

**Naval Base Kitsap Bremerton Pier 6 Pile
Replacement –
Marine Mammal Monitoring**

Prepared for

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INTRODUCTION

The Biological Evaluation for the N44255-10-D-5021/0006 ~ Replace Fendering System, Pier 6, PSNS & IMF, Bremerton, Washington Project requires that a Marine Mammal Monitoring Plan be followed during all pile driving activity. The plan requires a report that summarizes the marine mammal observations around the site including observation dates, times, weather and water conditions, animal behavior patterns, and details of any work stoppages that resulted from marine mammal presence or poor viewing conditions. The plan also requires that the report contain all field data sheets and logs.

Northwest Environmental Consulting (NVEC) conducted marine mammal monitoring at Pier 6 at the Bremerton Naval Shipyard during all pile extraction and pile driving activities from September 2015 through October 2015. The work was not continuous during these times. This report summarizes efforts, observations, and mitigation activities that were followed during installation and removal of the pilings, and includes an estimate of take.

The monitoring followed the protocol described in the NAVBASE Kitsap Bremerton Pier Pile Replacement Project Marine Mammal Monitoring Plan (included as Appendix A). Appendix B includes original data sheets for marine mammal monitoring.

MONITORING SUMMARY

Monitoring Locations

Pile replacement activities took place at Pier 6 in the Bremerton Navy Shipyard. Naval Base (NAVBASE) Kitsap Bremerton is located on the north side of Sinclair Inlet within the city of Bremerton in Kitsap County. The NAVBASE Kitsap Bremerton waterfront, including Pier 6, is restricted from public access. This area is designated as the Waterfront Restricted Area and is delineated by the Port Security Barriers.

Marine mammal monitors were present at two locations during vibratory extraction of piles: one monitor observed from a boat in Sinclair Inlet and the other observed from the construction site on Pier 6. During impact hammering, one monitor was present, observing from Pier 6. The monitoring locations are described as follows:

- *On-pier monitoring: Naval Base Kitsap-Bremerton, Pier 6.* During vibratory pile extraction and pile-driving installation, one monitor was present at Pier 6. Pier 6 is approximately 370 meters long and oriented north to south. The shoreline along the north end of the pier is a seawall. To the south is Sinclair Inlet. A floating fence, the Port Security Barrier, is present approximately 85 meters from the end of the pier. The floats on this barrier are a known haul-out site for California sea lions. The security barrier starts along the edge of the pier to the east of Pier 7, and continues to the southwest (230 meters) and extends west out of the observation zone. Two other piers flank Pier 6, approximately 90 meters east and 180 meters west. Due to security restrictions, no photos of the site were taken.
- *On-water monitoring: Sinclair Inlet, Washington.* During vibratory pile extraction, one monitor was present on a boat in Sinclair Inlet. The vessel departed from Port Orchard Marina and followed the route in the monitoring protocol.

Observation Protocol and Guidelines

All monitoring protocols were followed in accordance with the Marine Mammal Monitoring Plan. The respective Zone of Influence (ZOI) was established using fixed areas in the water, including the Port Security Barriers. A range finder and aerial photographs were used to calibrate distance of landmarks from each observation point. Monitors would move around the sites to improve visual coverage of the respective ZOI as needed.

Monitoring Effort

The following qualified biologists conducted the on-pier monitoring: Molly McCormly (MM), Emily Drew (ED), Brad Thiele (BT), and Mallore Weinheimer (MW). David Ness (DN) performed the on-water monitoring, with Caleb Cowles (CC) operating the boat.

Monitoring Summary

During 4 days of observation, 101 creosote-treated piles and 17 steel piles were removed primarily by direct pull, with few requiring vibratory extraction. Fifteen days of monitoring was for the installation of 160 concrete piles via impact hammer, totaling 19 days of monitoring for the final year of the three year project. Three species of marine mammal were observed during the vibratory extraction and pile-driving activities: California sea lion (CL), stellar sea lion (SL), and harbor seal (HS). No cetaceans were observed. Harbor seal was the most commonly observed species in the ZOI. Sightings are summarized in Table 1. The data sheets are included in Appendix B. No mitigation shut downs occurred during pile driving or removal.

Table 1 – Monitoring Summary

Date	Observer	Location	Pile* activity	Species	Number of sightings	Individuals sighted	Sightings inside	Sightings outside ZOI	Takes	Mitigation shut downs
9/9/15	MM	Pier 6	R	CL	6	6	6	0	0	0
				HS	1	1	1	0	0	0
9/10/15	MM	Pier 6	R	CL	10	12	12	0	3	0
				HS	5	5	5	0	4	0
9/11/15	MM	Pier 6	R	CL	6	7	2	0	0	0
				HS	6	6	6	0	2	0
9/14/15	ED	Pier 6	R	CL	2	2	2	0	0	0
				HS	2	2	2	0	0	0
9/15/15	ED	Pier 6	I	HS	1	1	0	1	0	0
9/16/15	MM	Pier 6	I	CL	6	9	9	0	5	0
				HS	3	3	3	0	2	0
9/17/15	MM	Pier 6	I	HS	2	2	1	1	1	0
9/21/15	MM	Pier 6	I	CL	4	5	6	0	4	0
				HS	4	4	3	1	3	0
9/22/15	MM	Pier 6	I	CL	1	1	1	0	0	0
				HS	3	3	2	1	0	0
9/23/15	MM	Pier 6	I	HS	5	5	3	2	0	0
9/28/15	MM	Pier 6	I	HS	4	4	4	0	2	0
9/29/15	MM	Pier 6	I	CL	2	4	2	0	4	0
				HS	2	2	0	2	0	0
9/30/15	ED	Pier 6	I	CL	2	2	0	2	0	0
				HS	2	2	0	2	0	0
10/1/15	BT	Pier 6	I	HS	5	5	2	3	2	0
10/5/15	ED	Pier 6	I	HS	2	2	0	2	0	0
10/6/15	BT	Pier 6		-						
10/7/15	MW	Pier 6	I	HS	4	4	4	0	3	0
10/8/15	MW	Pier 6	I	HS	1	1	0	0	0	0
10/13/15	BT	Pier 6	I	HS	1	1	1	0	0	0
Totals				CL	41	50	42	2	17	0
				HS	53	53	37	15	19	0
				SL	1	1	1	0	0	0

* Pile Activity: Removal (R)
Installation (I)

Sea lions hauled out on the Port Security Fence were tallied during the pre-construction sweep and again when pile driving was complete for the day (see Table 2). The Security fence was out of the ZOI during all impact pile driving, so no Take occurred for California sea lions using the fence as a haul out during pile installation.

Table 2 – Security Barrier Tallies

Date	Observer	Location	Activity	Pre-Work	Post-Work	Estimated Number of Takes*
9/9/15	DN	Boat	Pile Extraction	69	72	3
9/10/15	DN	Boat	Pile Extraction	62	62	0
9/11/15	DN	Boat	Pile Extraction	60	96	36
9/14/15	DN	Boat	Pile Extraction	50	47	3
9/15/15	ED	Pier 6	Pile driving	53	69	0
9/16/15	MM	Pier 6	Pile driving	52	61	0
9/17/15	MM	Pier 6	Pile driving	50	53	0
9/21/15	MM	Pier 6	Pile driving	57	72	0
9/22/15	MM	Pier 6	Pile driving	65	58	0
9/23/15	MM	Pier 6	Pile driving	49	61	0
9/28/15	MM	Pier 6	Pile driving	71	75	0
9/29/15	MM	Pier 6	Pile driving	81	92	0
9/30/15	ED	Pier 6	Pile driving	58	66	0
10/1/15	BT	Pier 6	Pile driving	55	60	0
10/5/15	ED	Pier 6	Pile driving	53	77	0
10/6/15	BT	Pier 6	Pile driving	68	55	0
10/7/15	MW	Pier 6	Pile driving	58	62	0
10/8/15	MW	Pier 6	Pile driving	76	78	0
10/13/15	BT	Pier 6	Pile driving	66	61	0
Total						42

**No Take is calculated during pile driving because the pile-driving ZOI did not reach the security fence.*

TAKE ESTIMATE

Take was estimated by tallying the number of mammals observed in the acoustical harassment ZOI (during pile extraction and installation) and by calculating the change in the number of California sea lions observed on the Port Security Fence (during pile extraction only). The security fence was not within the ZOI for pile installation.

The ZOI during pile installation covers a 117-meter-wide area. Harbor seals and California sea lions entering this ZOI during pile installation were counted as Take. No mammals were observed entering the 10-meter-radius shutdown zone. All work occurred on the west side of Pier 6, north of the pier's end; thus, the ZOI for pile installation did not reach the Port Security Fence and occasionally did not reach the end of Pier 6.

The ZOI for pile extraction covers a 1,600-meter-radius area. California sea lions hauled out on the Port Security Fence were within this ZOI. Numbers of sea lions here ranged from 47 to 96 individuals in September and October 2015 (see Table 2). Take on California sea lions was estimated by conducting a pre-work and post-work count of hauled-out individuals. The change in marine mammals observed on the barrier between the start and stop of work was counted as a Take because these animals had entered the water at some point during pile extraction activities. No mammals were observed entering the 10-meter-radius shutdown zone during vibratory pile extraction.

The number of Takes per species is shown in Table 3.

Table 3 – Estimated Take

Species	Observations in ZOI	Port Security Fence Estimate	Total	Take limits authorized in the IHA
California sea lion	17	42	59	2,880
Harbor seal	19	0	19	660
Steller's sea lion	0	0	0	60

BEHAVIORS OBSERVED

The monitors reported that the observed behaviors of the sea lions and harbor seals were normal, with no visible reactions to the noise disturbance.

Behaviors for all species were recorded in one of the following categories:

- Foraging – Animals seen feeding on fish, observed multiple times in a localized area, or moving without a clear sense of direction in that localized region.
- Transient – Animals observed maintaining a general heading and pace as they moved through the site.
- Milling – Animals that were moving in an area, but did not appear to be foraging or moving in a linear fashion.
- Hauled out – Individuals basking on the security barrier or in the water at the security barrier.

APPENDIX A
MARINE MAMMAL MONITORING PLAN

NAVBASE Kitsap Bremerton
Pier 6 Pile Replacement Project
Marine Mammal Monitoring Plan

July 2015

In accordance with the NAVBASE Kitsap Pier 6 Incidental Harassment Authorization Request, marine mammal monitoring will be implemented during this project. Qualified marine mammal observers 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 380 creosote treated pilings, 20 steel fender piles and impact pile driving of 330 concrete piling that will occur over three years. For impact pile driving there will be a small acoustic injury zone (SL sounds are greater than 180 dB). For vibratory pile removal and driving, no injury will occur (SL sounds are less than 180 dB), and so will result in a Level B acoustical harassment ZOI only. This zone is calculated to extend to the 120 dB (nonpulse) isopleth for vibratory pile removal. However, land is intersected before this extent is reached directly south, at a maximum of 1,600 meters and to the east at 1,700 meters (Figure 1). For impact driving of concrete piles, the zone of Level B acoustical harassment is much smaller, at 117 meters (Figure 2).

The Navy or their contractor will conduct briefings between the construction supervisors and the crew and marine mammal observer(s) prior to the start of pile-driving activity, marine mammal monitoring protocol and operational procedures.

Prior to the start of pile driving on any day, the Orca Network and/or Center for Whale Research will be contacted and/or data reviewed to find out the location of the nearest marine mammal sightings. The Orca Sightings Network consists of a list of over 600 (and growing) residents, scientists, and government agency personnel in the U.S. and Canada. ‘Sightings’ information collected by the Orca Network includes detection by hydrophone. With this level of coordination in the region of activity, the Navy will be able to get real-time information on the presence or absence of whales before starting any pile removal or driving.

Monitoring to Estimate Take Levels for California Sea Lions, Steller Sea Lions and Harbor Seals

The Navy proposes the following Marine Mammal Monitoring Plan in order to estimate project Level B acoustical harassment take levels in the ZOI:

- To verify the required monitoring distance, the vibratory Level B acoustical harassment ZOI will be determined by using a range finder or hand-held global positioning system device.
- The vibratory Level B acoustical harassment ZOI will be monitored for the presence of marine mammals 15 minutes before, during, and 30 minutes after any pile removal or driving activity.
- Monitoring will be continuous unless the contractor takes a significant (30 minutes or greater) break-then the 15 minutes before, during, and 30 minutes monitoring sequence will begin again.

- If marine mammals are observed, their location within the ZOI, and their reaction (if any) to pile-driving activities will be documented.
- During vibratory pile removal, one land-based biologist will monitor the area from the pier work site, and one boat with a biologist will travel through the monitoring area (Figure 1). This zone is considered a realistic area for visual monitoring for vibratory extraction of both steel and wood piles due to the limited number of steel piles and high number of wood piles.
- During impact hammering, one land-based biologist will monitor the area from the pier work site (Figure 2).
- A shutdown zone of 10 meters will be implemented surrounding each pile for vibratory and impact hammering to ensure no physical impacts occur.
- If a marine mammal approaches or enters a shutdown zone during impact or vibratory pile driving, work will be halted and delayed until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal.

Monitoring to Comply with Killer Whales and Grey Whales

The Navy proposes the following Marine Mammal Monitoring Plan in order to ensure no takes to killer whales, and grey whales in the ZOI:

- During vibratory pile removal, one land-based biologist will monitor the area from the pier work site, and one boat with a biologist will travel through the monitoring area (Figure 1) completing an entire loop approximately every 30 minutes. If any killer whales or grey whales (or any cetacean) are observed, pile removal will not begin. This zone is considered a realistic area for visual monitoring for vibratory extraction of both steel and wood piles due to the limited number of steel piles and high number of wood piles.
- During impact hammering, one land-based biologist will monitor the area from the pier work site. If any killer whales or grey whales are observed, pile installation will not begin.
- If any killer whales or grey whales approaches or enters the disturbance zone during pile driving, work will be halted and delayed until either the animal has voluntarily left and been visually confirmed beyond the disturbance zone or 15 minutes have passed without re-detection of the animal.

Minimum Qualifications for Marine Mammal Observers

Qualifications for marine mammal observers 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 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 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 defined shut-down safety or Level B acoustical harassment ZOI; dates and times when in water construction activities were suspended to avoid injury from impact pile driving; etc.

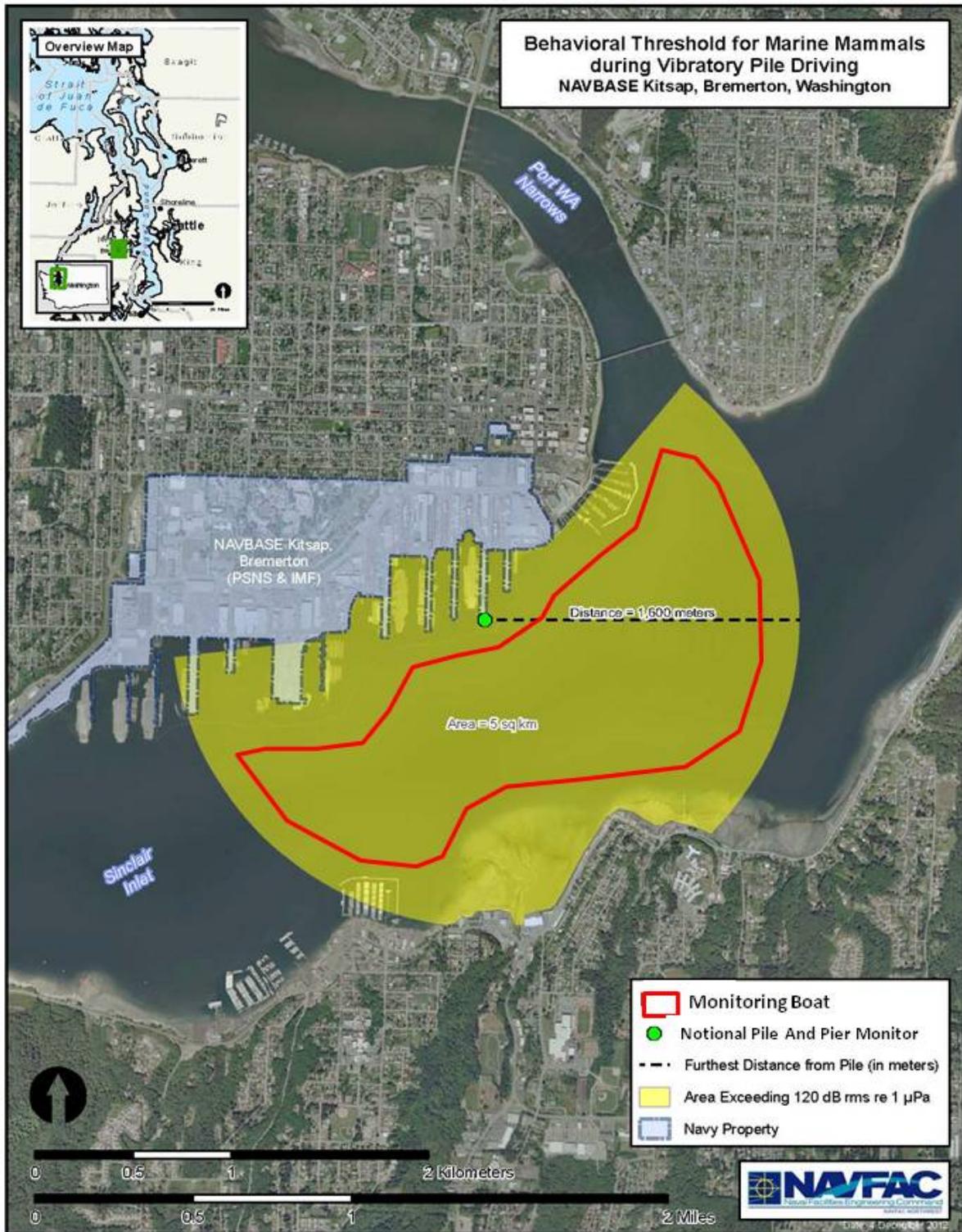


Figure 1.



Figure 2.



INCIDENTAL HARASSMENT AUTHORIZATION

The U.S. Navy (Navy), Naval Base Kitsap Bremerton, Washington, is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)), to harass marine mammals incidental to the Pier 6 Maintenance Project at Bremerton, WA.

1. This Incidental Harassment Authorization (IHA) is valid from September 1, 2015 through March 1, 2016.
2. This IHA is valid only for pile driving and removal activities associated with the Pier 6 Maintenance Project at Naval Base Kitsap Bremerton, Washington. Any reference to pile driving in this document refers to both pile driving and removal unless otherwise indicated.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of the Navy, its designees, and work crew personnel operating under the authority of this IHA.
 - (b) The species authorized for taking are the harbor seal (*Phoca vitulina richardii*), California sea lion (*Zalophus californianus*), and Steller sea lion (*Eumetopias jubatus monteriensis*).
 - (c) The taking, by Level B harassment only, is limited to the species listed in condition 3(b). See Table 1 (attached) for numbers of take authorized.
 - (d) The taking by injury (Level A harassment), serious injury, or death of any of the species listed in item 3(b) of the Authorization or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (e) The Navy shall conduct briefings between construction supervisors and crews, marine mammal monitoring team, acoustic monitoring team, and Navy staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.

4. Mitigation Measures

The holder of this Authorization is required to implement the following mitigation measures:

- (a) For all pile driving, the Navy shall implement a minimum shutdown zone of 10 m radius around the pile. If a marine mammal comes within or approaches the shutdown zone, such operations shall cease.



- (b) The Navy shall establish monitoring locations as described below. Please also refer to the Marine Mammal Monitoring Plan (Monitoring Plan; attached).
 - (i) For all vibratory pile removal activities, a minimum of two observers shall be deployed. One observer shall be located at the pier work site, positioned to achieve optimal monitoring of the shutdown zone and the surrounding waters of Sinclair Inlet. A minimum of one vessel-based observer shall be deployed and shall conduct regular transits through the estimated disturbance zone for the duration of the activity.
 - (ii) For all impact pile driving activities, a minimum of one shore-based observer shall be located at the pier work site.
 - (iii) These observers shall record all observations of marine mammals, regardless of distance from the pile being driven, as well as behavior and potential behavioral reactions of the animals. If any killer whales or gray whales are detected, activity must not begin or must shut down.
 - (iv) All observers shall be equipped for communication of marine mammal observations amongst themselves and to other relevant personnel (e.g., those necessary to effect activity delay or shutdown).
- (c) Prior to the start of pile driving on any day, the Navy shall take measures to ensure that no species for which incidental take is not authorized are located within the vicinity of the action area, to include the following:
 - (i) The Navy shall contact and/or review the latest sightings data from the Orca Network and/or Center for Whale Research, including passive acoustic detections, to determine the location of the nearest marine mammal sightings.
- (d) Monitoring shall take place from fifteen minutes prior to initiation of pile driving activity through thirty minutes post-completion of pile driving activity. Pre-activity monitoring shall be conducted for fifteen minutes to ensure that the shutdown zone is clear of marine mammals, and pile driving may commence when observers have declared the shutdown zone clear of marine mammals. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, animals shall be allowed to remain in the shutdown zone (i.e., must leave of their own volition) and their behavior shall be monitored and documented. Monitoring shall occur throughout the time required to drive a pile. The shutdown zone must be determined to be clear during periods of good visibility (i.e., the entire shutdown zone and surrounding waters must be visible to the naked eye).
- (e) If a marine mammal approaches or enters the shutdown zone, all pile driving activities at that location shall be halted. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or fifteen minutes have passed without re-detection of the animal.

- (f) Monitoring shall be conducted by qualified observers, as described in the Monitoring Plan. Trained observers shall be placed from the best vantage point(s) practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator.
- (g) The Navy shall use soft start techniques recommended by NMFS for vibratory and impact pile driving. Soft start for vibratory drivers requires contractors to initiate sound for fifteen seconds at reduced energy followed by a thirty-second waiting period. This procedure is repeated two additional times. Soft start for impact drivers requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. Soft start shall be implemented at the start of each day's pile driving and at any time following cessation of pile driving for a period of thirty minutes or longer. Soft start for impact drivers must be implemented at any time following cessation of impact driving for a period of thirty minutes or longer.
- (h) Pile driving shall only be conducted during daylight hours.

5. Monitoring

The holder of this Authorization is required to conduct marine mammal monitoring during pile driving activity. Marine mammal monitoring and reporting shall be conducted in accordance with the Monitoring Plan.

- (a) The Navy shall collect sighting data and behavioral responses to pile driving for marine mammal species observed in the region of activity during the period of activity. All observers shall be trained in marine mammal identification and behaviors, and shall have no other construction-related tasks while conducting monitoring.
- (b) For all marine mammal monitoring, the information shall be recorded as described in the Monitoring Plan.
- (c) The Navy shall conduct acoustic monitoring sufficient to measure underwater and airborne source levels for vibratory removal of timber piles and impact driving of concrete piles. Minimum requirements include:
 - (i) Measurements shall be taken for a minimum of ten piles of each type. Measured concrete piles shall be 24-in square (or the larger of the two sizes planned for installation).
 - (ii) Each hydrophone (underwater) and microphone (airborne) shall be calibrated prior to the beginning of the project and shall be checked at the beginning of each day of monitoring activity.
 - (iii) Environmental data shall be collected including but not limited to: wind speed and direction, wave height, water depth, precipitation, and type and location of in-water construction activities, as well other factors that could

contribute to influencing the airborne and underwater sound levels measured (e.g., aircraft, boats).

- (iv) The construction contractor shall supply the Navy and monitoring personnel with an estimate of the substrate condition, hammer model and size, hammer energy settings and any changes to those settings during the piles being monitored.
- (v) Post-analysis of data shall include the average, minimum, and maximum rms values and frequency spectra for each pile monitored. If equipment used is able to accommodate such a requirement, average, minimum, and maximum peak values shall also be provided.

6. Reporting

The holder of this Authorization is required to:

- (a) Submit a draft report on all monitoring conducted under the IHA within 45 days of the completion of marine mammal and acoustic monitoring, or sixty days prior to the issuance of any subsequent IHA for this project or other projects at Naval Base Kitsap Bremerton, whichever comes first. A final report shall be prepared and submitted within thirty days following resolution of comments on the draft report from NMFS. This report must contain the informational elements described in the Monitoring Plan, at minimum (see attached), and shall also include:
 - (i) Detailed information about any implementation of shutdowns, including the distance of animals to the pile and description of specific actions that ensued and resulting behavior of the animal, if any.
 - (ii) Description of 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.
 - (iii) A refined take estimate based on the number of marine mammals observed during the course of construction activities.
 - (iv) Results of acoustic monitoring, including the information described in condition 5(c) of this authorization.
- (b) Reporting injured or dead marine mammals:
 - (i) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as an injury (Level A harassment), serious injury, or mortality, Navy shall immediately cease the specified activities and report the incident to the Office of Protected Resources (301-427-8425), NMFS, and the West Coast Regional Stranding Coordinator (206-526-6550), NMFS. The report must include the following information:

1. Time and date of the incident;

2. Description of the incident;
3. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
4. Description of all marine mammal observations in the 24 hours preceding the incident;
5. Species identification or description of the animal(s) involved;
6. Fate of the animal(s); and
7. Photographs or video footage of the animal(s).

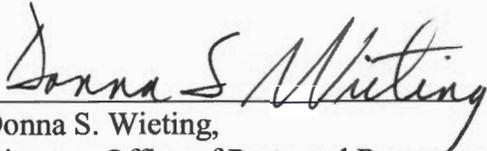
Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with Navy to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Navy may not resume their activities until notified by NMFS.

- (ii) In the event that Navy discovers an injured or dead marine mammal, and the lead observer determines that the cause of the injury or death is unknown and the death is relatively recent (e.g., in less than a moderate state of decomposition), Navy shall immediately report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS.

The report must include the same information identified in 6(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with Navy to determine whether additional mitigation measures or modifications to the activities are appropriate.

- (iii) In the event that Navy discovers an injured or dead marine mammal, and the lead observer 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), Navy shall report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. Navy shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.

7. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines that the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.



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

AUG 28 2015

Date

Table 1. Authorized take numbers, by species

Species	Authorized Take
Harbor seal	660
California sea lion	2,880
Steller sea lion	60

APPENDIX B
DATA SHEETS FROM SEPTEMBER AND OCTOBER
2015 MARINE MAMMAL MONITORING

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: David Neas Date: Sept. 9, 2015 Monitoring Location: Sinclair Inlet Page 1 of 1

Use separate line for each sighting or recapture

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pupa	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	1240	1250	Sea Lion	H	69	-	-	-	Varied	Varied	All hauled out on Ponce barrier. Visibility =
POST	2.0	1615	1625	Sea Lion	H	72	-	-	-	Varied	Varied	Post count all hauled out. Sea level 10' rising
PRE												

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
 Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter;
 UMM Unidentified Marine Mammal; UP Unidentified Pinniped
 Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
 Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
 Behavior: T Transient F Foraging R Resting H Haul Out

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Molly McCormley Date: 9/9/15

Monitoring Location: Pier 6

Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pup	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	1323	1325	CL	T	1	M	A	W	100m	100m	Spring, calm/lowish tide, excellent vis. sea lions on pier fenced by boat moving B. toward fence
PRE	2.0	1351	1352	CL	T	1	M	A	S	50m	100m	dead pulling occurring inside fence → hauled out of fence DE @ 1350
PRE	3.0	1418	1421	CL	T	1	M	A	W	100m	130m	T a little outside fence
PRE	4.0	1434	1439	CL	T	1	M	SA	W	50m	100m	T a little inside fence
PRE	1.0	1455	1456	HS	T	1	V	A	S	50m	100m	T inside fence
POST	5.0	1630	1631	CL	T	1	M	A	W	60m	110m	T outside fence
POST	6.0	1638	1639	CL	T	1	M	A	E	50m	100m	← outside fence
~~~~~												
obs.	Molly McCormley		Date:	9/10/15		location:		Pier 6				
PRE	1.0	0734	0735	CL	T	1	M	A	E	50m	100m	calm, overcast, excellent vis, lowish tide B: 0 → outside fence pg. 1 of 2
PRE	1.1	0742	0744	CL	R	1	-	A	-	50m	100m	resting outside fence, 7 animals appeared
PON	2.0	0802	0811	CL	R	1	M	A	NN	40m	70m	wdy inside fence
PON	3.0	0912	0918	CL	R	1	M	A	-	50m	100m	
PON	1.0	0929	0930	HS	T	1	V	A	E	50m	90m	

Activity: PON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdowns - note time when hammer starts and comes off pile, not intermittent striking of pile.

Species Code: DP Dall's Porpoise GW Gray Whale HB Humpback Whale HP Harbor Porpoise HS Harbor Seal KW Killer Whale MW Minke Whale SL Steller Sea Lion SO Sea Otter;

LMM Unidentified Marine Mammal; UP Unidentified Pinniped CL: California sea lion

Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)

Sightings: If the same animal is seen on multiple occasions use the I, I, etc. Each new animal should be done sequentially.

Behavior: T Transient F Foraging R Resting H Haul Out

ube 9/10/15 on: 0752 off: 0819 attached: 0747

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task 1 -> pier/over water  
 task 2 -> land based/travel

**Marine Mammal Observation Form**  
**Northwest Environmental Consulting**

Observer: Molly McCormley Date: 9/10/15

Monitoring Location: pier 6

Page 2 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PON	4.0	0938	0939	CB	T	1	M	A	E	50m	100m	
POST	5.0	0948	0950	CB	F	2	M	A	S	60m	90m	caught a fish
POST	6.0	1033	1035	CB	R	2	M	S	-	55m	105m	
POST	7.0	1035	1039	CB	T	1	M	A	W	70m	120m	
POST	8.0	1044	1045	CL	R	1	M	A	-	45m	95m	
POST	9.0	1057	1059	CB	T	1	M	A	N	25m	75m	traveling towards pier, then turned around & left
POST	2.0	1105	1107	HS	T	1	U	A	SW	90m	950	
PON	1.1	1157	1158	HS	R	1	U	A	-	25m	75m	
PON	1.2	1358	1359	HS	R	1	U	A	-	50m	50m	
POST	1.3	1609	1613	HS	T	1	U	A	E	10m	70m	
POST	1.0	1635	1642	SL	H	1	M	S	-	50m	100m	hauled out @ east end of fence, then left

**Activity:** P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.  
**Species Code:** DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; UMM Unidentified Marine Mammal; UP Unidentified Pinniped  
**Visibility:** B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)  
**Sightings:** If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.  
**Behavior:** T Transient F Foraging R Resting H Haul Out

CL: California sealion 9/10/15  
 vibe attached: 1138  
 unattached: 1210  
 vibe attached: 1341  
 unattached: 1514  
 vibe attached: 1642  
 unattached: 1651

5:25



**Marine Mammal Observation Form**  
**Northwest Environmental Consulting**

Observer: Molly McGowanley Date: 9/11/15

Monitoring Location: pier 6

Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	0726	0727	CL	T	1	M	A	E	30m	100m	Excellent visibility, low tide, BFO lowest ~10
CL	0	0727	0728				J	A	NW	100m	150m	
PRE	2.0	0921	0924	CL	-	1		S	S	40m	70m	
PRE	3.0	0931	0932	CL	T	2	M	S	S	40m	80m	
PRE	2.0	0932	0933	HS	T		J	-	W	90m	100m	
PRE	4.0	1010	1011	CL	T	1	M	A	W	150m	200m	
PRE	5.0	1027	1028	CL	-	1		S	SW	50m	100m	
PON	6.0	1129	1131	CL	R	1	M	S	-	30m	100m	
PON	3.0	1241	1242	HS	R	1	J	A	-	30m	100m	
PON	3.1	1312	1313	HS	T	1	J	A	W	50m	50m	
POST	3.2	1422	1423	HS	T	1	J	A	E	30m	50m	
POST	4.0	1723	1724	HS	R	1	J	A	-	50m	100m	

**Activity:** PON Pile Driver On PRE Pre Watch POST Post Watch ME-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.  
**Species Code:** DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; UMM Unidentified Marine Mammal; UP Unidentified Pinniped.  
**Visibility:** B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)  
**Sightings:** If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.  
**Behavior:** T Transient F Foraging R Resting H Haul Out

9/11/15

vibe attached : 1121  
 unattached : 1200  
 attached : 240  
 unattached : 313

attached : 1557  
 unattached : 1619



Marine Mammal Observation Form  
Northwest Environmental Consulting

Bremerton Naval Shipyard

Observer: Emily Drew

Date: Sept 14, 2005

Monitoring Location: Pier 6,

Page 1 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE		727										Start of 15 min. 100% cloud. Beaufort 1.
PRE	1.0	727	830	CS	H	10	M+F		—	200m	300m	Sea lions sleeping on fenceline floats ^{S of pier}
		742										Prewatch complete
PRE	1.1	817	817	CS	T	1	M		E	200m	310m	One of the CS is swimming along fence
PRE	1.2	830	936	CS	H	8	M+F		—	200m	300m	Sea lions continue to sleep
PRE	2.0	830	936	CS	H	15	M+F		—	200m	350m	Sea lions sleeping on fenceline SE of pier
PRE	2.1	937	1029	CS	H	8	M+F		—	100m	350m	(8/12) Sea lions still hauled out. 8 inside fence, 12 outside
PRE	1.3	937	1029	CS	H	19	M+F		—	100m	300m	(19/29) Sea lions still hauled out. 19 inside fence, 24 outside
PRE	3.0	1000	1006	HS	F	1	U+K		SW	100m	300m	Swimming near fence, inside
PRE	1.4	1030	1149	CS	H	16	M+F		—	100m	300m	(16/19) Sea lions hauled out; some swimming near fence 16 inside, 19 outside
PRE	2.2	1030	1139	CS	H	9	M+F		—	100m	350m	(9/12) " " " " 9 inside, 12 outside
PRE	2.3	1140	1200	CS	H	12	M+F			100m	150m	Sea lions hauled out. 12 inside fence, 13 outside.
PRE	1.5	1150	1200	CS	H	17	M+F			50m	130m	Sea lions hauled out. 17 inside fence, 24 outside
		1200										Lunch break

**Activity:** P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.

**Species Code:** DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; CS - California Sea Lion

UMM Unidentified Marine Mammal; UP Unidentified Pinniped.

**Visibility:** B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)

**Sightings:** If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.

**Behavior:** T Transient F Foraging R Resting H Haul Out

Marine Mammal Observation Form  
Northwest Environmental Consulting

Bremerton Naval Shipyard  
Pier 6

Observer: Emily Drew

Date: Sept 14, 2015

Monitoring Location:

Page 2 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE		1235										Restarting monitoring. Conditions are the same as morning.
PRE	4.0	1240	1344	CS	H	18	M+F			50+m	300m	Hauled out on fence floats, S & SW. 18 inside, 20 outside
PRE	5.0	1245	1344	CS	H	9	M+F			100+m	350m	Hauled out on fence float, SE. 9 inside, 13 outside
												↑ These are probably the same sealions as 1.0 and 2.0.
												Individuals in the group regularly hop in the water, swim near fence line, and haul out again.
PRE	6.0	1311	1322	CS	R	1	M	1 adult	N/A	100m	350m	Loosening, slowly swimming parallel to fence, 50m to inside.
PRE	5.1	1345		CS	H	10	M+F			100m	400m	Hauled out on fence floats. 10 inside, 14 outside
PRE	4.1	1345		CS	H	19	M+F			100m	350m	Hauled out on fence floats. 19 inside, 20 outside
PRE	7.0	1402	1402	HS	T	1	Unk		N	50m	150m	Traveling towards work barge, then dove.
		1507										End monitoring. No vibratory hammering or pile driving occurred today.

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.

Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; CS - California sea lion

UMM Unidentified Marine Mammal; UP Unidentified Pinniped.

Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)

Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.

Behavior: T Transient F Foraging R Resting H Haul Out



Marine Mammal Observation Form  
Northwest Environmental Consulting

Observer: Emily Drew Date: Sep 15, 2015 Monitoring Location: Pier 6 Page 1 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE		1630		START	OF	MONITORING						Weather: ~60°, 100% cloud, Beaufort 1-2, tide rising, scattered showers, winds 0-7 mph
PRE	1.0	1430	<del>1430</del>	CS	H	17	M+F		—			CS hauled out on fence floats, SE of pier section
PRE	2.0	1430		CS	H	20	"		—			CS hauled out on fence floats, S of pier section
PRE	3.0	1430		CS	H	26	"		—			CS hauled out on fence floats, section SW of pier
PRE	1.1	1526		CS	H	25	"		—			Section SE, hauled out
PRE	2.1	1526		CS	H	22	"		—			Section S, hauled out
PRE	3.1	1526		CS	H	19	"		—			Section SW, hauled out
PRE	1.2	1623		CS	H	24	"		—	75m	175m	Section SE, hauled out
PRE	2.2	1623		CS	H	24	"		—	75m	225m	Section S, hauled out
PRE	3.2	1623		CS	H	18	"		—	150m	275m	Section SW, hauled out
PON	—	1640										Pile driving begins 1640. Hauled out sea lions continue to sleep. Two start calling.
POST	—	1645										Pile driving ends 1645. No sea lions moved.
POST	1.3	1650		CS	H	26	M+F		—	75m	175m	Section SE, hauled out. None seemed disturbed by activity. Two got in water by end of 1/2 hr observation.

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.  
Species Code: DP Dall's Porpoise GW Gray Whale, HB Humpback Whale, HP Harbor Porpoise, HS Harbor Seal, KW Killer Whale, MW Minke Whale, SL Steller Sea Lion, SO Sea Otter, UMM Unidentified Marine Mammal, UP Unidentified Pinniped.  
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (>15km)  
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.  
Behavior: T Transient F Foraging R Resting H Haul Out



Marine Mammal Observation Form  
Northwest Environmental Consulting

Observer: Molly McGinnley Date: 9/16/15

Monitoring Location: pier 6

Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	0737	0738	CS	H	52	M	A	-	50m	100m	morning fence cont   cloud cover: Bsk 15:1, high tide, excellent vis mostly males
PRE	1.1	0739	0740	CS	T	1	M	A	N	10m	70m	
PRE	1.0	0759	0800	HS	T	1	U	A	NE	50m	80m	
PRE	1.2	0859	0811	CS	T	2	M	S	NE	75m	100m	porpoising all over the place/wrestling
PRE	1.3	0823	0824	CS	T	1	M	A	SW	50m	100m	
PON	1.2	0829	0841	CS	F	2	M	S	S	60m	110m	at least one caught a fish
PON	1.0	0845	0846	HS	T	1	U	A	W	60m	75m	
PON	1.2	0946	0949	CS	T	2	M	S	NW	60m	100m	porpoising/wrestling
PON	1.3	1257	1303	CS	T	1	M	S	NE	10m	50m	went under pier
PON	1.0	1443	1443	HS	T	1	U	A	E	15m	50m	
Post	1.0	1520	1521	CS	H	61	M	A	-	50m	100m	fence cont - mostly males

Activity: PON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.  
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; UMM Unidentified Marine Mammal; UP Unidentified Pinniped. CS: California Sea Lion  
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)  
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.  
Behavior: T Transient F Foraging R Resting H Haul Out

9/16/15  
hammer up: 0829  
up: 1240  
down: 210  
down: 1513

9/16/15  
driving: 1320-1513  
6 piles

**Marine Mammal Observation Form**  
**Northwest Environmental Consulting**

Observer: Molly McCormley Date: 9/17/15

Monitoring Location: Pier 6

Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	0923	0924	CL	H	50	-	-	-	50m	100m	overcast, excellent vis, B:1, high tide @ 0900 going down morning fence count, mostly males
PRE	1.0	1307	1308	HS	T	1	U	A	S	70m	120m	
PON	1.0	1334	1335	HS	R	1	U	A	E	10m	80m	
POST	1.0	1509	1513	CL	H	53	50M 30U	U	-	50m	100m	fence count
~~~~~												
Obs.	Molly McCormley	date: 9/21/15		monitoring loc: Pier 6								
PRE	1.0	0944	0950	CL	H	57	53M 30A 55A	30A 55A	-	50m	100m	pg 1 of 2 fence count 30 A, 5 SA, rest U (could only see partial body)
PRE	1.1	1348	1358	CL	T	1	M	A	SW	40m	100m	Scattered clouds, excellent vis, B:1 low tide @ 1000 going up
PON	1.2	1416	1425	CL	T	1	M	A	W	45m	95m	
PON	1.0	1427	1428	HS	T	1	U	A	S	50m	100m	
PON	1.0	1455	1458	HS	T	1	U	A	N	70m	90m	
PON	1.0	1517	1519	HS	T	1	U	A	W	100m	130m	steadily moving away
PON	1.3	1525	1528	CL	R	1	U	A	-	50m	95m	
PON	1.4	1535	1549	CL	T	2	U	A	S	50m	95m	T for a little, then rested

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter;
 UMM Unidentified Marine Mammal; UP Unidentified Pinniped. CL: California sea lion
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

9/17/15 Hammer 0923
 9/21/15 Hammer driving: 1311-1508
 9/21/15 driving: 1415-1609
 10 piles
 11 piles

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Molly McCormley Date: 9/21/15

Monitoring Location: pier 6

Page 2 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PON	1.0	1604	1605	HS	R	1	U	A	-	50m	60m	
POST	1.0	1610	1613	CL	H	72	67M URest	32A 9.5 Vrest	-	50m	100m	fence count unknown: cant see whole animal.
observer: Molly McCormley date: 9/22/15 monitoring loc: pier 6 pg. 1 of 1												
PRE	1.0	0927	0929	CL	H	65	53M Vrest	A: 48 S: 5	-	50m	100m	fence count unknown: cant see whole animal clear skies, B: 0 low tide @ 0930 excellent vis going up
PRE	1.0	0950	0959	HS	T	1	V	A	E	80m	130m	
PRE	1.1	1115	1116	HS	T	1	V	A	S	40m	90m	moving away from site
PRE	1.1	1129	1138	CL	R	1	M	A	-	40m	90m	
PRE	1.1	1311	1312	HS	T	1	V	A	NW	50m	40m	
POST	1.0	1622	1629	CL	H	58	54M V: 4	44A 10SA	-	50m	100m	unknown: cant see whole animal fence count
observer: Molly McCormley date: 9/23/15 monitoring loc: pier 6 pg. 1 of 2												
PRE	1.0	0757	0802	CL	H	49	M	2SA LBA	-	50m	100m	unknown: cant tell partly cloudy, B: 0, excellent vis fence count low tide @ 800 going up
PRE	1.0	0906	0907	HS	T	1	V	A	SE	100m	150m	
PRE	1.1	0923	0924	HS	T	1	V	A	E	10m	60m	

Activity: P-ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; UMM Unidentified Marine Mammal; UP Unidentified Pinniped. CL: California Sealion
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

9/22/15 driving: 1430-1621

11 piles

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Molly McCormiley Date: 9/23/15

Monitoring Location: pier 6

Page 2 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.1	1228	1231	HS	T	1	V	A	SW	40m	90m	
PRE	1.2	1238	1239	HS	R	1	V	A	-	500m	550m	
PRE	1.3	1325	1326	HS	T	1	V	A	NE	20m	30m	@ 1430 B:2
POST	1.0	1607	1610	CL	H	61	M	59A 25A	-	50m	50m	fence count
~~~~~												
Obs. Molly McCormiley date: 9/23/15 loc: pier 6 pg. 1 of 1												
PRE	1.0	0800	0805	CL	H	71	M	A	-	50m	100m	clear skies, excellent vis, B:1, high tide @ 0800 fence count
PRE	1.0	0903	0904	HS	T	1	V	A	W	20m	80m	
PON	1.0	0927	0928	HS	T	1	V	A	W	50m	80m	
PON	1.1	0929	0930	HS	R	1	V	SA	-	10m	70m	very small
Post	1.2	1028	1029	HS	T	1	V	A	E	10m	70m	
Post	1.0	1022	1027	CL	H	75	M	A	-	50m	100m	
~~~~~												

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter;
 UMM Unidentified Marine Mammal; UP Unidentified Pinniped. *CL: California sealion*
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

9/23/15 driving 0956 - 1045 3 piles
 driving 1347 - 1415 2 piles
 driving 1541 - 1554 1 pile
 9/28/15 driving 0911 - 0930 1 pile
 0958 - 1020 1 pile

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Molly McCormick

Date: 9/29/15

Monitoring Location: pier 6

Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	0900	0905	CE	H	81	M	A: 70 V: 2	-	50m	150m	clear skies, B:0, excellent vis, high tide @ 0900 getting down fence count v= can't tell (can't see whole animal)
PRE	1.0	0812	0813	HS	T	1	V	A	W	40m	140m	
PRE	1.1	1015	1016	CL	R	1	M	A	-	30m	130m	
PON	1.2	1102	1106	CL	T	3	M	A	SW	60m	110m	porpoising
PON	1.1	1508	1509	HS	T	1	V	A	W	80m	110m	
POST	1.0	1605	1610	CL	H	92	M	A	-	50m	150m	fence count

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter, UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

9/29/15 driving 1026-1207 9 piles
 driving 1505-1604 4 piles

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Emily Drew Date: Sept 30, 2015 Monitoring Location: Pier 6, Bremerton Page 1 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	(m) Distance to sighting	(m) Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	—	0907										Start of watch
PRE	1.0	0907	—	CS	H	10	M+F	—	—	150-200	325-350m	Sea lions on fence plants SW of Pier. Hourly count.
PRE	2.0	0901	—	CS	H	20	M+F	—	—	100m	300+	Sea lions on fence plants S of Pier. Hourly count.
PRE	3.0	0907	—	CS	H	28	M+F	—	—	75-200	250-275m	Sea lions on fence plants SE of Pier. Hourly count.
PRE	4+	1007	—	CS	H	10	M+F	—	—	150-200	325-350	On fence plants SW of pier.
PRE	2.1	1007	—	CS	H	24	M+F	—	—	100	300+	On fence plants S of pier.
PRE	3.1	1007	—	CS	H	28	M+F	—	—	75-200	250-275	On fence plants S of pier.
PRE	1=2	1107	—	CS	H	12	M+F	—	—	150-200	325-350	On fence plants SW of pier.
PRE	2.2	1107	—	CS	H	25	M+F	—	—	100	300+	On fence plants S of pier.
PRE	3.2	1107	—	CS	H	29	M+F	—	—	75-200	325+	On fence plants SE of pier.
PON	—	1150	454									Pile driving for 4 minutes; then crew takes lunch break
POST	1.3	1154		CS	H	15	M+F					On fence plants SW of pier. None seem disturbed.
POST	2.3	1154		CS	H	24	M+F					On fence plants SW of pier. None seem disturbed.
POST	3.3	1154		CS	H	28	M+F					On fence plants SE of pier. None seem disturbed.

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter.
UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1., etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Emily Drew

Date: Sept 30, 2015

Monitoring Location: Prier G,

Bremerton, WA

Page 2 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pupa	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PST	—	—	1209	—	—	—	—	—	—	—	—	End post watch. Pre watch continues for next pile driving.
PRE	4.0	1234	1234 1234	HS	T	1	UNK	—	N	50m	150m	Seal traveling up the channel to W of pier 6. Does not reappear.
PON	—	1242	—	—	—	—	—	—	—	—	—	Pile driving (dead blows) begins, and is intermittent.
PON	5.0	1245	1255	CS	R	1	M	—	—	50m	200m	Sea lion basks at surface, inside fence line
PON	1.4	1328	—	CS	H	10	M+F	—	—	—	—	Sea lions sleeping on floats, SW of pier.
PON	2.4	1328	—	CS	H+R	23	M+F	—	—	—	—	Sea lions sleeping on floats S of pier (1 is basking in water)
PON	3.4	1330	—	CS	H+R	20	M+F	—	—	—	—	Sea lions sleeping on floats SE of pier. (2 are basking in water)
PON	—	1333	—	—	—	—	—	—	—	—	—	Pile driving continues, intermittently every 5-10 minutes. Mostly deadblows
PON	6.0	1406	1406	CS	T	1	M	—	E	75m	250m	Sea lion swimming parallel with fence, 50m in front of pier.
POST	—	1407	—	—	—	—	—	—	—	—	—	Hammer is off piles while crew repositions barge.
POST	1.5	1420	1421	HS	F	1	UNK	—	E	10m	225m	Seal swims towards school of 4-6 fish just off end of pier
POST	2.5	1430	—	CS	H	14	M+F	—	—	—	—	CS sleeping/resting on floats SW of pier
POST	2.5	1430	—	CS	H+R	26	M+F	—	—	—	—	CS on floats S of pier (2 are floating in water)
POST	3.5	1432	—	CS	H	26	M+F	—	—	—	—	CS on floats SE of pier.

Activity: PON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter;
UMM Unidentified Marine Mammal; U/P Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

POST - 1432 ————— end of survey for the day

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: B. Thiele

Date: 8/1/15

Monitoring Location: Pier 6 north side

Page 1

of

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	m Distance to sighting	m Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE		7:45										Calm & Clear 5 knot wind near high-tide Beaufort 0
	1.0	7:55	7:55	CSL	HO	55	-	-	-	-	300+	Security Fence Sweep - 100 yards either side of pier end
PON		8:13	8:15									Area clear - 11 piles to line up
PON		8:43	8:45									9:15-9:17 9:36-9:37 9:50-9:50 9:50-9:56 10:00-10:01 10:12-10:13
POST		10:12										
POST	2.0	10:42	10:42	CSL	HO	50					300+	Security fence
PRE	3.0	1:13	1:13	CSL	HO	60					300+	Security fence Sweep Tide going out
PON	*	1:30	2:44									SEA Start 1:30-1:31 1:42 1:50 1:56 2:19 2:27 2:44
PON	1.0	2:20	2:20	HS	M	1	-	-	-	20	60	milling, then dove, no reaction to driving but hammer was between blows
PON	1.1	2:29	2:31	HS	M	1	-	-	-	100	150	large school of small fish adjacent to work area, between blows
PON	1.2	2:39	2:39	HS	M	1	-	-	-	200	250	between laminar blows
POST	1.3	2:49	2:59	HS	M	1				200	250	
POST	1.4	3:02	3:02	HS	M					50	250	
POST	4.0	3:24	3:24	CSL	HO	60					300+	final count

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.

Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter.

UMM Unidentified Marine Mammal; UP Unidentified Pinniped.

Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)

Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.

Behavior: T Transient F Foraging R Resting H Haul Out

4 take

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Emily Drew Date: Oct 5, 2015 Monitoring Location: Pier 6, Bremerton Page 1 of 3

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	—	0814	—									Start of watch
PRE	1.0	0815	—	CS	H	14	M+F	All age off shift	—	150+ m	>400m	CS hauled out on fence floats SW of Pier. Hourly count
PRE	2.0	0815	—	CS	H	16	M+F	"	—	50-100m	>400m	CS hauled out on fence floats S of Pier. Hourly count.
PRE	3.0	0815	—	CS	H	23	M+F	"	—	50-100m	>300m	CS hauled out on fence floats SE of Pier. Hourly count.
PRE	4.0	0850	—	HS	T	1	Unk	ADCH	E	40m	500m	Seal swimming just inside fence line. Only surfaced once.
PRE	1.1	0909	—	CS	H	17	M+F					SW
PRE	2.1	0909	—	CS	H	20	M+F		See above			See above, hourly count S
PRE	3.1	0909	—	CS	H	25	Unk					SE
PON	—	0911	0924									Pile driving begins, intermittently.
PON	—	0924	0924									Pile driving continues, intermittently, for 1 min.
PON	—	0934	0934									Pile driving continues for 1 min.
PON	—	0944	0944									Pile driving intermittently for 1 min
PON	—	0953	0953									Pile driving intermittently for 1 min.
POST	1.2	1004	—	CS	H	14	M+F			see above		SW - see above, hourly count of CS on SW fence floats

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.

Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion, SO Sea Otter.

UMM Unidentified Marine Mammal; UP Unidentified Pinniped.

Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)

Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.

Behavior: T Transient F Foraging R Resting H Haul Out

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Emily Drew Date: Oct 5, 2015 Monitoring Location: Pier 6, Bremerton Page 2 of 3

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pup	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
POST	2.2	1004	1004	CS	H+R	22	M+F	-	-	See above		See above. Hourly count of CS on fence flanks S of pier. 1 is in water.
POST	3.2	1004	-	CS	H	27	M+F	-	-	See above		See above. Hourly count of CS on fence flanks SE of pier
POST	-	1010										End of monitoring for 1st round of pile driving.
PRE	-	1106										Prewatch begins for 2nd round of pile driving
PRE	1.3	1106	-	CS	H	15	M+F	ADULT	-	See above		See above. Hourly count SW of pier
PRE	2.3	1106	-	CS	H	22	M+F	"	-	See above		See above. Hourly count S of pier
PRE	3.3	1106	-	CS	H+R	29	M+F	"	-	See above		See above. Hourly count SE of pier.
PRE	5.0	1110	-	HS	T	1	UNK	ADULT	NE	30- >300m		Seal swimming inside fence line SE of pier. Surfaced once.
PRE	-	1150										Lunch break; End of monitoring for lunch break.
PRE	-	1235										Monitoring resumes.
PRE	-	1237	-	CS	H+S	21	M+F	ADULT	-	See above		See above. Hourly count SW of pier. 2 in water.
PRE	-	1237	-	CS	H	24	M+F	"	-	See above		See above. Hourly count S of pier
PRE	-	1237	-	CS	H+R	32	M+F	"	-	See above		See above. Hourly count SE of pier 1 male in water.
PON	-	1330	1332									Start pile driving and end. Intermittent.

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter;
UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

Marine Mammal Observation Form
Northwest Environmental Consulting

Oct 5, 2015

Observer: Emily Drew

Date: ~~Sept 30, 2015~~

Monitoring Location: Pier 6, Bremerton WA

Page 3 of 3

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PON	-	1340	1344									Start pile driving and end. Intermittent.
PRE	-	1344	-	CS	H	21	M+F	Adults	-			See above. SW of pier
PRE	-	1344	-	CS	H	26	M+F	"	-	See above		See above. S of pier
PKE	-	1344	-	CS	H	31	M+F	"	-			See above. SE of pier.
PON	-	1351	1353									Start pile driving and end. Intermittent.
PON	-	1400	1402									Start pile driving and end. Intermittent.
PON	-	1409	1410									Start pile driving and end. Intermittent.
PON	-	1422	1424									Start pile driving and end. Intermittent.
PON	-	1429	1430									Start pile driving and end. Intermittent.
PON	-	1436	1438									Start pile driving and end.
POST	-	1440	-	CS	H	19	M+F	Adults	-			See above. SW of pier. 2 in water
POST	-	1440	-	CS	H+R	27	M+F	Adults	-	See above		See above. S of pier. 2 in water.
POST	-	1440	-	CS	H+R	31	M+F	Adults	-			See above. SE of pier. 1 in water.
POST	-	1453										End of watch. Sea lions did not appear to alter their behavior at any time during the day's pile driving.

Activity: PON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter.
UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

their behavior at any time during the day's pile driving.

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: B. Thiele Date: 9/16/15 Monitoring Location: Pier 6 Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	1:10	1:11	CSL	HO	68	-	-	-		200+	Security fence sweep
-												Overcast, Beaufort 1, unlimited visibi. tide is in
PON		2:33		-	-	-	-	-	-			17 piles 2:33-2:42 2:48-2:55 3:02-3:11 3:16-3:24 3:34-3:44 3:51-3:59 4:07-4:15 4:24-4:35 4:41-4:47
PDF		4:48										3:15 wind increasing - Beaufort 2 - calmer between P.P.s
POST	2.0	5:06		CSL	HO	55						4:15 wind calming - Beaufort 1 Security fence sweep

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

0 Take

Marine Mammal Observation Form
Northwest Environmental Consulting

Bremerton

Observer: Maloree W Date: 9/7/15 Monitoring Location: Pier G Page 1 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to (m) sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	-	7:20	7:50	CASL		34						Start 15 min pre-sweep - Security Fence
PON	-	7:55	8:00									
PON		8:13	8:18									
"		8:25	8:28									
"		8:40	8:43									
"		8:52	8:57									
"		9:16	9:17									
"		9:24	9:22									
PON		9:23	9:23	HS	T	1	-	-	S	30	95	no further sightings
PON		9:37	9:44									one min break @ 9:40
PON		9:50	9:54									
PON		9:56	9:57									
POST		9:57	10:27	CASL	HO	42						30 min post watch - 10:30
PRE		2:30	2:35	CASL	HO	55						Security Fence

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter;
UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

1 HS

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Malloy W.

Date: 10/7/15

Monitoring Location: Bremerton Pier 6

Page 2 of 2

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PON		2:48	2:54									2 min break in pile driving @ 2:49
"		2:55	3:03									
"		3:10	3:11									
"		3:17	3:23									2 min break in pile driving @ 3:33
"		3:29	3:39									
"		3:50	3:53									
"		3:55	3:58									
PON	1.0	4:03		HS	T	1			E	72	104	
PON		4:07	4:11									
PON	1.1	4:08		HS	T	1			E	58	110	End of sighting
PON		4:17	4:23									
PON		4:31	4:35									
POST		4:35	5:05	CASL		62						
	2.0	5:01		HS	T				N	42	62	End of sighting

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: Malloye W. Date: 10/8/15 Monitoring Location: Bremen Pier Co Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE		7:10	7:35	CAS		76						
PRE	1.0	7:18	-	HS	T	1			E	46	68	end of sighting
PON		8:26	8:36									2 min break in pile driving @ 8:27
"		8:43	8:49									
"		9:47	9:54									
"		10:01	10:11									
"		11:21	11:28									
"		11:38	11:44									
"		1:23	1:30									
"		1:38	1:45									
"		2:44	2:51									
"		2:58	3:06									
POST	2.0	3:50	4:20	CASL	HO	78				-	-	Post Pile Driving - security fence

Activity: PON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter; UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out

Take

Marine Mammal Observation Form
Northwest Environmental Consulting

Observer: B. Threlk Date: 10/13/15 Monitoring Location: Pier 6 Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pups	Direction of Travel	(m) Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE		2:48	2:50	CASL	HD	66	-	-	-	150+	300+	Clear, unlimited visibility, beaufort 0, slack tide some clouds moving in w/ beaufort 1 away from pier
PON		4:28	-	-	-	-	-	-	-	-	-	Area clear no sightings
POST		4:32	-	-	-	-	-	-	-	-	-	
POST		4:52	4:52	HS	M	1	-	-	-	50	100	
POST		5:00	5:00			61				150+	300+	Sweep of security fence

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.
Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter, UMM Unidentified Marine Mammal; UP Unidentified Pinniped.
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.
Behavior: T Transient F Foraging R Resting H Haul Out