

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE J	PAGE OF PAGES 1 2
2. AMENDMENT/MODIFICATION NO. 0003	3. EFFECTIVE DATE 31-Aug-2015	4. REQUISITION/PURCHASE REQ. NO. W66QKZ51215710		5. PROJECT NO.(If applicable)
6. ISSUED BY US ARMY CORPS OF ENGINEERS JEFFREY RENNER PO BOX 2946 PORTLAND OR 97208-2946	CODE W9127N	7. ADMINISTERED BY (If other than item 6) See Item 6		
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		X	9A. AMENDMENT OF SOLICITATION NO. W9127N-15-R-0003	
		X	9B. DATED (SEE ITEM 11) 04-Aug-2015	
			10A. MOD. OF CONTRACT/ORDER NO.	
			10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.				
12. ACCOUNTING AND APPROPRIATION DATA (If required)				
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.				
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.				
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).				
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:				
D. OTHER (Specify type of modification and authority)				
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.				
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) Replaces Attachment 11, in its entirety. Amends Spec 35 52 00.00 25 (3.1.2).				
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.				
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
		TEL:	EMAIL:	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA		16C. DATE SIGNED
_____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)		

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SUMMARY OF CHANGES

(End of Summary of Changes)

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MATERIAL OFF-LOADING FACILITY CONSTRUCTION

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. Submit the following in accordance with Section 01 33 00, SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Material Off-loading Facility Plan; G

1.2 DESCRIPTION

Install structures (such as timber piles, metal sheet piles, etc) as needed for delivery of jetty material and equipment by barge. Remove structures upon completion of the permanent work. For purposes of this specification, temporary structures must be any type of adequately constructed structure which the Contractor elects to build to satisfy, and which does satisfy, the condition that existing facilities be properly retained during use.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 MATERIAL OFF-LOADING FACILITY

3.1.1 General

a. Barging of materials is permitted for this contract. Provide a Material Off-loading Facility Plan describing methods of installation, materials to be used, location, drawings and design calculations, type and size of piles to be driven, specific pile driving equipment, pile driving method (eg - driving shoes on the pile), methods to ensure safety during installation/removal, quality control methods (specifically location verification), and impacted footprint below (area in acres) jurisdictional waters of the U.S. which is +11.2 feet NAVD88. Jetty relic stone is scattered along the jetty and may be encountered during the installation of piles. Provide details of how the Contractor will address this issue if encountered.

b. The off-loading facility must be safely designed and maintained and be carried to adequate depths and braced as necessary for proper performance of the work. The working drawings and design calculations must be prepared, sealed, and signed by a Professional Engineer. The furnishing of such plans must not serve to relieve the Contractor of any part of his responsibility for the safety of the work or for the successful completion of the project. The following items are also required in the stamped design: material requirements of piling (what grade steel, etc.), method of securing floating plant to pile structures.

c. Maintain temporary structures and approaches in place until no longer needed. Unless the CO directs otherwise, completely remove and dispose of properly. During removal, minimize debris falling into water and utilize low tides and calm conditions to minimize turbidity. Contractor-furnished materials remain the Contractor's property upon removal.

3.1.2 Constraints

The following constraints for barging to Jetty A include:

- a. Construct the material off-load facility between stations 77+00 and 86+00 or as approved by the CO. The area of fill below jurisdictional waters of the U.S. (+11.2 feet NAVD88) must not exceed 1.2 acres.
- b. A maximum of 24 piles can be installed as dolphins and a maximum of 93 sections of Z or H piles can be installed to retain rock fill. Pile diameter must be a maximum diameter of 24 inches.
- c. Piles are to be installed only by vibratory driving method. Jetty relict stone may be encountered during pile installation and may need to be relocated.
- d. Piles are to be untreated wood or other approved material.
- d. Piles may be driven and/or removed between 1 May and 30 September.
- f. A soft start procedure will be used at the beginning of each day when in-water pile driving or any time pile driving has ceased for more than 30 minutes. For vibratory pile driving, the contractor must initiate noise from vibratory hammers for 15 seconds at reduced energy followed by a 30-second waiting period. The procedure shall be repeated two additional times.
- g. For all vibratory pile driving, a shutdown and disturbance zone will be monitored.
 - (1) Monitoring will take place from 30 minutes prior to initiation through 30 minutes post-completion of pile driving.
 - (2) The shutdown zone will always be a minimum of 10 meters (33 feet) to prevent injury from physical interaction of marine mammals with construction equipment.
 - (3) Monitor the entirety of the underwater disturbance zone observable by binoculars.
- h. If the shutdown zone is obscured by fog or poor lighting conditions, pile driving will not be initiated until the entire shutdown zone is visible.
- i. If a marine mammal approaches or enters the shutdown zone during the course of vibratory pile driving operations, activity will be halted and delayed until the animal has voluntarily left and been visually confirmed beyond the shutdown zone. If a marine mammal is seen above water and then dives below, the contractor would wait 15 minutes for pinnipeds and 30 minutes for cetaceans. If no marine mammals are seen by the observer in that time it will be assumed that the animal has moved beyond the exclusion zone.

- j. If a marine mammal is observed in the acoustic disturbance zone, but not approaching or entering the shutdown zone or in the underwater disturbance zone, a "take" will be recorded and the work will be allowed to proceed without cessation. Marine mammal behavior will be monitored and documented on the reporting form.
- k. For in-water heavy machinery work other than pile driving (e.g., standard barges, tug boats, barge-mounted excavators, or clamshell equipment used to place or remove material), if a marine mammal comes within 10 meters, 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). The taking, by Level B harassment only, is limited to the species listed in condition 3(b), See Table 2 of the IHA (attached) for numbers of take authorized. If any marine mammal species are encountered during activities that are not listed for authorized taking and are likely to be exposed to sound pressure levels (SPLs) greater than or equal to 120 dB re 1mPa (rms) by being in the ZOI, or if the number of individuals exposed to Level B is likely to exceed the allowable take numbers, then the contractor must stop pile driving activities.
- l. Scan the waters for 30 minutes before and during and 30 minutes after all pile driving. If any species for which take is not authorized are observed within the area of potential sound effects during or 30 minutes before pile driving, the observer(s) will immediately notify the on-site supervisor or inspector, and require that pile driving either not initiate or temporarily cease until the animals have moved outside of the area of potential sound effects.
- m. Visual monitoring will be conducted by qualified, trained marine mammal observers. An observer has prior training and experience conducting marine mammal monitoring or surveys, and who has the ability to identify marine mammal species and describe relevant behaviors that may occur in proximity to in-water construction activities.
- n. Trained observers will be placed at the best vantage points practicable (from the construction barges, on shore, or jetty-side) to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator.
- o. Marine mammal observer(s) will be on site at all times during pile driving. Each observer must meet a list of qualifications for marine mammal observers (see below) to be considered qualified, or undergo training to meet the qualifications before the start of pile driving. A minimum of two observers is required. Observers are required to have no other construction-related tasks while conducting monitoring. One observer must be stationed at Clatsop Spit and one observer stationed at Jetty A at the pile installation site.
- p. Use a hand-held or boat-mounted GPS device or rangefinder to verify the required monitoring distance from the project site. . Scan the waters within the area of potential sound effects using binoculars (10x42 or similar) or spotting scopes (20-60 zoom or equivalent), and by making visual observations.

- q. If weather or sea conditions restrict the observer's ability to observe, or become unsafe for the monitoring vessel(s) to operate, cease pile installation until conditions allow for monitoring to resume.
- r. Conduct pile driving only during daylight hours from sunrise to sunset when it is possible to visually monitor marine mammals.
- s. Use a marine mammal observation sheet to record the species, date, and time of any marine mammal sightings. Record marine mammal behavior and any communication between the observer and the contractor during pile driving.
- t. The following information must be collected on sighting forms.
 - (1) Date and time that pile removal and/or installation begins and ends.
 - (2) Construction activities occurring during each observation period.
 - (3) Weather parameters (e.g., percent cover, visibility).
 - (4) Water conditions [e.g., sea state, tidal state (incoming, outgoing, slack, low, and high)].
 - (5) Species, numbers, and, if possible, sex and age class of marine mammals.
 - (6) Marine mammal behavior patterns observed, including bearing and direction of travel, and, if possible, the correlation to SPLs.
 - (7) Distance from pile removal and/or installation activities to marine mammals and distance from the marine mammal to the observation point.
 - (8) Locations of all marine mammal observations.
 - (9) Other human activity in the area.
 - (10) note in behavioral observations, to the extent practicable, if an animal has remained in the area during construction activities.
- u. Minimum qualifications for marine mammal observers:
 - (1) Visual acuity in both eyes (correction is permissible) sufficient to discern moving targets at the water's surface with ability to estimate target size and distance. Use of binoculars or spotting scope may be necessary to correctly identify the target.
 - (2) Advanced education in biological science, wildlife management, mammalogy or related fields (Bachelor's degree or higher is preferred).
 - (3) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).

(4) Experience or training in the field identification of marine mammals (cetaceans and pinnipeds).

(5) Sufficient training, orientation or experience with vessel operation and pile driving operations to provide for personal safety during observations.

(6) 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 needed.

v. Install pile caps to prevent birds from perching on piles.

w. Do not disturb existing pile dikes (located between approximately station 83+00 and 83+50).

x. Keep a minimum of 50 feet clearance between the barge activities and the south side of the existing pile dikes and 100 feet clearance on the north side of the pile dikes. Remove the material off-load facility upon completion of the project.

y. In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA, such as an injury (Level A harassment), serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), immediately cease the specified activities and immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. Include the following information indicated in the attached form and listed in the IHA. Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with the Corps to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The Corps would not be able to resume their activities until notified by NMFS via letter, email, or telephone. In the event that there is a discovery of an injured or dead marine mammal, and the lead MMO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS West Coast Stranding Hotline and/or by email to the West Coast Regional Stranding Coordinators. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with the Corps to determine whether modifications in the activities are appropriate.

z. In the event that the Corps or Contractor discovers an injured or dead marine mammal, and the lead MMO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS West Coast Stranding Hotline and/or by email to the West Coast Regional Stranding Coordinators, within 24 hours of the discovery. Provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network.

3.2 MATERIAL DELIVERY ACCESS ROUTE (MDAR)

3.2.1 General

A high ground remnant jetty construction feature exists on the estuary side of Jetty A and is available for use as a MDAR to deliver jetty materials and equipment to the staging and storage area. Material comprising this feature is primarily rocky overburden. Some larger jetty stones are also present in this area that have been displaced from the Jetty A side slope and must be moved back adjacent to the jetty and not be incorporated into the MDAR. The area has variable relief which may require both cutting and filling to achieve a consistent grade elevation. All debris encountered within the MDAR footprint must be removed prior to any reconstruction. Leave the MDAR in place upon completion of the project.

3.2.2 On-site Woody Debris Incorporation

A portion of the woody debris removed from the jetty construction area is required to be used during improvement of the MDAR. Incorporate approximately 100 logs with a diameter larger than 1 foot and a minimum length of 10 feet into the lowest portions of the existing MDAR. Embed woody debris prior to fill below MHHT and place so they are evenly spaced, and have any root wads extending into the estuary side of the MDAR as shown on the drawings. Only use on-site woody debris.

3.2.3 Constraints

The following constraints for reconstruction or using the MDAR include:

- a. A maximum width of 30 feet is allowed to develop the MDAR.
- b. Fill material for MDAR must be consistent with material described in Section 35 31 26.40 25, JETTY REPAIRS, paragraph JETTY CREST HAUL ROAD. Additional fill material may be utilized from grading high areas within existing limits of the MDAR as well as incorporation of woody debris from woody debris clearing operations.
- c. The footprint of the MDAR extending into jurisdictional waters of the U.S. due to grading or importing of material including turnouts must not exceed 1.3 acres.
- d. Fill volume for development of the MDAR must not exceed 38,000 cubic yards.
- e. The MDAR elevation must be a minimum of +12 feet NAVD88. Hauling along the MDAR is not permitted when MDAR is inundated.
- f. The MDAR must be completed so as not to impact the entire cross section of the jetty
- g. Do not remove any existing concrete platform or structure encountered in the construction of the MDAR. Leave in place and cover as needed.

-- End of Section --



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910
THE DIRECTOR

Barbara Geren Cisneros
Environmental Resource Specialist
U.S. Army Corps of Engineers
Environmental Planning Section
P.O. Box 294
Portland, OR 97208-2946

AUG 31 2015

Dear Barbara,

Enclosed is an Incidental Harassment Authorization (IHA), issued pursuant to Section 101(a)(5)(D) of the Marine Mammal Protection Act, to take small numbers of marine mammals, by Level B harassment only, incidental to the Rehabilitation of Jetty A at the Mouth of the Columbia River.

You are required to comply with the conditions contained in the IHA, including all mitigation, monitoring and reporting requirements. Along with mitigation measures to be incorporated, the IHA requires monitoring for the presence and behavior of marine mammals prior to, during, and after all pile driving and removal events.

If you have any questions concerning the IHA or its requirements, please contact Rob Pauline, Office of Protected Resources, at 301-427-8408.

Sincerely,

Donna S. Wieting

for Donna S. Wieting,
Director,
Office of Protected Resources,
National Marine Fisheries Service.

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910
THE DIRECTOR

DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

Incidental Harassment Authorization

The US Army Corps of Engineers (Corps) is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1371(a)(5)(D)) and 50 CFR 216.106, to take, incidentally by Level B harassment, small numbers of marine mammals incidental to the rehabilitation of Jetty A at the Mouth of the Columbia River (MCR):

1. This Authorization is valid from May 1, 2016 through April 30, 2017.
2. This Authorization is valid only for activities involving pile installation and removal related to the rehabilitation of Jetty A at the MCR Jetty system in Pacific County, Washington and Clatsop County, Oregon.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of the Corps, its designees, and work crew personnel operating under the authority of this incidental harassment authorization (IHA).
 - (b) The species authorized for takings by incidental harassment include killer whale (*Orcinus orca*), Steller sea lion (*Eumatopius jubatus*), gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), California sea lion (*Zalophus californianus*), and harbor seal (*Phoca vitulina richardii*).
 - (c) The taking, by Level B harassment only, is limited to the species listed in condition 3(b). See Table 2 (attached) for numbers of take authorized.
 - (d) The taking by injury (Level A harassment), serious injury, or death of any of the species listed in condition 3(b) of the Authorization or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.

THE ASSISTANT ADMINISTRATOR
FOR FISHERIES



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4. The holder of this Authorization is required to cooperate with the National Marine Fisheries Service and any other Federal, state or local agencies monitoring the impacts of the activity on marine mammals. The holder must notify Monica DeAngelis of the West Coast Regional Office (562-980-3232) at least 24 hours prior to starting activities.

5. Mitigation Requirements

(a) The Corps is authorized to utilize only vibratory driving under this IHA.

(b) Time Restriction: For all in-water pile driving activities, the Corps shall operate only during daylight hours when visual monitoring of marine mammals can be conducted.

(c) In order minimize impact to Southern resident killer whales, in-water work will not be conducted during their primary feeding season extending from October 1 until on or after May 1. Installation could occur from May 1 through September 30 each year.

(d) Establishment Level B Harassment Zones

(i) The Corps shall establish Level B behavioral harassment ZOI where received underwater sound pressure levels (SPLs) are higher than 120 dB (rms) re 1 μ Pa for and non-pulse sources (i.e. vibratory hammer). The ZOI delineates where Level B harassment would occur. For vibratory driving, the level B harassment area is comprised of a radius between 10 m and 7.3 km from driving operations.

(ii) The radii and area of the Level B harassment zone is provided in Table 1 below.

(e) Establishment of shutdown zone

(i) The Corps shall implement a minimum shutdown zone of 10 m from vibratory hammer during driving activities. If a marine mammal approaches or enters the shutdown zone during the course of vibratory pile driving operations, activity will be halted and delayed until the animal has voluntarily left and been visually confirmed beyond the shutdown zone. If a marine mammal is seen above water and then dives below, the contractor would wait 15 minutes for pinnipeds and 30 minutes for cetaceans. If no marine mammals are seen by the observer in that time it will be assumed that the animal has moved beyond the exclusion zone.

(f) Use of Soft-start

(i) The project will utilize soft start techniques for vibratory pile driving. We require the Corps 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. 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 thirty minutes or longer.

- (ii) Whenever there has been downtime of 30 minutes or more without vibratory driving, the contractor will initiate the driving with soft-start procedures described above.

(g) Standard Mitigation Measures

- (i) Briefings shall be conducted between construction supervisors and crews, marine mammal monitoring team, and Corps 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.
- (ii) For in-water heavy machinery work other than pile driving (e.g., standard barges, tug boats, barge-mounted excavators, or clamshell equipment used to place or remove material), if a marine mammal comes within 10 meters, 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).

7. Monitoring Requirements

(a) General.

- (i) The holder of this Authorization must designate a minimum of two qualified marine mammal observers (MMOs), as described in Section 13 of the Application, approved in advance by the National Marine Fisheries Service to monitor the area for marine mammals before, during, and after pile driving activities.
- (ii) For all marine mammal and acoustic monitoring, information shall be recorded as described in the Monitoring Plan

(b) Visual Monitoring

- (i) 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. One observer will be placed on or near the drilling rig near Jetty A while a second observer will be stationed on the opposite side of the observable zone of influence on Clatsop Spit.

- (ii) During pile driving, the area within 10 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.
- (iii) The area within the Level B harassment threshold for pile driving will be monitored MMOs positioned at locations described in 7(b)(i) to provide adequate view of the harassment zone. Marine mammal presence within this Level B harassment zone, if any, will be monitored. 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.
- (iv) 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.
- (v) If waters exceed a sea-state which restricts the observers' ability to make observations within the marine mammal buffer zone (the 10 meter radius) (e.g. excessive wind or fog), pile installation will cease until conditions allow the resumption of monitoring.
- (vi) The waters will be scanned 30 minutes prior to commencing pile driving at the beginning of each day, and prior to commencing pile driving after any stoppage of 30 minutes or greater. If marine mammals enter or are observed within the designated marine mammal buffer zone (the 10m radius) during or 30 minutes prior to impact pile driving, the monitors will notify the on-site construction manager to not begin until the animal has moved outside the designated radius
- (vii) The waters will continue to be scanned for at least 30 minutes after pile driving has completed each day.
- (viii) Observations shall be made using high-quality binoculars (e.g., Zeiss, 10 x 42 power). MMOs shall be equipped with radios or cell phones for maintaining contact with other observers and Corps' engineers, and range finders to determine distance to marine mammals, boats, buoys, and construction equipment

(c) Data Collection

- (i) Observers are required to use approved data forms. Among other pieces of information, the Corps will record detailed information about any implementation of shutdowns, including the distance of animals to the pile and description of specific actions that ensued and resulting behavior of the animal, if any. In addition, the Corps will attempt to distinguish between the number of individual animals taken and the number of incidents of take. At a minimum, the following information be collected on the sighting forms:
- i. Date and time that monitored activity begins or ends;
 - ii. Construction activities occurring during each observation period;
 - iii. Weather parameters (e.g., percent cover, visibility);
 - iv. Water conditions (e.g., sea state, tide state);
 - v. Species, numbers, and, if possible, sex and age class of marine mammals;
 - vi. Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from pile driving activity;
 - vii. Distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point;
 - viii. Locations of all marine mammal observations; and
 - ix. Other human activity in the area.

8. Reporting Requirements

- a) The Corps shall provide NMFS with a draft final report within 90 days after the expiration of the IHA. This report shall detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed due to pile driving. If no comments are received from NMFS within 30 days, the draft final report would be considered the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.
- b) Reporting of injured or dead animals
 - i. In the event that the Corps discovers an injured or dead marine mammal, and the lead MMO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), the Corps would immediately report the incident to Jolie Harrison (Jolie.Harrison@NOAA.gov), Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and Brent Norberg (Brent.Norberg@noaa.gov), the West Coast Regional Stranding .The report would include the following information:

- i. Time, date, and location (latitude/longitude) of the incident;
- ii. Name and type of vessel involved;
- iii. Vessel's speed during and leading up to the incident;
- iv. Description of the incident;
- v. Status of all sound source use in the 24 hours preceding the incident;
- vi. Water depth;
- vii. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- viii. Description of all marine mammal observations in the 24 hours preceding the incident;
- ix. Species identification or description of the animal(s) involved;
- x. Fate of the animal(s); and
- xi. Photographs or video footage of the animal(s) (if equipment is available).

Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with the Corps to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The Corps would not be able to resume their activities until notified by NMFS via letter, email, or telephone.

- ii. In the event that the Corps discovers an injured or dead marine mammal, and the lead MMO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), the Corps would immediately report the incident to Jolie Harrison (Jolie.Harrison@NOAA.gov), Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and Brent Norberg (Brent.Norberg@noaa.gov), the West Coast Regional Stranding Coordinator. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with the Corps to determine whether modifications in the activities are appropriate.
 - iii. In the event that the Corps discovers an injured or dead marine mammal, and the lead MMO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), the Corps would immediately report the incident to Jolie Harrison (Jolie.Harrison@NOAA.gov), Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and Brent Norberg (Brent.Norberg@noaa.gov), the West Coast Regional Stranding Coordinator within 24 hours of the discovery. The Corps would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network
9. A copy of this Authorization must be in the possession of all contractors and marine mammal monitors operating under the authority of this Incidental Harassment Authorization.

10. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.

AUG 31 2015

Perry Grayson

for

Donna S. Wieting, Director
Office of Protected Resources
National Marine Fisheries Service

Date

Table 1. Calculated Distance and Area Encompassed Level B Harassment threshold at Jetty A

Jetty	Underwater threshold	Distance— m (mi)	Area excluding land & jetty masses— km ² (mi ²)
Jetty A: ~ Station 78+50, River Side	Vibratory driving, pinniped injury (190 dB)	0	0
	Vibratory driving, cetacean injury (180 dB)	1 (3.3)	<0.000003 (0.000001)
	Vibratory driving, disturbance (120 dB)	7,356 (4.6 miles)	23.63 (9.12)

Table 2. Estimated Numbers of Marine Mammals allowed to be taken by Level B Harassment under this IHA

Species/Stocks	Authorized Takes
Killer whale (Western transient stock)	8
Gray whale (Eastern North Pacific Stock)	4
Harbor porpoise	850
Steller sea lion	12,750
California sea lion	2,788
Harbor seal	493

1005 1 1 1014

1014

Date: _____

PAGE _____ of _____

PROJECT: _____

Qualified (per IHA/LOA & Requirements in Specifications) Marine Mammal Observer(s): _____

Equipment List, and Date(s) of Calibration/Maintenance, As Applicable: _____

Total Number of Piles Installed/Removed per Day:

Day: 1) ___ 2) ___ 3) ___ 4) ___ 5) ___ 6) ___ 7) ___ 8) ___ 9) ___ 10) ___ 11) ___ 12) ___ 13) ___ 14) ___ 15) ___ 16) ___ 17) ___

Total Duration of Installation/Removal per Day (hours):

Day: 1) ___ 2) ___ 3) ___ 4) ___ 5) ___ 6) ___ 7) ___ 8) ___ 9) ___ 10) ___ 11) ___ 12) ___ 13) ___ 14) ___ 15) ___ 16) ___ 17) ___

Event Code/ Activity Type	Time/Duration of Event; (Start/End Time if Continuous)	Construction Type During Sighting	Other Human Activity in Area	Event /Work Activity Location	Species Type	Sighting Number (1 or 1.1.X if Re- sight)	Time/Duration Watching Sighting; (Start/End Time if Continuous)	# of Animals/Group Size (min/max/best)	Gender (If Observable)	Age Class (If Observable)	Sighting Cue/ Behavior Code	Location of Species & Bearing/Direction of Travel Relative to Construction:	Location of Observer	Distance/ Direction to Animal (from Observer)	Distance/Direction to Pile (Between Animal and Pile)	Mitigation Used During Sighting	Mitigation Type	Visibility	% Glare	Weather Condition	Sea State & Wave Height	Tidal State	Swell Direction	Behavior Change/Response to Activity/Comments
[EON; EOFF; PRE; POST; SSV; WC; S; MDE; MSD]	_____ _____	[SSV; VI; VR; NONE; DP; PLO; OTH]		Jetty Station/ GPS Location	[CASL; HSEA; STSL; HPOR; DPOR; ORCA; HUMP; GRAY; UNLW; OTHR; UNKW]	_____ _____	_____ _____	_____ _____	___ M ___ F	___ Adult ___ Juvenile ___ Calves	See Behavior/ Sighting Cue Code Key	Jetty Station, Barge, Shore/ GPS, STA Location	(m) or (km)	(m) or (km)	Y N	DE SD	[B; P; M; G; E]		[S; PC; L; R; F; OC]	[L; M; H]	EB/FL S/L/H	[N; S; E; W]		
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								
									___ M ___ F	___ Adult ___ Juvenile ___ Calves			(m) or (km)	(m) or (km)	Y N	DE SD								

Sighting #-chronological number of sightings; if resight of same animal, then 1.1, 1.2, etc.
See Key for Codes and Definitions
See IHA/LOA for specific permit conditions
Contact Corps and Appropriate Officials Immediately if Take Occurs of Marine Mammal Specie Not Included in the IHA/LOA Permit, if Take Exceeds Permit Numbers, if Level A Take Occurs, or if Other Species Have Been Taken
If Dead or Dying Marine Mammal Species is Observed, Record Species Type, Date, Time, and Location of Observation; Photograph Species, and Immediately Notify Corps and NMFS

Sighting Cue & Behavior Codes		
BR	Breaching	Leaps clear of water
CD	Change Direction	Suddenly changes direction of travel
CH	Chuff	Makes loud, forceful exhalation of air at surface
DI	Dive	Forward dives below surface
DE	Dead	Shows decomposition or is confirmed as dead by investigation
DS	Disorientation	An individual displaying multiple behaviors that have no clear direction or purpose
FI	Fight	Antagonistic interactions between two or more individuals
FO	Foraging	Confirmed by food seen in mouth
MI	Milling	Moving slowly at surface, changing direction often, not moving in any particular direction
PL	Play	Behavior that does not seem to be directed towards a particular goal; may involve one, two or more individuals
PO	Porpoising	Moving rapidly with body breaking surface of water
SL	Slap	Vigorously slaps surface of water with body, flippers, tail etc.
SP	Spyhopping	Rises vertically in the water to "look" above the water
SW	Swimming	General progress in a direction. Note general direction of travel when last seen [Example: "SW (N)" for swimming north]
TR	Traveling	Traveling in an obvious direction. Note direction of travel when last seen [Example: "TR (N)" for traveling north]
UN	Unknown	Behavior of animal undetermined, does not fit into another behavior
Pinniped only		
EW	Enter Water (from haul out)	Enters water from a haul-out for no obvious reason
FL	Flush (from haul out)	Enters water in response to disturbance
HO	Haul out (from water)	Hauls out on land
RE	Resting	Resting onshore or on surface of water
LO	Look	Is upright in water "looking" in several directions or at a single focus
SI	Sink	Sinks out of sight below surface without obvious effort (usually from an upright position)
VO	Vocalizing	Animal emits barks, squeals, etc.
Cetacean only		
LG	Logging	Resting on surface of water with no obvious signs of movement

Marine Mammal Species Codes	
CASL	California Sea Lion
HSEA	Harbor Seal
STSL	Steller Sea Lion
HPOR	Harbor Porpoise
DPOR	Dall's Porpoise
ORCA	Killer Whale
HUMP	Humpback Whale
GRAY	Gray Whale
UNLW	Unknown Large Whale
OTHR	Other
UNKW	Unknown

Event Codes	
E ON	Effort On
E OFF	Effort Off
PRE	Pre Watch
POST	Post Watch
SSV	Soft start-vibratory
WC	Weather Condition/Change
S	Sighting
M-DE	Mitigation Delay
M-SD	Mitigation Shutdown

Mitigation Codes	
DE	Delay onset of Pile Driving
SD	Shut down Pile Driving

Construction Type Codes	
SSV	Soft Start (Vibratory)
VI	Vibratory Pile Driving (Installation)
VR	Vibratory Pile Driving (Removal)
NONE	No Pile Driving
PLO	Rock Placement Only
OTH	Other

Visibility Codes	
B	Bad (<0.5km)
P	Poor (0.5 – 1.5km)
M	Moderate (1.5 – 10km)
G	Good (10 - 15km)
E	Excellent (>15km)

Weather Condition Codes	
S	Sunny
PC	Partly Cloudy
L	Light Rain
R	Steady Rain
F	Fog
OC	Overcast

Sea State and Wave Height Codes	
Light	0 – 3 ft
Moderate	4 – 6 ft
Heavy	>6 ft

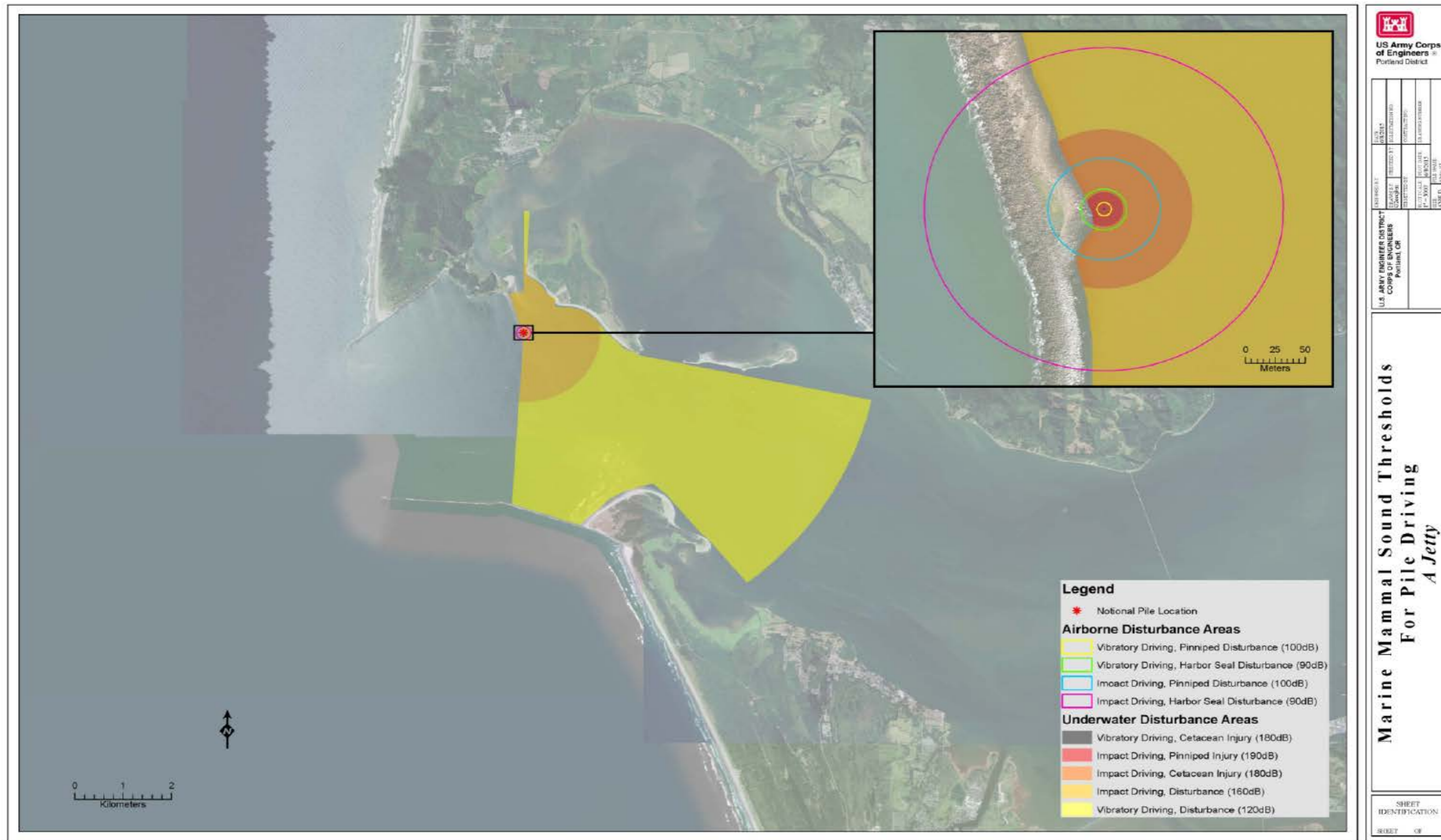
Glare	Indicate total glare of observers' area of responsibility. Determine if observer coverage is covering 90 degrees or 180 degrees and document daily. Then assess total glare for that area. This will provide needed information on percentage of field of view that was poor due to glare.
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Swell	Indicate direction the swell is coming from (S for coming from the south). If possible, record direction relative to fixed location (Jetty A). Choose this location at beginning of monitoring project.
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Tide	Indicate Ebb, Flood, Slack/Low/High Tide
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- Qualified marine mammal observer(s) must monitor shutdown and disturbance zone during all pile installation, removal, and maintenance activities.
- Monitoring will take place from 30 minutes prior to initiation, during, and through 30 minutes post-completion of pile driving.
- The shutdown zone will include all areas encompassed within 10m radius from pile installation. The shutdown zone will always be a minimum of 10 meters (33 feet) to prevent injury from physical interaction of marine mammals with construction equipment.
- Monitor the entirety of the underwater disturbance zone reasonably observable by binoculars.
- Visual monitoring will be conducted by qualified, trained marine mammal observers (hereafter "observer"). Visual monitoring will be implemented during all pile installation activities at all jetties. An observer has prior training and experience conducting marine mammal monitoring or surveys, and who has the ability to identify marine mammal species and describe relevant behaviors that may occur in proximity to in-water construction activities.
- Trained observers will be placed at the best vantage points practicable (from the construction barges, on shore, or jetty-side) to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator.
- If the shutdown zone is obscured by fog or poor lighting conditions, pile driving will not be initiated until the entire shutdown zone is visible.
- Prior to the start of pile driving, the shutdown zone will be monitored for 30 minutes to ensure that the shutdown zone is clear of marine mammals. Pile driving will only commence once observers have declared the shutdown zone clear of marine mammals.
- If a marine mammal approaches or enters the shutdown zone during pile driving, work will be halted and delayed until either the animal has voluntarily left and visually confirmed beyond the disturbance zone, or 30 minutes have passed without re-detection of the animal.
- If a marine mammal is observed in the acoustic disturbance zone, but not approaching or entering the shutdown zone, a "take" will be recorded and the work will be allowed to proceed without cessation. Marine mammal behavior will be monitored and documented.
- Monitor the area of potential sound effects for injury to marine mammals during pile driving. The observer position(s) will either be from the top of jetty or adjacent barge.
- Use a hand-held or boat-mounted GPS device or rangefinder to verify the required monitoring distance from the project site.
- Scan the waters within the area of potential sound effects using binoculars (10x42 or similar) or spotting scopes (20-60 zoom or equivalent), and by making visual observations.
- If weather or sea conditions restrict the observer's ability to observe, or become unsafe for the monitoring vessel(s) to operate, cease pile installation until conditions allow for monitoring to resume.
- Scan the waters for 30 minutes before and during all pile driving. If any species for which take is not authorized are observed within the area of potential sound effects during or 30 minutes before pile driving, the observer(s) will immediately notify the on-site supervisor or inspector, and require that pile driving either not initiate or temporarily cease until the animals have moved outside of the area of potential sound effects.
- Conduct pile driving only during daylight hours from sunrise to sunset when it is possible to visually monitor marine mammals.
- Use a marine mammal observation sheet to record the species, date, and time of any marine mammal sightings. Record marine mammal behavior and any communication between the observer and the contractor during pile driving.
- If the Corps observes any dead or dying marine mammal species in the action area, regardless of known cause:
 - o Record the species type (if known), date, time, and location of the observation
 - o Take a photograph of the specimen
 - o Immediately notify NOAA Fisheries.
- During land-based rock placement, vehicles and personnel will avoid as much as possible direct approach towards pinnipeds that are hauled out. If it is absolutely necessary to make movements towards pinnipeds, approach in a slow and steady manner to reduce the behavioral harassment to the animals as much as possible.

Figure 19. ZOI Map, Marine Mammal Sound Thresholds from Pile Driving, Jetty A



Maximum Underwater Disturbance ZOI threshold = 4.6 miles radius;
 Maximum Underwater Injury ZOI threshold = 1 meter radius;
 Airborne ZOI Disturbance threshold = 6 meters, piniped, and 20 meters harbor seal



Steller Sea Lion



Steller Sea Lions

NMML



Steller Sea Lion (large male)



California Sea Lion (male)



California Sea Lion (male)



Harbor Seals

<u>Characteristic</u>	<u>Steller Sea Lion</u>	<u>California Sea Lion</u>	<u>Harbor Seal</u>
Forehead	Tends to be flatter Rounder in larger males	Tends to be rounded	Rounded
Color	Light brown (dark brown when wet)	Dark brown (black when wet)	Gray (often w/ spots)
Presence on S. Jetty	Adults and juveniles	Adult males only	Adults and juveniles
Abundance on S. Jetty	Very Common	Common	Very rare
Length	To 12 feet	To 8 feet	To 5 feet
Voice	Growl, roar	Varied, barking common	Generally silent

Date: _____

PAGE _____ of _____

Qualified (per IHA/LOA & Requirements in Specifications) Marine Mammal Observer(s): _____

PROJECT: _____

Equipment List, and Date(s) of Calibration/Maintenance, As Applicable: _____

Name and Type of Vessel Involved	Vessel Speed During and Leading Up to Incident	Description of Incident	Status of All Sound Sources in 24-hrs Preceding Incident	Water Depth	Description of All Marine Mammals Observed in 24-hr Preceding Incident	Fate of Animal(s)	Photo or Video Footage ID	Event Code/ Activity Type	Time/Duration of Event: (Start/End Time if Continuous)	Construction Type During Sighting	Other Human Activity in Area	Event /Work Activity Location	Species Type	Sighting Number (1 or 1.1-X if Re-sight)	Time/Duration Watching Sighting: (Start/End Time if Continuous)	# of Animals/Group Size (min/max/best); # of calves	Gender (if Observable)	Age Class (if Observable)	Sighting Cue/ Behavior Code	Location of Species & Bearing/Direction of Travel Relative to Construction:	Location of Observer	Distance/ Direction to Animal (From Observer)	Distance/Direction to Pile (Between Animal and Pile)	Mitigation Used During Sighting	Mitigation Type	Visibility	% Glare	Weather Condition	Sea State & Wave Height	Tidal State	Swell Direction	Behavior Change/Response to Activity/Comments	
								[EON; EOFF; PRE; POST; SV; WIC; S; MDK; MSD]	--:-- --:--	[SSV; V; VR; NONE; DP; PLO; OTH]		Jetty Station/ GPS Location	[CASL; HSEA; STSL; HPDR; DPDR; CRCA; HUMP; GRAY; UNLW; OTHR; UNKW]	1.1-X	--:-- --:--	1	M F	Adult Juvenile Calves	See Behavior/ Sighting Cue Code Key		Jetty Station, Barge, Shore/ GPS, STA Location	(m) or (km)	(m) or (km)	Y N	DE SD	[B; P; M; G; E]		[S; PC; L; R; F; OC]	[L; M; H]		EB/FL S/L/H	[N; S; E; W]	
									--:-- --:--						--:-- --:--		M F	Adult Juvenile Calves			(m) or (km)	(m) or (km)	Y N	DE SD									
									--:-- --:--						--:-- --:--		M F	Adult Juvenile Calves			(m) or (km)	(m) or (km)	Y N	DE SD									
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									--:-- --:--						--:-- --:--		M F	Adult Juvenile Calves			(m) or (km)	(m) or (km)	Y N	DE SD									

(i) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA, such as an injury (Level A harassment), serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), immediately cease the specified activities and immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. Include the following information indicated in this form (i) Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with the Corps to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The Corps would not be able to resume their activities until notified by NMFS via letter, email, or telephone.

(ii) In the event that there is a discovery of an injured or dead marine mammal, and the lead MMO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS West Coast Stranding Hotline and/or by email to the West Coast Regional Stranding Coordinators. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with the Corps to determine whether modifications in the activities are appropriate.

(iii) In the event that the Corps discovers an injured or dead marine mammal, and the lead MMO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS West Coast Stranding Hotline and/or by email to the West Coast Regional Stranding Coordinators, within 24 hours of the discovery. Provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network.

Sighting #=chronological number of sightings; if resight of same animal, then 1.1, 1.2, etc.

See Key for Codes and Definitions

See IHA/LOA for specific permit conditions

Contact Corps and Appropriate Officials Immediately if Take Occurs of Marine Mammal Species Not Included in the IHA/LOA Permit, if Take Exceeds Permit Numbers, if Level A Take Occurs, or if Other Species Have Been Taken

If Dead or Dying Marine Mammal Species is Observed, Record Species Type, Date, Time, and Location of Observation; Photograph Species, and Immediately Notify Corps and NMFS