rms) and the lack of potentially injurious source characteristics. Impact pile driving produces short, sharp pulses with higher peak levels and much sharper rise time to reach those peaks. When impact driving is necessary, required measures (implementation of shutdown zones) significantly reduce any possibility of injury. Given sufficient "notice" through use of soft start (for impact driving), marine mammals are expected to move away from a sound source that is annoying prior to its becoming potentially injurious. The likelihood that marine mammal detection ability by trained observers is high under the environmental conditions described for Icy Strait Point further enables the implementation of shutdowns to avoid injury, serious injury, or mortality.

HTC's proposed activities are localized and of short duration. The entire project area is limited to the Icy Strait cruise ship terminal area and its immediate surroundings. The project

will require the installation of a total of approximately 104 steel pipe piles of varying diameters below the MHHW. Piles that will be used include 24-inch, 30-inch, 42-inch, and 60-inch steel pipe piles. Total impact hammer time would not exceed 5 minutes per pile for 104 piles resulting in less than 10 hours of driving time. Total vibratory hammer time would not exceed 5 hours on any one given day over the course of an estimated 103 driving days, nor would it exceed more than 100 hours over a four-month period. These localized and short-term noise exposures may cause brief startle reactions or short-term behavioral modification by the animals. These reactions and behavioral changes are expected to subside quickly when the exposures cease. Moreover, the proposed mitigation and monitoring measures are expected to reduce potential exposures and behavioral modifications even further. Additionally, no important feeding and/or reproductive areas for marine mammals are known to be near the proposed action area. Therefore, the take resulting from the proposed HTC re-development of the Icy Strait Point Cruise Ship Terminal is not reasonably expected to and is not reasonably likely to adversely affect the marine mammal species or stocks through effects on annual rates of recruitment or survival.

The project also is not expected to have significant adverse effects on affected marine mammals' habitat, as analyzed in detail in the “Anticipated Effects on Marine Mammal Habitat” section. The project activities would not modify existing marine mammal habitat. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (e.g., Thorson and Reyff, 2006; HDR, 2012; Lerma, 2014). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. In response to vibratory driving, pinnipeds (which may become somewhat habituated to human activity in industrial or urban waterways) have been observed to orient towards and sometimes move towards the sound. The pile driving activities analyzed here are similar to, or less impactful than, numerous construction activities conducted in other similar locations, which have taken place with no reported injuries or mortality to marine mammals, and no known long-term adverse consequences from behavioral harassment. Repeated exposures of individuals to levels of sound that may cause Level B harassment are unlikely to result in hearing impairment or to significantly disrupt foraging behavior. Thus, even repeated Level B harassment of some small subset of the overall stock is unlikely to result in any significant realized decrease in fitness for the affected individuals, and thus would not result in any adverse impact to the stock as a whole. Level B harassment will be reduced to the level of least practicable impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the project area while the activity is occurring.

In summary, this negligible impact analysis is founded on the following factors: (1) the possibility of injury, serious injury, or mortality may reasonably be considered discountable; (2) the anticipated incidents of Level B harassment consist of, at worst, temporary modifications in

behavior; (3) the absence of any significant habitat within the project area, including rookeries, significant haul-outs, or known areas or features of special significance for foraging or reproduction; (4) the presumed efficacy of the proposed mitigation measures in reducing the effects of the specified activity to the level of least practicable impact. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activity will have only short-term effects on individuals. The specified activity is not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS finds that the total marine mammal take from HTC's re-development of the Icy Strait Point Cruise Ship Terminal will have a negligible impact on the affected marine mammal species or stocks.

Small Numbers Analysis

Table 3 demonstrates the number of animals that could be exposed to received noise levels that could cause Level B behavioral harassment for the proposed work associated with the re-development of the Icy Strait Point Cruise Ship Terminal in Hoonah, Alaska. The analyses provided represents between <0.01% to 14.4% of the stocks of humpback whale, Steller sea lion, harbor seal, Dall's porpoise, gray whale, harbor porpoise, minke whale, and Pacific white-sided dolphin that could be affected by Level B behavioral harassment. NMFS therefore concludes that small numbers of these stocks will be taken relative to the total populations of the affected species or stocks.

As explained previously, we are proposing to authorize 412 takes (Level B harassment only) of killer whales from three stocks of killer whales that are known to occur in the Icy Strait area: (1) Alaska resident stock with an estimated population of 2,347; (2) Gulf of Alaska, Aleutian Islands, and Bering Sea transient stock with an estimated population of 587; and (3) West Coast transient stock with an estimated population of 354. Given that all three stocks occur in the Icy Strait Area, the 412 proposed takes will most likely be apportioned among the three stocks. As described in the estimated take section, based on sightings data, NMFS expects approximately 348 takes (87 per month * 4 months) of the resident stock to occur and 64 (16 per month * 4 months) of the two transient stocks to occur. These numbers are small relative to the population sizes of the resident and transient stocks. Furthermore, NMFS notes that the number of takes proposed to be authorized represents the estimated incidents of take, not the number of individuals taken. More likely, fewer individuals would be taken, but a subset would be taken more than one time during the duration of the Authorization.

Specific resident pods are frequently encountered throughout Icy Strait according to Dalheim (2015). These would be the AG pod numbering a minimum of 42 whales and the AF pod with a minimum count of 79 whales. Whales from these two pods have been seen in the area every month of the year and the Icy Strait corridor is a major route for them both entering and exiting inland waters. The AG pod, specifically, has been observed on numerous occasions inside Port Frederick, passing directly off shore of Hoonah. As such, many of the anticipated takes are likely to be repeated takes of the same animals from AG and AF pods. However, even in a worst-case scenario in which all 412 takes came from the resident stock, the number of takes would still be small compared to the population size (approximately 17.6%).

As stated above, the anticipated number of takes attributable to the transient stocks (64) is small compared to the population sizes of both the West coast transient stock and the Gulf of Alaska, Aleutian Islands, and Bering Sea transient stock. Further, NMFS also believes that small numbers of the West Coast transient stock would be taken based on the limited region of exposure in comparison with the known distribution of the transient stock. The West Coast transient stock ranges from Southeast Alaska to California while the proposed project activity would be stationary. As described in the Description of Marine Mammals in the Area of the Specified Activity section in our **Federal Register** notice announcing the proposed authorization (80 FR 14945; March 20, 2015), a notable percentage of West Coast transient whales have never been observed in Southeast Alaska. Only 155 West Coast transient killer whales have been identified as occurring in Southeast Alaska according to Dahlheim and White (2010). The same study identified three pods of transients, equivalent to 19 animals, that remained almost exclusively in the southern part of Southeast Alaska (i.e. Clarence Strait and Sumner Strait). This information indicates that only a small subset of the entire West Coast Transient stock would be at risk for take in the Icy Strait area because a sizable portion of the stock has either not been observed in Southeast Alaska or consistently remains far south of Icy Strait. Similarly, only a very small number of Gulf of Alaska, Aleutian Islands, and Bering Sea transient killer whales have been observed in Southeast Alaska with sightings being an uncommon occurrence (Dalheim 2015). Whales from this stock occur mainly from Prince William Sound through the Aleutian Islands and Bering Sea and are spread across a vast area.

In summary, NMFS concludes that small numbers of each of the three stocks of killer whales known to occur in the Icy Strait region will be taken relative to the population sizes of the affected stocks. This conclusion is based on the small likelihood that all of the incidents of take

would come from only one stock; the reduced percentage of transient stocks of killer whales likely to be found in the Icy Strait area due to the wide geographic distribution of these two stocks; and the likelihood of repeated exposures of both transient and resident whales, especially among the two resident pods identified as commonly frequenting the waters near the action area.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, which are expected to reduce the number of marine mammals potentially affected by the proposed action, NMFS finds that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no subsistence uses of marine mammals in the proposed project area; and, thus, no subsistence uses impacted by this action. The nearest locations where subsistence hunting may occur are at Eagle Point, located approximately 10 miles distant from the Icy Strait Cruise Terminal project site and at Flynn Cove, located approximately 7.5 miles from the project site. Peak subsistence hunting months are March, May, and October and the pile driving is slated to occur in the June to September timeframe. Therefore, 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.

Endangered Species Act (ESA)

There are two marine mammal species that are listed as endangered under the ESA with confirmed or possible occurrence in the study area: humpback whale and Steller sea lion

(Western DPS). NMFS' Permits and Conservation Division initiated consultation with NMFS' Protected Resources Division under section 7 of the ESA on the issuance of an IHA to HTC under section 101(a)(5)(D) of the MMPA for this activity. NMFS' Protected Resources Division concluded that the proposed action is likely to adversely affect, but not likely to jeopardize these species.

National Environmental Policy Act (NEPA)

NMFS has prepared an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) which considered comments submitted in response to this notice as part of that process. The EA and Finding of No Significant Impact (FONSI) are posted at *http://www.nmfs.noaa.gov/pr/permits/incidental/construction.htm*.

Authorization

As a result of these determinations, we have issued an IHA to HTC for conducting the

described activities at Icy Strait Point, Alaska, from June 1, 2015 through October 31, 2015 provided the previously described mitigation, monitoring, and reporting requirements are incorporated.

Dated: May 22, 2015.

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Perry Gayaldo,

Deputy Director,

Office of Protected Resources,

National Marine Fisheries Service.

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