



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

MAY 13 2015

Kojo Fordjour  
Environmental and Permitting Manager  
WSDOT Ferries Division  
2901 3<sup>rd</sup> Avenue, Ste. 500  
Seattle, WA 98121-3014

Dear Mr. Fordjour,

Enclosed is an Incidental Harassment Authorization (IHA) issued pursuant to section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1361 et seq.), to take small numbers of marine mammals, by Level B harassment, incidental to the Vashon Seismic Retrofit Project in Washington State. You are required to comply with the conditions contained in the IHA, including all mitigation, monitoring, and reporting requirements. In addition, you must cooperate with any federal, state, or local agency monitoring the impacts of your activities.

If you have any questions concerning the IHA or its requirements, please contact Jolie Harrison, Office of Protected Resources (NMFS), at 301-427-8401.

Sincerely,

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

Enclosure





## Incidental Harassment Authorization

Washington State Department of Transportation (WSDOT) Ferries Division (WSF), 2901 3<sup>rd</sup> Avenue, Suite 500, Seattle, Washington 98121-3014, 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 216.107 to take, by Level B harassment only, small numbers of marine mammals incidental to conducting in-water construction work for the Vashon Seismic Retrofit Project, contingent upon the following conditions:

1. This Authorization is valid from August 1, 2015, through July 31, 2016.
2. This Authorization is valid only for activities associated with in-water construction work for the Vashon Seismic Retrofit Project in Vashon Island, Washington.
3. (a) The species authorized for incidental harassment takings, Level B harassment only, are: Pacific harbor seal (*Phoca vitulina richardsi*), California sea lion (*Zalophus californianus*), Eastern Distinct Population Segment of Steller sea lion (*Eumetopias jubatus*), harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*Phocoenoides dalli*), transient and Southern Resident killer whale (*Orcinus orca*), gray whale (*Eschrichtius robustus*), minke whale (*Balaenoptera acutorostrata*), and humpback whale (*Megaptera novaeangliae*).  
  
(b) The authorization for taking by harassment is limited to the following acoustic sources and from the following activities:
  - (i) Impact and vibratory pile driving;
  - (ii) Pile removal; and
  - (iii) Work associated with above piling activities.  
(c) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the West Coast Regional Administrator (206-526-4489), National Marine Fisheries Service (NMFS) and the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at (301) 427-8401.
4. The holder of this Authorization must notify the Chief of the Permits and Conservation Division, Office of Protected Resources, at least 48 hours prior to the start of activities identified in 3(b) (unless constrained by the date of issuance of this Authorization in which case notification shall be made as soon as possible).

## 5. Prohibitions



(a) The taking, by incidental harassment only, is limited to the species listed under condition 3(a) above and by the numbers listed in Table 1 (attached). The taking by Level A harassment or death of the species identified in Table 1 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 Authorization.

(b) The taking of any marine mammal is prohibited whenever the required protected species observers (PSOs), required by condition 7(a), are not present in conformance with condition 7(a) of this Authorization.

## 6. Mitigation

(a) Use of Noise Attenuation Devices: A pile driving energy attenuator (such as an air bubble curtain system) shall be used for all impact pile driving.

(b) Time Restriction: In-water construction work shall occur only during daylight hours, when visual monitoring of marine mammals can be conducted.

(c) Establishment of Level B Harassment Zones of Influence

(i) Before the commencement of in-water pile driving activities, WSDOT shall establish Level B behavioral harassment zones of influence (ZOIs) where received underwater sound pressure levels (SPLs) are higher than 160 dB (rms) and 120 dB (rms) re 1  $\mu$ Pa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile driving and mechanic dismantling), respectively. The modeled isopleths for ZOIs are listed in Table 2 (attached).

(ii) Once the underwater acoustic measurements are conducted during initial test pile driving, WSDOT shall adjust the sizes of the ZOIs, and monitor these zones as described under the Proposed Monitoring section below.

(d) Monitoring of marine mammals shall take place starting 30 minutes before pile driving begins until 30 minutes after pile driving ends.

(e) Soft Start

(i) When there has been downtime of 30 minutes or more without pile driving, the contractor will initiate the driving with ramp-up procedures described below.

(ii) For vibratory hammers, the contractor shall initiate the driving for 15 seconds at reduced energy, followed by a 1 minute waiting period. This procedure shall be repeated two additional times before continuous driving is started. This procedure shall also apply to vibratory pile extraction.

(iii) For impact driving, an initial set of three strikes would be made by the hammer at 40-percent energy, followed by a 1-minute waiting period, then two subsequent three-strike sets at 40-percent energy, with 1-minute waiting periods, before initiating continuous driving.

(f) Power Down and Shutdown Measures

(i) WSDOT shall implement shutdown measures if southern resident killer whales (SRKW) are sighted within the vicinity of the project area and are approaching the Level B harassment zone (zone of influence, or ZOI) during in-water construction activities.

(ii) If a killer whale approaches the ZOI during pile driving or removal, and it is unknown whether it is a SRKW or a transient killer whale, it shall be assumed to be a SRKW and WSDOT shall implement the shutdown measure identified in 6(f)(i).

(iii) If a SRKW enters the ZOI undetected, in-water pile driving or pile removal shall be suspended until the SRKW exits the ZOI to avoid further level B harassment.

(iv) WSDOT shall implement shutdown measures if the number of any allotted marine mammal takes reaches the limit under the IHA, if such marine mammals are sighted within the vicinity of the project area and are approaching the Level B harassment zone during pile removal activities.

(g) Restart after Shutdown

After a shutdown triggered by 6(f), WSDOT shall not resume activities until the killer whale or other marine mammal (1) is observed to have left the Level B harassment zone or (2) has not been seen or otherwise detected within the Level B harassment zone 30 minutes.

7. Monitoring:

(a) Protected Species Observers: WSDOT shall employ NMFS-approved PSOs to conduct marine mammal monitoring for its construction project.

(i) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance. Use of binoculars will be required to correctly identify the target.

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

- (iii) Sufficient training, orientation or experience with the construction operation to provide for personal safety during observations.
- (iv) 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.
- (v) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
- (vi) Writing skills sufficient to prepare a report of observations that would include such information as the number and type of marine mammals observed; the behavior of marine mammals in the project area during construction, dates and times when observations were conducted; dates and times when in-water construction activities were conducted; and dates and times when marine mammals were present at or within the defined ZOI.

(b) Monitoring Protocols: PSOs shall be present on site at all times during pile removal and driving.

- (i) A range finder or hand-held global positioning system device will be used to ensure that the 120 dB<sub>rms</sub> re 1 µPa Level B behavioral harassment ZOI is monitored.
- (ii) A 30-minute pre-construction marine mammal monitoring will be required before the first pile driving or pile removal of the day. A 30-minute post-construction marine mammal monitoring will be required after the last pile driving or pile removal of the day. If the constructors take a break between subsequent pile driving or pile removal for more than 30 minutes, then additional pre-construction marine mammal monitoring will be required before the next start-up of pile driving or pile removal.
- (iii) Marine mammal visual monitoring shall be conducted by land-based biologists and boat-based biologist(s) travel through the monitoring area for ZOIs that correspond to specific pile driving/removal methods and pile sizes listed in Table 2 (attached). Specifically:
  - (A) The required monitoring distances shall be determined by using a range finder or hand-held global positioning system device.
  - (B) ZOI-1 will be monitored by one land-based biologist at the terminal work site, and one boat with a pilot and a biologist that will travel through the monitoring area.

- (C) ZOI-2 will be monitored by one land-based biologist at the terminal work site, and one boat with a pilot and a biologist that will travel through the monitoring area.
  - (D) ZOI-3 will be monitored by five land-based biologists, and one boat with a pilot and a biologist that will travel through the monitoring area.
  - (E) ZOI-4 will be monitored by one land-based biologist at the terminal work site, and one boat with a pilot and a biologist that will travel through the monitoring area.
  - (F) ZOI-5 will be monitored by one land-based biologist at the terminal work site, and one boat with a pilot and a biologist that will travel through the monitoring area.
  - (G) ZOI-6 will be monitored by two land-based biologists from the terminal work site.
- (iv) If marine mammals are observed, the following information will be documented:
- (A) Species of observed marine mammals;
  - (B) Number of observed marine mammal individuals;
  - (C) Behavioral of observed marine mammals;
  - (D) Location within the ZOI; and
  - (E) Animals' reaction (if any) to pile-driving activities
- (v) WSDOT shall contact the Orca Network and/or Center for Whale Research to find out the location of the nearest marine mammal sightings.
- (vi) WSDOT shall also utilize marine mammal occurrence information collected by the Orca Network using hydrophone systems to maximize marine mammal detection in the project vicinity.

## 8. Reporting:

- (a) WSDOT shall provide NMFS with a draft monitoring report within 90 days of the conclusion of the construction work, or within 90 days after the expiration of this IHA, whichever comes first. 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.
- (b) If comments are received from the NMFS West Coast Regional Administrator or NMFS Office of Protected Resources on the draft report, a final report shall be submitted

to NMFS within 30 days thereafter. If no comments are received from NMFS, the draft report will be considered to be the final report.

(c) In the unanticipated event that the construction activities clearly cause the take of a marine mammal in a manner prohibited by this Authorization (if issued), such as an injury, serious injury, or mortality, WSDOT shall immediately cease all operations and immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the following information:

- (i) time, date, and location (latitude/longitude) of the incident;
- (ii) description of the incident;
- (iii) status of all sound source use in the 24 hours preceding the incident;
- (iv) environmental conditions (e.g., wind speed and direction, sea state, cloud cover, visibility, and water depth);
- (v) description of marine mammal observations in the 24 hours preceding the incident;
- (vi) species identification or description of the animal(s) involved;
- (vii) the fate of the animal(s); and
- (viii) photographs or video footage of the animal (if equipment is available).

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

(d) In the event that WSDOT discovers an injured or dead marine mammal, and the lead PSO 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), WSDOT will immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the same information identified above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with WSDOT to determine whether modifications in the activities are appropriate.

(e) In the event that WSDOT discovers an injured or dead marine mammal, and the lead PSO 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), WSDOT shall report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators, within 24 hours of the discovery. WSDOT shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. WSDOT can continue its operations under such a case.

9. 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, or if there is an unmitigable adverse impact on the availability of such species or stocks for subsistence uses.

10. A copy of this Authorization and the Incidental Take Statement issued under the Endangered Species Act must be in the possession of each contractor who performs the construction work for the Vashon Seismic Retrofit Project in Vashon Island, Washington.

11. WSDOT is required to comply with the Terms and Conditions of the Incidental Take Statement corresponding to NMFS' Biological Opinion.

*Donna S. Wieting*

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

**MAY 13 2015**

Date

**Table 1. Species/stocks and numbers of marine mammals allowed under this IHA.**

Species	Estimated marine mammal takes
Pacific harbor seal	1,919
California sea lion	1,919
Steller sea lion	644
Harbor porpoise	438
Dall's porpoise	146
Killer whale, transient	50
Killer whale, Southern Resident	4
Gray whale	71
Humpback whale	36
Minke whale	36

**Table 2. Modeled maximum Level A and Level B harassment zones for various pile driving activities**

Pile Driving Methods	Distance to 190 dB* (m)	Distance to 180 dB (m)	Distance to 160 dB (m)	Distance to 121 dB (m)	ZOI code	ZOI size (km <sup>2</sup> )
Vibratory pile driving / removal (24-in steel pile)	NA	NA	NA	5,500	ZOI-1	44 km <sup>2</sup>
Vibratory pile driving / removal (13-in timber pile)	NA	NA	NA	2,000	ZOI-2	5.6 km <sup>2</sup>
Vibratory pile removal (30-in steel pile)	NA	NA	NA	21,500	ZOI-3	151 km <sup>2</sup>
Test impact pile driving (assume 8 dB reduction w/ attenuation devices)	4.0	19	402	NA	ZOI-4	0.4 km <sup>2</sup>
Impact driving (24-in steel pile)	3.0	12	251	NA	ZOI-5	0.07 km <sup>2</sup>
Impact pile driving (13-in timber)	NA	NA	46	NA	ZOI-6	1,769 m <sup>2</sup>

\* Sound pressure levels are dB re 1  $\mu$ Pa rms.