

WSF Seattle Slip 3
Vehicle Transfer Span Replacement Project
2023-2024 Marine Mammal Monitoring Plan

May 13, 2024

In accordance with the 2023-2024 Incidental Harassment Authorization Application, 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.

Key project elements that require marine mammal monitoring include:

- 16-14” existing tower steel H-piles will be removed with a vibratory hammer,
- 12-24” steel temporary piles will be installed with a vibratory hammer, proofed with an impact hammer, then removed with a vibratory hammer when construction is complete,
- 2-78” steel drilled shafts will be installed with a vibratory hammer,
- 1- 30” steel wingwall pile will be installed with a vibratory hammer.

Distances to Thresholds are shown in Table 1. Monitoring details are shown in Table 2.

PSO locations and zones are shown in attached Figures 1-4. Note that there is no public access for PSO monitoring locations in the SE corner of the ZOIs. This is working Port of Seattle property, and there are no safe monitoring locations.

Monitoring

WSF proposes the following Marine Mammal Monitoring Plan:

- Monitoring distances will be determined by using a range finder, hand-held global positioning system device or landmarks with known distances from the monitoring positions.
- Zones will be monitored for the presence of marine mammals 30 minutes before, during, and 30 minutes after any pile activity.
- Monitoring will be continuous unless the contractor takes a significant break, in which case, monitoring will be required 30 minutes prior to restarting pile removal.
- If marine mammals are observed, their location within the zones, and their reaction (if any) to pile activities will be documented.
- Pile driving will stop if a marine mammal is approaching one of the Exclusion Zones noted below (species specific).
- Harassment will be determined based on marine mammal observations outside of Exclusion Zones (species specific).

WSF proposes the following measures to prevent Southern Resident Killer Whale (SRKW) take:

- If SRKW (as identified by Orca Network, Whale Report Alert System, NMFS or another qualified source) approach any of the zones during pile activity, work will be paused until the SRKW exit the zones to avoid Level A/B take.
- If killer whales approach the zones during pile activity, and it is unknown whether they are SRKW or Transient (TKW), it shall be assumed they are SRKW in order to prevent SRKW Level A/B take.

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

- If positively identified TKW (as identified by Orca Network, Whale Report Alert System, NMFS or another qualified source) approach the zones during pile activity, and it is known that SRKW are not in the vicinity (from the same qualified sources) work will continue. The exception is that if TKW approach an exclusion zone (zone size dependent on pile type), work will pause to prevent Level A take.
- If the permitted number of TKW takes have been used, and killer whale approach any of the zones during pile activity, work shall be paused to avoid take.

Minimum Qualifications for Protected Species Observers

Qualifications for PSOs include:

- 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.
- All PSOs shall be equipped with internet capable electronic devices for ArcGIS Survey123 online data collection and submittals.

Table 1 Distances to Exclusion Zones

Pile type, size & pile driving method	Exclusion Zone (m)					SRKW/ Humpback Exclusion (m)
	LF cetacean	MF cetacean	HF cetacean	Phocid	Otariid	
Vibratory drive, 78" steel pile, 1 piles/day, 60 min/pile	100	100	100	50	50	15,410*
Vibratory drive, 30" steel pile, 1 pile/day, 60 min/pile	100	100	100	50	50	15,410
Vibratory drive/removal 24" steel pile, 3 piles/day, 30 min/pile	100	100	100	50	50	15,410
Vibratory removal 14" steel pile, 4 piles/day, 30 min/pile	50	50	50	50	50	1,600
Impact drive (proof) 24" steel piles, 3 piles/day, 350 strikes/pile	100	100	100	50	50	750

*Land is reached at a maximum of 15,410 m (15.4 km/9.6 miles)

Table 2 Exclusion Zones and Monitoring

Figure	Zone	Distance	Species	Pile Activity	Number of Monitors
1/2	ZOE	15,410 m 100 m 50 m	SRKW/Humpback Exclusion All other species except pinnipeds Exclusion Pinnipeds Exclusion	78/30/24” Steel Vibratory	8 Terminal – 2 W. Seattle – 1 Magnolia – 1 Ferries – 2 Bainbridge Island - 2
3	ZOI	1,600 m 10 m	SRKW/Humpback Exclusion All species Exclusion	14” Steel Vibratory	3 Terminal – 2 Pier 69/70 – 1
4	ZOE	750 m 100 m 50 m	SRKW/Humpback Exclusion All other species except pinnipeds Exclusion Pinnipeds Exclusion	24” Steel Impact	3 Terminal – 2 Pier 62 – 1

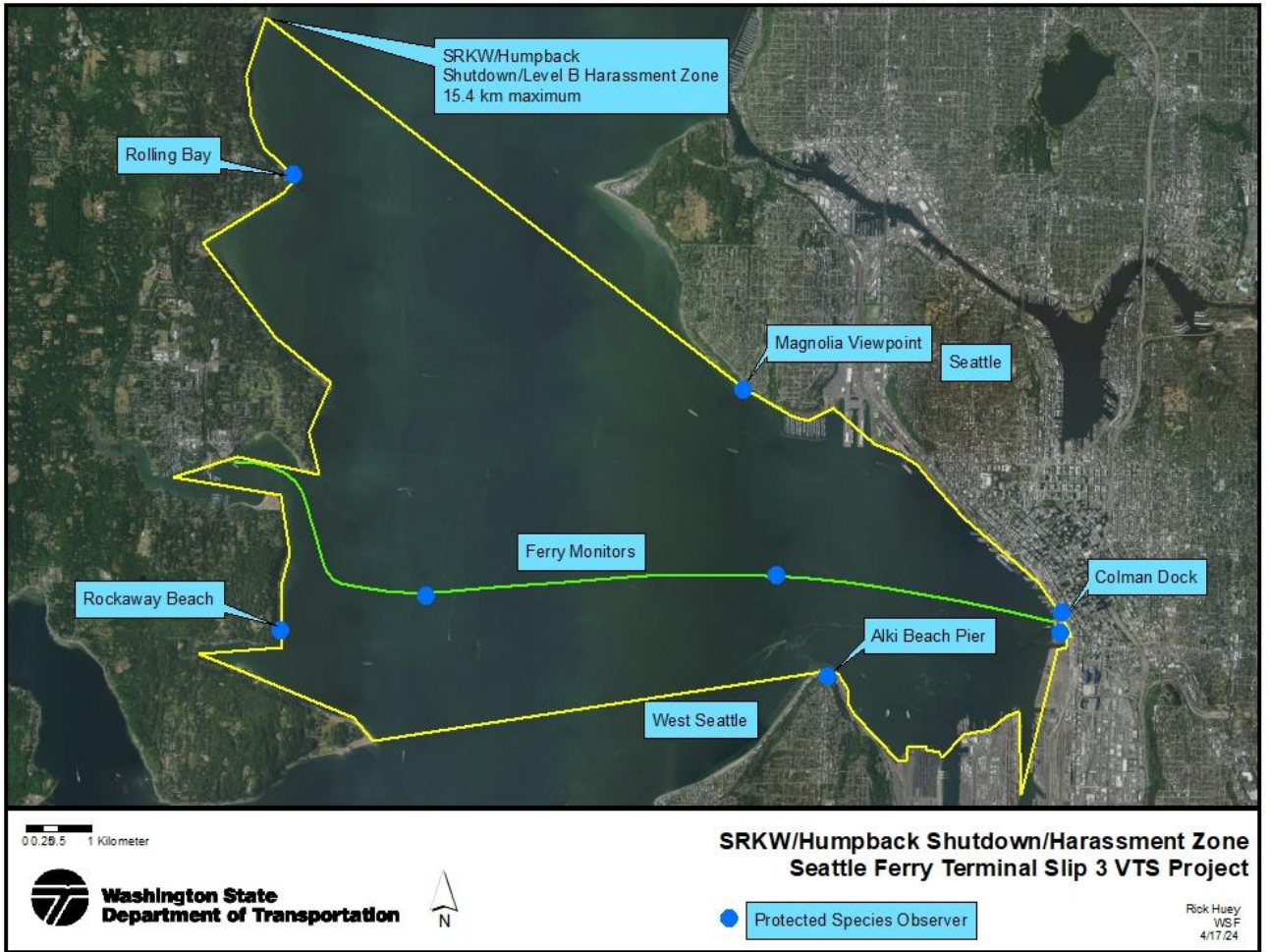


Figure Error! No text of specified style in document. - ZOI-1 24/30/78” Steel Vibratory Offshore Zone

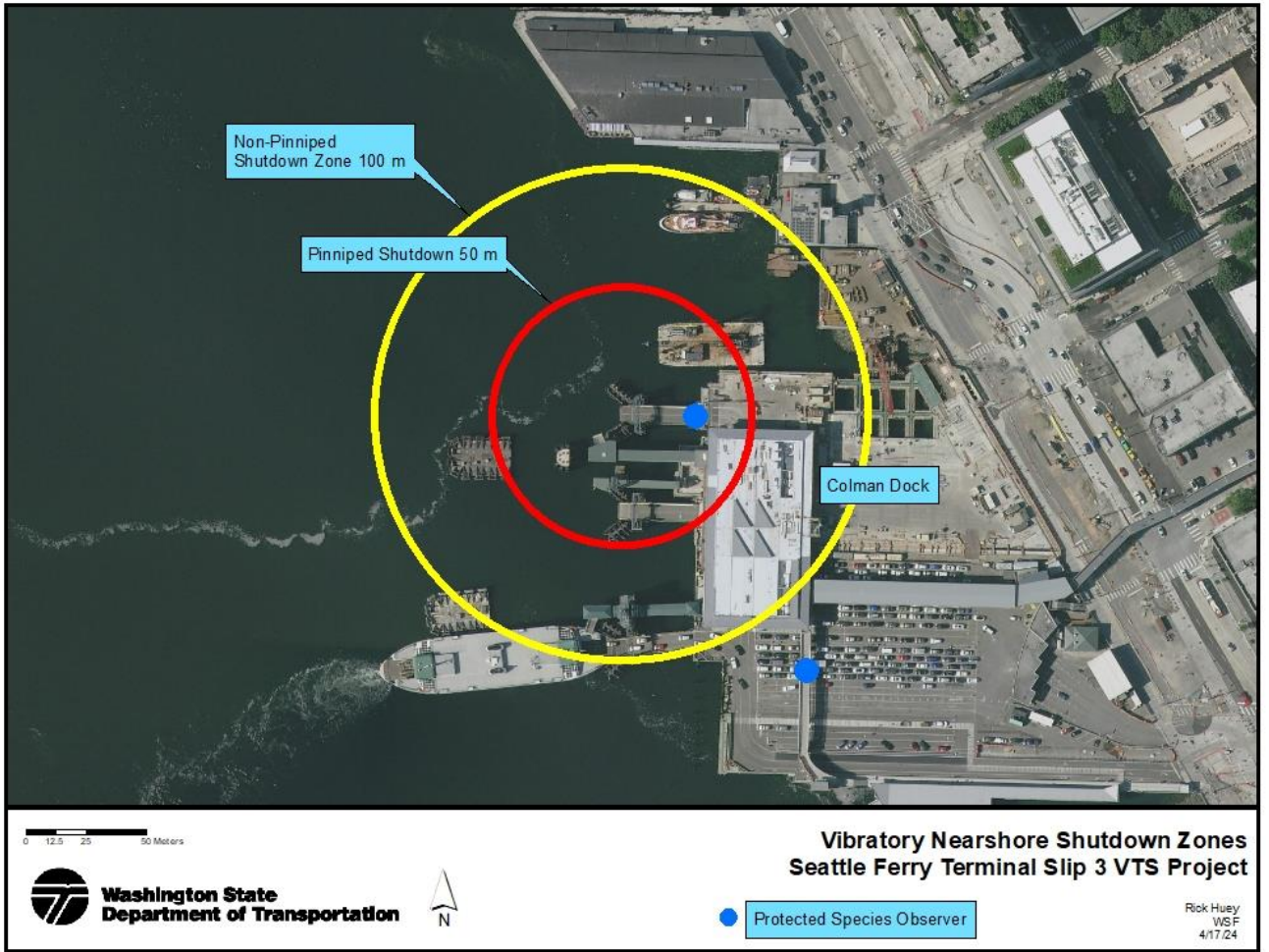


Figure Error! No text of specified style in document.2 ZOI-1 24/30/78" Steel Vibratory Nearshore Zones

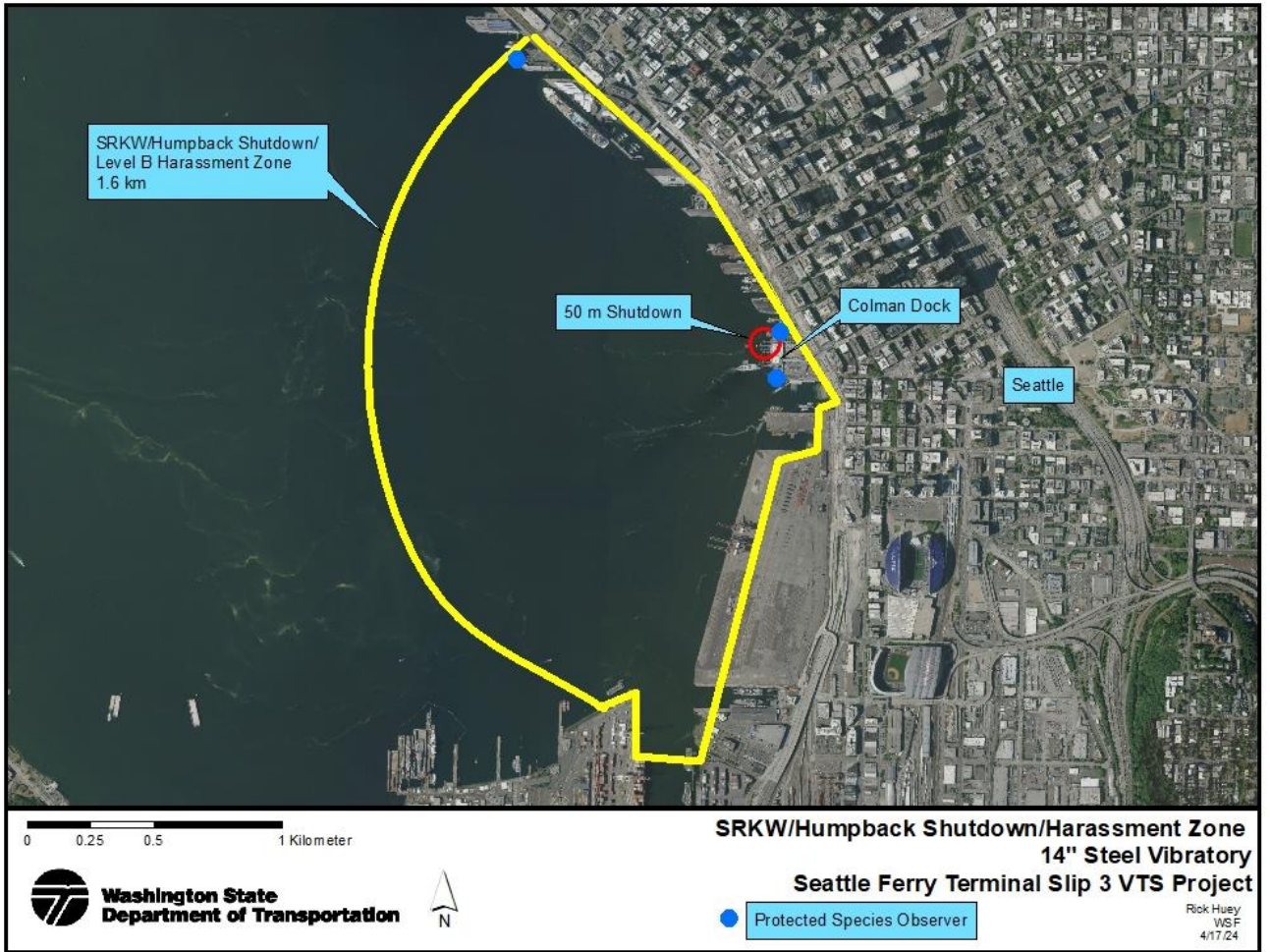


Figure 3 ZOI-2 14" Steel Vibratory Zones

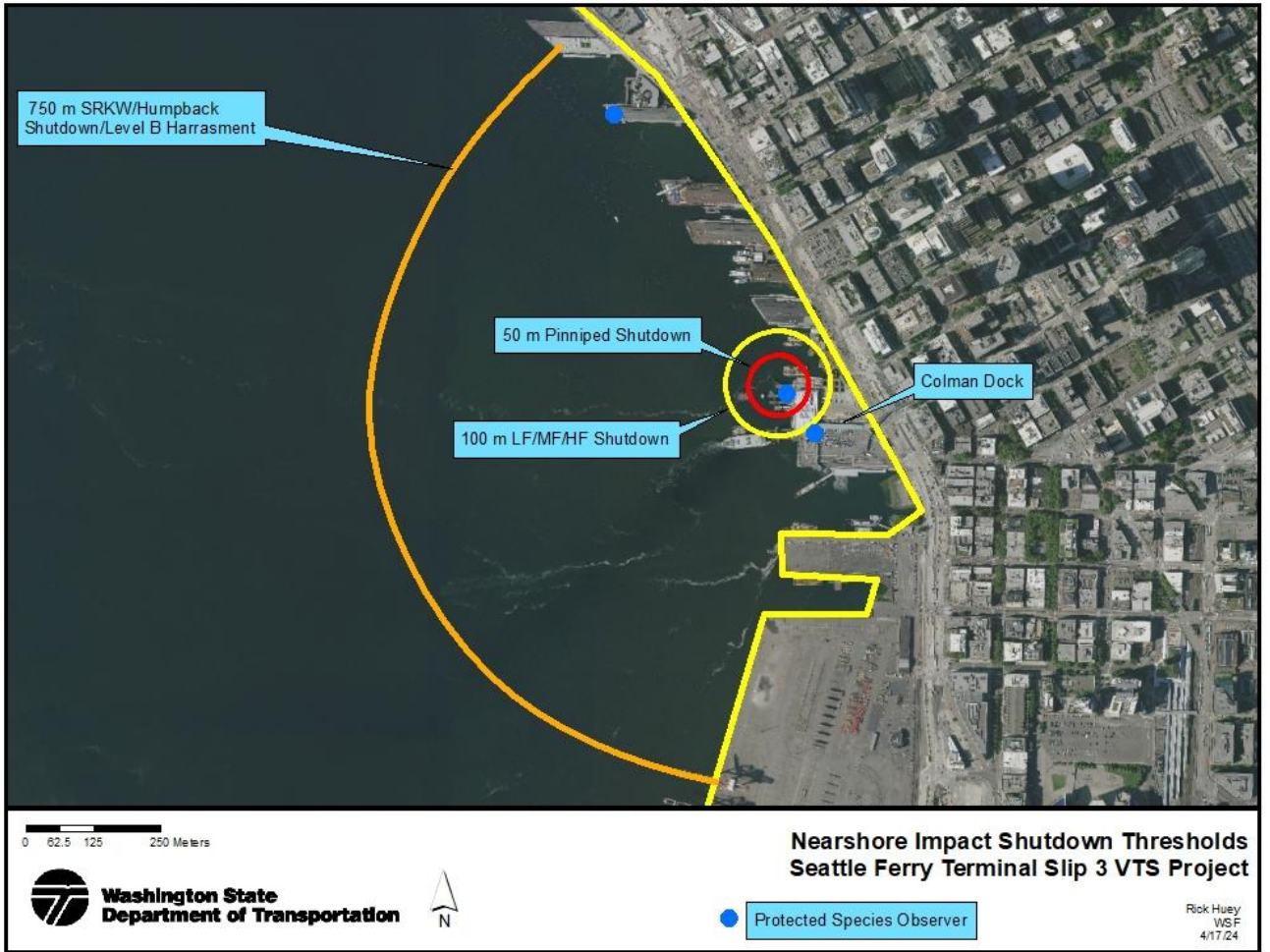


Figure 4 ZOI-3 24" Steel Impact Shutdown