

**Mukilteo Multimodal Project
Season Three Marine Mammal Monitoring Report**

**Washington State Department of Transportation
Ferries Division**

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Season Three Marine Mammal Monitoring Report**

Submitted To:

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Cover: Harbor seal at Mukilteo Project Site. February 2018. Tyler Graham. WSDOT/WSF.



Table of Contents

1.0	Description of the Activity	4
1.1	Construction Seasons	5
1.2	In-water Project Elements Completed in 2019/20 (Season 3)	6
1.2.1	Overhead Loading Structure and Vehicle Transfer Span	6
1.2.2	Public Fishing Pier	6
2.0	Project Setting and Land Use	7
3.0	Take Results and Monitoring.....	8

LIST OF TABLES

Table 1-1.	Pile Numbers Planned/Completed by Season	7
Table 3-1.	2019/20 Permitted Take.....	8
Table 3-2.	Observations and Observed Take	9
Table 3-3.	Data Fields	10

LIST OF FIGURES

Figure 2-1.	Location of Mukilteo Ferry Terminal and nearby features.....	4
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ATTACHMENTS

- Marine Mammal Monitoring Plan (March 2018)
- Monitoring Data for 2019/20 (Spreadsheet)
- Hydroacoustic Monitoring Reports 2018/20 (Impact Driving)
- Sound Source Verification Reports (Timber and Steel)

1.0 Description of the Activity

WSF is proposing to relocate the Mukilteo Ferry Terminal approximately one-third of a mile east of the existing terminal. The Mukilteo terminal has not had significant improvements since the early 1980s and components of the facility are aging and do not meet current seismic standards. The current terminal layout makes it difficult for passengers to get in and out of the terminal and contributes to traffic congestion, safety concerns and conflicts between vehicle and pedestrian traffic. The new terminal will improve operations and multimodal connections and safety.

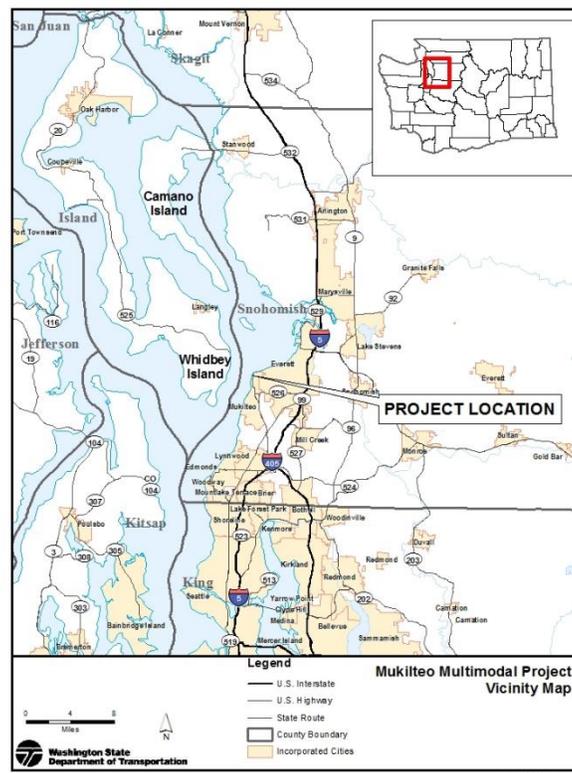


Figure 1-1. Location of Mukilteo Ferry Terminal and nearby features.

The WSDOT/WSF and the Federal Transit Administration (FTA) are constructing the Mukilteo Multimodal Project to improve the operations and facilities serving the mainland terminus of the Mukilteo-Clinton ferry route in Washington State. The ferry route is part of State Route (SR) 525, the major transportation corridor crossing Possession Sound, the portion of Puget Sound that separates Island County (Whidbey Island) from the central Puget Sound mainland.

The purpose of the Mukilteo Multimodal Project is to provide safe, reliable, and effective service and connection for general purpose transportation, transit, high occupancy vehicles (HOV), pedestrians, and bicyclists traveling between Island County and the Seattle/Everett metropolitan area and beyond. The Mukilteo ferry terminal has not had significant improvements for almost



30 years and needs key repairs. The existing facility is deficient in a number of aspects, such as safety, multimodal connectivity, capacity, and the ability to support the goals of local and regional long-range transportation and comprehensive plans. The project is intended to:

- Reduce conflicts, congestion, and safety concerns for pedestrians, bicyclists, and motorists by improving local traffic and safety at the terminal and the surrounding area that serves these transportation needs.
- Provide a terminal and supporting facilities with the infrastructure and operating characteristics needed to improve the safety, security, quality, reliability, efficiency, and effectiveness of multimodal transportation.
- Accommodate future demand projected for transit, HOV, pedestrian, bicycle, and general purpose traffic. The Mukilteo Multimodal Project consists of four in-water construction seasons:

1.1 Construction Seasons

The project consists of four in-water work seasons:

- Season 1 was the demolition of the Tank Farm Pier and dredging of the navigation channel, which was completed in 2015/16.
- No in-water work took place in 2016/17.
- Season 2 included ground improvement, trestle and terminal building foundation piles, and was completed in 2017/18.
- Season 3 consisted of installation of the remaining permanent in-water piles for the overhead loading structure, vehicle transfer span and public fishing pier, which was completed in 2019/20.
- Season 4 will consist of the demolition of the existing Mukilteo terminal, and the removal of temporary piles and the installation of floating dolphin anchor piles at the new terminal site, which will be completed in 2020/21.



1.2 In-water Project Elements Completed in 2019/20 (Season 3)

1.2.1 Overhead Loading Structure and Vehicle Transfer Span

The overhead loading structure design includes three 30-inch steel piles and one 120-inch drilled shaft. The vehicle transfer span will be supported by two 78-inch drilled shafts. Construction for the drilled shafts will require the contractor place temporary piles to access the shaft overwater.

The drilled shafts were installed by first vibrating either the casings into the soil. The casing, which is a large-diameter steel pile that matches the size of the drilled shaft, extends about 25 to 40 feet above the MLLW surface elevation. The casing extends into the soil a minimum of 85 feet below the existing mudline, but the bottom of the drilled shaft extends about 35 feet below the bottom of the casing.

Once the casing was placed, an auger drilled out soil on the inside of the casing and the soil was placed on a barge. A slurry of bentonite was used to prevent the hole from collapsing as the auger drills below the casing. The removed soil was disposed of at an approved location, likely the approved in-water disposal site.

Once the shaft was been fully drilled, it was filled with concrete, which displaced the slurry inside the hole. The slurry was suctioned off the top of the casing, ensuring that it did not enter aquatic habitat. The total volume of concrete fill in the two vehicle transfer span shafts is approximately 250 cubic yards, and the volume for the overhead loading shaft is approximately 300 cubic yards.

Temporary platforms consisting of up to (69) 24-inch temporary piles were installed. The temporary piles were vibrated into place, then proofed for up to two to five feet to support construction equipment.

1.2.2 Public Fishing Pier

The public fishing pier is supported by (26) 24-inch steel piles. The timber and composite floats located at the existing fishing pier will be rebuilt and relocated to the new fishing pier. An additional 80-foot by 5-foot gangway and an additional 8-foot by 15-foot float will be added at the waterward end of the gangway to meet ADA requirements. The additional float will be located above the location where the mud line is at approximately -32 feet MLLW.



Table 1-1. Pile Numbers Planned/Completed by Season

Method	Pile Size (inch)	Season 2 Completed	Season 3 Completed	Comment
Vibratory Drive	12	134	0	Fewer needed, complete
	24	4	65	Temporary
	24	0	26	Permanent, complete
	30	25	3	Permanent, complete
	36	0	6	Permanent, complete
	78	0	2	Permanent, complete
	120	0	1	Permanent, complete
	sheet	0	0	Design change, not needed
Vibratory Removal	24	4	65	Temporary, removed and reinstalled
	30	0	9	Permanent
	sheet	0	0	Design change, not needed
Impact Drive	24	4	65	Proofed for load-bearing
	30	25	3	Fewer needed, complete

2.0 Project Setting and Land Use

The Mukilteo Ferry Terminal is located in the City of Mukilteo, Snohomish County, Washington. The terminal is located in Township 28 North, Range 4 East, Section 3, in Possession Sound. The new terminal would be approximately 1,700 feet (ft.) east of the existing terminal in Township 28N, Range 4E, Section 33 (Figure 1-2). Land use in the Mukilteo area is a mix of residential, commercial, industrial, and open space and/or undeveloped lands.



3.0 Take Results and Monitoring

Marine mammal monitoring was implemented for all pile driving and removal in the 2019/20 in-water work window (August 1 to February 15). The marine mammal monitoring plan is attached. Pile driving/removal was paused for 7 hours in Year Three in order to avoid unpermitted take or prevent injury.

IHA reporting requirement 6a. (xi) Number of individuals of each species (differentiated by month as appropriate) detected within the monitoring zone, and estimates of number of marine mammals taken, by species (a correction factor may be applied to total take numbers, as appropriate).

No correction factor has been applied to the observed take noted in Table 3-2, as WSF has not been able to identify a method that can be used, and no guidance is available from NMFS regarding acceptable correction factors.

Permitted take, observations and take used are provided below:

Table 3-1. 2019/20 Permitted Take

Species	Total	Level A	Level B
Harbor Seal	1,953	93	1,860
Northern Elephant Seal	7	0	7
California Sea Lion	868	0	868
Steller Sea Lion	154	0	154
SR Killer Whale	0	0	0
Transient Killer Whale	21	0	21
Gray Whale	2	0	2
Humpback Whale	6	0	6
Minke Whale	7	0	7
Harbor Porpoise	823	39	784
Dall's Porpoise	202	39	163
Bottlenose Dolphin	49	0	49
Long-beaked Common Dolphin	49	0	49



Table 3-2. Observations and Observed Take

Species	Individuals Observed	Total Take Used	Level A Used	Level B Used
Harbor Seal	1,060	168	4	164
Northern Elephant Seal	2	1	0	1
California Sea Lion	663	105	6	99
Steller Sea Lion	18	7	0	7
SR Killer Whale	34	0	0	0
Transient Killer Whale	15	0	0	0
Gray Whale	0	0	0	0
Humpback Whale	1	0	0	0
Harbor Porpoise	79	12	0	12
Dall's Porpoise	0	0	0	0
Minke Whale	0	0	0	0
Bottlenose Dolphin	0	0	0	0
Long-beaked Common Dolphin	0	0	0	0

All data was collected in ArcGIS Survey123. Major data fields collected are listed in Table 3-3, and data is attached as a separate spreadsheet. The spreadsheet includes additional data fields.

For example, attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals was captured by the Comments and Duplicate Sighting fields.



Table 3-3. Data Fields

Protected Species Observer Data Fields
PSO Monitor Name
Project
PSO Monitoring Station ID
Construction Activity
Weather Conditions
Specify other. (Weather)
Observation Date & Time
Species Observed
Specify other. (Species)
Duplicate Sighting
Number of Individuals Observed
Direction of Sighting from the PSO
Distance from the PSO
Compass Bearing towards Animal from PSO (optional data)
Distance from PSO to Animal (Meters) (optional data)
Compass Bearing to Noise Source from PSO (optional data)
Distance from PSO to Noise Source (Meters) (optional data)
Calculated Angle between the Bearings (optional data)
Distance of Animal from Noise Source (Meters) (optional data)
Observed Behavior
Direction of Travel
Comments about the Sighting
Zone Selection
Number of Individuals in Shutdown Zone
Number of Individuals in Harassment Zone
Harassment/Shutdown Comments