

Mukilteo Multimodal Project Phase 2 Marine Mammal Monitoring Plan

May 2017

In accordance with the May 2017, Washington State Ferries Mukilteo Multimodal Project Phase 2 Incidental Harassment Authorization Request, marine mammal monitoring will be implemented during this project.

Qualified Protected Species Observers (PSOs) will be present on site at all times during pile removal and driving. Marine mammal behavior, overall numbers of individuals observed, frequency of observation, and the time corresponding to the daily tidal cycle will be recorded.

Proposed Monitoring

WSF proposes the following Marine Mammal Monitoring Plan:

- PSOs shall be present on site at all times during pile removal and driving.
- 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 30-minute pre-construction marine mammal monitoring will be required before the next start-up of pile driving or pile removal.
- Marine mammal visual monitoring will be conducted for different ZOIs based on different sizes of piles being driven or removed, as shown in maps in WSDOT's Marine Mammal Monitoring Plan.
- For Level A zones less than 160 m and Level B zones less than 1,000 m (i.e., vibratory 12-in H pile driving, 10 piles/day; impact proofing of 24-in steel piles, 3 piles/day), two land-based PSOs will monitor the exclusion zones and Level B harassment zone (Fig. 1 – *Note: PSO locations are approximate, and will be adjusted depending on the pile activity*).
- For Level A zones between 160 and 500 m, and Level B zones between 1,000 and 10,000 m (i.e., vibratory pile driving and removal of 24-in steel piles, 3 piles/day; vibratory driving and removal of steel sheet; and impact proofing of 30-in steel piles, 5 piles/day), 5 land-based PSOs and 1 vessel-based PSO on a ferry will monitor the Level A and Level B harassment zones (Fig. 2 – *Note: PSO locations are approximate, and will be adjusted depending on the pile activity*).
- For the rest of the pile driving and pile removal scenario, 5 land-based PSOs and 2 vessel-based PSOs on ferries will monitor the Level A and Level B harassment zones (Fig. 3 – *Note: PSO locations are approximate, and will be adjusted depending on the pile activity*).

- If marine mammals are observed, the following information will be documented:
 - Species of observed marine mammals;
 - Number of observed marine mammal individuals;
 - Behavior of observed marine mammals; and
 - Location within the ZOI.

Monitoring to Prevent Killer Whale Take

WSF proposes the following measures to prevent SRKW Level B acoustical harassment take:

- If SRKW (as identified by Orca Network, NMFS or another qualified source) approach the ZOIs during pile removal or driving, work will be paused until the SRKW exit the ZOIs to avoid Level B harassment take.
- If killer whales approach the ZOIs during pile removal or driving, and it is unknown whether they are SRKW or transient, it shall be assumed they are SRKW in order to prevent SRKW Level B harassment take.
- If SRKW enter the ZOIs undetected, up to 4 ‘unexpected’ Level B harassment takes may be used. Work will be paused until the SRKW exit the ZOI to avoid further Level B harassment take. The intent of monitoring is to prevent any take of SRKW. The 4 unexpected Level B harassment takes will be used only if necessary.

WSF proposes the following Marine Mammal Monitoring Plan for Transient killer whale:

- If positively identified Transients (as identified by Orca Network, NMFS or another qualified source) approach the ZOIs during pile removal or driving, and it is known that SR killer whales are not in the vicinity (from the same qualified sources) work will continue.
- If the permitted number of Transient killer whale takes have been used, and killer whale approach the ZOI during vibratory pile removal, work shall be paused to avoid take.

Minimum Qualifications for Protected Species Observers

WSDOT shall employ NMFS-approved PSOs to conduct marine mammal monitoring for its construction project. NMFS-approved PSOs will meet the following qualifications:

- Independent observers (*i.e.*, not construction personnel) are required.
- At least one observer must have prior experience working as an observer.
- Other observers may substitute education (undergraduate degree in biological science or related field) or training for experience.
- Where a team of three or more observers are required, one observer should be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer.
- NMFS will require submission and approval of observer CVs.

- Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance. Use of binoculars may be necessary to identify the target correctly.
- Experience or training in the field identification of marine mammals (cetaceans and pinnipeds).
- Sufficient training, orientation or experience with the construction operation to provide for personal safety during observations.
- 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.
- Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
- 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; dates and times when marine mammals were present at or within the Level B acoustical harassment ZOI; dates and times when pile removal was paused due to the presence of marine mammals.



Figure 1 – Monitoring Locations



Figure 2 – Monitoring Locations



Figure 3 – Monitoring Locations