



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

Department Of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

INCIDENTAL HARASSMENT AUTHORIZATION

The Washington State Department of Transportation (WSDOT), 150 Israel Road SW, P.O. Box 47417, Olympia, WA 98504-7417, is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1371(a)(5)(D)), to harass marine mammals incidental to construction and demolishing activities associated with the Manette Bridge replacement project in Bremerton, Washington.

1. This Incidental Harassment Authorization (IHA) is valid from June 29, 2010 through June 28, 2011.
2. This IHA is valid only for construction and demolishing activities associated with the Manette Bridge replacement project in Bremerton, Washington.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of the WSDOT, its designees, and work crew personnel operating under the authority of this IHA.
 - (b) The species authorized for taking are the California sea lion (*Zalophus californianus*), Pacific Harbor seal (*Phoca vitulina*), and the eastern North Pacific gray whale (*Eschrichtius robustus*).
 - (c) The taking, by Level B harassment only, is limited to the species listed in condition 3(b).
 - (d) The taking by Level A harassment, injury or death of any of the species listed in item 3(b) of the Authorization or the taking by harassment, injury or death of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (e) In the unanticipated event that any cases of pinniped injury or mortality are judged to result from these activities, the holder of this Authorization must immediately cease operations and report the incident, within 48 hours, to the Assistant Regional Administrator (ARA) for Protected Resources, NMFS Northwest Region, phone (206) 526-6150 and to the Chief, Permits, Conservation, and Education Division, Office of Protected Resources, NMFS, phone (301) 713-2289.
 - (i) The WSDOT shall postpone the construction and demolishing activities until NMFS is able to review the incident and determine whether steps can be taken to avoid further injury or mortality or until such taking can be



authorized under regulations promulgated under section 101(a)(5)(A) of the Marine Mammal Protection Act.

4. Mitigation Measures

In order to ensure the least practicable impact on the species and levels of takes listed in 3(b) and (c), the holder of this Authorization is required to comply with the following mitigation measures:

(a) Equipment and Noise Standards

- (i) To mitigate noise levels and, therefore, impacts to marine mammals, all the construction equipment shall comply with applicable equipment noise standards of the U.S. Environmental Protection Agency, and all construction equipment shall have noise control devices no less effective than those provided on the original equipment.
- (ii) All steel piles shall be installed using a vibratory hammer until an impact hammer is needed for bearing or if a pile encounters consolidated material. If vibratory installation is not possible due to the substrate, an impact pile driver would be used.

(b) Time and Visibility Restrictions

- (i) Pile driving activities shall only be conducted during daylight hours.
- (ii) If the safety zone (see below) is obscured by fog or poor lighting conditions, impact pile driving will not be initiated until the entire safety zone is visible.

(c) Zones of Safety and Influence

- (i) For impact pile driving, the safety zones are defined as the areas where received SPLs from noise source exceed 180 dB re 1 μ Pa (rms) for cetaceans or 190 dB re 1 μ Pa (rms) for pinnipeds.
- (ii) Before impact pile driving initiates, WSDOT and its contractor shall establish safety zones for impact pile driving with radii of 251 m and 54 for modeled received levels of 180 and 190 dB re 1 μ Pa (rms), respectively.
- (iii) Once impact pile driving begins, WSDOT and its contractor shall adjust the sizes of the impact pile driving safety zones based on empirical measurements of the 180 and 190 dB re 1 μ Pa (rms) received levels.
- (iv) WSDOT and its contractor shall establish zones of influence (ZOIs) at received levels of 160 and 120 dB re 1 μ Pa (rms) for impact and vibratory pile driving, respectively. WSDOT and its contractor shall establish ZOIs based on empirical measurements of received levels reaching 160 and 120 dB re 1 μ Pa (rms).

- (v) All safety and influence zones shall be monitored for marine mammals prior to and during construction activities. Please refer to the Monitoring and Reporting Measures section for a detailed description of monitoring measures.
- (d) Shutdown Measures
 - (i) No impact pile driving shall be initiated when marine mammals are detected within safety zones where noise received levels are at or exceed 180 dB re 1 μ Pa (rms) for cetaceans or 190 dB re 1 μ Pa (rms) for pinnipeds.
 - (ii) During impact driving, when a marine mammal is detected within the respective safety zones or is about to enter the safety zones, impact pile driving shall be halted and shall not be resumed until the animal is seen to leave the safety zone on its own, or 30 minutes has elapsed until the animal is last seen.
- (e) Protective Measures for Species Listed under the Endangered Species Act (ESA)
 - (i) If an ESA-listed marine mammal species (Steller sea lion or Southern Resident killer whale) is detected in the vicinity of the project area, pile driving and dredging operations shall be halted and stationing construction vessels will turn off dynamic positioning systems.
 - (ii) Pile driving and dredging activities shall be suspended when ESA-listed marine mammals (Steller sea lion and killer whale) are detected within the zone of behavioral harassment (160 dB re 1 μ Pa for impulse sources and 120 dB re 1 μ Pa for non-impulse sources) and all vessels' dynamic positioning systems will be turned off.
- (f) "Soft Start" Impact Pile Driving or Ramp-up
 - (i) "Soft-start" technique shall be used at the beginning of each day's in-water pile driving activities or if pile driving has ceased for more than one hour to allow any marine mammal that may be in the immediate area to leave before pile driving reaches full energy.
 - (ii) For vibratory pile driving, the soft start requires contractors to initiate noise from vibratory hammers for 15 seconds at reduced energy followed by a one minute waiting period. The procedure shall be repeated two additional times.
 - (iii) If an impact hammer is used on a pile greater than 10 inches in diameter, contractors shall be required to provide an initial set of three strikes from the impact hammer at 40 percent energy, followed by a one minute waiting period, then two subsequent 3-strike sets.

(g) Sound Attenuation Measures

(i) An air bubble curtain(s) shall be employed during impact installation of all steel piles.

(ii) WSDOT shall provide bubble curtain performance criteria to the contractor, which include:

1. Piling shall be completely engulfed in bubbles over the full depth of the water column at all times when an impact pile driver is in use.
2. The lowest bubble ring shall be in contact with the mud line for the full circumference of the ring. The weights attached to the bottom ring shall ensure complete mud line contact. No parts of the ring or other objects shall prevent the full mud line contact.
3. Bubblers shall be constructed of minimum 2-inch (5.1-cm) inside diameter aluminum pipe with 1/16-inch (0.16-cm) diameter bubble release holes in four rows with 3/4-inch (1.9-cm) spacing in the radial and axial directions. Bubblers shall be durable enough to withstand repeated deployment during pile driving and shall be constructed to facilitate underwater setup, knockdown, and reuse on the next pile.
4. One or more compressors shall be provided to supply air in sufficient volume and pressure to self-purge water from the bubblers and maintain the required bubble flux for the duration of pile driving.
5. Compressors shall be of a type that prevents the introduction of oil or fine oil mist by the compressed air into the water. If there is presence of oil film or sheen on the water surface in the vicinity of the operating bubbler, the contractor shall immediately stop work until the source of oil film or sheen is identified and corrected.
6. The system shall provide a bubble flux of 3.0 cubic meters (m³) per minute per linear meter of pipe in each layer (32.91 cubic feet, or 0.93 m³, per minute per linear foot of pipe in each layer).
7. The bubble ring manifold shall incorporate a shut off valve, flow meter, and a throttling globe valve with a pressure gauge for each bubble ring supply.
8. Prior to first use of the bubble curtain during pile driving, the fully-assembled system shall be test-operated to demonstrate proper function and to train personnel in the proper balancing of the air flow to the bubblers. The test shall also confirm the calculated pressures and flow rates at each manifold ring. The Contractor

shall submit an inspection/performance report to WSDOT within 72 hours following the performance test.

5. Monitoring

(a) Marine Mammal Observers

(i) A minimum of two qualified and NMFS-approved marine mammal observers (MMOs) would be present on site at all times during steel pile driving. In order to be considered qualified, WSDOT lists the following requirements for prospective MMOs:

1. Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance.
2. Advanced education in biological science, wildlife management, mammalogy or related fields (Bachelors 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, including the identification of behaviors.
5. Sufficient training, orientation or experience with the construction operation to provide for personal safety during observations.
6. Writing skills sufficient to prepare a report of observations.
7. Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

(b) Marine Mammal Monitoring

(i) Safety Zone Monitoring to Support Mitigation Measures

1. At least two MMOs shall be on site to monitor the safety and influence zones by using a range finder or hand held global positioning system (GPS) device.
2. The zone shall be monitored by driving a boat along and within the radius while visually scanning the area, and/or monitored from shore if there is a vantage point that will allow full observation of the zone.

3. If the safety zone is obscured by fog or poor lighting conditions, pile driving shall not be initiated until the entire safety zone is visible.
 4. The safety zone shall be monitored for the presence of marine mammals for 30 minutes prior to impact pile driving, during pile driving, and 20 minutes after pile driving activities.
 5. No impact pile driving shall be started if a marine mammal is detected within the respective safety zones. Pile driving may begin if a marine mammal is seen leaving the safety zone, or 30 minutes has elapsed since the marine mammal is last seen inside the safety zone.
 6. If marine mammals are observed, their location in relation to the safety and influence zones, and their reaction (if any) to pile driving activities shall be documented.
- (ii) Marine mammal sighting data shall be collected during construction and demolition activities associated with the Manette Bridge replacement project. These data shall include, but are not limited to:
1. Construction activities such as impact and vibratory pile driving, use of dynamic positioning system by construction and supporting vessels, and sediment dredging.
 2. Marine mammal sightings, behavior, overall numbers of individuals observed, frequency of observation, and the time corresponding to the daily tidal cycle.

6. Reporting

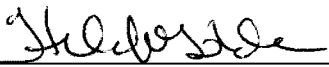
- (a) Weekly Reports: WSDOT shall submit weekly marine mammal monitoring reports from the time when in-water construction activities are commenced to NMFS Office of Protected Resources (OPR). The weekly reports shall include a summary of the previous week's monitoring activities and an estimate of the number of marine mammals that may have been disturbed as a result of in-water construction activities. This report must contain the following information:
- (i) A summary of the previous week's construction and demolishing activities. Including the types and number of machinery and vessels being used.
 - (ii) Empirically measured safety zones and zones of influence if pile driving is conducted.
 - (iii) Dates, times, tidal stage, and weather during the marine mammal monitoring.

- (iv) Species, number, location, distance from specific noise sources, and behavior of any marine mammals, observed throughout all monitoring activities.
- (v) An estimate of the number (by species) of marine mammals that are known to have been exposed to visual and acoustic stimuli associated with the construction and demolishing activities.
- (vi) A description of the implementation and effectiveness of the mitigation measures, if taken.

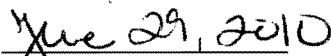
(b) Final Report:

- (i) WSDOT shall provide NMFS OPR with a draft final report within 90 days after the expiration of the IHA. This report should detail the in-water construction and demolishing activities being conducted, empirically measured safety zones for pile driving, monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed due to the construction activities during the entire IHA period.
- (ii) If no comments are received from NMFS OPR within 30 days, the draft final report will be considered the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.

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



for James H. Lecky,
Director, Office of Protected Resources,
National Marine Fisheries Service.



Date