



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**

National Marine Fisheries Service  
P.O. Box 21668  
Juneau, Alaska 99802-1668

December 4, 2019

MEMORANDUM FOR: Jolie Harrison, Chief  
Permits and Conservation Division, Office of Protected Resources

FROM:   
Jon Kurland  
Assistant Regional Administrator for Protected Resources

SUBJECT: Section 7 Consultation for Whittier Ferry Terminal

On October 29, 2019, the National Marine Fisheries Service (NMFS) Alaska Region (AKR) completed informal consultation under section 7(a)(2) of the Endangered Species Act (ESA) regarding the proposed widening of the Whittier Ferry Terminal located in Whittier, Alaska. The Alaska Department of Transportation and Public Facilities (ADOT&PF), acting on behalf of the Federal Highway Administration, requested our concurrence that the proposed action may affect, but is not likely to adversely affect, the western distinct population segment (DPS) of Steller sea lions (*Eumetopias jubatus*) or the Mexico or Western North Pacific DPSs of humpback whale (*Megaptera novaeangliae*). Based on our analysis of the information provided, AKR concurred with ADOT&PF's determination.

ADOT&PF also requested a Marine Mammal Protection Act Incidental Harassment Authorization (IHA) for the take of humpback whales and Steller sea lions, along with several other, non-listed marine mammal species. The Permits and Conservation Division (PR1) preliminarily determined that the proposed action would not be likely to adversely affect western DPS Steller sea lions and only the non-listed Hawaii DPS humpback whales would likely occur within the action area (84 FR 56444). Our ESA section 7 consultation with ADOT&PF on this project considers all of the effects that would be associated with PR1's issuance of an IHA for the project. Therefore, the attached October 29, 2019 letter of concurrence that AKR issued to ADOT&PF applies to PR1's IHA issuance as well.

If you have any questions, please contact Jenna Malek at [jenna.malek@noaa.gov](mailto:jenna.malek@noaa.gov) or 907-271-1332.

Attachment: 2019-10-29 Whittier Ferry Dock LOC Final





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**

National Marine Fisheries Service

P.O. Box 21668

Juneau, Alaska 99802-1668

October 29, 2019

Mr. Jack MacKinnon, Commissioner  
Department of Transportation and Public Facilities  
PO Box 112500  
Juneau, AK 99811-2500

Re: Whittier Ferry Terminal ACF Modification Letter of Concurrence, NMFS #AKRO-2019-01201

Dear Mr. MacKinnon:

The National Marine Fisheries Service (NMFS) has completed informal consultation under section 7(a)(2) of the Endangered Species Act (ESA) regarding the proposed widening of the Whittier Ferry Terminal located in Whittier, Alaska (Figure 1). The Alaska Department of Transportation and Public Facilities (AKDOT&PF) requested on behalf of the Federal Highway Administration (FHA) a joint Incidental Harassment Authorization and endangered species consultation with concurrence that the proposed action may affect, but is not likely to adversely affect, the western distinct population segment (DPS) of Steller sea lions (*Eumetopias jubatus*) and the Mexico and Western North Pacific DPSs of humpback whale (*Megaptera novaeangliae*). Based on our analysis of the information you provided to us, and additional literature cited below, NMFS concurs with your determination.

This letter underwent pre-dissemination review in compliance with applicable Data Quality Act guidelines. A complete administrative record of this consultation is on file in this office.

AKDOT&PF determined that this project will have no effect on Steller sea lion critical habitat because critical habitat does not occur within the action area. Therefore, Steller sea lion critical habitat will not be discussed further in this consultation.

### **Consultation History**

NMFS received your request for consultation on June 6, 2019, which included your correspondence identifying Christy Gentemann of AKDOT&PF as the non-Federal representative for FHA for this project. NMFS requested more information about the project via email on July 29, 2019. On July 30, 2019, AKDOT&PF provided NMFS with additional information regarding the project schedule and proposed mitigation measures. On July 23, 2019, NMFS Headquarters Permits Division (PR1) requested the applicant adopt a transmission loss coefficient of 15 to be used instead of the proposed coefficient of 20 used in calculating the Level A and B isopleths. Additional information regarding locations of Protected Species Observers was also requested.



### **Description of the Proposed Action**

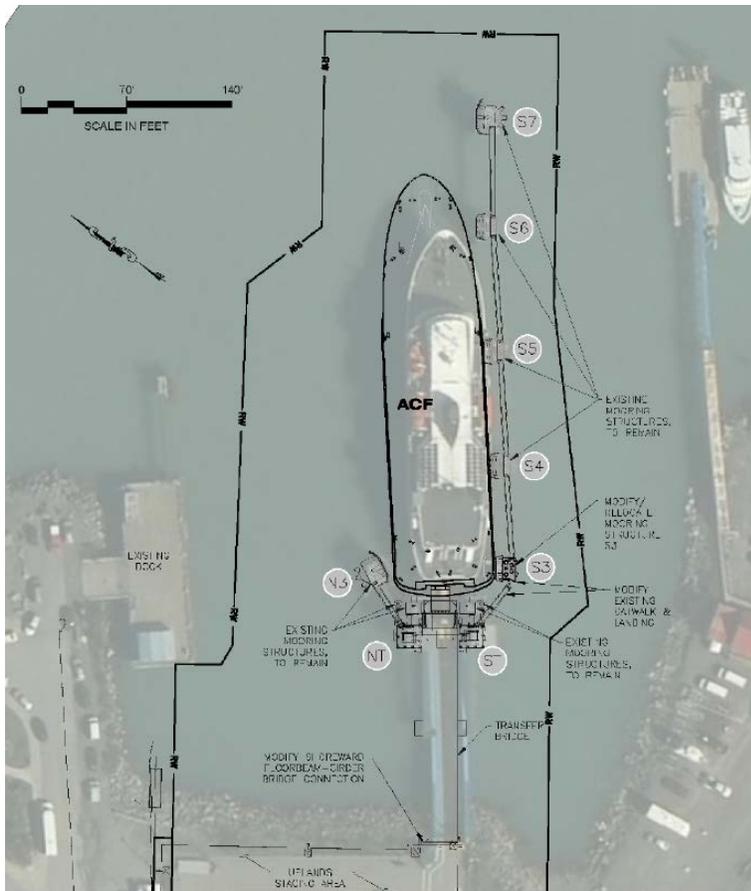
The proposed project will use a vibratory hammer to extract the four 30-inch piles that comprise dolphin S3 at the Whittier Ferry Terminal and reinstall them approximately 1.2 m southeast of their existing location using the same vibratory hammer (Figure 2). Each pile will be proofed with an impact hammer to a final depth of 19.8 m (65 feet) into the sea floor.

Additional construction activities include modifying the existing catwalk and landing, and modifying the bridge girder connection. These activities will occur above water and do not produce underwater sound levels of concern.

The work is anticipated to occur in February and March over two three-day periods for a total of six days within the two month window.



**Figure 1. Project location in Whittier Harbor at the head of Passage Canal in Prince William Sound, AK.**



**Figure 2. Site plan for the Whittier Ferry Terminal modifications. Dolphin S3 is the 5<sup>th</sup> dolphin counting down from the top right.**

### Action Area

The action area is defined in the ESA regulations (50 CFR 402.02) as the area within which all direct and indirect effects of the project will occur. The action area is distinct from and larger than the project footprint because some elements of the project may affect listed species some distance from the project footprint. The action area, therefore, extends out to a point where no measurable effects from the project are expected to occur.

Since 1997, NMFS has used generic sound exposure thresholds to determine whether an activity produces underwater sounds that might result in impacts to marine mammals (70 FR 1871). NMFS recently developed comprehensive guidance on sound levels likely to cause injury to marine mammals through onset of permanent and temporary threshold shifts (PTS and TTS; Level A harassment) (81 FR 51693). NMFS is in the process of developing guidance for behavioral disruption (Level B harassment). However, until such guidance is available, NMFS uses the following conservative thresholds of underwater sound pressure levels<sup>1</sup>, expressed in

<sup>1</sup> Sound pressure is the sound force per unit micropascals ( $\mu\text{Pa}$ ), where 1 pascal (Pa) is the pressure resulting from a force of one newton exerted over an area of one square meter. Sound pressure level is expressed as the ratio of a measured sound pressure and a reference level. The commonly used reference pressure level in acoustics is 1  $\mu\text{Pa}$ , and the units for underwater sound pressure levels are decibels (dB) re 1  $\mu\text{Pa}$ .

root mean square<sup>2</sup> (rms), from broadband sounds that cause behavioral disturbance, and referred to as Level B harassment under section 3(18)(A)(ii) of the Marine Mammal Protection Act (MMPA):

- impulsive sound: 160 dB re 1  $\mu\text{Pa}_{\text{rms}}$
- continuous sound: 120 dB re 1  $\mu\text{Pa}_{\text{rms}}$

Under the PTS/TTS Technical Guidance, NMFS uses the following thresholds for underwater sounds that cause injury, referred to as Level A harassment under section 3(18)(A)(i) of the MMPA (NMFS 2016b). These acoustic thresholds are presented using dual metrics of cumulative sound exposure level ( $L_E$ ) and peak sound level ( $L_{\text{pk}}$ ) for impulsive sounds and  $L_E$  for non-impulsive sounds:

Hearing Group	PTS Onset Acoustic Thresholds* (Received Level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	$L_{\text{pk,flat}}$ : 219 dB $L_{E,\text{LF},24\text{h}}$ : 183 dB	$L_{E,\text{LF},24\text{h}}$ : 199 dB
Mid-Frequency (MF) Cetaceans	$L_{\text{pk,flat}}$ : 230 dB $L_{E,\text{MF},24\text{h}}$ : 185 dB	$L_{E,\text{MF},24\text{h}}$ : 198 dB
High-Frequency (HF) Cetaceans	$L_{\text{pk,flat}}$ : 202 dB $L_{E,\text{HF},24\text{h}}$ : 155 dB	$L_{E,\text{HF},24\text{h}}$ : 173 dB
Phocid Pinnipeds (PW) (Underwater)	$L_{\text{pk,flat}}$ : 218 dB $L_{E,\text{PW},24\text{h}}$ : 185 dB	$L_{E,\text{PW},24\text{h}}$ : 201 dB
Otariid Pinnipeds (OW) (Underwater)	$L_{\text{pk,flat}}$ : 232 dB $L_{E,\text{OW},24\text{h}}$ : 203 dB	$L_{E,\text{OW},24\text{h}}$ : 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 ( $L_{\text{pk}}$ ) has a reference value of 1  $\mu\text{Pa}$ , and cumulative sound exposure level ( $L_E$ ) has a reference value of 1  $\mu\text{Pa}^2\text{s}$ . 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.

NMFS defines the action area for this project as the area within which project-related noise levels are  $\geq 120$  dB re 1  $\mu\text{Pa}_{\text{rms}}$  (i.e., the point where no measurable effect from the project would occur). Received sound levels associated with vibratory hammering used in pile removal and installation are anticipated to decline to 120 dB re 1  $\mu\text{Pa}_{\text{rms}}$  within 15.8 km of the source. However, due to inlet topography, the maximum distance sound generated at the ferry terminal can travel is 12.0 km (7.5 mi). To define the action area, we considered the diameter and type of

<sup>2</sup> Root mean square (rms) is the square root of the arithmetic average of the squared instantaneous pressure values.

piles, the pile-driving method, and empirical measurements of noise from a similar project (Denes et al. 2016) to estimate the area within which marine mammals are likely to be harassed or injured by noise.

During the initial application, AKDOT&PF used the Kake location sound source level estimates in Denes et al. (2016) to determine the distance to the threshold isopleths because the pile size was identical and the water depths were similar (11.8 m at Kake, 9 m in Whittier), which determine the amount of pile within the water column able to influence sound levels at the source. At the request of NMFS PR1, AKDOT&PF used the more conservative sound source value at Auke Bay because the harder substrate at Auke Bay is more similar to Whittier, while the softer muddier sediments at Kake could have dampened the sound levels. Using the more conservative source levels from Auke Bay, the radial distance to the 120 dB isopleth is 15 km from the project location. However, we note that, due to geography, sound capable of affecting marine mammals would not extend beyond 12 km from the Whittier ferry terminal (Figure 3) (see Effects of the Action for additional explanation).



**Figure 3. Project location with AKDOT&PF proposed monitoring zones. The light green is the vibratory hammering monitoring zone extending 12 km, and the hatched is the impact monitoring zone that extends 1.2 km.**

## **Mitigation Measures**

### **1. General Mitigation Measures**

- a. Toxic or hazardous material specifications, inventories, separation, confinement, and handling will be determined, documented, and communicated to appropriate personnel.
- b. The applicant has agreed to apply these measures to all marine mammals as part of this project (Christy Gentemann, AKDOT&PF, pers. comm. October 22, 2019).

### **2. Protected Species Observer Requirements**

- a. PSOs must:
  - 1) be in good physical condition and be able to withstand harsh weather conditions for an extended period of time;
  - 2) have vision correctable to 20-20;
  - 3) be able to conduct field observations and data collection according to assigned protocols;
  - 4) have writing skills sufficient to prepare understandable reports of observations and technical skills to complete data entry forms accurately; and
  - 5) be able to identify marine mammals in Alaskan waters by species and marine mammal behavior.
- b. PSOs will have completed training specific to this type of construction activity prior to deployment to the project site (taught by an experienced trainer following a course syllabus approved by NMFS). This course will include training in:
  - 1) field identification of marine mammals and marine mammal behavior;
  - 2) ecological information on Alaska's marine mammals and specifics on the ecology and management concerns of those marine mammals;
  - 3) ESA and MMPA regulations;
  - 4) mitigation measures outlined in the LOC;
  - 5) proper equipment use;
  - 6) methodologies in marine mammal observation and data recording and proper reporting protocols; and
  - 7) identification of PSO roles and responsibilities.
- c. PSOs will work in shifts lasting no longer than 4 hours with at least a 1-hour break from marine mammal monitoring duties between shifts. PSOs will not perform PSO duties for more than 12 hours in a 24-hour period (to reduce fatigue). Note that during the 1-hour break for a PSO, a crew member can be assigned to be the observer as long as they do not have other duties at that time and they have received instructions and tools to allow them to make marine mammal observations.
- d. PSOs will have the ability to effectively communicate orally, by radio and in person, with project personnel to provide real-time information on marine mammals.
- e. PSOs will have the ability and authority to order appropriate mitigation response to avoid takes of marine mammals.

- f. The PSOs will have the following equipment to address their duties:
- 1) Range finder;
  - 2) Annotated chart and compass;
  - 3) Inclinometer;
  - 4) Two-way radio communication, or equivalent, with onsite project manager;
  - 5) Appropriate personal protective equipment;
  - 6) Daily tide tables for the project area;
  - 7) Watch or chronometer;
  - 8) Binoculars (7x50 or higher magnification) with built-in rangefinder or reticles (rangefinder may be provided separately);
  - 9) Handheld global positioning system;
  - 10) A copy of this LOC and all appendices, printed on waterproof paper and bound; and
  - 11) Observation Record forms printed on waterproof paper, or weatherproof electronic device allowing for required PSO data entry.
- g. PSOs will have no other primary duties beyond watching for, acting on, and reporting events related to marine mammals.
- h. Prior to commencing in-water work or at changes in watch, PSOs should establish a point of contact with the construction crew. The PSO will brief the point of contact as to the shutdown procedures if marine mammals are observed likely to enter or within the shutdown zone, and shall request that the point of contact instruct the crew to notify the PSO when a marine mammal is observed. If the point of contact goes "off shift" and delegates his duties, the PSO must be informed and brief the new point of contact.

### 3. Monitoring and Shutdown Zones

- a. Protected Species Observers (PSOs), will be located onsite throughout pile driving and extraction. PSOs will monitor the relevant zones indicated for each activity listed in Table 1. Where requirements for immediate actions/responses are noted, the requirements do not apply if they would create an imminent and serious threat to a person or vessel. In that event, actions/responses will be taken as soon as possible. Additional mitigation measures for each activity are listed in subsections below.

**Table 1. Monitoring and Shutdown Zones for Each Activity**

Activity	Monitoring Zone Radius (m) <sup>1</sup>	Shutdown Zone Radius (m)	
		Steller Sea Lion	Humpback Whale
Vibratory pile extraction	12000	10	25
Vibratory pile driving	12000	10	25
Impact pile driving	1500	25	550

<sup>1</sup>Animals that occur in this zone during the indicated activity are considered as having been "taken".

- b. PSOs will be positioned such that the entire shutdown zone and adjacent waters for each activity is visible (e.g., situated on a platform, elevated promontory, boat or aircraft). This location, with optimal viewing of the monitoring zones, will be verified prior to pile extraction and driving start up procedures or initiation of other activities. Depending on the size of the shutdown zone, multiple PSOs and locations may be needed to adequately cover the shutdown zone.
- c. Prior to commencing pile extraction and driving, PSOs will scan waters within the pile extraction or driving shutdown zones and confirm no listed marine mammals are observed to be present within the shutdown zones for 30 minutes prior to initiation of the in-water activity. If one or more listed marine mammals are observed within the shutdown zone, pile extraction or driving will not begin until the marine mammals exit the shutdown zones of their own accord, and the zones have remained clear of marine mammals for 30 minutes immediately prior to activity.
- d. The PSOs will continuously monitor the shutdown zones during pile extraction and driving operations for the presence of marine mammals.
- e. In-water activities will take place during daylight conditions and with a Beaufort Sea State of 4 or less, with adequate visibility to see the entire shutdown zone and adjacent waters to effective shutdown activities prior to a marine mammal entering a shutdown zone.
- f. If visibility degrades to where the PSO determines that he/she cannot ensure that a marine mammal does not enter the shutdown zone during pile extraction or driving, the crew may continue to extract a pile or drive the section of pipe that was being driven to its target depth, but will not drive additional sections of piling. The crew will then cease activity until the entire shutdown zone is visible and the PSO has indicated that the zone has remained devoid of marine mammals for 30 minutes prior to additional activity.
- g. The PSO will order the pile driving activities to cease immediately if one or more marine mammals appears likely to enter, or is observed within, the appropriate shutdown zone. The PSO on duty will immediately call or radio the operators and initiate a shutdown of pile extraction or driving activities. If direct communication with the operators is not practical, the construction crew point of contact will relay the shutdown order to the equipment operators.
- h. Following shutdown of pile extraction or driving activities for less than 30 minutes due to the presence of marine mammals in the shutdown zone, pile driving may commence when the PSO provides assurance that listed marine mammals were observed exiting the shutdown zone or have not been seen in the shutdown zone for 30 minutes (for cetaceans) or 15 minutes (for pinnipeds) immediately prior to the resumption of in-water operations.
- i. Following a lapse of pile extraction or driving activities of more than 30 minutes (e.g. due to time spent welding a new section of pipe, low visibility conditions, shutdown due to presence of marine mammals, or mechanical delays), the PSO will authorize resumption of activities (using soft-start procedures if applicable) only after the PSO provides assurance that listed marine mammals have not been present in the shutdown zone for at least 30 minutes immediately prior to resumption of operations.

- j. If a marine mammal is observed within a shutdown zone or is otherwise harassed, harmed, injured, or disturbed (Table 1), PSOs will report that occurrence to NMFS using the contact specified in Section 13 (Table 2). Alternately, crew members may report incidences of harassment, harm, injury, or disturbance of marine mammals to a PSO who has been designated as the point of contact between crew members and NMFS.

#### **4. Pile driving**

*Please see Section 2 (Shutdown Zones) for required shutdown zones.*

- a. If no listed marine mammals are observed within the pile driving shutdown zones for 30 minutes, soft-start procedures will be implemented immediately prior to impact pile driving activities.
  - 1) For impact pile driving, a soft-start is comprised of an initial set of three strikes from the hammer at about 40 percent energy, followed by a 30-second waiting period, then two subsequent three-strike sets with associated 30-second waiting periods at the reduced energy.

Following this soft-start procedure, impact pile driving at operational power may commence provided marine mammals remain absent from the pile driving monitoring zone.

- b. In-water activities will take place between nautical dawn and twilight, and with a Beaufort Sea State of 4 or less, with adequate visibility to see the entire monitoring and shutdown zones and adjacent waters to effectively shut down activities prior to a marine mammal entering a shutdown zone.
- c. If visibility degrades to where the PSO determines that he/she cannot ensure that a marine mammal does not enter the shutdown zone during pile extraction or driving, the crew may continue to pull a pile or drive the section of pipe that was being driven to its target depth, but will not drive additional sections of piling. If pile extraction or driving is suspended (to weld on a new section, for example) when the monitoring zone is not visible, the crew will not resume pile driving until visibility the entire shutdown zone is visible and the PSO has indicated that the zone has remained devoid of marine mammals for 30 minutes prior to additional pile driving.

#### **5. Vessel Transit**

##### **A. General Vessel Mitigation Measures**

- 1) Vessel operators will maintain a vigilant watch for marine mammals to avoid vessel strikes.
- 2) Consistent with NMFS marine mammal viewing guidelines (<https://alaskafisheries.noaa.gov/pr/mm-viewing-guide>), operators of vessels will, at all times, avoid approaching marine mammals within 100 yards. Operators will observe direction of travel and attempt to maintain a distance of 100 yards or greater between the animal and the vessel by working to alter course or slowing the vessel.
- 3) Vessels will stay at least 300 m away from cow-calf pairs, feeding aggregations, or whales that are engaged in breeding behavior.
- 4) The vessel operator will avoid operating in a way to separate members of a group of

marine mammals from other members of that group. A group is defined as being three or more whales observed within a 500-m (1641-ft) area and displaying behaviors of directed or coordinated activity (e.g., group feeding).

- 5) If the vessel approaches within 1.6 km (1 mi) of whales, the vessel operator will take reasonable precautions to avoid potential interaction with the whales by taking one or more of the following actions, as appropriate:
  - a. Reducing vessel speed to less than 5 knots (9 km/hour) within 274 m (300 yards or 900 ft) of the whale(s).
  - b. Steering to the rear of the whale(s) if possible.
  - c. Operating the vessel(s) to avoid causing a whale to make changes in travel direction.
  - d. Checking the waters immediately adjacent to the vessel(s) to ensure that no whales will be injured when the propellers are engaged.
  - e. Reducing vessel speed to 5 knots or less when weather conditions reduce visibility to 0.5 miles or less to avoid the likelihood of injury to whales.
- 6) In order to reduce potential whale strikes, vessels shall not exceed speeds of 10 knots at any time.
- 7) If a whale approaches the vessel and if maritime conditions safely allow, the engine will be put in neutral and the whale will be allowed to pass beyond the vessel. If the vessel is taken out of gear, vessel crew will ensure that no whales are within 50 m of the vessel when propellers are re-engaged, thus minimizing risk of marine mammal injury.
- 8) When weather conditions require, such as when visibility drops, support vessels must reduce speed and change direction as necessary (and as operationally practicable), to avoid the likelihood of injury to marine mammals.
- 9) Vessels should take reasonable steps to alert other vessels regarding the location of whale(s).
- 10) Vessels will not allow tow lines to remain in the water when not underway, and no trash or other debris will be thrown overboard, thereby reducing the potential for marine mammal entanglement.
- 11) The applicant will implement measures to minimize risk of spilling hazardous substances. These measures will include: avoiding operation of watercraft in the presence of sea ice to the extent practicable and using fully-operational vessel navigation systems composed of radar, chartplotter, sonar, marine communication systems, and satellite navigation receivers, as well as Automatic Identification System (AIS) for vessel tracking.
- 12) The transit route for the vessels will avoid known biologically important areas and designated critical habitat to the extent practicable.

## **6. Data Collection & Reporting**

### **A. Data Collection**

1. PSOs will record observations on data forms or into electronic data sheets, electronic copies of which will be submitted to NMFS in a digital spreadsheet format at the end of

the project.

2. PSOs will use NMFS-approved Observation Records. Observation Records will be used to record the following:
  - a. The date and start and stop time for each PSO shift;
  - b. Pile extraction and installation times, strike counts, and the duration of soft start procedures noted separately from the full power duration.
  - c. A description of other in-water activities not involving pile extraction or installation (location, type of activity, onset and completion times).
  - d. Date and time of each significant event ( e.g., a marine mammal sighting, operation shutdown, reason for operation shutdown, change in weather)
  - e. Weather parameters (e.g., percent cloud cover, percent glare, visibility) and sea state where the Beaufort Wind Force Scale will be used to determine sea-state (<https://www.weather.gov/mfl/beaufort>);
  - f. Species, numbers, and, if possible, sex and age class of observed marine mammals, along with the date, time, and location of the observation;
  - g. The predominant sound-producing activities occurring during each marine mammal sighting;
  - h. Marine mammal behavior patterns observed, including bearing and direction of travel;
  - i. Behavioral reactions of marine mammals just prior to, or during sound producing activities;
  - j. Location of marine mammals, distance from observer to the marine mammal, and distance from the predominant sound-producing activity or activities to marine mammals;
  - k. Whether the presence of marine mammals necessitated the implementation of mitigation measures to avoid acoustic impact, and the duration of time that normal operations were affected by the presence of marine mammals.
  - l. Geographic coordinates for the observed animals, with the position recorded by using the most precise coordinates practicable (coordinates must be recorded in decimal degrees, or similar standard, and defined coordinate system).

## **B. Humpback Whale Fluke Pictures**

1. If possible, sightings of humpback whales will be transmitted to NMFS, including:
  - a. Photographs (especially flukes) and video obtained.
  - b. Geographic coordinates for the observed animals, with the position recorded by using the most precise coordinates practicable (coordinates must be recorded in decimal degrees, or similar standard (and defined) coordinate system).
  - c. Number of animals per sighting event; and number of adults/juveniles/calves per sighting event (if determinable).
  - d. Environmental conditions as they existed during each sighting event, including sea conditions, weather conditions, visibility (km/mi), lighting conditions, and percent ice cover.

### **C. Unauthorized Take**

1. If a listed marine mammal is determined by the PSO to have been disturbed, harassed, harmed, injured, or killed (e.g., a listed marine mammal(s) is injured or killed or is observed entering the exclusion/shutdown zone before operations can be shut down), it must be reported to NMFS within one business day (contact listed below, Table 2). These PSO records must include:
  - a. Information that must be listed in the PSO report (see Item 6.A.2).
  - b. Number of listed animals affected.
  - c. The date and time of each event.
  - d. The cause of the event (e.g., ringed seal approached within 2200 m of an impact hammer while in operation).
  - e. The time the animal(s) entered the monitoring zone, and, if known, the time it exited the zone.
  - f. Mitigation measures implemented prior to and after the animal entered the monitoring zone.

### **D. Final Report**

1. A draft report will be submitted to NMFS within 90 calendar days of the completion of the in-water work for the project. A final comprehensive report will be prepared and submitted to NMFS within 30 calendar days following resolution of comments on the draft report. The report be submitted to Greg Balogh, NMFS PRD ANC supervisor, at [greg.balogh@noaa.gov](mailto:greg.balogh@noaa.gov). The report will summarize the data recorded as per Mitigation Measure 6.A.2, all activities associated with the proposed action, and results of marine mammal monitoring conducted during the in-water project activities. The final technical report will include items from the list above as well as the following:
  - a. Summaries of monitoring efforts including total hours, total distances, and marine mammal distribution through the study period, accounting for sea state and other factors that affect visibility and detectability of marine mammals.
  - b. Analyses on the effects from various factors that may have influenced detectability of marine mammals (e.g., sea state, number of observers, fog, glare, and other factors as determined by the PSOs).
  - c. Species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover.  
Effects analyses of the project activities on listed marine mammals.
  - d. Number of marine mammals observed (by species) during periods with and without project activities (and other variables that could affect detectability), such as:
    - i. Initial marine mammal sighting distances versus project activity at time of sighting.

- ii. Observed marine mammal behaviors and movement types versus project activity at time of sighting.
  - iii. Numbers of marine mammal sightings/individuals seen versus project activity at time of sighting.
  - iv. Distribution of marine mammals around the action area versus project activity at time of sighting.
  - v. Refined exposure estimate based on the number of marine mammals observed. This may be reported as a rate of take (number of marine mammals per hour or per day) or using another appropriate metric.
2. Digital, queryable documents containing PSO observations and records, and digital, queryable reports will be submitted to: Greg Balogh at [greg.balogh@noaa.gov](mailto:greg.balogh@noaa.gov) and to Bonnie Easley-Appleyard at [bonnie.easley-appleyard@noaa.gov](mailto:bonnie.easley-appleyard@noaa.gov). In the event that this contact information becomes obsolete, call 907-271-5006 for updated reporting contact information.

## 7. Summary of Agency Contact Information

**Table 2. Summary of Agency Contact Information**

<b>Reason for Contact</b>	<b>Contact Information</b>
Consultation Questions, Final Reports & Data Submittal	Greg Balogh: <a href="mailto:greg.balogh@noaa.gov">greg.balogh@noaa.gov</a> Bonnie Easley-Appleyard: <a href="mailto:bonnie.easley-appleyard@noaa.gov">bonnie.easley-appleyard@noaa.gov</a>
Stranded, Injured, or Dead Marine Mammal <i>(not related to project activities )</i>	Stranding Hotline (24/7 coverage) 877-925-7773
Oil Spill Response	U.S. Coast Guard 17th District Command Center: 907-463-2000  Sadie Wright: 907-586-7630, <a href="mailto:sadie.wright@noaa.gov">sadie.wright@noaa.gov</a>
Report Submission	NMFS Protected Resources Supervisor: 907-271-3023 or 907-306-1895
In the event that this contact information becomes obsolete	NMFS Anchorage Main Office: 907-271-5006

## Listed Species and Critical Habitat

### Western North Pacific DPS and Mexico DPS Humpback Whales

The humpback whale was listed as endangered under the Endangered Species Conservation Act (ESCA) on December 2, 1970 (35 FR 18319). Congress replaced the ESCA with the ESA in 1973, and humpback whales continued to be listed as endangered. NMFS recently conducted a global status review and changed the status of humpback whales under the ESA. The globally listed species was divided into 14 DPSs, four of which are endangered, one is threatened, and the remaining 9 are not listed under the ESA (81 FR 62260; September 8, 2016).

Wade et al. (2016) analyzed humpback whale movements throughout the North Pacific Ocean between winter breeding areas and summer feeding areas using a comprehensive photo-identification study of humpback whales in 2004-2006 during the SPLASH project (Structure of Populations, Levels of Abundance and Status of Humpbacks). The migration rates were used to estimate the probability that whales from each winter/breeding area were found in each of the six feeding areas. The probability of encountering whales from each of the four North Pacific DPSs in various feeding areas is summarized in Table 3 below (NMFS 2016a). The probability of encountering a humpback whale in the Whittier Ferry Dock action area from the non-listed Hawaii DPS is 89%, while the probability of encountering a threatened humpback whale from the Mexico DPS is only 10.5% and 0.5% for the Western North Pacific DPS.

The abundance estimate for humpback whales in the Gulf of Alaska is estimated to be 2,089 (CV= 0.09) animals which includes whales from the Hawaii DPS (89%), Mexico DPS (10.5%), and Western North Pacific DPS (0.5%) (NMFS 2016a, Wade et al. 2016).

**Table 3. Probability of encountering humpback whales from each DPS in the North Pacific Ocean (columns) in various feeding areas (on left). Adapted from Wade et al. (2016). Purple shading indicates the location of this project's action area.**

Summer Feeding Areas	North Pacific Distinct Population Segments			
	Western North Pacific DPS (endangered) <sup>1</sup>	Hawaii DPS (not listed)	Mexico DPS (threatened)	Central America DPS (endangered) <sup>1</sup>
Kamchatka	100%	0%	0%	0%
Aleutian I / Bering / Chukchi	4.4%	86.5%	11.3%	0%
Gulf of Alaska	0.5%	89%	10.5%	0%
Southeast Alaska / Northern BC	0%	93.9%	6.1%	0%
Southern BC / WA	0%	52.9%	41.9%	14.7%
OR/CA	0%	0%	89.6%	19.7%

<sup>1</sup> For the endangered DPSs, these percentages reflect the 95% confidence interval of the probability of occurrence in order to give the benefit of the doubt to the species and to reduce the chance of underestimating potential takes.

Humpback whales produce a wide variety of sounds ranging from 20 Hz to 10 kHz. During the breeding season males sing long, complex songs, with frequencies in the 20-5000 Hz range and intensities as high as 181 dB (Payne 1970, Winn et al. 1970, Thompson et al. 1986). Source levels average 155 dB and range from 144 to 174 dB (Thompson et al. 1979). The songs appear to have an effective range of approximately 10 to 20 km. Animals in mating groups produce a variety of sounds (Tyack 1981, Silber 1986). NMFS categorizes humpback whales in the low-frequency cetacean functional hearing group, which likely can hear frequencies between 7 Hz and 35 kHz (NMFS 2016b).

Additional information on humpback whale biology and natural history is available at:

<https://www.fisheries.noaa.gov/species/humpback-whale>

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock#cetaceans---large-whales>

### **Western DPS Steller Sea Lions**

The family Otariidae, to which Steller sea lions belong, encompasses “eared” seals, including fur seals. Steller sea lions, the largest otariids, show marked sexual dimorphism with males 2-3 times larger than females. On average, adult males weigh 566 kg (1,248 lbs.) and adult females are much smaller, weighing on average 263 kg (580 lbs.; Fiscus 1961; Calkins and Pitcher 1982; Winship et al. 2001).

The Steller sea lion was listed as a threatened species under the ESA on November 26, 1990 (55 FR 49204). In 1997, NMFS reclassified Steller sea lions as two DPSs based on genetic studies and other information (62 FR 24345; May 7, 1997). At that time, the eastern DPS (which includes animals born east of Cape Suckling, Alaska, at 144°W longitude) was listed as threatened, and the western DPS (which includes animals breeding west of Cape Suckling, both in Alaska and Russia) was listed as endangered. On November 4, 2013, the eastern DPS was removed from the endangered species list (78 FR 66140). Information on Steller sea lion biology, threats, and habitat (including critical habitat) is available online at:

<https://www.fisheries.noaa.gov/species/steller-sea-lion> and in the revised Steller Sea Lion

Recovery Plan (NMFS 2008), which can be accessed at:

<https://repository.library.noaa.gov/view/noaa/15974>.

The most recent comprehensive aerial photographic and land-based surveys of western Steller sea lions in Alaska estimated a total Alaska population (both pups and non-pups) of 53,303 (Muto et al. 2019). Although Steller sea lion abundance continues to decline in the western Aleutians, numbers are thought to be increasing in the eastern part of the western DPS range. The Central Gulf of Alaska Region, which includes the action area, has the second highest positive non-pup count and pup count (4.33 percent/year and 4.22 percent/year, 2003-2016) of any of the nine wDPS Steller sea lion sub-regions (Muto et al. 2019).

In the action area, Steller sea lions utilize a haul out in Shotgun Cove, the mouth of which is approximately five miles from the Whittier ferry terminal. Due to its size, the haulout is used by only ten to twelve sea lions. The nearest major haulout is more than 20 nautical miles away. In the winter, the foraging grounds are expected to be outside the action area because herring, a primary food source for Steller sea lions in the winter, generally overwinter deep in bays and channels often near their spawning areas (Straley et al. 2018). The nearest herring spawning area

is far outside Passage Canal (Figure 4). Steller sea lions can range greater than 20 kilometers to find optimal foraging conditions. Steller sea lion prey also includes salmon, which is common in Passage Canal, including near the harbor, from May through September<sup>3</sup>, thus Steller sea lions infrequently forage at the streams at the head of Passage Canal. Other prey for Steller sea lions include walleye Pollock, octopus, squid, Pacific cod, flatfishes, capelin, and sand lance. Pacific cod is an important food for Steller sea lions in winter.



**Figure 4. Major herring spawning areas close to Whittier Harbor (ADEC 2005).**

The ability to detect sound and communicate underwater is important for a variety of Steller sea lion life functions, including reproduction and predator avoidance. NMFS categorizes Steller sea lions in the otariid pinniped functional hearing group, with an applied frequency range between 60 Hz and 39 kHz in water (NMFS 2016b). Studies of Steller sea lion auditory sensitivities have found that this species detects sounds underwater between 1 to 25 kHz (Kastelein et al. 2005), and in air between 250 Hz and 30 kHz (Muslow and Reichmuth 2010; Reichmuth and Southall 2011). Sound signals from pile installation and extraction operations are anticipated to be within the hearing range of Steller sea lions.

Additional information on Steller sea lion biology and natural history is available at:

<https://www.fisheries.noaa.gov/species/steller-sea-lion>

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock#pinnipeds-otariids-eared-seals-or-fur-seals-and-sea-lions>

### **Effects of the Action**

For purposes of the ESA, “effects of the action” means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is “not likely to adversely affect” listed species or critical habitat is that all

<sup>3</sup> <https://www.adfg.alaska.gov/static-sf/Region2/pdfpubs/westernpws.pdf>

of the effects of the action are expected to be insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and are those that one would not be able to meaningfully measure, detect, or evaluate, and should never reach the scale where take occurs. Discountable effects are those that are extremely unlikely to occur. Beneficial effects are contemporaneous positive effects without any adverse effects to the species.

This consultation includes recent NMFS guidance on the term “harass,” which means to: “create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering” (Wieting 2016).

#### Four Steps for an Assessment of Harass:

1. Whether an animal is likely to be exposed to a stressor or disturbance (an annoyance)
2. The nature of that exposure in terms of magnitude, frequency, duration, etc. Included in this may be the type and scale as well as considerations of the geographic area of exposure (e.g. is the annoyance within a biologically important location for the species, such as a foraging area, spawning/breeding area, or nursery?)
3. The expected response of the exposed animal to a stressor or disturbance (e.g. startle, flight, alteration of important behaviors), and
4. Whether the nature and duration or intensity of that response is a significant disruption of those behavior patterns which include, but are not limited to, breeding, feeding, or sheltering, resting, or migrating.

The potential effects of the proposed action on listed species and critical habitat include acoustic harassment from vibratory and impact hammering and vessel traffic associated with the removal and reinstallation of three piles at the Whittier ferry terminal.

#### Acoustic Disturbance

Possible impacts to marine mammals exposed to loud underwater noise include mortality (directly from the noise, or indirectly from a reaction to the noise), injury, and disturbance ranging from severe (e.g., abandonment of vital habitat) to mild (e.g., startle response). In-water noise is the primary concern for the species covered in this consultation. Pile driving introduces noise into the underwater environment that has the potential to negatively impact marine mammals (Thompson et al. 2013). See the “Action Area” section above for a description of NMFS sound exposure thresholds. Though proposed pile driving will introduce continuous sounds into the water, the activities are not expected to adversely affect humpback whales due to the implementation of mitigation measures.

#### *Pile driving*

Impact pile driving is expected to be the loudest of the pile-driving activities associated with the proposed action. Denes et al. (2016) measured root mean square (rms) sound pressure levels between 200 and 210 dB re 1  $\mu\text{Pa}_{\text{rms}}$  at 1 m at frequencies between 0.1 and 1 kHz during the use of impact hammers to drive 24 to 30-in. steel piles in Ketchikan, Kodiak and Auke Bay. Vibratory pile driving generates lower peak and rms sound pressure levels than impact pile driving, but the total energy imparted to the pile is somewhat comparable because the vibratory hammer operates continuously and the piles require more time to install (ICF Jones & Stokes and Illingworth and Rodkin Inc. 2012). Table 4 compares the proposed impact and vibratory pile-

driving activities and physical characteristics of the Whittier ferry terminal project to pile-driving activities in other areas.

**Table 4. Source levels and characteristics from Denes et al. 2016 compared to Whittier ferry terminal activity characteristics**

Location	Water Depth (m)	Pile Size	Surface Area within Water Column (m <sup>2</sup> )	Substrate	Sound Source <sup>1</sup> (dB)	
					Vibratory	Impact
Kake <sup>2</sup>	11.8	30-in steel	29.1	Alluvium and till (10-15 ft) Bedrock (>15 ft)	157.9	194.8
Auke Bay <sup>2</sup>	18.9	30-in steel	46.0	Silty, gravelly sand (Thickness: 13–23 ft) Clayey silt (Thickness: 15–30 ft)	168.8	191.2
Whittier Harbor	9.0	30-in steel	22.4	Fluvial gravel with sand, and alluvial and glacial materials	-	-

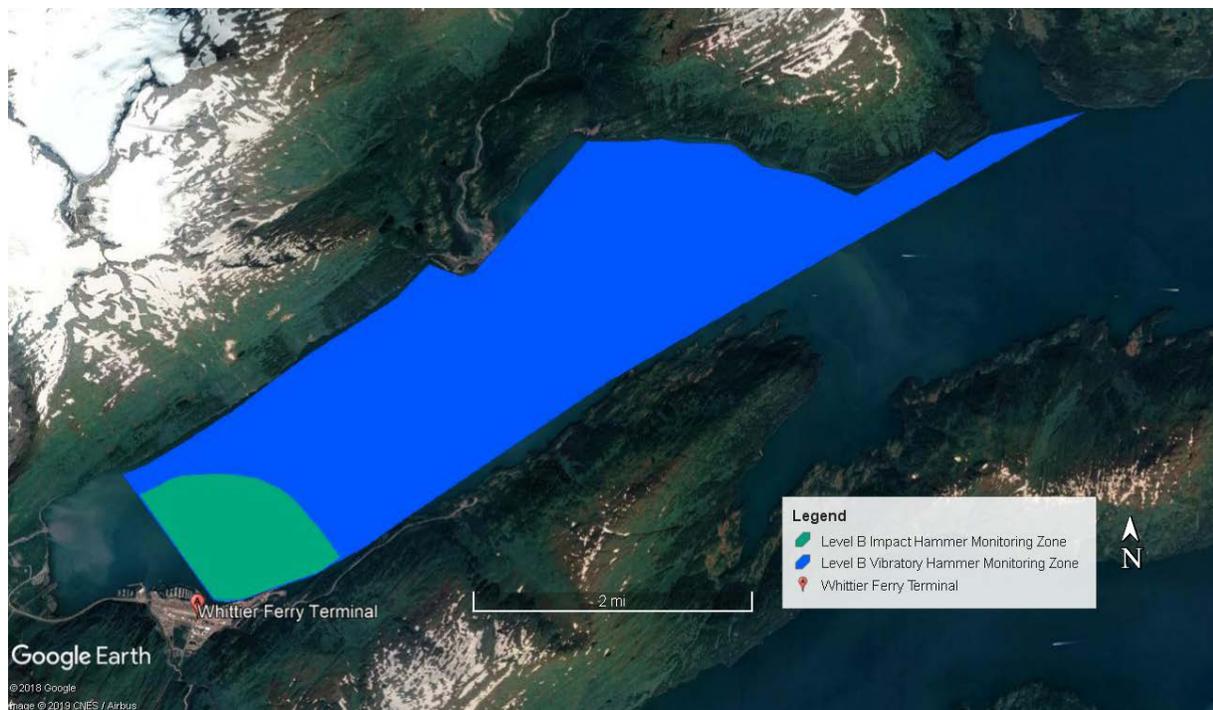
1. Mean value.  
2. Denes et al. 2016

Without site-specific sound source verification, we must use the best available information to assess effects to ESA-listed species. The information available for 30-inch steel piles involved measurements for Auke Bay, AK; Ketchikan, AK; and Kake, AK. After considering similarities and differences between physical characteristics of the proposed project area and the projects shown in Table 4, we determined that the area likely to be ensonified to 120 re 1 $\mu$ Pa<sub>rms</sub> from vibratory hammer pile-driving is not greater than 15.8 km, however, due to geography of Passage Canal, we have determined that in-water sound in excess of 120 dB (sound capable of harassing marine mammals) will not extend beyond 12 km (Figure 5). The area ensonified to 160 dB re 1  $\mu$ Pa<sub>rms</sub> from the impact hammer pile-driving is expected to be less than 1.2 km; however, because this activity is a very small portion of the overall project, a separate zone was not calculated. In addition, the USACE is applying a conservative shutdown zone with a 2 km radius for both vibratory and impact pile driving.

#### *Humpback Whales*

We do not anticipate ESA-listed humpback whales (both Mexico and Western North Pacific DPSs) to be present in the action area. Most humpback whales have migrated south for the winter, during the time frame for this project. Further, even during the summer, humpback whales have only been seen on rare occasions over the past 20 years (once per year) inside Passage Canal where they stay for several hours (as cited in AKDOT&PF 2019). Only one in ten of those humpback whales that rarely frequent Passage Canal are from an ESA-listed DPS. Roughly 13 percent of the entire population utilizes the Gulf of Alaska in the summer (2,089 of 15,805 whales; Wade et al. 2016). Of those 2,089 whales, between 3 and 7 percent stayed through winter (64-135 whales; 0.9% if the entire population; Straley et al. 2018). For the

purposes of our analysis, we conservatively assumed that over 7 percent of humpbacks present during summer in the Gulf of Alaska would overwinter in Prince William Sound (150 whales), which is a small proportion of the 2,089 whales that frequent the Gulf of Alaska annually. We expect that one in ten of the 150 humpback whales that overwinter in Prince William Sound is from a listed entity, and that, based upon their scarcity in Passage Canal during summer, the chances of any humpback whales entering Passage Canal is very low during winter. The project will ensonify Passage Canal for six days during winter.



**Figure 5. Level B monitoring zones as defined in Table 1.**

During the winter, many humpback prey resources migrate to deeper shelf waters and to their spawning grounds. Herring is a common prey resource for humpback whales and Steller sea lions. The nearest herring spawning grounds are 30 km from Whittier (Figure 4) near Esther Island, as well as in Montague Strait, Bainbridge Passage, and Port Gravina.<sup>4</sup>

We do not anticipate that this project will expose Mexico DPS or Western North Pacific humpback whales to sound pressure levels that reach Level B acoustic thresholds because: 1) we expect very few humpback whales, and no Mexico or Western North Pacific DPS humpback whales to be present in or near the action area during the months of February and March; 2) the project incorporates monitoring and mitigation measures that include exclusion zones that minimize the risk of exposure for any individual that approaches the shutdown zone, 3) the likelihood of the humpback whale being from an ESA-listed entity is low, and 4) the prey resources for humpback whales will be outside Passage Canal in February and March. If exposure to project-related noise were to occur, it is expected to be at levels below those that

<sup>4</sup> <https://gulfwatchalaska.org/monitoring/pelagic-ecosystem/humpback-whales/>

would cause observable effects. Further, mitigation measures will make exposure to sound levels in excess of Level B MMPA take thresholds extremely unlikely. Therefore, we conclude such effects on Mexico DPS or Western North Pacific humpback whales are insignificant and discountable.

### *Steller Sea Lions*

In addition to herring, Steller sea lions also eat walleye pollock and Pacific cod. Walleye pollock spawn in the Gulf of Alaska in March and April in shallow waters of the outer continental shelf. Prior to that, they are in the warmer, deeper areas of the continental shelf from December through February in the Gulf of Alaska. Their closest spawning aggregation to the project site is the entrance to Prince William Sound (more than 70 miles away).<sup>5</sup> Pacific cod peak spawning season is in March. A tagging study revealed that site fidelity by Pacific cod in fjords varies by fjord. In the fjord closest to the project area, West Twin Bay, Pacific cod were more likely to permanently emigrate during prespawning and spawning (which aligns with the project timing) across all size classes tagged (Lewandoski et al. 2018).

We do not anticipate that this project will expose western DPS Steller sea lions to sound pressure levels that reach Level B acoustic thresholds because: 1) we do not anticipate Steller sea lions to be in the ensonified area of Passage Canal during the February/March time frame because their primary winter prey resources are outside Passage Canal (Straley et al. 2018, Lewandoski et al. 2018), and 2) the project incorporates monitoring and mitigation measures that include exclusion zones which minimize the risk of exposure for any individual that approaches the shutdown zone. In the unlikely event that exposure to project-related noise were to occur, it is expected to be at levels below those that would cause observable effects because it would occur at the outer reaches of the Level B isopleth. Further, mitigation measures will make exposure to sound levels in excess of Level B MMPA take thresholds extremely unlikely because the project is required to stop its sound-generating activity when a Steller sea lion is spotted by a PSO entering the Level B ensonification zone. Therefore, we conclude effects due to project-related sounds are insignificant and discountable.

### Habitat Alteration

The installation of piles will disturb bottom sediments and may cause a temporary increase in suspended sediment in the action area. Using available information collected from a project in the Hudson River, we expect pile driving activities to produce total suspended sediment (TSS) concentrations of approximately 5.0 to 10.0 mg/L above background levels within approximately 300 feet (91 meters) of the pile being driven (FHWA 2012). The small resulting sediment plume is expected to settle out of the water column within a few hours. Studies of the effects of turbid water on fish suggest that concentrations of suspended sediment can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993). The TSS levels expected for pile driving or removal (5.0 to 10.0 mg/L) are below those shown to have adverse effect on fish (580.0 mg/L for the most sensitive species, with 1,000.0 mg/L more typical; see summary of scientific literature in Burton 1993) and benthic communities (390.0 mg/L (EPA 1986)). For this reason, we do not expect this project will affect water quality to any measurable degree during construction, nor is it likely to cause future impacts that are measurably different from the existing environmental baseline. Noise generated from pile driving can reduce the

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<sup>5</sup> <https://www.adfg.alaska.gov/index.cfm?adfg=walleyepollock.main>

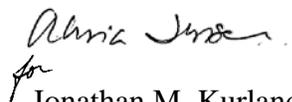
fitness and survival of fish in areas used by foraging marine mammals; however, given the small area of the project site and the fact that any physical changes to this habitat would not be likely to reduce the localized availability of fish to any measurable degree (Fay and Popper 2012), it is extremely unlikely that Mexico DPS humpback whales would be affected. Therefore, we conclude the potential impacts due to habitat alteration are insignificant.

### **Conclusion**

Based on this analysis, NMFS concurs with your determination that the proposed action may affect, but is not likely to adversely affect, western DPS Steller sea lions, Western North Pacific DPS humpback whales, or Mexico DPS humpback whales. Reinitiation of consultation is required where discretionary federal involvement or control over the action has been retained or is authorized by law, and if (1) take of listed species occurs, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter, or (4) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16).

Please direct any questions regarding this letter to Greg Balogh at [greg.balogh@noaa.gov](mailto:greg.balogh@noaa.gov) or (907-271-3023).

Sincerely,



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