

**Anacortes Ferry Terminal  
Tie-up Slip Project  
Marine Mammal Monitoring Plan**

March 20, 2014

In accordance with the April 2014, Washington State Ferries Anacortes Ferry Terminal Tie-up Slip Incidental Harassment Authorization Request, marine mammal monitoring will be implemented during this project.

Qualified Protected Species Observers (PSO) 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.

This project includes vibratory removal of and driving of timber and steel piles. For vibratory pile removal and driving, no injury will occur (SL sounds are less than 180 dB<sub>RMS</sub>), and so will result in a Level B acoustical harassment ZOIs only.

For vibratory removal and driving, distances to the ZOIs are:

- 152 dB<sub>RMS</sub> at 16 meters (12-inch timber pile removal) = 1.6 km/1.0 mi
- 162 dB<sub>RMS</sub> at 10 meters (24-inch steel pile removal/driving) = 4.0 km/2.5 mi
- 174 dB<sub>RMS</sub> at 10 meters (30-inch steel pile driving) = 26 km/16 mi
- 177 dB<sub>RMS</sub> at 10 meters (36-inch steel pile removal/driving) = 40 km/25 mi

For 30- and 36-inch piles, land is reached in approximately 11 miles maximum (Figure 1). Measurements of in-water noise levels produced by vibratory removal and driving will be taken with the Underwater Sound Level Meter (see attached USLM plan) during the project. Project ZOIs may be adjusted based on these measurements.

**Monitoring to Estimate Take Levels**

WSF proposes the following Marine Mammal Monitoring Plan in order to estimate project Level B acoustical harassment take levels in the ZOIs:

- To verify the required monitoring distance, the vibratory Level B acoustical harassment ZOIs will be determined by using a range finder or hand-held global positioning system device.
- The vibratory Level B acoustical harassment ZOIs will be monitored for the presence of marine mammals 30 minutes before, during, and 30 minutes after any pile driving activity.
- Monitoring will be continuous unless the contractor takes a significant break; then the 30 minutes before, during, and 30 minutes monitoring sequence will begin again.
- If marine mammals are observed, their location within the ZOIs, and their reaction (if any) to pile-driving activities will be documented.

- During vibratory timber removal, and 24” steel vibratory pile driving and removal, one land-based PSO will monitor the area from the terminal work site, and one boat with a driver and a PSO will travel through the monitoring area (Figure 2).
- During 30/36” vibratory pile driving, one land-based PSO will monitor the area from the terminal work site, and two boats with two drivers and two PSOs will travel through the monitoring area (Figure 3).

### **Monitoring to Comply with SRKW Take Levels**

To ensure that project take does not exceed 5 percent SRKW unintentional take in the ZOIs, the following monitoring steps will be implemented:

- The intent of monitoring is to prevent any take of SRKW.
- If SRKW approach the ZOIs during vibratory pile driving, work will be paused until the SRKW exit the ZOIs.
- If killer whale approach the ZOIs, and it is unknown whether they are SRKW or transient, it shall be assumed they are SRKW and work will be paused until the whales exit the ZOIs.
- If SRKW enter the ZOIs undetected, up to 4 ‘unintentional’ Level B harassment takes are requested. Work will be paused until the SRKW exit the ZOIs to avoid further Level B harassment take.
- The four unintentional Level B harassment takes will be used only if necessary.

### **Minimum Qualifications for PSOs**

- 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 correctly identify the target.
- Advanced education in biological science, wildlife management, mammalogy or related fields (Bachelor’s degree or higher) is preferred, but not required.
- 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 to prepare a report that includes number/type of marine mammals observed; marine mammal behavior in the area during construction, dates/times of observations; dates/times when in-water construction was conducted; dates/times when marine mammals were present near or within the ZOIs; dates/times when in-water construction was suspended to avoid SRKW take.

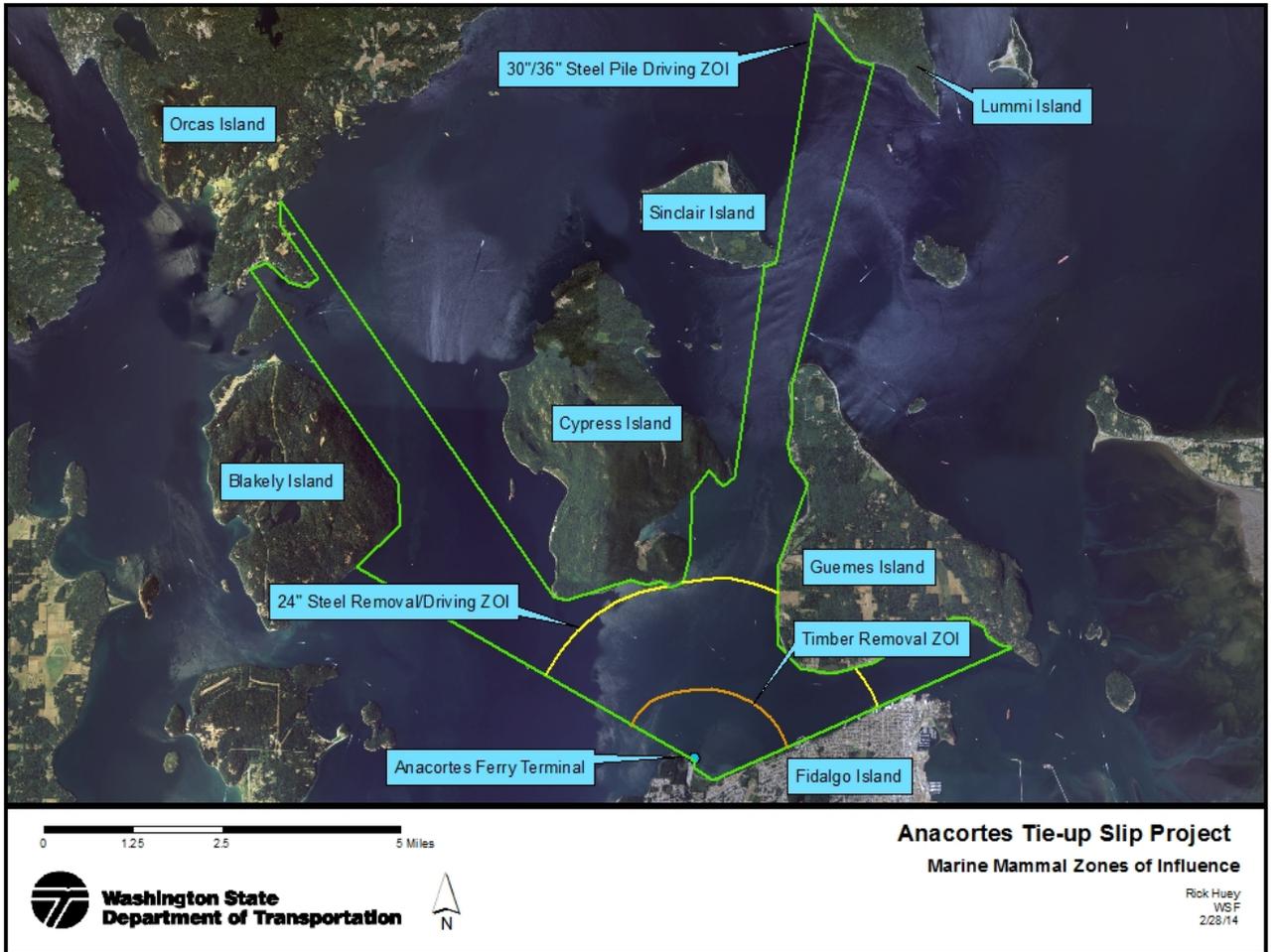


Figure 1 – Anacortes Tie-up Slip Project Vibratory ZOIs

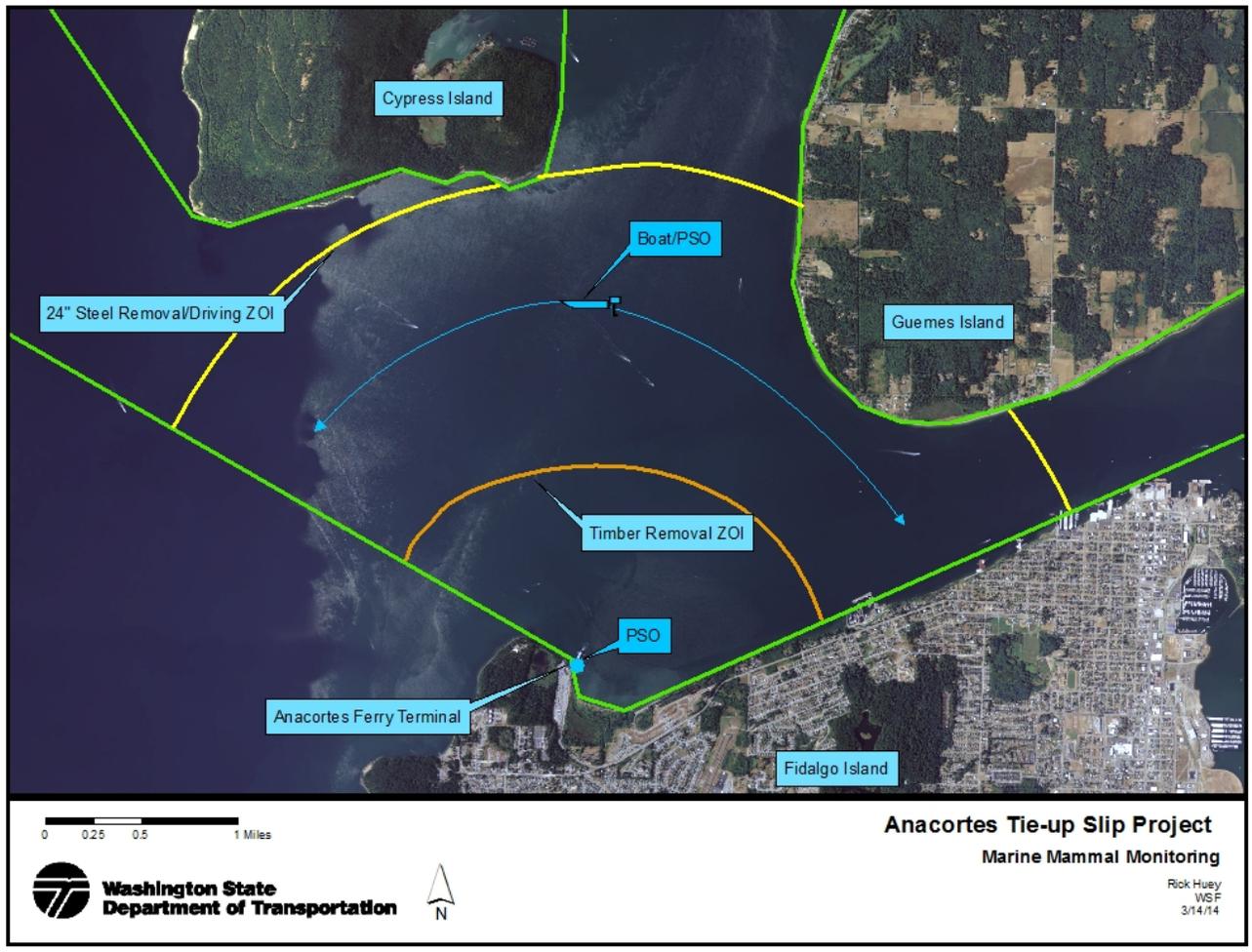


Figure 2 – Timber and 24” Steel Marine Mammal Monitoring

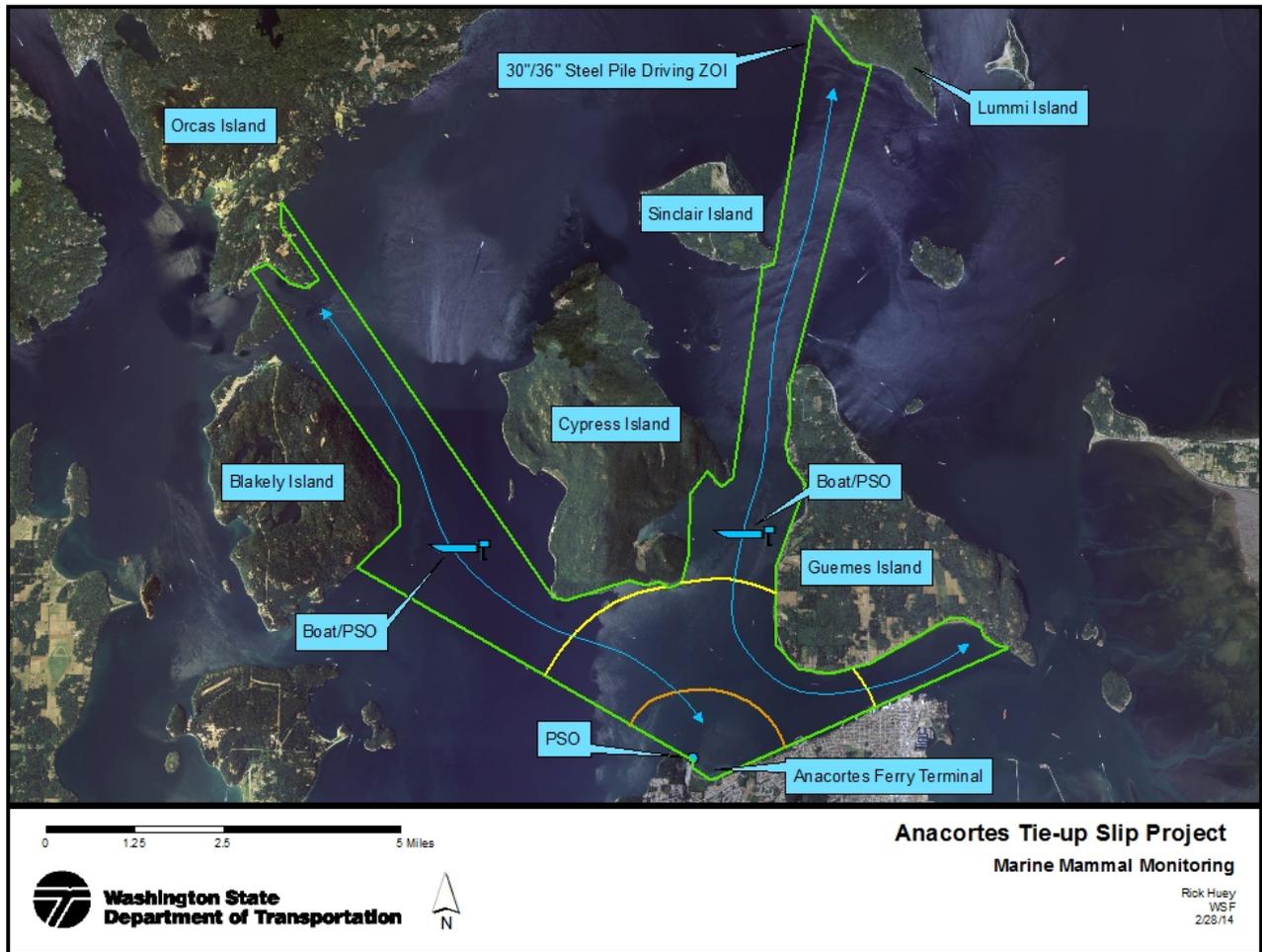


Figure 3 – 30/36” Marine Mammal Monitoring