

Date: October 13, 2015

To: Mark Mazzola, City of Seattle Department of Transportation (SDOT)

From: Calvin Douglas, Anchor QEA, LLC

Cc: Maureen Meehan, SDOT
Jody Robinson, Jacobs
Jennifer Horwitz and Heather Page, Anchor QEA, LLC

Re: Elliott Bay Seawall Project (NWS-2011-778-WRD and NWR-2013-10650)
REVISED Marine Mammal Monitoring Season 2 Annual Report

This report provides the marine mammal monitoring results for Season 2 (2014/2015 in-water work window) for the Elliott Bay Seawall Project (EBSP). In compliance with the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA), marine mammal monitoring was conducted during all in-water impact and vibratory pile driving activities for the EBSP. As part of the MMPA compliance, National Marine Fisheries Service (NMFS) issued a Letter of Authorization (LOA) and ESA Incidental Take Statement, which allows take of marine mammals by harassment incidental to pile driving activities in Elliott Bay.

MARINE MAMMAL MONITORING METHODS

Marine mammal monitoring methods and protocols were established per agency guidelines and permits, based on information in the following EBSP monitoring plan and permit documents:

- *Marine Mammal Protection Act and Endangered Species Act Updated Marine Mammal Monitoring and Mitigation Plan* (City of Seattle 2013)
- *National Marine Fisheries Service Endangered Species Act Incidental Take Statement for the Elliott Bay Seawall Project* (NOAA 2013)
- *Marine Mammal Protection Act Letter of Authorization for the Elliott Bay Seawall Project* (NOAA 2014)

The marine mammal monitoring included the following eight species, which are organized into three groups:

- Pinnipeds (seals)
 - California sea lion (*Zalophus californianus*)
 - Harbor seal (*Phoca vitulina*)
 - Steller sea lion (*Eumetopias jubatus*)
- Small cetaceans (porpoises)
 - Dall's porpoise (*Phocoena dalli*)
 - Harbor porpoise (*Phocoena phocoena*)

- Large cetaceans (whales)
 - Gray whale (*Eschrichtius robustus*)
 - Humpback whale (*Megaptera novaeangliae*)
 - Killer whale Southern Resident (*Orcinus orca*)
 - Killer whale transient

The monitoring area included two zones designated as Exclusion Zone and Level B Harassment Zone. The two zones varied by the type of pile work and marine mammal species. The Exclusion Zone included areas where a stop-work order was to be issued if species were present. Within the Level B Harassment Zones, marine mammals were closely monitored and take was documented, but work was allowed to continue. The Exclusion Zones and Level B Harassment Zones are presented on Table 1 and shown on Figure 1 in Attachment A.

TABLE 1. EXCLUSION ZONE AND LEVEL B HARASSMENT ZONE MONITORING THRESHOLDS BY SPECIES GROUP AND PILE INSTALLATION TYPE

Zone Threshold	Location to Monitor	Species Group
Vibratory/Steel Sheet Piles		
Exclusion Zone (Stop Work Order)	2.5 miles (4.0 kilometers [km]) to Source	Large Cetaceans
Level B Harassment Threshold (Take)	From 3.9 miles (6.3 km) to 2.5 miles (6.3 km to 4.0 km)	Large Cetaceans
Level B Harassment Threshold (Take)	From 3.9 miles (6.3 km) to Source	Pinnipeds and Small Cetaceans
Impact/Steel Sheet Piles		
Exclusion Zone (Stop Work Order)	3,280 feet (1.0 km) to Source	Large Cetaceans
Exclusion Zone (Stop Work Order)	200 feet (61.0 meters [m]) to Source	Pinnipeds and Small Cetaceans
Level B Harassment Threshold (Take)	3,280 feet to 200 feet (1.0 km to 61.0 m)	Pinnipeds and Small Cetaceans
Impact/Concrete Piles		
Exclusion Zone (Stop Work Order)	3,280 feet (1.0 km) to Source	Large Cetaceans
Exclusion Zone (Stop Work Order)	50 feet (15.2 m) to Source	Pinnipeds and Small Cetaceans
Level B Harassment Threshold (Take)	400 feet to 50 feet (121.9 m to 15.2 m)	Pinnipeds and Small Cetaceans

All monitoring was performed by land-based observers. The number of land-based observers was determined by the type of pile driving activity. One observer was located at the project site during impact and vibratory pile driving. During vibratory pile driving, two additional observers were located at designated viewpoints on the north and south entrance of Elliott Bay with unobstructed views of the bay. The south monitoring point is located at the Hamilton Viewpoint Park pier, identified as the Alki monitoring site. The north monitoring point is located at the West 32nd Avenue City pump station, identified as the Magnolia monitoring site. The monitoring locations are shown on Figure 2 in Attachment A.

Trained Anchor QEA marine mammal monitors used binoculars to search the monitoring zone for the presence of marine mammals during pile driving activities. Observations and positions of marine mammals were recorded on a daily monitoring data sheet. The daily data sheet was developed prior to program implementation and was used to record the following information: date; weather conditions; time and location of environmental conditions that could deter or prevent marine mammal detections; observation time period; marine mammal species observed; time, duration, and location of marine mammals observed; observable species behavior during pile driving activities; pile-related activities taking place during the monitoring; communication between the observers and the contractor or SDOT; and, if applicable, why a stop-work order was or was not initiated. The locations of marine mammal sightings were also identified on grid maps.

MARINE MAMMAL MONITORING RESULTS

Marine mammal monitoring during vibratory and impact pile driving was performed by trained Anchor QEA marine mammal monitors for a total of 81 days, between September 11, 2014, and March 5, 2015. Marine mammal monitoring was also conducted on an additional four days during which no piles were driven due to equipment issues. Marine mammal monitoring occurred on a total of 85 days during this reporting period. Overall, five of the eight potential marine mammal species were observed during the monitoring period. Four species were observed in the Level B Harassment Zone during pile driving, with the number of takes subsequently documented: California sea lion, harbor seal, Steller sea lion, and humpback whale. Total takes documented during the monitoring included 596 California sea lions, 149 harbor seals, 1 Steller sea lion, and 1 humpback whale. Pile-driving activity was stopped or delayed twice during the monitoring period. One stop-work order was initiated during pile driving when a humpback whale entered Elliott Bay during vibratory pile installation (November 5, 2014). A delay in the start of impact pile driving occurred when a harbor seal was resting on a float near the construction site (November 14, 2014). Vibratory pile installation continued during this impact pile installation delay. One killer whale was also observed, on September 30, 2014, within the Level B Harassment Zone in the main channel of Puget Sound, at a distance of 6 kilometers. Because no vibratory installation was occurring at the time of the sighting, no take or stop-work was required.

No observable changes in behavior in the California sea lions, harbor seals, or the single Steller sea lion were noted during pile driving activities. The majority of the California sea lion observations occurred from the Alki monitoring site (508 out of 596). There are two mooring buoys located in the southwest area of Elliott Bay (Figure 3 in Attachment A). California sea lions were observed resting on these buoys on almost every monitoring day. The number of sea lions observed from all three monitoring locations combined ranged from 0 to 12 and the average number observed per monitoring day was 7. On many of the monitoring days, sea lions occupied these mooring buoys during the entire monitoring period. Monitoring days when no Californian sea lions were observed usually occurred when large vessels were moored to one or both buoys. Overall, the sea lion group that occupies these mooring buoys accounted for the vast majority of takes documented during the monitoring period.

The majority of the harbor seal observations occurred from the Alki monitoring site and the Magnolia monitoring site (59 at Alki, 60 at Magnolia, for a total of 119 out of 149). Harbor seals were observed

relatively frequently during the monitoring period. The number of harbor seals observed per monitoring day ranged from 0 to 5; however, it was most common to observe 1 or 2. The average number observed per monitoring day was 1. Harbor seals were typically observed swimming for a few minutes or less.

The single Steller sea lion observation within the Level B Harassment Zone occurred on September 22, from the Alki monitoring site. This sea lion was observed swimming for about 8 minutes.

The stop-work occurred on November 5, 2014, when a humpback whale entered Elliott Bay. Per monitoring protocols, internet sites that track whale activity in Puget Sound were viewed prior to and during monitoring shifts. As a result, the monitors were aware that a humpback whale was in the main body of Puget Sound that day and approaching Elliott Bay. The whale was first observed near the mouth of Elliott Bay at 1410 and stop-work was initiated for the two vibratory hammers that were active at that time. The whale was observed intermittently from all three monitoring locations. For about the first hour, the whale swam within Elliott Bay near the Exclusion Zone boundary. The whale then moved farther into Elliott Bay into the Exclusion Zone boundary and was observed until about 1630, when the whale was last seen swimming toward the Duwamish River. Pile driving activity did not resume that day, as the last sighting was near sunset well inside the Exclusion Zone. The following morning, the monitors confirmed there was no evidence of the whale inside the Exclusion Zone before pile driving was initiated.

The delay in impact pile installation was initiated prior to the start of impact pile driving on November 14 when a harbor seal was lying on a float within the Exclusion Zone for impact hammer pile driving. A delay in work was initiated at 0915, and work began at 1215, 30 minutes after the seal left the float and swam outside the Exclusion Zone. Vibratory pile installation continued during this impact pile installation delay.

The 596 California sea lion takes documented during the Year 2 monitoring exceed the 175 maximum number of takes per year authorized in the EBSP LOA for Season 2 (NOAA 2014) and incidental take statement (NOAA 2013). As described previously, 508 of the 596 documented takes of California sea lion were associated with the mooring buoys located near the Alki monitoring site. This group of sea lions (average of 6) was observed almost daily from the Alki monitoring site, typically during the entire monitoring period, and no observable change in behavior was documented during any phase of pile driving activities.

The 149 harbor seal takes documented during the Season 2 monitoring are significantly below the 700 maximum number of takes per year authorized in the EBSP LOA for Season 2 (NOAA 2014) and incidental take statement (NOAA 2013). As described previously, no observable change in harbor seal behavior was documented during any phase of pile driving activities. The 1 humpback whale take documented during the Season 2 monitoring occurred when the whale entered the Level B Harassment Zone, prior to entering the Exclusion Zone, which initiated the stop-work order described previously. Four is the maximum number of humpback whale takes per year authorized in the EBSP LOA for Season 2 (NOAA 2014) and incidental take statement (NOAA 2013).

Monitoring information documented on the daily monitoring forms is included in Attachment B. Table B-1 provides a daily summary of pile driving activity and weather conditions during the monitoring period. Table B-2 provides a daily summary of marine mammal species observed, time and duration of observations, distance from pile driving activities, and species behavior per monitoring site. Table B-3

provides a daily summary of California sea lion and harbor seal takes per species and monitoring site. Since only one Steller sea lion and one humpback whale take were documented during the 85 monitoring days (on September 22 and November 5, respectively), these species are not included in Table B-3. Table B-4 provides a summary of takes documented during the monitoring period. As noted in Table B-1, some monitoring days included fog, rain, and wind conditions that made monitoring more challenging than during clear weather periods; however, no environmental conditions occurred during the monitoring period that warranted a stop or delay of pile driving activities because marine mammal species could not be observed.

REFERENCES

- City of Seattle, 2013. *Marine Mammal Protection Act and Endangered Species Act Updated Marine Mammal Monitoring and Mitigation Plan*. Elliott Bay Seawall Project.
- NOAA (National Oceanic and Atmospheric Administration), 2013. *National Marine Fisheries Service Endangered Species Act Incidental Take Statement for the Elliott Bay Seawall Project*.
- NOAA, 2014. *Marine Mammal Protection Act Letter of Authorization for the Elliott Bay Seawall Project*. Valid from October 22, 2014 through October 21, 2015. National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

ATTACHMENT A – FIGURES

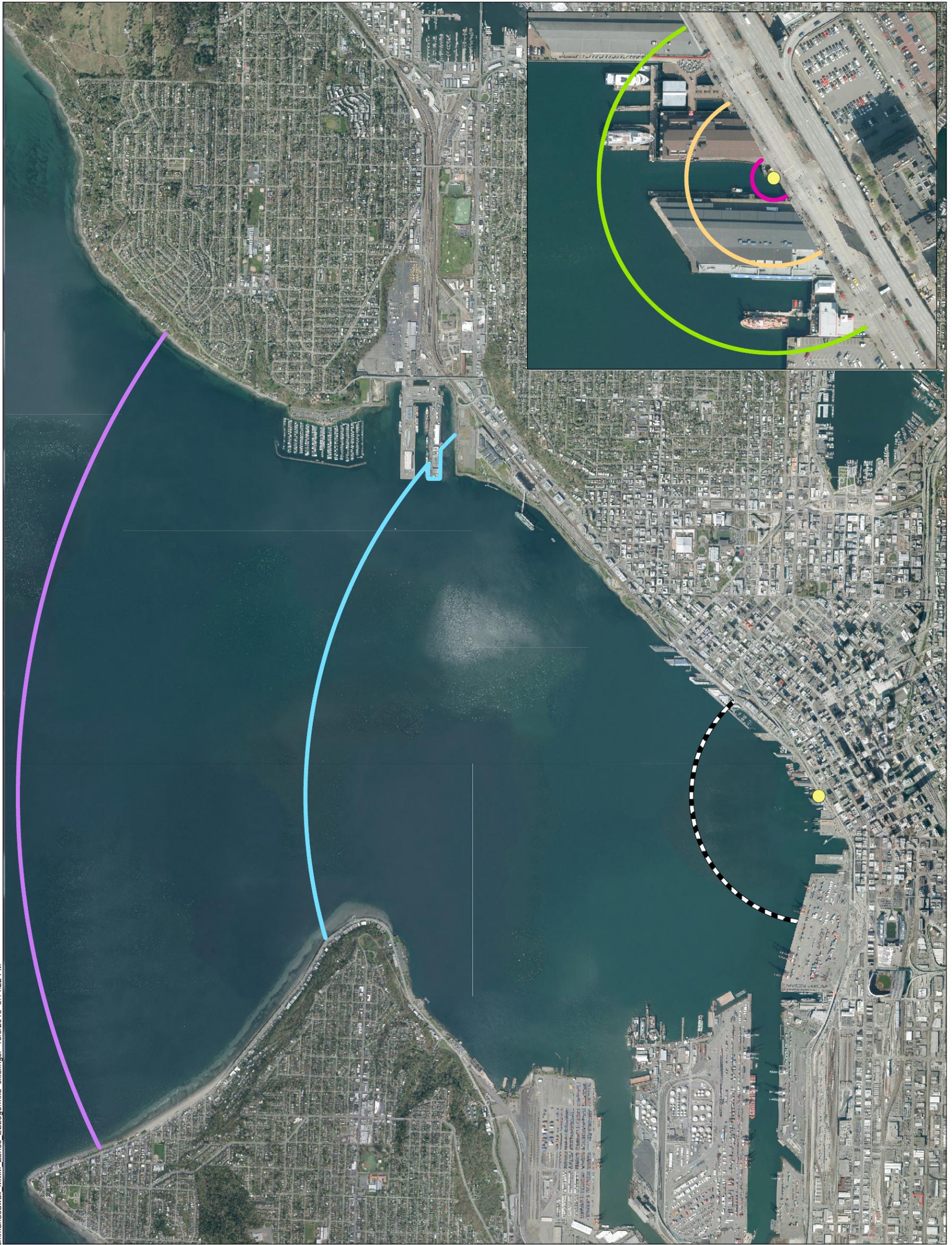
- Figure 1 Exclusion Zones and Level B Harassment Zones
- Figure 2 Marine Mammal Monitoring Area and Monitoring Locations
- Figure 3 Locations of Marine Mammals Observed during the Monitoring

ATTACHMENT B – TABLES

- Table B-1 Daily Summary of Pile Driving Activity and Weather Conditions during the Marine Mammal Monitoring
- Table B-2 Daily Summary of Species Observed, Time, Duration, Distance from Pile Driving, and Species Behavior per Monitoring Site
- Table B-3 Daily Summary of Documented California Sea Lion and Harbor Seal Takes per Monitoring Site
- Table B-4 Summary of Documented Takes During Season 2 Monitoring

ATTACHMENT A
FIGURES

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● Example Pile Related Noise Point Source¹

**Exclusion Zone Thresholds
(stop-work order will be issued if threshold is crossed)**

- Pinnipeds & Small Cetaceans - Impact Concrete
50 feet/15 meters
- Pinnipeds & Small Cetaceans - Impact Steel Sheet
200 feet/61 meters
- Large Cetaceans - Impact Steel Sheet & Concrete
3,280 feet/1,000 meters
- Large Cetaceans - Vibratory Steel Sheet
2.5 mi/4,023 meters

**Level B Harassment Zone Thresholds
("take" will be issued for a marine mammal in applicable zone)**

- Pinnipeds & Small Cetaceans - Impact Concrete
400 feet/122 meters to 50 feet/15 meters (stop work)
- Pinnipeds & Small Cetaceans - Impact Steel Sheet
3,280 feet/1,000 meters to 200 feet/61 meters (stop work)
- Large Cetaceans - Vibratory Steel Sheet
3.9 mi/6,276 meters to 2.5 miles/4,023 meters (stop work)
- Pinnipeds & Small Cetaceans - Vibratory Steel Sheet
3.9 mi/6,276 meters to Point Source



Feet

0 1,250 2,500 3,750 5,000



Note:
This figure replaces Figure 1 from the Updated Marine Mammal Monitoring and Mitigation Plan (April 2013). It incorporates NOAA's revised Level B harassment zones for impact driving of steel sheets and vibratory driving of steel sheets of 1,000 meters and 6,276 meters respectively.

¹Actual pile driving location varies north and south within the EBSP Project Area.

Figure 1
Exclusion Zones and Level B Harassment Zones
Marine Mammal Monitoring Season 2 Report
Elliott Bay Seawall Project

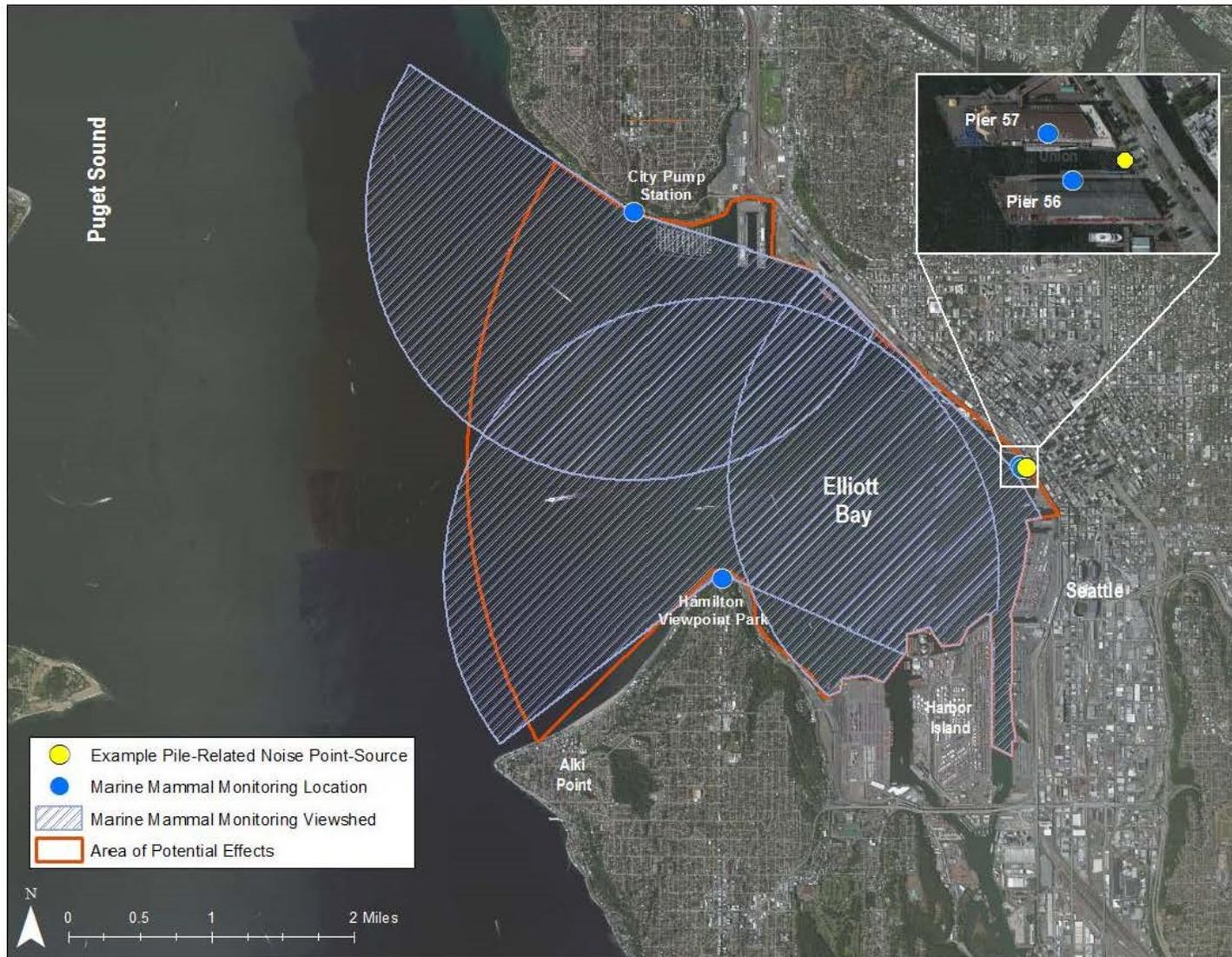
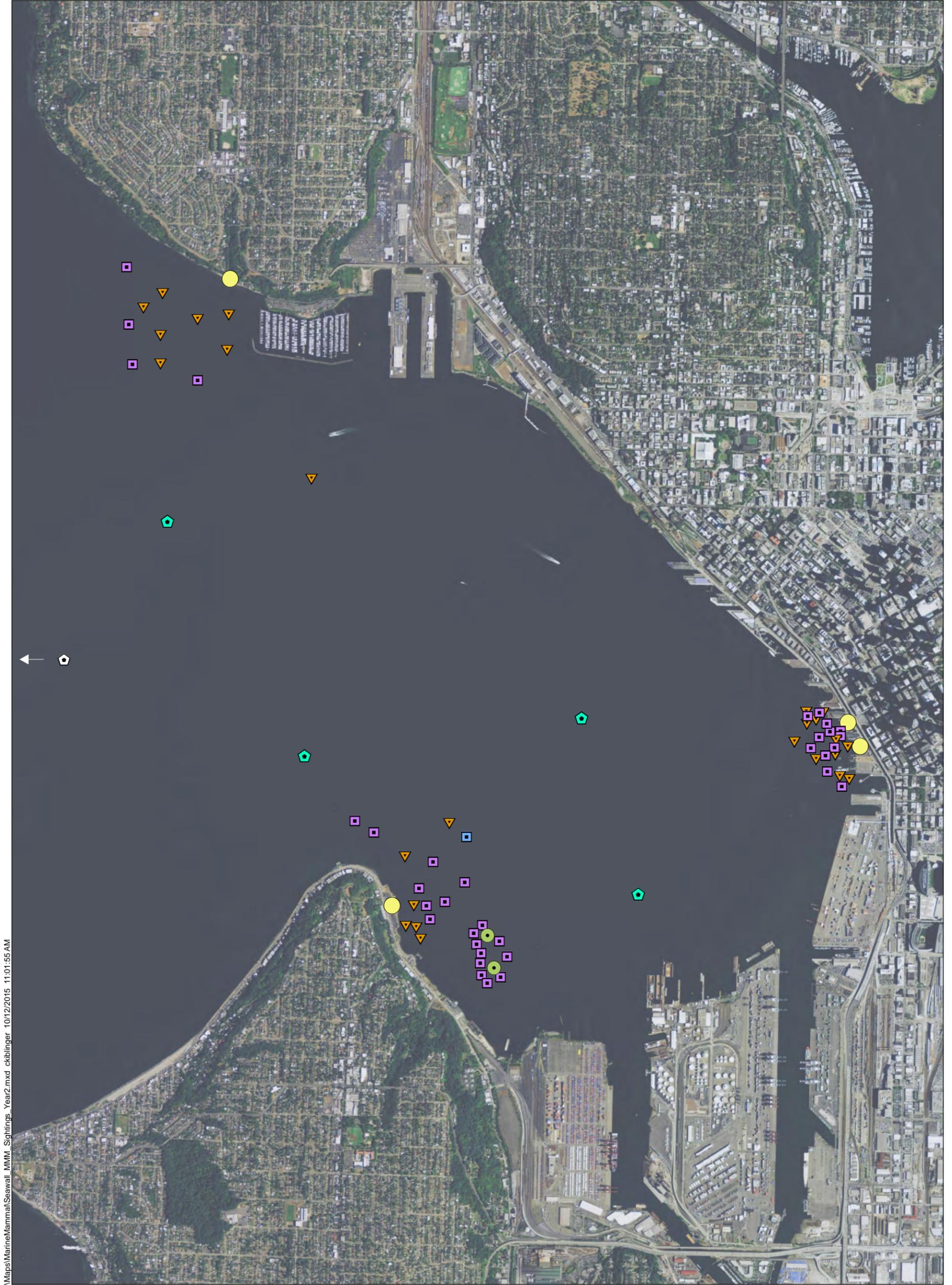


Figure 2. Marine Mammal Monitoring Area and Monitoring Locations



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- | | |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  Marine Mammal Monitoring Location |  Harbor Seal |
| Marine Mammal Sightings¹ |  California Sea Lion |
|  Killer Whale ² |  Stellar Sea Lion |
|  Humpback Whale ³ |  Mooring Buoys |

¹ Locations where marine mammals were observed, many of the symbols represent multiple sightings over the 85-day monitoring period.
² Killer whale was observed within the Level B Harassment Zone, but more than 30 minutes outside pile driving activity.
³ Represents one whale observed by all monitors over a 2-hour period.

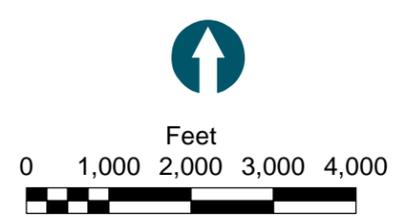


Figure 3
 Marine Mammal Sightings and Monitoring Locations
 Marine Mammal Monitoring Season 2 Annual Report
 Elliott Bay Seawall Project

ATTACHMENT B
TABLES

TABLE B-1. DAILY SUMMARY OF PILE DRIVING ACTIVITY AND WEATHER CONDITIONS DURING THE MARINE MAMMAL MONITORING

Date	Pile Driving Activity^a	Weather Conditions
Thursday, September 11, 2014	Vibratory from 0715 to 1100	Mostly clear skies, moderate wind, mid 50°F (10°C)
Friday, September 19, 2014	Vibratory from 1520 to 1610	Sunny, partly cloudy, mid 70°F (23°C)
Saturday, September 20, 2014	Vibratory from 1045 to 1440	Mostly clear skies, light breeze, mid 60°F (18°C)
Monday, September 22, 2014	Vibratory from 0945 to 1445	Overcast, rain in morning, light breeze, mid 60°F (18°C)
Tuesday, September 23, 2014	Vibratory from 0820 to 1410	Overcast with rain off and on during day, mid 60°F (18°C)
Wednesday, September 24, 2014	Vibratory from 0730 to 1510	Overcast, light rain, mid 60°F (18°C)
Thursday, September 25, 2014	Vibratory from 1030 to 1315	Partly cloudy in morning, upper 60°F (18°C), clear in afternoon
Friday, September 26, 2014	Vibratory from 1240 to 1515	Partly cloudy in morning, mid 60°F (18°C), clear in afternoon
Saturday, September 27, 2014	Vibratory from 0830 to 1445	Partly cloudy in morning with rain, upper 60°F (18°C), clear in afternoon
Sunday, September 28, 2014	Vibratory from 0900 to 1715	Partly cloudy, upper 60°F (18°C)
Tuesday, September 30, 2014	Vibratory from 1500 to 1715	Overcast, light breeze, mid 60°F (18°C)
Thursday, October 16, 2014	Vibratory from 1330 to 1720	Sunny, mid 60°F (18°C)
Friday, October 17, 2014	Vibratory from 0915 to 1010	Overcast, mid 50°F (10°C)
Thursday, October 23, 2014	Monitors mobilized on site but no pile driving occurred	Overcast with rain off and on during day, mid 50°F (10°C)
Friday, October 24, 2014	Vibratory from 0900 to 1725	Overcast, mid 50°F (10°C)
Saturday, October 25, 2014	Vibratory from 1415 to 1600	Overcast with rain off and on during day, mid 50°F (10°C)
Sunday, October 26, 2014	Vibratory from 0900 to 1710	Overcast with rain off and on during day, mid 50°F (10°C)
Monday, October 27, 2014	Vibratory from 0815 to 1730	Overcast, mid 50°F (10°C)
Tuesday, October 28, 2014	Vibratory from 0950 to 1730	Partly cloudy in morning with rain, upper 50°F (10°C), clear in afternoon
Wednesday, October 29, 2014	Vibratory from 0820 to 1800	Overcast, light breeze, mid 50°F (10°C)
Thursday, October 30, 2014	Vibratory from 1325 to 1715	Heavy rain in morning overcast in afternoon, light wind, mid 50°F (10°C)
Friday, October 31, 2014	Vibratory from 0830 to 1725	Overcast with light showers, mid 50°F (10°C)
Saturday, November 01, 2014	Vibratory from 0900 to 1440	Partly sunny, mid 50°F (10°C)
Sunday, November 02, 2014	Vibratory from 0920 to 1630	Overcast with light rain, mid 50°F (10°C)
Monday, November 03, 2014	Vibratory from 0930 to 1620	Overcast with rain off and on during day, mid 50°F (10°C)
Tuesday, November 04, 2014	Vibratory from 0735 to 1620	Overcast with fog and light rain, mid 50°F (10°C)
Wednesday, November 05, 2014	Vibratory from 0820 to 1410; stop work issued at 1410	Overcast with rain off and on during day, mid 50°F (10°C)
Thursday, November 06, 2014	Vibratory from 0730 to 1605	Partly sunny, with wind and rain off and on during day, mid 60°F (18°C)
Friday, November 07, 2014	Vibratory from 0735 to 1615	Clear and sunny, upper 50°F (10°C)

TABLE B-1. DAILY SUMMARY OF PILE DRIVING ACTIVITY AND WEATHER CONDITIONS DURING THE MARINE MAMMAL MONITORING

Date	Pile Driving Activity^a	Weather Conditions
Saturday, November 08, 2014	Vibratory and impact from 0900 to 1610	Partly cloudy with sun breaks, upper 50°F (10°C)
Sunday, November 09, 2014	Vibratory from 0900 to 1555	Overcast with rain and light fog in morning, mid 40°F (4°C)
Monday, November 10, 2014	Vibratory from 0815 to 1620	Mostly clear skies, mid 50°F (10°C)
Tuesday, November 11, 2014	Vibratory from 0710 to 1610	Clear, mid 40°F (4°C)
Wednesday, November 12, 2014	Vibratory from 0710 to 1605	Clear, with light breeze, mid 40°F (4°C)
Thursday, November 13, 2014	Vibratory from 0710 to 1635	Sunny, with wind, mid 40°F (4°C)
Friday, November 14, 2014	Vibratory from 0745 to 1605. Delay in impact issued from 0915 to 1215 due to harbor seal on float within Exclusion Zone. Seal left Exclusion Zone at 1145, impact delay lifted at 1215, impact from 1230 to 1300.	Clear, with light breeze, high 30°F (-1°C)
Saturday, November 15, 2014	Vibratory from 0915 to 1610 and impact 1030 to 1610	Sunny, 28°F (-2.2°C)
Sunday, November 16, 2014	Vibratory from 0900 to 1500	Sunny, with wind, mid 30°F (-1°C)
Monday, November 17, 2014	Vibratory from 0820 to 1600 and impact from 1300 to 1600	Clear, 20°F (-6.6°C)
Tuesday, November 18, 2014	Vibratory from 0750 to 1600 and impact from 0855 to 1600	Overcast, mid 30°F (-1°C)
Wednesday, November 19, 2014	Vibratory from 0755 to 1605 and impact from 0845 to 1605	Overcast, mid 30°F (-1°C)
Thursday, November 20, 2014	Vibratory from 0750 to 1605	Partly cloudy with rain in afternoon, high 20°F (-2.8°C)
Friday, November 21, 2014	Vibratory from 0810 to 1555	Overcast with rain off and on during day, mid 30°F (-1°C)
Saturday, November 22, 2014	Vibratory from 0905 to 1445	Partly cloudy, upper 40°F (4°C)
Sunday, November 23, 2014	Vibratory from 0920 to 1600	Overcast with light rain, moderate wind, mid 40°F (4°C)
Monday, November 24, 2014	Vibratory from 0825 to 1555	Overcast with rain off and on during day, mid 40°F (4°C)
Tuesday, November 25, 2014	Vibratory from 0810 to 1500 and impact from 0830 to 1030	Overcast with fog and rain, mid 50°F (10°C)
Wednesday, November 26, 2014	Vibratory from 0800 to 1515	Overcast, mid 50°F (10°C)
Saturday, November 29, 2014	Vibratory from 0930 to 1500	Sunny, with wind, mid 40°F (4°C)
Sunday, November 30, 2014	Vibratory from 0900 to 1555	Clear, with light breeze, high 30°F (-1°C)
Monday, December 01, 2014	Vibratory from 0810 to 1545	Clear, high 30°F (-1°C)

TABLE B-1. DAILY SUMMARY OF PILE DRIVING ACTIVITY AND WEATHER CONDITIONS DURING THE MARINE MAMMAL MONITORING

Date	Pile Driving Activity^a	Weather Conditions
Tuesday, December 02, 2014	Vibratory from 0810 to 1115	Sunny, 40°F (4°C)
Thursday, December 04, 2014	Vibratory from 0820 to 1550	Overcast with rain off and on during day, mid 40°F (4°C)
Friday, December 05, 2014	Vibratory from 0820 to 1550	Overcast with rain, mid 40°F (4°C)
Saturday, December 06, 2014	Vibratory from 0900 to 1355	Overcast with rain, upper 50°F (10°C)
Sunday, December 07, 2014	Impact from 0900 to 1600 (Vibratory scheduled but did not occur)	Partly sunny with some fog, mid 40°F (4°C)
Monday, December 08, 2014	Vibratory from 0815 to 1355	Clear, mid 40°F (4°C)
Monday, February 02, 2015	Monitors mobilized on site but no pile driving occurred	Overcast with rain, mid 50°F (10°C)
Wednesday, February 04, 2015	Vibratory from 0815 to 1710	Overcast with rain, mid 50°F (10°C)
Thursday, February 05, 2015	Vibratory from 0830 to 1555	Overcast with rain, mid 50°F (10°C)
Friday, February 06, 2015	Vibratory from 0830 to 1650	Overcast with rain, mid 50°F (10°C)
Saturday, February 07, 2015	Vibratory from 0915 to 1700	Overcast with rain and wind, mid 50°F (10°C)
Sunday, February 08, 2015	Vibratory from 0900 to 1510	Clear, with light breeze, mid 50°F (10°C)
Monday, February 09, 2015	Vibratory from 0810 to 1715	Overcast with rain off and on during day, mid 40°F (4°C)
Tuesday, February 10, 2015	Vibratory from 1330 to 1545	Clear, with morning rain, high 50°F (10°C)
Wednesday, February 11, 2015	Vibratory from 0825 to 1545	Overcast with fog, mid 50°F (10°C)
Thursday, February 12, 2015	Monitors mobilized on site but no pile driving occurred	Overcast, upper 50°F (10°C)
Friday, February 13, 2015	Vibratory from 0925 to 1145	Overcast, mid 50°F (10°C)
Saturday, February 14, 2015	Monitors mobilized on site but no pile driving occurred	Overcast, mid 50°F (10°C)
Sunday, February 15, 2015	Vibratory from 0925 to 1630	Sunny, mid 50°F (10°C)
Monday, February 16, 2015	Vibratory from 0800 to 1600	Sunny, mid 50°F (10°C)
Tuesday, February 17, 2015	Vibratory from 0740 to 1645	Sunny, mid 50°F (10°C)
Wednesday, February 18, 2015	Vibratory from 1500 to 1700	Overcast, mid 50°F (10°C)
Thursday, February 19, 2015	Vibratory from 0755 to 1710	Overcast with rain off and on during day, mid 50°F (10°C)
Friday, February 20, 2015	Vibratory from 0755 to 1710	Partly cloudy in morning, upper 50°F (10°C), clear in afternoon
Saturday, February 21, 2015	Vibratory from 0900 to 1725	Overcast, mid 50°F (10°C)
Sunday, February 22, 2015	Vibratory from 0950 to 1310	Clear, mid 40°F (4°C)

TABLE B-1. DAILY SUMMARY OF PILE DRIVING ACTIVITY AND WEATHER CONDITIONS DURING THE MARINE MAMMAL MONITORING

Date	Pile Driving Activity^a	Weather Conditions
Monday, February 23, 2015	Vibratory from 1115 to 1615	Sunny, mid 50°F (10°C)
Tuesday, February 24, 2015	Vibratory from 0855 to 0930	Sunny, mid 50°F (10°C)
Wednesday, February 25, 2015	Vibratory from 0900 to 1740	Partly cloudy with light breeze, mid 50°F (10°C)
Thursday, February 26, 2015	Vibratory from 0800 to 1615 and impact from 0800 to 1615	Overcast, mid 50°F (10°C)
Friday, February 27, 2015	Vibratory from 0900 to 1800 and impact from 0900 to 1800	Overcast with rain and fog, mid 40°F (4°C)
Saturday, February 28, 2015	Vibratory from 0900 to 1735 and impact from 0900 to 1735	Partly cloudy, mid 50°F (10°C)
Monday, March 02, 2015	Vibratory from 0845 to 1500	Partly cloudy, mid 50°F (10°C)
Thursday, March 05, 2015	Vibratory from 0730 to 1400	Clear, mid 40°F (4°C)

a Time shows approximate beginning and end of pile driving activity. Monitoring times began and ended at least 30 minutes outside pile driving activity. All pile driving days included breaks in pile driving. Some breaks lasted several hours.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Thursday, September 11, 2014	Construction Site	CSL (2)	0655 to 1015 (3 Hours, 20 Minutes)	~600 ft (~180 m)	Swimming and feeding outside ferry wake. No observable change in behavior during PD.
	Alki Site	CSL (2)	0820 to 0821 (1 Minute) and 0841 to 0849 (8 Minutes)	~10,000 ft (~3 km)	Swimming and foraging parallel to shoreline. No observable change in behavior during PD.
		HS (1)	0758 to 0759 (1 Minute)	~10,000 ft (~3 km)	Swimming parallel to shore. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0658 to 0805 (1 Hour, 7 Minutes)	~15,000 ft (~4.6 km)	Swimming and foraging near shoreline. No observable change in behavior during PD.
Friday, September 19, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (7)	1440 to 1640 (2 Hours)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Saturday, September 20, 2014	Construction Site	CSL (2)	0905 to 0917 (12 Minutes)	~500 ft (~150 m)	Swimming, submerging, and surfacing. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
		CSL (1)	1404 to 1405 (1 Minute)	~500 ft (~150 m)	Swimming, submerging, and surfacing. No observable change in behavior during PD.
		HS (1)	1148 to 1149 (1 Minute)	~300 ft (~90 m)	Swimming briefly above surface parallel to shoreline. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
		HS (1)	1404 to 1405 (1 Minute)	~500 ft (~150 m)	Swimming, submerging, and surfacing. No observable change in behavior during PD.
	Alki Site	CSL (7)	0900 to 1515 (6 Hours and 15 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
		HS (2)	1131 to 1220 (49 Minutes)	~10,500 ft (~3.2 km)	Swimming and foraging parallel to shoreline. No observable change in behavior during PD.
	Magnolia Site	HS (2)	1305 to 1515 (2 Hours and 10 Minutes)	~15,000 ft (~4.6 km)	Swimming and foraging parallel to shoreline. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Monday, September 22, 2014	Construction Site	CSL (1)	0855 to 1245 (3 Hours and 50 Minutes)	~500 ft (~150 m)	Swimming, submerging, and surfacing periodically. No observable change in behavior during PD.
		HS (1)	0700 to 0730 (30 Minutes)	~500 ft (~150 m)	Swimming, submerging, and surfacing. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
	Alki Site	CSL (8)	0705 to 1515 (8 Hours 10 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
		HS (2)	0852 to 0855 (3 Minutes)	~13,000 ft (~4 km)	Swimming and foraging near shoreline. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
		SS (1)	1314 to 1322 (8 Minutes)	~12,500 ft (~3.8 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	0715 to 0747 (32 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
		HS (1)	1456 to 1515 (19 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging. No observable change in behavior during PD.
Tuesday, September 23, 2014	Construction Site	CSL (1)	0730 to 0733 (3 Minutes)	~500 ft (~150 m)	Swimming, submerging, and surfacing. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
		HS (1)	0830 to 0832 (2 Minutes)	~300 ft (~90 m)	Swimming, submerging, and surfacing. No observable change in behavior during PD.
	Alki Site	CSL (8)	0700 to 1440 (7 Hours and 40 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1139 to 1150 (11 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
		HS (1)	0810 to 0811 (1 Minute)	~16,000 ft (~4.8 km)	Swimming and submerging. No observable change in behavior during PD.
Wednesday, September 24, 2014	Construction Site	CSL (1)	1310 to 1316 (6 Minutes)	~2000 ft (~600 m)	Swimming, surfacing, and foraging. No observable change in behavior during PD.
	Alki Site	CSL (7)	0700 to 1540 (8 Hours and 40 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0929 to 0933 (4 Minutes)	~15,000 ft (~4.6 km)	Swimming and surfacing near shoreline. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Thursday, September 25, 2014	Construction Site	CSL (1)	1111 to 1245 (1 Hour and 34 Minutes)	~1,000 ft (~300 m)	Swimming, submerging, surfacing, and foraging periodically. No observable change in behavior during PD.
		HS (1)	1053 to 1054 (1 Minute)	~500 ft (~150 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (7)	1000 to 1345 (3 Hours 45 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
		HS (2)	1230 to 1235 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming and surfacing near shoreline. No observable change in behavior during PD.
	Magnolia Site	HS (2)	0830 to 0959 (1 Hour and 29 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
Friday, September 26, 2014	Construction Site	CSL (1)	0940 to 1205 (2 Hours and 25 Minutes)	~2000 ft (~600 m)	Swimming and foraging. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
	Alki Site	CSL (8)	0930 to 1600 (6 Hours 30 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy. No observable change in behavior during PD.
	Magnolia Site	HS (1)	1410 to 1512 (1 Hour and 2 Minutes)	~15,000 ft (~4.6 km)	Swimming and surfacing periodically near shoreline. No observable change in behavior during PD.
Saturday, September 27, 2014	Construction Site	CSL (1)	0840 to 0844 (4 Minutes)	~400 ft (~120 m)	Swimming and foraging. No observable change in behavior during PD.
		HS (1)	0823 to 0827 (4 Minutes)	~300 ft (~91 m)	Swimming and foraging. No observable change in behavior during PD.
	Alki Site	CSL (5)	0800 to 1520 (6 Hours and 50 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (2)	0844 to 1431 (5 Hours and 47 Minutes)	~15,000 ft (~4.6 km)	Swimming and surfacing periodically. No observable change in behavior during PD.
		HS (1)	1001 to 1003 (2 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.
Sunday, September 28, 2014	Construction Site	CSL (1)	1222 to 1223 (1 Minute)	~500 ft (~150 m)	Swimming. No observable change in behavior during PD.
	Alki Site	HS (2)	1010 to 1012 (2 Minutes)	~10,500 ft (~3.2 km)	Swimming and surfacing near shoreline. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	0831 to 0834 (3 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging. No observable change in behavior during PD.
		HS (2)	1641 to 1720 (39 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Tuesday, September 30, 2014	Construction Site	HS (1)	1633 to 1637 (4 Minutes)	~1,000 ft (~300 m)	Swimming and submerging. No observable change in behavior during PD.
	Alki Site	CSL (9)	1330 to 1745 (4 Hours and 15 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
		HS (2)	1525 to 1739 (2 Hours and 14 Minutes)	~10,000 ft (~3 km)	Swimming, submerging, and foraging periodically. No observable change in behavior during PD.
	Magnolia Site	HS (2)	1343 to 1743 (4 Hours)	~16,000 ft (~4.8 km)	Swimming, submerging, and foraging periodically. No observable change in behavior during PD.
		KW (1)	1428 to 1430 (2 Minutes)	~20,000 ft (~6 km)	Swimming north in main channel of Puget Sound. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
Thursday, October 16, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (3)	1400 to 1750 (3 Hours and 50 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1600 to 1602 (2 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
Friday, October 17, 2014	Construction Site	HS (1)	0848 to 0850 (2 Minutes)	~1,000 ft (300 m)	Swimming and submerging.
	Alki Site	CSL (10)	0924 to 1010 (46 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
		HS (1)	0946 to 0948 (2 Minutes)	~10,500 ft (~3.2 km)	Swimming and submerging. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Thursday, October 23, 2014	Monitors mobilized on site but no pile driving occurred.				
Friday, October 24, 2014	Construction Site	HS (1)	1640 to 1647 (7 Minutes)	~1,200 ft (~360 m)	Swimming and submerging. No observable change in behavior during PD.
	Alki Site	CSL (9)	0740 to 1755 (10 Hours and 15 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
		HS (2)	1126 to 1308 (1 Hour and 42 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline. No observable change in behavior during PD.
	Magnolia Site	HS (1)	1230 to 1300 (30 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Saturday, October 25, 2014	Construction Site	CSL (2)	1544 to 1626 (42 Minutes)	~2,500 ft (~750 m)	Swimming, submerging, and foraging periodically. No observable change in behavior during PD.
	Alki Site	CSL (9)	1400 to 1630 (2 Hours and 30 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Sunday, October 26, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (8)	0830 to 1750 (9 Hours and 20 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	HS (1)	1027 to 1028 (1 Minute) and 1654 to 1655 (1 Minute)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.
Monday, October 27, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (9)	0745 to 1800 (10 Hours and 15 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
		HS (2)	0950 to 1730 (7 Hours and 40 Minutes)	~10,500 ft (~3.2 km)	Swimming and submerging periodically. No observable change in behavior during PD.
Magnolia Site	HS (2)	0752 to 0756 (4 Minutes)	~16,000 ft (~4.8 km)	Swimming.	
Tuesday, October 28, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (9)	0740 to 1800 (10 Hours and 20 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming and foraging. No observable change in behavior during PD.
		HS (1)	1005 to 1015 (10 Minutes)	~10,500 ft (~3.2 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
Magnolia Site	None	NA	NA	NA	
Wednesday, October 29, 2014	Construction Site	HS (1)	1724 to 1728 (4 Minutes)	~2,000 ft (600 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (6)	0730 to 1830 (11 Hours)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
		HS (1)	0830 to 0835 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming. No observable change in behavior during PD.
Magnolia Site	None	NA	NA	NA	

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Thursday, October 30, 2014	Construction Site	CSL (1)	1457 to 1459 (2 Minutes)	~900 ft (~275 m)	Swimming and foraging. No observable change in behavior during PD.
		HS (1)	1255 to 1301 (6 Minutes)	~900 ft (~275 m)	Swimming and foraging.
	Alki Site	CSL (7)	0800 to 1745 (9 Hours 45 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	HS (2)	1551 to 1552 (1 Minute)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.
Friday, October 31, 2014	Construction Site	CSL (1)	1425 to 1427 (2 Minutes) and 1657 to 1659 (2 Minutes)	~500 ft (~150 m)	Swimming and foraging. No observable change in behavior during PD.
		HS (1)	0810 to 0811 (1 Minute)	~400 ft (~120 m)	Swimming.
	Alki Site	CSL (8)	0750 to 1800 (10 Hours and 10 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	HS (1)	1327 to 1726 (3 Hours and 59 Minutes)	~15,000 ft (~4.6 km)	Swimming and submerging periodically. No observable change in behavior during PD.
Saturday, November 01, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (8)	0830 to 1520 (6 Hours and 50 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming and foraging. No observable change in behavior during PD.
		HS (1)	0905 to 0945 (40 Minutes) and 1540 to 1541 (1 Minute)	~10,500 ft (~3.2 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1120 to 1130 (10 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.
HS (1)		1300 to 1315 (15 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.	
Sunday, November 02, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (6)	0830 to 1700 (8 Hours 30 minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (2)	1044 to 1045 (1 Minute)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
		HS (1)	1040 to 1044 (4 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Monday, November 03, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (9)	0820 to 1650 (8 Hours and 30 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
		HS (2)	0820 to 1600 (7 Hours and 40 Minutes)	~10,500 ft (~3.2 km)	Swimming and submerging periodically. No observable change in behavior during PD.
Magnolia Site	HS (1)	1117 to 1633 (5 Hours and 16 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging periodically. No observable change in behavior during PD.	
Tuesday, November 04, 2014	Construction Site	CSL (1)	0801 to 0807 (6 Minutes)	~2,500 ft (~760 m)	Swimming and foraging. No observable change in behavior during PD.
		CSL (1)	1538 to 1546 (8 Minutes)	~5,000 ft (~1.5 km)	Swimming and foraging. No observable change in behavior during PD.
		HS (1)	1528 to 1529 (1 Minute)	~2,500 ft (~760 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (6)	0700 to 1650 (9 Hours 50 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1330 to 1605 (2 Hours and 35 Minutes)	~16,000 ft (~4.8 km)	Swimming periodically. No observable change in behavior during PD.
Wednesday, November 05, 2014	Construction Site	HW (1)	1410 to 1630 (2 Hours and 20 Minutes)	Throughout Elliott Bay	Swimming and breaching. Observed by all three monitors periodically. Take was documented when the whale entered Level B Harassment Zone and stop work was initiated when the whale entered Exclusion Zone.
	Alki Site	CSL (1)	1435 to 1445 (10 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
		HW (1)	1410 to 1630 (2 Hours and 20 Minutes)	Throughout Elliott Bay	Swimming and breaching. Observed by all three monitors periodically. Take was documented when the whale entered Level B Harassment Zone and stop work was initiated when the whale entered Exclusion Zone.
	Magnolia Site	HS (2)	0702 to 1544 (8 Hours and 42 Minutes)	~15,000 ft (~4.6 km)	Swimming periodically. No observable change in behavior during PD.
HW (1)		1410 to 1630 (2 Hours and 20 Minutes)	Throughout Elliott Bay	Swimming and breaching. Observed by all three monitors periodically. Take was documented when the whale entered Level B Harassment Zone and stop work was initiated when the whale entered Exclusion Zone.	
Thursday, November 06, 2014	Construction Site	HS (1)	1521 to 1522 (1 Minute)	~1,000 ft (~300 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (8)	0700 to 1645 (9 Hours and 45 Minutes)	~10,000 ft (~3 km)	Alternating between resting on mooring buoy and swimming and foraging. No observable change in behavior during PD.
	Magnolia Site	HS (1)	1254 to 1256 (2 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Friday, November 07, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (12)	0700 to 1645 (9 Hours and 45 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (2)	0902 to 1012 (1 Hour and 10 Minutes)	~10,500 ft (~3.2 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
	Magnolia Site	CSL (3)	0740 to 0800 (20 Minutes)	NA	Swimming towards Alki. These are assumed to be part of the group of 12 documented as takes at Alki. No observable change in behavior during PD.
Saturday, November 08, 2014	Construction Site	CSL (3)	0915 to 1111 (1 Hour and 56 Minutes)	~350 ft (~106 m)	Swimming periodically. No observable change in behavior during PD.
		CSL (10)	0830 to 1640 (8 Hours and 10 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Alki Site	HS (1)	1052 to 1053 (1 Minute)	~10,000 ft (~3 km)	Swimming near shore. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0847 to 1555 (7 Hours and 7 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging periodically. No observable change in behavior during PD.
Sunday, November 09, 2014	Construction Site	HS (1)	1030 to 1031 (1 Minute)	~1,000 ft (~300 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (4)	0921 to 1538 (5 Hours and 17 Minutes)	~10,500 ft (~3.2 km)	Swimming periodically. No observable change in behavior during PD.
		HS (1)	0925 to 1422 (3 Hours and 57 Minutes)	~10,500 ft (~3.2 km)	Swimming periodically and resting on floating driftwood. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	0945-1602 (6 Hours and 17 Minutes)	~15,000 ft (~4.6 km)	Swimming and submerging periodically. No observable change in behavior during PD.
Monday, November 10, 2014	Construction Site	CSL (1)	1000 to 1001 (1 Minute)	~1,000 ft (~300 m)	Swimming and foraging. No observable change in behavior during PD.
		HS (1)	1000 to 1130 (1 Hour and 30 Minutes)	~500 ft (~150 m)	Swimming and submerging periodically. No observable change in behavior during PD.
	Alki Site	CSL (5)	0745 to 1650 (9 Hours and 5 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	0830 to 1610 (7 Hours and 40 Minutes)	~10,500 ft (~3.2 km)	Swimming and submerging periodically. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1545 to 1650 (1 Hour and 5 Minutes)	~15,000 ft (~4.6 km)	Swimming, submerging, and foraging periodically. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Tuesday, November 11, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (6)	0732 to 1235 (5 Hours and 3 Minutes)	~10,500 ft (~3.2 km)	Swimming and foraging periodically. No observable change in behavior during PD.
		HS (1)	0805 to 1041 (2 Hours and 36 Minutes)	~10,500 ft (~3.2 km)	Swimming and submerging. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	0959 to 1000 (1 Minute)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
		HS (1)	0801 to 0802 (1 Minute)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
Wednesday, November 12, 2014	Construction Site	CSL (1)	1101 to 1105 (4 Minutes)	~800 ft (~240 m)	Swimming. No observable change in behavior during PD.
		HS (1)	1452 to 1454 (2 Minutes)	~800 ft (~240 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (2)	0710 to 1635 (10 Hours and 25 Minutes)	~10,500 ft (~3.2 km)	Swimming and foraging periodically. No observable change in behavior during PD.
	Magnolia Site	HS (4)	0712 to 1544 (8 Hours and 32 Minutes)	~15,000 ft (~4.6 km)	Swimming periodically. No observable change in behavior during PD.
Thursday, November 13, 2014	Construction Site	CSL (2)	1336 to 1338 (2 Minutes)	~600 ft (~240 m)	Swimming. No observable change in behavior during PD.
		HS (1)	0856 to 0857 (1 Minute) and 1117 to 1120 (3 Minutes)	~500 ft (~150 m)	Swimming and submerging. No observable change in behavior during PD.
	Alki Site	CSL (4)	0740 to 1605 (9 Hours and 25 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Friday, November 14, 2014	Construction Site	CSL (1)	0801 to 0802 (1 Minute)	~500 ft (~150 m)	Swimming. No observable change in behavior during PD.
		HS (1)	0915 to 1145 (2 Hours and 30 Minutes)	~220 ft (~67 m)	Harbor seal pup sleeping on float. Delay in start for impact hammering issued at 0915. Pup swam out of impact hammering Exclusion Zone at 1145, delay for impact hammering lifted at 1215. Vibratory pile installation continued during this time as no delay or stop work for pinnipeds during vibratory work is required.
	Alki Site	CSL (2)	0715 to 1635 (9 Hours and 20 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (3)	0748 to 1509 (7 Hours and 21 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Saturday, November 15, 2014	Construction Site	CSL (1)	1410 to 1415 (5 Minutes)	~500 ft (~150 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (7)	0830 to 1640 (8 Hours and 10 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (5)	0932 to 1526 (5 Hours and 54 Minutes)	~12,000 ft (~3.6 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (2)	1120 to 1121 (1 Minute) and 1404 to 1405 (1 Minute)	~15,000 ft (~4.6 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
		HS (1)	1611 to 1615 (4 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.
Sunday, November 16, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (7)	0830 to 1530 (7 Hours and 0 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (2)	0945 to 0946 (1 Minute) and 1215 to 1216 (1 Minute)	~12,000 ft (~3.6 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0924 to 0925 (1 Minute) and 1449 to 1450 (1 Minute)	~15,000 ft (~4.6 km)	Swimming and submerging. No observable change in behavior during PD.
Monday, November 17, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (4)	1100 to 1630 (5 Hours and 30 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (2)	1030 to 1035 (5 Minutes) and 1605 to 1610 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (2)	1137 to 1138 (1 Minute) and 1551 to 1558 (7 Minutes)	~15,000 ft (~4.6 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
		HS (1)	1507 to 1509 (2 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.
Tuesday, November 18, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (8)	0810 to 1608 (7 Hours and 58 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy periodically. No observable change in behavior during PD. Swam into area after monitoring began and left area before monitoring ended.
		HS (2)	1017 to 1018 (1 Minute) and 1348 to 1349 (1 Minute)	~10,500 ft (~3.2 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0723 to 1531 (8 Hours and 8 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Wednesday, November 19, 2014	Construction Site	CSL (1)	0751 to 0855 (1 Hour and 4 Minutes)	~1,500 ft (~450 m)	Swimming. No observable change in behavior during PD.
		HS (1)	1610 to 1611 (1 Minute)	~600 ft (~182 m)	Swimming.
	Alki Site	CSL (4)	0720 to 1635 (9 Hours and 15 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	1055 to 1059 (4 Minutes)	~10,500 ft (~3.2 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	0804 to 0834 (30 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.
		HS (1)	0735 to 0835 (1 Hour) and 1303 to 1313 (10 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.
Thursday, November 20, 2014	Construction Site	CSL (1)	1010 to 1013 (3 Minutes)	~500 ft (~150 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (11)	0720 to 1635 (9 Hours and 15 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
		HS (1)	1230 to 1245 (15 Minutes)	~10,500 ft (~3.2 km)	Seal pup resting on beach. No observable change in behavior during PD.
	Magnolia Site	CSL (2)	0730 to 0745 (15 Minutes) and 1025 to 1030 (5 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
		HS (2)	1220 to 1230 (10 Minutes) and 1400 to 1415 (15 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
Friday, November 21, 2014	Construction Site	HS (1)	0915 to 0916 (1 Minute)	~400 ft (~122 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (6)	0740 to 1625 (8 Hours and 45 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (2)	0838 to 0842 (4 Minutes) and 0916 to 0922 (6 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
Saturday, November 22, 2014	Construction Site	CSL (1)	1401 to 1409 (8 Minutes)	~3,000 ft (~900 m)	Swimming and foraging. No observable change in behavior during PD.
	Alki Site	CSL (6)	0830 to 1515 (6 Hours and 45 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (2)	1342 to 1343 (1 Minute) and 1456 to 1457 (1 Minute)	~11,000 ft (~3.4 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	HS (2)	0840 to 0842 (4 Minutes)	~15,000 ft (~4.6 km)	Swimming and foraging.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Sunday, November 23, 2014	Construction Site	CSL (1)	0845 to 0846 (1 Minute)	~500 ft (~150 m)	Swimming. Occurred prior to active pile driving and therefore was not included in the take tally count.
	Alki Site	CSL (4)	0829 to 1630 (8 Hours and 1 Minute)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	1346 to 1539 (1 Hour and 53 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1019 to 1020 (1 Minute) and 1303 to 1304 (1 Minute)	~15,000 ft (~4.6 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
Monday, November 24, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (3)	0800 to 1625 (8 Hours and 25 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	0740 to 0745 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming. Occurred prior to active pile driving and therefore was not included in the take tally count.
	Magnolia Site	CSL (1)	0834 to 0835 (1 Minute)	~16,000 ft (~4.8 km)	Swimming and foraging. No observable change in behavior during PD.
Tuesday, November 25, 2014	Construction Site	CSL (3)	0804 to 0806 (2 Minutes), 0901 to 0905 (4 Minutes)	~4,000 ft (~1.2 km)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (10)	0730 to 1530 (8 Hours)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0816 to 0817 (1 Minute)	~15,000 ft (~4.6 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
Wednesday, November 26, 2014	Construction Site	CSL (2)	1300 to 1320 (20 Minutes)	~100 ft (~30 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (5)	0730 to 1524 (7 Hours and 54 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD. Swam away before monitoring ended.
	Magnolia Site	CSL (1)	0951 to 0952 (1 Minute) and 1305 to 1307 (2 Minutes)	~14,000 ft (~4.3 km)	Swimming, submerging, and foraging periodically. No observable change in behavior during PD.
Saturday, November 29, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (5)	0900 to 1530 (6 Hours and 30 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1443 to 1509 (26 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging. No observable change in behavior during PD.
Sunday, November 30, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (11)	0830 to 1625 (7 Hours and 55 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Monday, December 01, 2014	Construction Site	CSL (4)	0745 to 1220 (4 Hours and 35 Minutes)	~800 ft (~240 m)	Swimming. No observable change in behavior during PD.
		HS (1)	0745 to 0747 (2 Minutes) and 1535 to 1542 (7 Minutes)	~800 ft (~240 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (6)	0740 to 1615 (8 Hours and 35 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	0830 to 0835 (5 Minutes) and 1100 to 1105 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming and submerging near shoreline. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	0854 to 1521 (6 Hours and 27 Minutes)	~16,000 ft (~4.8 km)	Swimming periodically. No observable change in behavior during PD.
Tuesday, December 02, 2014	Construction Site	HS (1)	0917 to 0920 (3 Minutes)	~400 ft (~120 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (8)	0740 to 1145 (4 Hours and 5 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0753 to 0754 (1 Minute)	~16,000 ft (~4.8 km)	Swimming and foraging.
Thursday, December 04, 2014	Construction Site	CSL (3)	0820 to 1547 (7 Hours and 27 Minutes)	~800 ft (~240 m)	Swimming, submerging, foraging periodically. No observable change in behavior during PD.
		HS (1)	1236 to 1242 (6 Minutes)	~800 ft (~240 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (4)	0740 to 1620 (8 Hours and 40 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	1120 to 1125 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming and submerging near shoreline. No observable change in behavior during PD.
	Magnolia Site	CSL (5)	0752 to 0924 (1 Hour and 32 Minutes)	~15,000 ft (~4.6 km)	Swimming and submerging periodically. No observable change in behavior during PD.
Friday, December 05, 2014	Construction Site	CSL (1)	0840 to 0846 (6 Minutes)	~300 ft (~90 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (5)	0740 to 1620 (8 Hours and 40 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
		HS (1)	1500 to 1505 (5 Minutes)	~11,500 ft (~3.5 km)	Swimming, submerging, and surfacing. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1501 to 1503 (2 Minutes)	~14,000 ft (~4.3 km)	Swimming. No observable change in behavior during PD.
		HS (1)	1444 to 1446 (2 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Saturday, December 06, 2014	Construction Site	None	NA	NA	NA
	Alki Site	CSL (5)	0830 to 1425 (6 Hours and 55 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0855 to 0856 (1 Minute)	~15,000 ft (~4.6 km)	Swimming and submerging. No observable change in behavior during PD.
Sunday, December 07, 2014	Construction Site	CSL (1)	1436 to 1437 (1 Minute)	~500 ft (~150 m)	Swimming. Occurred during breaks of more than 30 minutes from impact hammering and therefore was not included in the take tally count.
		HS (1)	1233 to 1234 (1 Minute) and 1319 to 1320 (1 Minute)	~80 ft (~24 m)	Swimming. Occurred during breaks of more than 30 minutes from impact hammering and therefore was not included in the take tally count.
	Alki Site	CSL (3)	0834 to 0836 (2 Minutes) and 1050 to 1052 (2 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline. Impact hammer only, observation outside Exclusion Zone and therefore was not included in the take tally count.
	Magnolia Site	CSL (1)	1101 to 1122 (21 Minutes)	~14,000 ft (~4.3 km)	Swimming near shoreline. Impact hammer only, observation outside Exclusion Zone and therefore was not included in the take tally count.
Monday, December 08, 2014	Construction Site	CSL (1)	1233-1235 (1 Minute)	~300 ft (~90 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (8)	0745 to 1425 (6 Hours and 40 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
		HS (1)	1000 to 1001 (1 Minute) and 1230 to 1231 (1 Minute)	~10,500 ft (~3.2 km)	Swimming and submerging. No observable change in behavior during PD.
	Magnolia Site	HS (3)	0905 to 0912 (7 Minutes) and 1307 to 1321 (14 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging. No observable change in behavior during PD.
Monday, February 02, 2015	Monitors mobilized on site but no pile driving occurred.				
Wednesday, February 04, 2015	Construction Site	CSL (2)	0830 to 0832 (2 Minutes) and 0958 to 1000 (2 Minutes)	~500 ft (~150 m)	Swimming. No observable change in behavior during PD.
		HS (2)	0813 to 1013 (2 Hours)	~400 ft (~120 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (5)	0720 to 1740 (10 Hours and 20 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	1312 to 1317 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0958 to 1006 (8 Minutes)	~15,000 ft (~4.6 km)	Swimming. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Thursday, February 05, 2015	Construction Site	CSL (1)	0759 to 0804 (5 Minutes)	~400 ft (~120 m)	Swimming.
		HS (2)	0742 to 0745 (3 Minutes) and 1041 to 1043 (2 Minutes)	~100 ft (~30 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (7)	0730 to 1630 (9 Hours)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy periodically. No observable change in behavior during PD.
		HS (1)	0730 to 1400 (6 Hours and 30 Minutes)	~10,500 ft (~3.2 km)	Resting on boat ramp. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1015 to 1017 (2 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
		HS (1)	0743 and 0816 (33 Minutes)	~16,000 ft (~4.8 km)	Swimming, submerging, and foraging.
Friday, February 06, 2015	Construction Site	CSL (1)	1010 to 1032 (22 Minutes)	~400 ft (~120 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (5)	0725 to 1520 (9 Hours and 55 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy periodically. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1505 to 1506 (1 Minute)	~15,000 ft (~4.6 km)	Swimming and submerging. No observable change in behavior during PD.
Saturday, February 07, 2015	Construction Site	HS (1)	1701 to 1702 (1 Minute)	~500 ft (~150 m)	Swimming.
	Alki Site	None	NA	NA	NA
	Magnolia Site	None	NA	NA	NA
Sunday, February 08, 2015	Construction Site	HS (1)	0955 to 0959 (4 Minutes)	~400 ft (~240 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (8)	0830 to 1540 (7 Hours and 10 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
		HS (1)	0945 to 0950 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming and submerging. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	0959 to 1000 (1 Minute) and 1307 to 1407	~15,000 ft (~4.6 km)	Swimming and submerging. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Monday, February 09, 2015	Construction Site	CSL (3)	0840 to 0845 (5 Minutes)	~1,200 ft (~365 m)	Swimming and submerging. No observable change in behavior during PD.
	Alki Site	CSL (6)	0710 to 1745 (10 Hours and 35 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (2)	1000 to 1700 (7 Hours) and 1425 to 1725 (3 Hours)	~10,500 ft (~3.2 km)	Swimming near shoreline. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	0830 to 0831 (1 Minute) and 1540 to 1542 (2 Minutes)	~15,000 ft (~4.6 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
Tuesday, February 10, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (6)	1300 to 1615 (3 Hours and 15 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Wednesday, February 11, 2015	Construction Site	CSL (1)	1514 to 1515 (1 Minute)	~1,200 ft (~360 m)	Swimming. No observable change in behavior during PD.
		HS (1)	0753 to 0807 (14 Minutes) and 1451 to 1507 (16 Minutes)	~300 ft (~90 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (8)	0720 to 1615 (8 Hours and 55 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0747 to 0821 (34 Minutes)	~16,000 ft (~4.8 km)	Swimming and foraging periodically.
Thursday, February 12, 2015	Monitors mobilized on site but no pile driving occurred.				
Friday, February 13, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (5)	0710 to 1215 (5 Hours and 5 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (2)	0913 to 0915 (2 Minutes)	~12,000 ft (~3.6 km)	Swimming and submerging.
Magnolia Site	HS (1)	1126 to 1130 (4 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.	
Saturday, February 14, 2015	Monitors mobilized on site but no pile driving occurred.				
Sunday, February 15, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (6)	0830 to 1700 (8 Hours)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Monday, February 16, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (5)	0700 to 1750 (10 Hours and 50 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	1445 to 1448 (3 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline. No observable change in behavior during PD.
Magnolia Site	None	NA	NA	NA	
Tuesday, February 17, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (6)	0700 to 1715 (10 Hours and 15 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (1)	1120 to 1122 (2 Minutes)	~14,000 ft (~4.3 km)	Swimming. No observable change in behavior during PD.
Wednesday, February 18, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (3)	0700 to 1730 (10 Hours and 30 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Thursday, February 19, 2015	Construction Site	CSL (1)	0754 to 0756 (2 Minutes)	~1,000 ft (~300 m)	Swimming. No observable change in behavior during PD.
		HS (1)	0926 to 0929 (3 Minutes)	~500 ft (~150 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (9)	0700 to 1740 (10 Hours and 40 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (1)	1145 to 1148 (3 Minutes) and 1509 to 1510 (1 Minute)	~15,000 ft (~4.6 km)	Swimming, submerging, and foraging. No observable change in behavior during PD.
Friday, February 20, 2015	Construction Site	CSL (1)	1122 to 1124 (2 Minutes)	~300 ft (~90 m)	Swimming. No observable change in behavior during PD.
	Alki Site	CSL (6)	0700 to 1740 (10 Hours and 40 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	1156 to 1157 (1 Minute) and 1543 to 1545 (2 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline. No observable change in behavior during PD.
	Magnolia Site	CSL (2)	1610 to 1611 (1 Minute)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Saturday, February 21, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (7)	0830 to 1755 (9 Hours and 25 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	HS (1)	1225 to 1226 (1 Minute) and 1703 to 1704 (1 Minutes)	~15,000 ft (~4.6 km)	Swimming and submerging. No observable change in behavior during PD.
Sunday, February 22, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (5)	0900 to 1340 (6 Hours and 40 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
	Magnolia Site	CSL (1)	1152 to 1155 (3 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
HS (1)		1055 to 1056 (1 Minute)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.	
Monday, February 23, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (6)	0645 to 1645 (10 Hours)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	1500 to 1501 (1 Minute)	~10,500 ft (~3.2 km)	Swimming near shoreline. No observable change in behavior during PD.
Magnolia Site	None	NA	NA	NA	
Tuesday, February 24, 2015	Construction Site	CSL (1)	1702 to 1707 (5 Minutes)	~800 ft (~240 m)	Swimming. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.
	Alki Site	CSL (10)	0645 to 1730 (10 Hours and 45 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD.
		HS (1)	0940 to 0945 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline.
	Magnolia Site	CSL (1)	0710 to 0714 (4 Minutes) and 0952 to 1001 (9 Minutes)	~16,000 ft (~4.8 km)	Swimming. No observable change in behavior during PD.
Wednesday, February 25, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (5)	0920 to 1810 (8 Hours and 50 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming in water near buoy. No observable change in behavior during PD. Swam into area after monitoring began.
		HS (1)	0930 to 0935 (5 Minutes)	~9,000 ft (~2.7 km)	Swimming. No observable change in behavior during PD.
	Magnolia Site	HS (1)	0716 to 0808 (52 Minutes)	~16,000 ft (~4.8 km)	Swimming. Occurred more than 30 minutes prior to or following active PD and therefore was not included in the take tally count.

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Thursday, February 26, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (7)	0645 to 1645 (10 Hours)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Friday, February 27, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (6)	0830 to 1830 (10 Hours)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Saturday, February 28, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (7)	0830 to 1805 (9 Hours and 35 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA
Monday, March 02, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (6)	0700 to 1530 (8 Hours and 30 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
		HS (1)	0950 to 0955 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA

TABLE B-2. DAILY SUMMARY OF SPECIES OBSERVED, TIME, DURATION, DISTANCE FROM PILE DRIVING, AND SPECIES BEHAVIOR PER MONITORING SITE

Date	Monitoring Site	Species Observed (number)	Time and Duration Observed	Distance from Pile Driving	Behavior
Thursday, March 05, 2015	Construction Site	None	NA	NA	NA
	Alki Site	CSL (8)	0700 to 1430 (7 Hours and 30 Minutes)	~10,000 ft (~3 km)	Resting on mooring buoy and swimming and foraging in water near buoy. No observable change in behavior during PD.
		HS (1)	1115 to 1120 (5 Minutes)	~10,500 ft (~3.2 km)	Swimming near shoreline. No observable change in behavior during PD.
	Magnolia Site	None	NA	NA	NA

Notes:

CSL = California Sea Lion

HS = Harbor Seal

SS = Steller Sea Lion

KW = Killer Whale

HW = Humpback Whale

PD = Pile Driving

NA = Not Applicable

ft = feet

km = kilometer

m = meter

Gray shading identifies observations that are not included in the take count because they occurred more than 30 minutes outside of pile driving activity or are duplicate sightings from other monitoring locations.

TABLE B-3. DAILY SUMMARY OF DOCUMENTED CALIFORNIA SEA LION AND HARBOR SEAL TAKES PER MONITORING SITE

Date	California Sea Lion				Harbor Seal			
	Construction Site	Alki Site	Magnolia Site	Total Takes	Construction Site	Alki Site	Magnolia Site	Total Takes
Thursday, September 11, 2014	2	2	0	4	0	1	1	2
Friday, September 19, 2014	0	7	0	7	0	0	0	0
Saturday, September 20, 2014	1	7	0	8	1	2	2	5
Monday, September 22, 2014 ^a	1	8	0	9	0	0	1	1
Tuesday, September 23, 2014	0	8	1	9	1	0	1	2
Wednesday, September 24, 2014	1	7	0	8	0	0	1	1
Thursday, September 25, 2014	1	7	0	8	1	2	0	3
Friday, September 26, 2014	0	8	0	8	0	0	1	1
Saturday, September 27, 2014	1	5	2	8	1	0	1	2
Sunday, September 28, 2014	1	0	1	2	0	2	2	4
Tuesday, September 30, 2014	0	9	0	9	1	2	2	5
Thursday, October 16, 2014	0	3	1	4	0	0	0	0
Friday, October 17, 2014	0	10	0	10	1	1	0	2
Thursday, October 23, 2014	0	0	0	0	0	0	0	0
Friday, October 24, 2014	0	9	0	9	1	2	1	4
Saturday, October 25, 2014	2	9	0	11	0	0	0	0
Sunday, October 26, 2014	0	8	0	8	0	0	1	1
Monday, October 27, 2014	0	9	0	9	0	2	2	4
Tuesday, October 28, 2014	0	9	0	9	0	1	0	1
Wednesday, October 29, 2014	0	6	0	6	1	1	0	2
Thursday, October 30, 2014	1	7	0	8	1	0	2	3
Friday, October 31, 2014	1	8	0	9	1	0	1	2
Saturday, November 01, 2014	0	8	1	9	0	1	1	2
Sunday, November 02, 2014	0	6	2	8	0	0	1	1
Monday, November 03, 2014	0	9	0	9	0	2	1	3
Tuesday, November 04, 2014	2	6	1	9	1	0	0	1
Wednesday, November 05, 2014 ^a	0	1	0	1	0	0	2	2
Thursday, November 06, 2014	0	8	0	8	1	0	1	2
Friday, November 07, 2014	0	12	0	12	0	2	0	2
Saturday, November 08, 2014	3	10	0	13	0	1	1	2
Sunday, November 09, 2014	0	4	1	5	1	1	0	2
Monday, November 10, 2014	1	5	1	7	1	1	0	2
Tuesday, November 11, 2014	0	6	1	7	0	1	1	2
Wednesday, November 12, 2014	1	2	0	3	1	0	4	5
Thursday, November 13, 2014	2	4	0	6	1	0	0	1
Friday, November 14, 2014	1	2	0	3	1	0	3	4
Saturday, November 15, 2014	1	7	2	10	0	5	1	6
Sunday, November 16, 2014	0	7	0	7	0	2	1	3
Monday, November 17, 2014	0	4	2	6	0	2	1	3
Tuesday, November 18, 2014	0	8	0	8	0	2	1	3
Wednesday, November 19, 2014	1	4	1	6	1	1	1	3
Thursday, November 20, 2014	1	11	2	14	0	1	2	3
Friday, November 21, 2014	0	6	0	6	1	0	2	3
Saturday, November 22, 2014	1	6	0	7	0	2	2	4
Sunday, November 23, 2014	0	4	1	5	0	1	0	1
Monday, November 24, 2014	0	3	1	4	0	0	0	0
Tuesday, November 25, 2014	3	10	0	13	0	0	1	1
Wednesday, November 26, 2014	2	5	1	8	0	0	0	0
Saturday, November 29, 2014	0	5	1	6	0	0	0	0

TABLE B-3. DAILY SUMMARY OF DOCUMENTED CALIFORNIA SEA LION AND HARBOR SEAL TAKES PER MONITORING SITE

Date	California Sea Lion				Harbor Seal			
	Construction Site	Alki Site	Magnolia Site	Total Takes	Construction Site	Alki Site	Magnolia Site	Total Takes
Sunday, November 30, 2014	0	11	0	11	0	0	0	0
Monday, December 01, 2014	4	6	1	11	1	1	0	2
Tuesday, December 02, 2014	0	8	0	8	1	0	1	2
Thursday, December 04, 2014	3	4	5	12	1	1	0	2
Friday, December 05, 2014	1	5	1	7	0	1	1	2
Saturday, December 06, 2014	0	5	0	5	0	0	1	1
Sunday, December 07, 2014	0	0	0	0	0	0	0	0
Monday, December 08, 2014	1	8	0	9	0	1	3	4
Monday, February 02, 2015	0	0	0	0	0	0	0	0
Wednesday, February 04, 2015	2	5	0	7	2	1	1	4
Thursday, February 05, 2015	1	7	1	9	2	1	1	4
Friday, February 06, 2015	1	5	1	7	0	0	0	0
Saturday, February 07, 2015	0	0	0	0	1	0	0	1
Sunday, February 08, 2015	0	8	1	9	1	1	0	2
Monday, February 09, 2015	3	6	1	10	0	2	0	2
Tuesday, February 10, 2015	0	6	0	6	0	0	0	0
Wednesday, February 11, 2015	1	8	0	9	1	0	1	2
Thursday, February 12, 2015	0	0	0	0	0	0	0	0
Friday, February 13, 2015	0	5	0	5	0	2	1	3
Saturday, February 14, 2015	0	0	0	0	0	0	0	0
Sunday, February 15, 2015	0	6	0	6	0	0	0	0
Monday, February 16, 2015	0	5	0	5	0	1	0	1
Tuesday, February 17, 2015	0	6	0	6	0	0	1	1
Wednesday, February 18, 2015	0	3	0	3	0	0	0	0
Thursday, February 19, 2015	1	9	0	10	1	0	1	2
Friday, February 20, 2015	1	6	2	9	0	1	0	1
Saturday, February 21, 2015	0	7	0	7	0	0	1	1
Sunday, February 22, 2015	0	5	1	6	0	0	1	1
Monday, February 23, 2015	0	6	0	6	0	1	0	1
Tuesday, February 24, 2015	0	10	1	11	0	1	0	1
Wednesday, February 25, 2015	0	5	0	5	0	1	0	1
Thursday, February 26, 2015	0	7	0	7	0	0	0	0
Friday, February 27, 2015	0	6	0	6	0	0	0	0
Saturday, February 28, 2015	0	7	0	7	0	0	0	0
Monday, March 02, 2015	0	6	0	6	0	1	0	1
Thursday, March 05, 2015	0	8	0	8	0	1	0	1
Total	50	508	38	596	30	59	60	149
Average	0.5	5.9	0.2	6.6	0.3	0.7	0.4	1.4

a Take of one Steller sea lion on September 22, 2014, and one humpback whale on November 5, 2014 were also documented.

TABLE B-4. SUMMARY OF DOCUMENTED TAKES PER SPECIES AND MONITORING SITE

California Sea Lion				Harbor Seal				Steller Sea Lion				Humpback Whale ^a			
Construction Site	Alki Site	Magnolia Site	Total Takes	Construction Site	Alki Site	Magnolia Site	Total Takes	Construction Site	Alki Site	Magnolia Site	Total Takes	Construction Site	Alki Site	Magnolia Site	Total Takes
50	508	38	596	30	59	60	149	0	1	0	1	1	1	1	1

a One humpback whale was observed at all three monitoring locations on November 5, 2014.