

# Memorandum

May 8, 2024

To: Katherine Chesick and Jill Macik, Seattle Department of Transportation

From: Michelle Havey and Reed Peloquin, Anchor QEA

cc: Ticson Mach, Seattle Department of Transportation  
David Graves, Seattle Parks and Recreation  
Jody Robinson and Jesse Kidd, Jacobs  
Heather Page, Josh Jensen, and Merri Martz, Anchor QEA

**Re: Waterfront Park Reconstruction Project Season 2 and Don Armeni Boat Ramp Project (NWS-2019-703-WRD) Marine Mammal Monitoring Report**

This report provides the marine mammal monitoring results for Season 2 (fall 2023) for the Waterfront Park Reconstruction Project (Pier 58 Project) located at Pier 58 and results from the Don Armeni Boat Ramp Project (Don Armeni Project). Pier 58 is located on the downtown Seattle waterfront in Elliott Bay, Washington, and the Don Armeni Boat Ramp is in the northeast section of the west Seattle waterfront (Figure 1). In compliance with the Endangered Species Act and the Marine Mammal Protection Act, marine mammal monitoring was conducted during all in-water pile-driving and removal activities for the two projects. As part of the Marine Mammal Protection Act compliance, the National Marine Fisheries Service issued an Incidental Harassment Authorization (IHA) for in-water pile driving and removal, which allows take of marine mammals by harassment incidental to pile-driving and removal activities in Elliott Bay for the Pier 58 Project and Don Armeni Project.

## Marine Mammal Monitoring Methods

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

- *Marine Mammal Monitoring Plan for the Waterfront Park Reconstruction Project Season 2* (Anchor QEA 2023)
- *Marine Mammal Protection Act Incidental Harassment Authorization Renewal for the Pier 58 Reconstruction Project* (NOAA 2023)
- *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts* (NMFS 2018)

Under the 2023 IHA, both projects were required to monitor for 12 species (NOAA 2023). The 12 species were organized into the following five functional hearing groups:

- High-frequency cetaceans (porpoises)

- Dall's porpoise (*Phocoena dalli*)
  - Harbor porpoise (*Phocoena phocoena*)
- Mid-frequency cetaceans (dolphins and whales)
  - Southern resident distinct population segment (DPS; *Orcinus orca*) and transient killer whales
  - Common bottlenose dolphin (*Tursiops truncatus*)
  - Long-beaked common dolphin (*Delphinus capensis*)
- Low-frequency cetaceans (whales)
  - Gray whale (*Eschrichtius robustus*)
  - Humpback whale (*Megaptera novaeangliae*)
  - Minke whale (*Balaenoptera acutorostrata*)
- Otariid pinnipeds (sea lions, eared)
  - California sea lion (*Zalophus californianus*)
  - Steller sea lion (*Eumetopias jubatus*)
- Phocid pinnipeds (seals, earless)
  - Elephant seal (*Mirounga angustirostris*)
  - Harbor seal (*Phoca vitulina*)

The monitoring area for both projects included an Exclusion Zone (Level A Take) and a Level B Harassment Zone (Level B Take) for each group. The two zones varied by the type of pile work and marine mammal functional hearing group. The Exclusion Zone was composed of areas where a Stop Work Order would be issued if species were present; for killer whales and humpback whales, the Exclusion Zones were equal to the size of the Level B Harassment Zones for other marine mammal species (Table 1). Within the Level B Harassment Zones, marine mammals were closely monitored, documented as takes if observed during work activities, and work continued; if the mammals were killer whales or humpback whales, a Stop, Change, or Delay Work Order would be initiated. Exclusion Zones and Level B Harassment Zones were established for each hearing group based on the type of in-water pile-driving and removal construction activities, including the following:

- Pile installation of 30-inch steel piles via vibratory hammer (Pier 58 Project)
- Pile installation of 30-inch steel piles via impact hammer (Pier 58 Project)
- Pile removal of 14-inch timber piles via vibratory hammer (Don Armeni Project)
- Pile installation of 16-inch steel piles via vibratory hammer (Don Armeni Project)

**Table 1**  
**Season 2 Exclusion Zone and Level B Harassment Zone Monitoring Thresholds, by Species Group and Pile Activity**

Zone Threshold	Location to Monitor <sup>1</sup>	Species Group
<b>Vibratory Installation (30-inch Steel Pile)</b>		
Exclusion Zone (Stop Work Order)	33 feet (10 m) to source	Otariids
	33 feet (10 m) to source	Mid-frequency cetaceans
	115 feet (35 m) to source	Phocids
	197 feet (60 m) to source	Low-frequency cetaceans
	279 feet (85 m) to source	High-frequency cetaceans
	13.5 miles (21.710 kilometers) to source	Killer whales, humpback whales <sup>2</sup>
Level B Harassment Threshold (Take)	13.5 miles (21.710 kilometers) to Exclusion Zone for each hearing group	All hearing groups
<b>Impact Installation (30-inch Steel Pile)</b>		
Exclusion Zone (Stop Work Order)	82 feet (25 m) to source	Otariids
	66 feet (20 m) to source	Mid-frequency cetaceans
	968 feet (295 m) to source	Phocids
	1,820 feet (555 m) to source	Low-frequency cetaceans
	2,165 feet (660 m) to source	High-frequency cetaceans
	2,021 feet (616 m) to source	Killer whales, humpback whales <sup>2</sup>
Level B Harassment Threshold (Take)	From 2,021 feet (616 m) to Exclusion Zone for each hearing group	All hearing groups excluding high-frequency cetaceans
<b>Vibratory Removal (Timber Pile)</b>		
Exclusion Zone (Stop Work Order)	1,486 feet (453 m) to source	Killer whales, humpback whales <sup>2</sup>
	33 feet (10 m) to source	All hearing groups
Level B Harassment Threshold (Take)	1,486 feet (453 m) to Exclusion Zone for each hearing group	All hearing groups
<b>Vibratory Installation (16-inch Steel Pile)</b>		
Exclusion Zone (Stop Work Order)	49 feet (15 m) to source	High-frequency cetaceans
	2.1 miles (3,415 m) to source	Killer whales, humpback whales <sup>2</sup>
	33 feet (10 m) to source	All other hearing groups
Level B Harassment Threshold (Take)	2.1 miles (3,415 m) to Exclusion Zone for each hearing group	All hearing groups

Notes:

1. Rounded up to nearest whole number.
2. If killer whales (Southern Resident and transient) or humpback whales entered the Level A Zone (616 m for impact steel installation, 21,710 m for vibratory 30-inch steel installation, 453 m for vibratory timber removal, 3,415 m for vibratory 16-inch steel installation), a Stop, Change, or Delay Work Order was initiated to prevent a take of these species.

Sources: NMFS 2018; NOAA 2023

m: meter

During Season 2 of the Pier 58 Project, vibratory and impact hammers were used for steel pile installation. The Exclusion Zones and Level B Harassment Zones implemented during Season 2 are presented in Table 1 and shown in Figures 1 through 5. Figure 3 shows vibratory pile installation of 30-inch steel piles, and Figure 5 shows impact installation of 30-inch steel piles. The Don Armeni Project used a vibratory hammer for the removal of timber piles and installation of 16-inch steel piles. The Exclusion Zones and Level B Harassment Zones for these work types are also shown in Table 1; Figure 2 shows timber pile removal and Figure 4 shows 16-inch steel pile installation.

Strike counts from steel pile impact installation were limited to 4,500 strikes per day for Season 2 of the Pier 58 Project. The official count was kept by the lead monitor at the project construction site; this daily count is available in Attachment A, Table A-1.

Monitoring was performed by up to four monitors depending on the activity and active project, as follows:

- For the Pier 58 Project, two protected species observers (PSOs) were required for impact proofing of the 30-inch steel piles at Pier 58 (Figure 5), and four PSOs were required for vibratory installation of 30-inch steel piles (Figure 3). The lead PSO was located at the Pier 58 construction site to survey the nearshore environment immediately surrounding active pile-related construction and acted as the contact for any works stoppages or delays to construction personnel. During impact activities, an additional PSO was located at the south entrance to Elliott Bay at Hamilton Viewpoint Park near Alki Point. During vibratory activities, the lead and Alki Point PSOs were supplemented with additional PSOs at the north entrance to Elliott Bay at the 32nd Avenue West beach access in Magnolia and on the Seattle-Bainbridge ferry to provide full coverage of the Level B Harassment Zone.
- For the Don Armeni Project, two PSOs were required for vibratory removal of timber piles (Figure 2), and three PSOs were required for vibratory installation of steel piles (Figure 4). The lead PSO was located at the Don Armeni construction site to survey the nearshore environment immediately surrounding active pile-related construction and was in close contact with construction personnel. During vibratory timber removal activities, an additional PSO was located across Elliott Bay at Pier 57 on the Seattle waterfront. During vibratory steel installation activities, the lead and Pier 57 PSOs were supplemented with an additional PSO at the north entrance to Elliott Bay at the Elliott Bay Park Fishing Pier. Pulling of broken or whole timber piles without using vibratory equipment did not require monitoring.

Trained marine mammal monitors from Anchor QEA and The Greenbusch Group, Inc., used binoculars to search the monitoring zones for the presence of marine mammals during pile-driving and removal activities. Observations and positions of marine mammals were recorded on an electronic daily monitoring form within the Esri ArcGIS Survey123 application on each observer's



phone, which was developed prior to program implementation for efficient and consistent data collection. The following data were collected:

- Date
- Monitoring activity start and finish times
- Site
- Construction activity during monitoring period
- Weather conditions and environmental conditions that could deter or prevent marine mammal detections
- Marine mammal species observed and number of species and sex and age class, if possible
- Time, duration, and location of marine mammals observed
- Observable species behavior during pile-driving and removal activities
- Pile-related activities taking place during monitoring
- Distances from pile activities to marine mammals
- Communication between the observers and the contractor or Seattle Department of Transportation
- Notable human activity in the area
- Reason a Stop Work Order was or was not initiated, if applicable

The locations of marine mammal sightings were also noted on grid maps. Take numbers were tallied each day to ensure the Pier 58 Project did not exceed the authorized number of incidental takes for each species.

In addition to marine mammal monitoring, acoustic monitoring was conducted by The Greenbusch Group in October for Pier 58 and in February for Don Armeni. Methods and results for those monitoring efforts are included as Attachments B and C, respectively.

## **Pier 58 Project Season 2 Marine Mammal Monitoring Results**

Marine mammal monitoring during vibratory and impact steel pile installation and removal activities was performed by trained marine mammal monitors from Anchor QEA and The Greenbusch Group for 19 days between September 25 and October 20, 2023. Vibratory and impact installations were the primary activities performed during Season 2, with the vibratory removal of a single H-pile on October 4 and of three 24-inch steel piles on October 20. Overall, vibratory and impact steel pile installation and removal occurred on 18 monitoring days. On two monitoring days, only the vibratory hammer was used. On one monitoring day, only the impact hammer was used. On most days, pile activity occurred off and on throughout the monitoring period, with breaks in hammer activity ranging from <30 minutes to several hours. A total of forty-four 30-inch steel piles were installed using vibratory and impact hammers.

Throughout Season 2, 6 of 12 potential marine mammal species were observed during the monitoring period (California sea lion, harbor seal, killer whale [Southern Resident DPS and transient], harbor porpoise, common bottle nose dolphin, and long-beaked common dolphin). Five species were observed in the Level B Harassment Zone during pile-driving activities. Total Level B takes documented during monitoring included 57 California sea lions, 54 harbor seals, 5 common bottle nose dolphins, and 9 harbor porpoises. Additionally, one individual harbor seal was observed in the Level A Exclusion Zone during pile-driving activities. Overall, no observable behavior changes were noted in marine mammal species during vibratory install or removal. Monitors did observe one instance of a California sea lion located approximately 3,600 meters away from the project site changing its swimming direction in response to the vibratory hammer being engaged and one instance of a California sea lion located approximately 200 meters away from the Project site changing its swimming direction in response to the impact hammer being engaged. Other than these two instances, marine mammals did not display any reaction to pile activities. The general locations where marine mammals were observed during this monitoring season are presented in Figures 6 and 7.

During Season 2 monitoring, the number of takes documented for California sea lions, harbor seals, harbor porpoises, and common bottlenose dolphins were considerably below the maximum number of Level B takes authorized for these species in the Pier 58 Project IHA for Season 2 (NOAA 2023). There was a single Level A take of a harbor seal. Table 2 compares documented take per species to the amount of authorized Level A and B takes.

**Table 2**  
**Pier 58 Season 2 Take Per Species**

Species	Documented Level A Take	IHA-Authorized Level A Take	Documented Level B Take	IHA-Authorized Level B Take
California sea lion	0	0	57	210
Harbor seal	1	21	54	189
Harbor porpoise	0	6	9	120
Common bottlenose dolphin	0	0	5	21

## Stop Work Initiation

In Season 2, a total of 10 work days were impacted by work delays and shutdowns. Work was delayed due to fog and/or heavy rain limiting visibility of the Level B Harassment Zone on September 27 and 28 and October 5, 11, 12, and 16; and work was shutdown on October 2. Work was shutdown for mammals in the Exclusion Zone on September 29 (harbor seal) and October 9 (unidentified species) and delayed on October 5 for a killer whale approaching the Exclusion Zone. Killer whales were also observed within the Exclusion Zone on October 12, but this sighting did not

result in a Delay or Stop Work Order because there was no active pile driving at the time or imminent. In total, Stop Work initiations led to a total of 11 hours and 21 minutes of work delay.

## California Sea Lions

The number of California sea lion takes from all four monitoring sites combined ranged from 0 to 11 per day, with a per-day average of 3.<sup>1</sup> Excluding the monitoring days with no pile driving due to mechanical issues, there were two monitoring days when no sea lion takes were documented. Nearly half (26 of 57) of California sea lion takes were observed from the Alki Point monitoring site, where they were frequently observed foraging and resting in the nearshore environment.

On one occasion, a California sea lion entering the Level B Harassment Zone during impact pile driving was observed to quickly change direction to leave the area. Additionally, a monitor observed one California sea lion located approximately 3,600 meters away from the Pier 58 Project site changing its swimming direction in response to the vibratory hammer being engaged.

In addition to the 57 California sea lion takes documented during the monitoring, 85 California sea lions were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile-driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day.

California sea lion information from the daily monitoring forms is presented in Attachment A. Table 3 summarizes California sea lion takes per monitoring site during Season 2 monitoring.

**Table 3**  
**Summary of Pier 58 Season 2 California Sea Lion Takes, Per Monitoring Site**

Monitoring Site	Total Level B Takes	Minimum and Maximum Number of Level B Takes Per Day During Monitoring Days
Construction	15	0–4
Alki Point	26	0–8
Magnolia	8	0–4
Seattle-Bainbridge Ferry	8	0–3
<b>Total</b>	<b>57</b>	

## Harbor Seals

Harbor seal takes from all four monitoring sites combined ranged from 0 to 7 per day, with a per-day average of 3.<sup>1</sup> Excluding the monitoring days with no pile driving due to mechanical issues, there were 4 monitoring days when no harbor seal takes were documented. For a single monitoring site, the

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<sup>1</sup> The per-day average is rounded to nearest whole number.

highest number of total harbor seal observations (54) and takes (38) and the highest number of takes in a single day (7) were observed from the Magnolia monitoring site.

There were no observable behavior changes in harbor seals during vibratory removal or installation and only one instance of a harbor seal reacting to the impact hammer by changing direction.

In addition to the 54 harbor seal Level B takes documented during the monitoring, 56 harbor seals were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile-driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day.

Harbor seal information from the daily monitoring forms is presented in Attachment A. Table 4 summarizes harbor seal takes per monitoring site during Season 2 monitoring.

**Table 4**  
**Summary of Pier 58 Season 2 Harbor Seal Takes, Per Monitoring Site**

Monitoring Site	Total Level B Takes	Minimum and Maximum Number of Level B Takes Per Day During Monitoring Days
Construction	2	0–2
Alki Point	7	0–3
Magnolia	38	0–7
Seattle-Bainbridge Ferry	7	0–2
<b>Total</b>	<b>54</b>	

## Killer Whales

Killer whales (Southern Resident or transient) were observed on a single monitoring day (October 9). Because no takes were authorized for Southern Resident killer whales, and marine mammal monitors could not confirm observations of transient versus Southern Resident DPS, all killer whale observations were treated as Southern Resident DPS. Killer whales entered the Exclusion Zone on October 9; however, this incursion did not result in a Delay or Stop Work Order because there was no pile activity at that time. One near incursion on October 5 led to a 30-minute delay in work after visibility conditions improved. This whale was not directly observed by any of the four monitors, but because the whale was reported moving into the area by the Orca Network and visibility conditions had only just become sufficient in the 30 minutes leading up to the report, the decision was made to delay work an additional 30 minutes to verify that the whale had not entered the Exclusion Zone.

Killer whale information from the daily monitoring forms is presented in Attachment A.

## **Harbor Porpoise**

Harbor porpoises were observed on 4 monitoring days (October 6, 9, 12, and 19) for a total of 16 observations. On October 12, eight of the nine Level B takes for the season were observed by monitors at the Alki Point and construction monitoring site locations. This pod of porpoises was observed several times throughout the day, swimming along the Seattle waterfront past the project site towards the Duwamish River, and then out of Elliott Bay along the Alki Point waterfront.

Harbor porpoise information from the daily monitoring forms is presented in Attachment A

## **Common Bottlenose Dolphin**

Common bottlenose dolphins were observed on a single monitoring day (October 20) at the Seattle-Bainbridge ferry near Bainbridge Island. Incidentally, all five of the observed mammals were considered takes.

Common bottlenose dolphin information from the daily monitoring forms is presented in Attachment A.

## **Don Armeni Boat Ramp Project Marine Mammal Monitoring Results**

Marine mammal monitoring during vibratory installation of steel piles and vibratory removal of timber pile activities was performed by trained marine mammal monitors from Anchor QEA and The Greenbusch Group for 8 days between February 5 and 14, 2024. Vibratory installation of steel piles occurred on 7 of the 8 monitoring days with vibratory removal of timber piles occurring on 3 of the monitoring days. A total of six 16-inch steel piles were installed while seven timber piles were removed.

During this work period, 3 of the 12 potential marine mammal species were observed during the monitoring period (California sea lion, harbor seal, and harbor porpoise). All three species were observed in the Level B Harassment Zone during pile-driving activities. Total Level B takes documented during monitoring included nine California sea lions, eight harbor seals, and one harbor porpoise. Overall, no observable behavior changes in marine mammal species were noted during either work activity. The general locations where marine mammals were observed during this monitoring season are presented in Figure 8.

The number of documented takes from this work period combined with the documented takes from Pier 58 Season 2 were considerably below the maximum number of Level B takes authorized for these species in the Pier 58 Project IHA for Season 2 (NOAA 2023).

**Table 5**  
**Don Armeni Project Take Per Species**

Species	Documented Level A Take	IHA-Authorized Level A Take Remaining after Pier 58 Season 2	Documented Level B Take	IHA-Authorized Level B Takes Remaining after Pier 58 Season 2
California sea lion	0	0	9	153
Harbor seal	0	20	8	135
Harbor porpoise	0	6	1	111

## Stop Work Initiation

No days of work were impacted by the Stop Work initiation during this work period.

## California Sea Lions

The number of California sea lion takes from the construction site and Pier 57 monitoring sites combined ranged from 0 to 8 per day, with a per-day average of 1.<sup>1</sup> There were 6 monitoring days when no sea lion takes were documented or observed. No California sea lions were observed from the Elliott Bay Fishing Pier monitoring site. The majority of the documented takes (eight of nine) occurred on February 7 when the Pier 57 monitor observed a large group foraging approximately 300 meters south of the project site.

In addition to the nine California sea lion takes documented during the monitoring, four California sea lions were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile-driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day.

Table 6 summarizes California sea lion takes per monitoring site during Don Armeni Project monitoring and information from the daily monitoring forms is presented in Attachment A.

**Table 6**  
**Summary of Don Armeni Project California Sea Lion Takes, Per Monitoring Site**

Monitoring Site	Total Level B Takes	Minimum and Maximum Number of Level B Takes Per Day During Monitoring Days
Construction	1	0–1
Pier 57	8	0–8
Elliott Bay Fishing Pier	0	--
<b>Total</b>	<b>9</b>	--

Note:

--: no data

## Harbor Seals

Harbor seal takes from all three monitoring sites combined ranged from 0 to 3 per day, with a per-day average of 1.<sup>1</sup> There were 3 monitoring days when no harbor seal takes were documented. The majority of takes (four) and total observations (nine) occurred at the Elliott Bay Fishing Pier monitoring site. There were no observable behavior changes in harbor seal during vibratory removal or installation.

In addition to the 8 harbor seal Level B takes documented during monitoring, 12 harbor seals were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile-driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day.

Table 7 summarizes harbor seal takes per monitoring site during Don Armeni Project monitoring information from the daily monitoring forms is presented in Attachment A.

**Table 7**  
**Summary of Don Armeni Project Harbor Seals, Per Monitoring Site**

Monitoring Site	Total Level B Takes	Minimum and Maximum Number of Level B Takes Per Day During Monitoring Days
Construction	3	0–2
Pier 57	1	0–1
Elliott Bay Fishing Pier	4	0–3
<b>Total</b>	<b>8</b>	--

Note:

--: no data

## Harbor Porpoise

Harbor porpoises were observed on a singular monitoring day (February 6) for a total of five observations and one documented take. This pod was observed swimming around Harbor Island in the morning, before disappearing for much of the day. This observation was made more than 30 minutes outside of pile-driving and removal activities, and thus, these individuals were not considered takes. One individual from this pod was observed later in the afternoon during work activities and was documented as a take.

## **Pier 58 Project Season 2 Supporting Details**

Detailed Pier 58 Project data collected during Season 2 monitoring are presented in Attachment A, as follows:

- Table A-1 provides a summary of the daily log kept by the lead PSO located at the Pier 58 Project site.
- Table A-2 provides a daily summary of pile-driving and removal activity, weather conditions during the monitoring period, marine mammal species observed, time and duration of observations, distance from pile-driving and removal activities, and species behavior.
- Table A-3 provides a daily summary of California sea lion Level B takes, observations that did not include takes, and the totals.
- Table A-4 provides a daily summary of harbor seal Level B takes, observations that did not include takes, and the totals.
- Table A-5 provides a daily summary of harbor porpoise Level B takes, observations that did not include takes, and the totals.
- Table A-6 provides a daily summary of common bottlenose dolphins Level B takes, observations that did not include takes, and the totals.
- Table A-6 also provides a daily summary of killer whale (Southern Resident and transient) observations that did not include takes.

## **Don Armeni Boat Ramp Project Supporting Details**

Detailed Don Armeni Project data collected during Season 2 monitoring are presented in Attachment A, as follows:

- Table A-7 provides a summary of the daily log kept by the lead PSO located at the Don Armeni Project site.
- Table A-8 provides a daily summary of pile-driving and removal activity, weather conditions during the monitoring period, marine mammal species observed, time and duration of observations, distance from pile-driving and removal activities, and species behavior.
- Table A-9 provides a daily summary of California sea lion Level B takes, observations that did not include takes, and the totals.
- Table A-10 provides a daily summary of harbor seal Level B takes, observations that did not include takes, and the totals.
- Table A-11 provides a daily summary of harbor porpoise Level B takes, observations that did not include takes, and the totals.

## **References**

Anchor QEA, 2023. *Marine Mammal Monitoring Plan for the Waterfront Park Reconstruction Project Season 2*. September 2023.



NMFS (National Marine Fisheries Service), 2018. *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). NOAA Technical Memorandum NMFS-OPR-59, p. 178.

NOAA (National Oceanic and Atmospheric Administration), 2023. *Marine Mammal Protection Act Incidental Harassment Authorization Renewal for the Pier 58 Reconstruction Project*. August 2023.

## Figures

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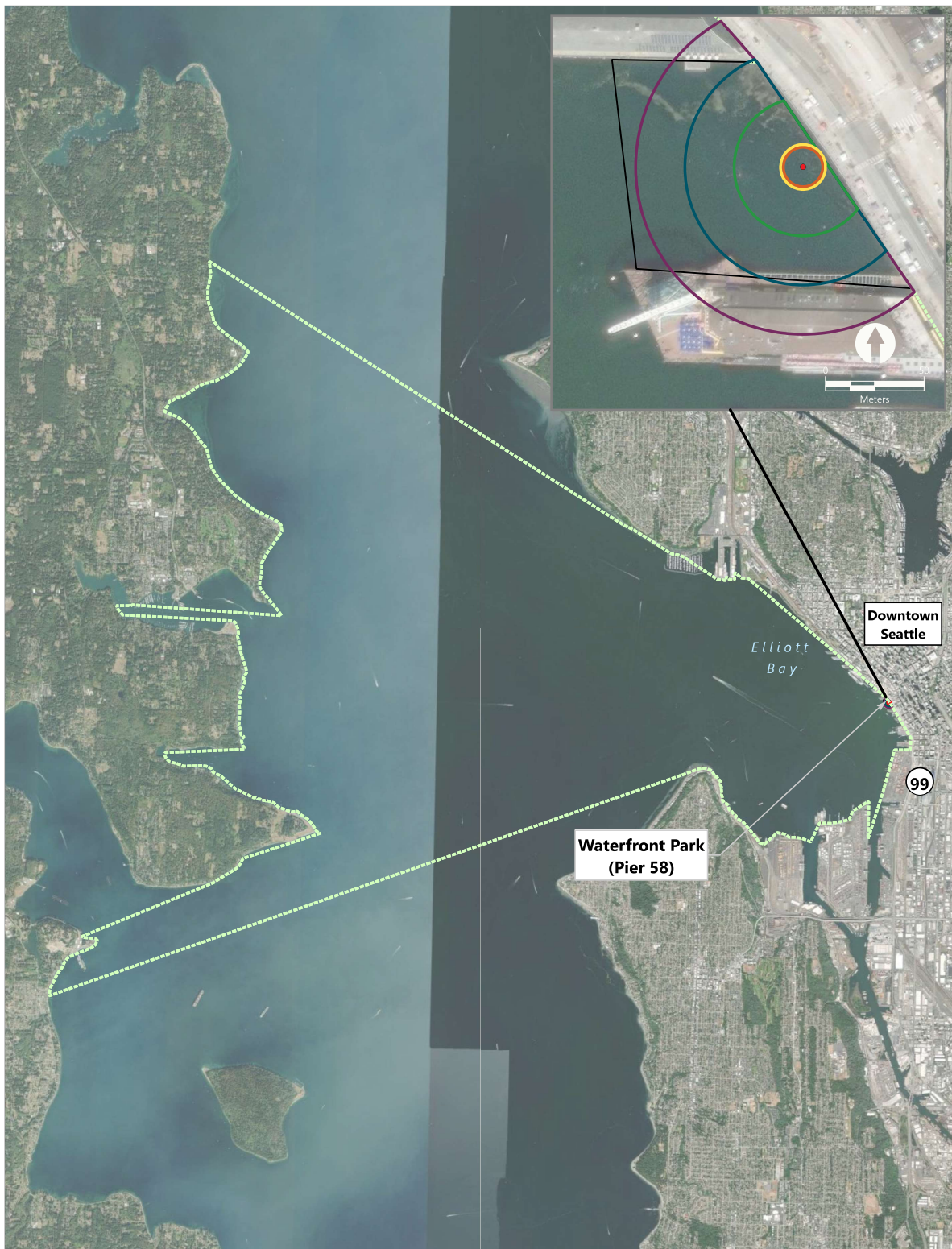


**Figure 1**  
**Waterfront Park and Don Armeni Boat Ramp Vicinity Map**  
Waterfront Park Reconstruction Project Season 2 and Don Armeni Boat Ramp Project Marine Mammal Monitoring Report



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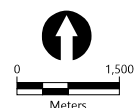


#### LEGEND:

- Hammer Location
- Waterfront Park
- Waterfront Park (Pier 58)
- Level B Harassment Zone - All Hearing Groups**
- ▨ Vibratory Installation (30-inch Steel Pile) (21,710 meters)
- Exclusion Zones**
- Otariid Pinnipeds (10 meters)
- ▨ Mid-Frequency Cetaceans (10 meters)
- ▨ Phocid Pinnipeds (35 meters)
- ▨ Low-Frequency Cetaceans (60 meters)
- ▨ High-Frequency Cetaceans (85 meters)

#### NOTES:

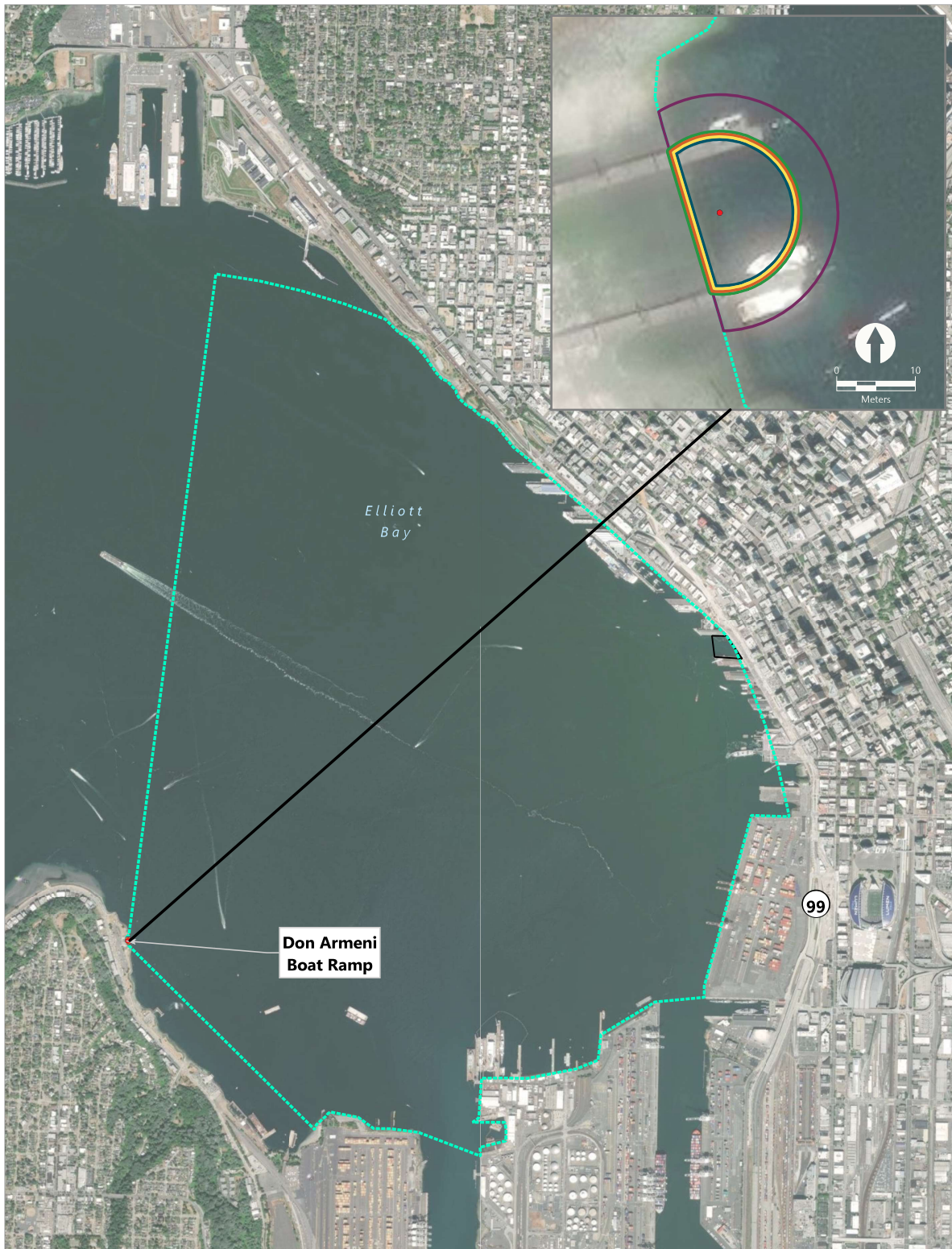
1. Exclusion zones will be adjusted as needed, based on location of hammer operations.



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**Figure 3**  
**Exclusion and Level B Harassment Zones for Vibratory Installation of Steel Piles**  
 Waterfront Park Reconstruction Project Season 2 and Don Armeni Boat Ramp Project Marine Mammal Monitoring Report



**LEGEND:**

- Hammer Location
- Waterfront Park

Don Armeni Boat Ramp

**Level B Harassment Zone - All Hearing Groups**

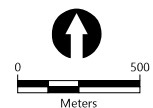
✚ Vibratory Installation (16-inch Steel Pile) (3,415 meters)

**Exclusion Zones**

- Otariid Pinnipeds (10 meters)
- ▢ Mid-Frequency Cetaceans (10 meters)
- ▢ Phocid Pinnipeds (10 meters)
- ▢ Low-Frequency Cetaceans (10 meters)
- ▢ High-Frequency Cetaceans (15 meters)

**NOTES:**

1. Exclusion zones will be adjusted as needed, based on location of hammer operations.





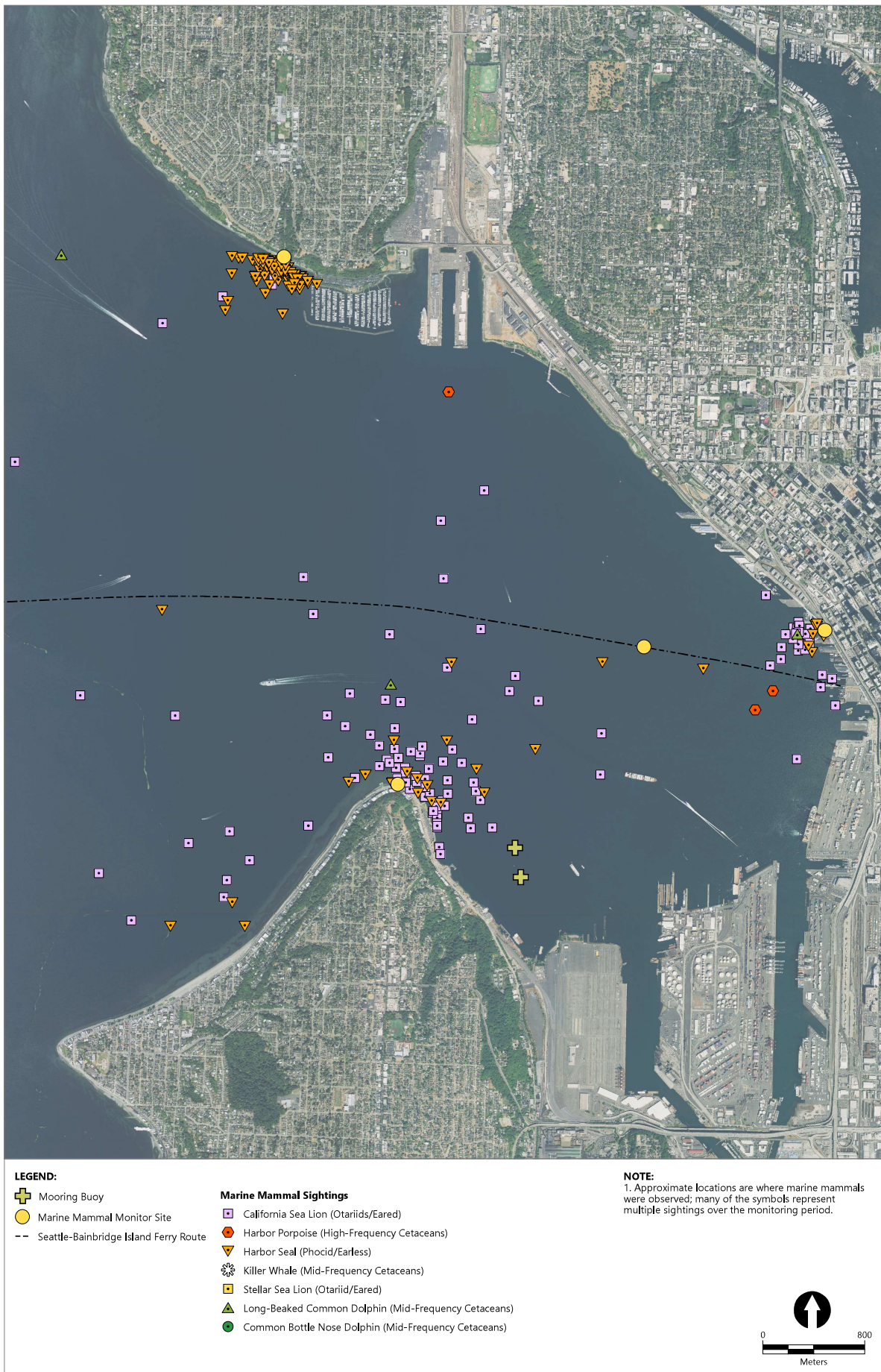


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**Figure 5**  
**Exclusion and Level B Harassment Zones for Impact Installation of Steel Piles**  
 Waterfront Park Reconstruction Project Season 2 and Don Armeni Boat Ramp Project Marine Mammal Monitoring Report



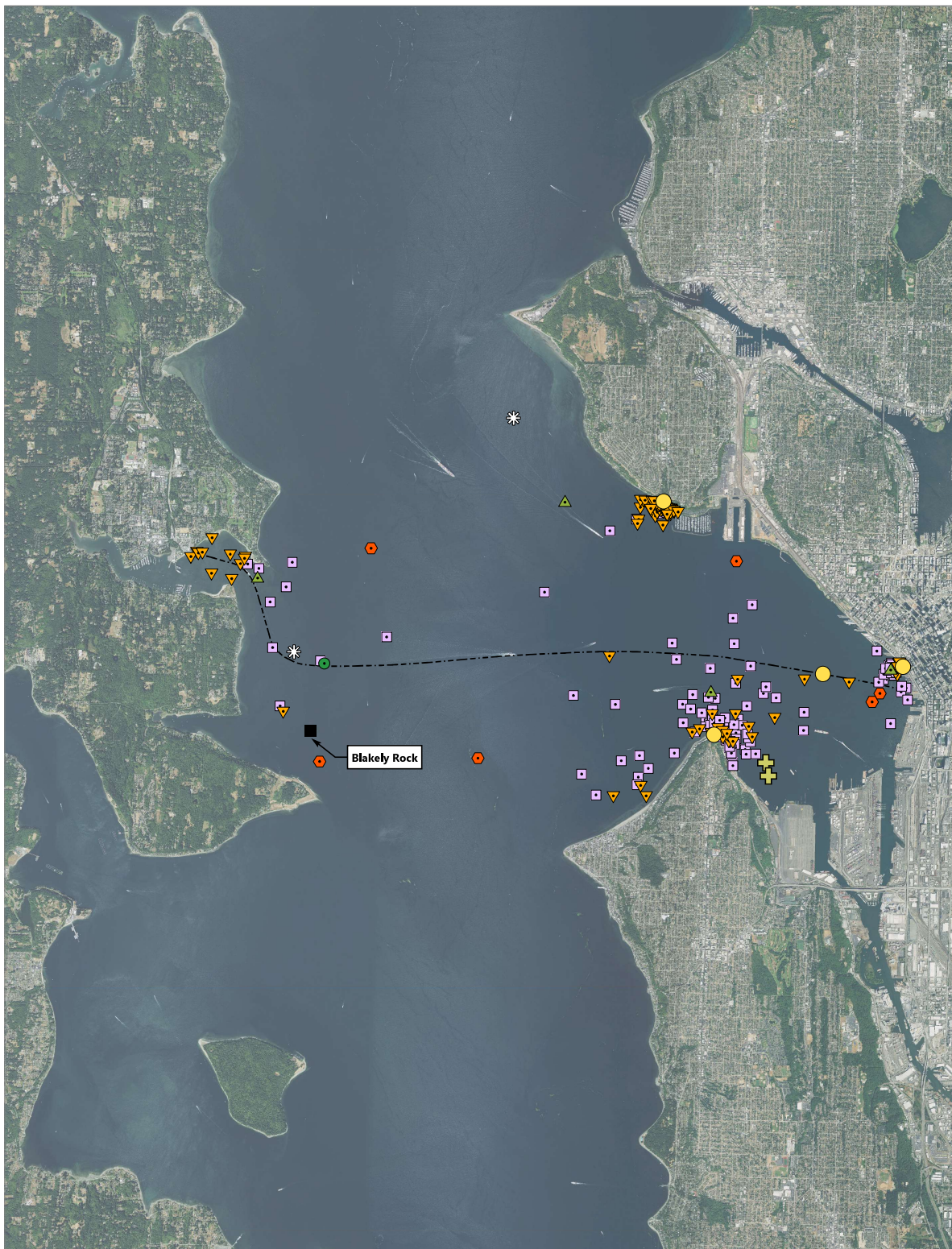


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**Figure 6**  
**Monitoring Locations and Marine Mammal Sightings Elliott Bay, Pier 58**  
Waterfront Park Reconstruction Project Season 2 and Don Armeni Boat Ramp Project Marine Mammal Monitoring Report





#### LEGEND:

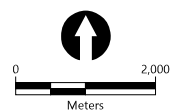
- Mooring Buoy
- Marine Mammal Monitor Site
- Seattle-Bainbridge Island Ferry Route

#### Marine Mammal Sightings

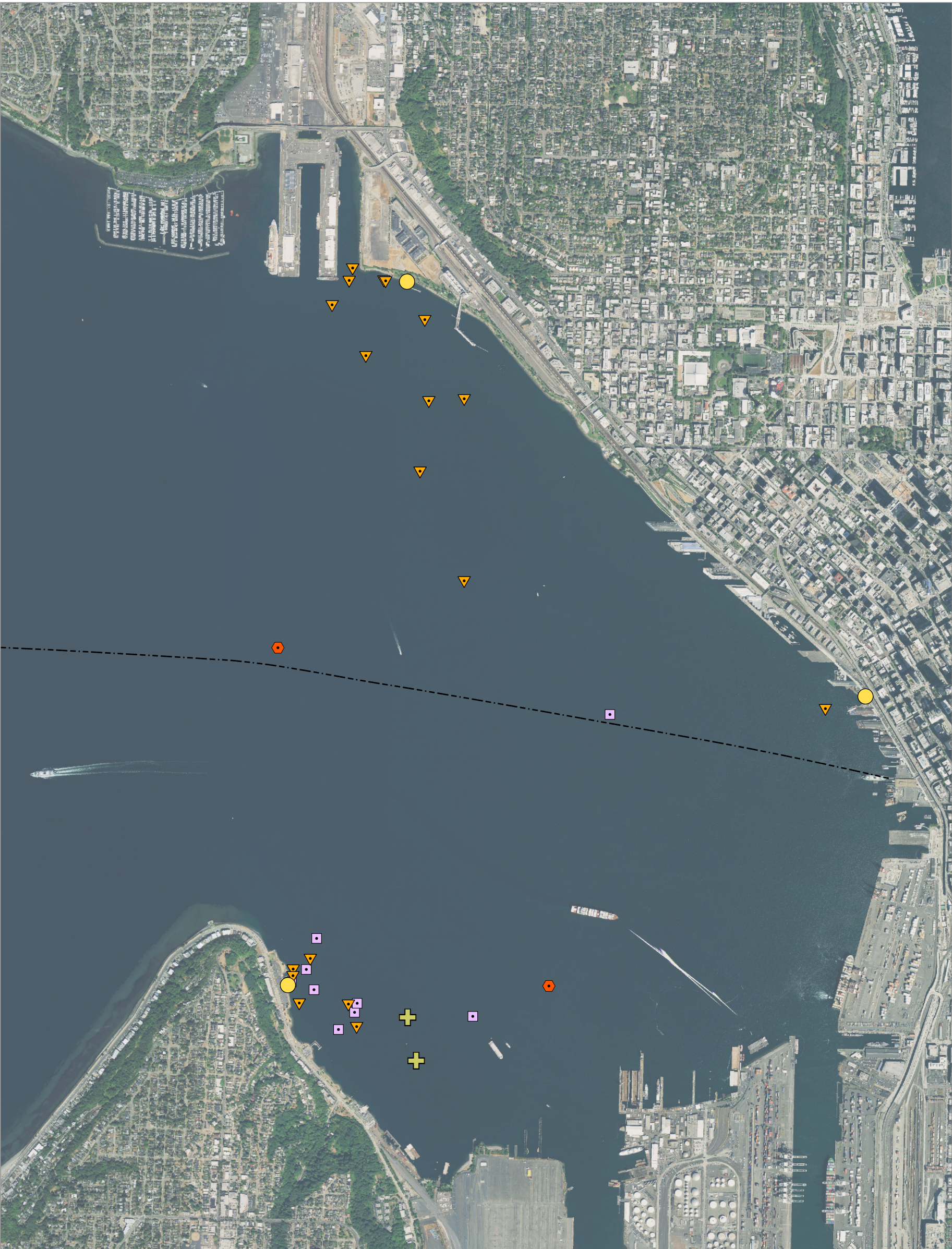
- California Sea Lion (Otariids/Eared)
- Harbor Porpoise (High-Frequency Cetaceans)
- Harbor Seal (Phocid/Earless)
- Killer Whale (Mid-Frequency Cetaceans)
- Stellar Sea Lion (Otariid/Eared)
- Long-Beaked Common Dolphin (Mid-Frequency Cetaceans)
- Common Bottle Nose Dolphin (Mid-Frequency Cetaceans)

#### NOTE:

1. Approximate locations are where marine mammals were observed; many of the symbols represent multiple sightings over the monitoring period.







LEGEND:

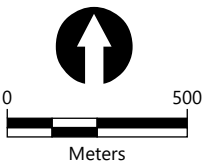
- Mooring Buoy
- Marine Mammal Monitor Site
- Seattle-Bainbridge Island Ferry Route

Marine Mammal Sightings

- California Sea Lion (Otariids/Eared)
- Harbor Porpoise (High-Frequency Cetaceans)
- Harbor Seal (Phocid/Earless)

NOTE:

1. Approximate locations are where marine mammals were observed; many of the symbols represent multiple sightings over the monitoring period.





## Attachment A

### Monitoring Data

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Table A-1  
Pier 58 Project Protected Species Observers Summary

Date	Daily Monitoring Start Time	Daily Monitoring End Time	Daily Notes	Pile Activity	Pile Type	Start Time	Stop Time	Total Number of Piles	Time Period Notes (shutdowns/delays/WQ issues/pile names)	Strike Count During Time Period
Pier 58 Season 2										
Monday, September 25, 2023	7:00	17:07	Vibratory installation and impact proofing on 1 pile. Two delays, first for a mechanical issue and a the second for due to a noise exceedance.	Vibratory install	Steel 30 inch	10:04	10:44	1	Pile: B11. Work ended early due to mechanical issue with the hydraulic power pack.	-
Monday, September 25, 2023	7:00	17:07	Vibratory installation and impact proofing on 1 pile. Two delays, first for a mechanical issue and a the second for due to a noise exceedance.	Impact install	Steel 30 inch	12:15	12:50	1	Pile: B11. Work ended early due to noise exceedance.	-
Monday, September 25, 2023	7:00	17:07	Vibratory installation and impact proofing on 1 pile. Two delays, first for a mechanical issue and a the second for due to a noise exceedance.	Impact install	Steel 30 inch	16:13	16:37	1	Pile: B11. Completed impacts on pile after approval from City to continue.	1,215 (total)
Tuesday, September 26, 2023	7:01	16:47	Vibratory installation and impact proofing on 1 pile. Work delayed 5-hour in the morning due to repairs to hydraulic power pack.	Vibratory install	Steel 30 inch	12:44	13:29	1	Pile: B18. Carcass of California sea lion observed drifting past the Project Site around 13:00.	-
Tuesday, September 26, 2023	7:01	16:47	Vibratory installation and impact proofing on 1 pile. Work delayed 5-hour in the morning due to repairs to hydraulic power pack.	Impact install	Steel 30 inch	14:19	14:38	1	Pile: B18. Impact installation ended before tip elevation reached due to early refusal.	-
Tuesday, September 26, 2023	7:01	16:47	Vibratory installation and impact proofing on 1 pile. Work delayed 5-hour in the morning due to repairs to hydraulic power pack.	Impact install	Steel 30 inch	16:09	16:17	1	Pile: B18. Impacts continued.	823 (total)
Wednesday, September 27, 2023	7:00	16:45	Vibratory installation of 2 piles and impact proofing on 1 pile. Work delayed for 2 hours morning due to poor visibility.	Vibratory install	Steel 30 inch	10:38	11:22	1	Pile: Z16. Work delayed from 08:30–10:30 due to poor visibility.	-
Wednesday, September 27, 2023	7:00	16:45	Vibratory installation of 2 piles and impact proofing on 1 pile. Work delayed for 2 hours morning due to poor visibility.	Impact install	Steel 30 inch	13:34	13:57	1	Pile: Z16	751
Wednesday, September 27, 2023	7:00	16:45	Vibratory installation of 2 piles and impact proofing on 1 pile. Work delayed for 2 hours morning due to poor visibility.	Vibratory install	Steel 30 inch	15:19	16:12	1	Pile: Z17	-
Thursday, September 28, 2023	7:04	17:34	Vibratory installation of 3 piles and impact proofing of 1 pile. Short delay due to low visibility that did not impact work activities. An object resembling a dead marine mammal was identified late in the day, the Coast Guard was informed and will follow up.	Impact install	Steel 30 inch	7:43	8:03	1	Pile: Z17	670
Thursday, September 28, 2023	7:04	17:34	Vibratory installation of 3 piles and impact proofing of 1 pile. Short delay due to low visibility that did not impact work activities. An object resembling a dead marine mammal was identified late in the day, the Coast Guard was informed and will follow up.	Vibratory install	Steel 30 inch	11:47	12:44	1	Pile: C4. Delay in work was issued between 12:58 and 13:46. Contractor on break when all clear issued and not in position to work until 14:35.	-
Thursday, September 28, 2023	7:04	17:34	Vibratory installation of 3 piles and impact proofing of 1 pile. Short delay due to low visibility that did not impact work activities. An object resembling a dead marine mammal was identified late in the day, the Coast Guard was informed and will follow up.	Vibratory install	Steel 30 inch	14:35	15:21	1	Pile: C5	-
Thursday, September 28, 2023	7:04	17:34	Vibratory installation of 3 piles and impact proofing on 1 pile. Short delay due to low visibility that did not impact work activities. An object resembling a dead marine mammal was identified late in the day, the Coast Guard was informed and will follow up.	Vibratory install	Steel 30 inch	16:29	17:04	1	Pile: C6. Unknown object tracked identified and tracked from 16:43 until 17:34 roughly 4km from project site.	-
Friday, September 29, 2023	7:27	14:24	Vibratory installation of 1 pile and impact proofing of 3 piles. Shutdown work from 08:25-08:46 due to harbor seal in the Level A zone. Standby from 10:10 to 12:35 for contractor.	Impact install	Steel 30 inch	8:03	9:50	3	Piles: C6, C4, and C5. Shut down from 08:25 to 08:46 due to harbor seal in Level A take zone.	2,449
Friday, September 29, 2023	7:27	14:24	Vibratory installation of 1 pile and impact proofing of 3 piles. Shutdown work from 08:25-08:46 due to harbor seal in the Level A zone. Standby from 10:10 to 12:35 for contractor.	Vibratory install	Steel 30 inch	15:20	15:54	1	Pile: C7	-

Table A-1  
Pier 58 Project Protected Species Observers Summary

Date	Daily Monitoring Start Time	Daily Monitoring End Time	Daily Notes	Pile Activity	Pile Type	Start Time	Stop Time	Total Number of Piles	Time Period Notes (shutdowns/delays/WQ issues/pile names)	Strike Count During Time Period
Monday, October 2, 2023	7:27	17:30	Vibratory installation of 3 piles and impact proofing of 1 pile. Work briefly delayed due to low visibility.	Impact install	Steel 30 inch	8:08	8:33	1	Pile: C7	1,005
Monday, October 2, 2023	7:27	17:30	Vibratory installation of 3 piles and impact proofing of 1 pile. Work briefly delayed due to low visibility.	Vibratory install	Steel 30 inch	11:23	11:53	1	Pile: A6	-
Monday, October 2, 2023	7:27	17:30	Vibratory installation of 3 piles and impact proofing of 1 pile. Work briefly delayed due to low visibility.	Vibratory install	Steel 30 inch	14:12	17:00	2	Piles: B15 and B16. Work shutdown at 16:11 and delayed until 16:50 due to low visibility.	-
Tuesday, October 3, 2023	7:24	13:35	Impact proofing of 3 piles and restrikes on 2 previously installed piles.	Impact install	Steel 30 inch	8:52	9:45	2	Piles: B18 and B11. Restrikes on both piles. Required soft starts not performed before pile B11 impact event.	125
Tuesday, October 3, 2023	7:24	13:35	Impact proofing of 3 piles and restrikes on 2 previously installed piles.	Impact install	Steel 30 inch	11:01	13:05	3	Piles: A6, B15, and B16	1,724
Wednesday, October 4, 2023	7:22	15:57	Vibratory installation of 3 piles and vibratory removal of 1 H-pile.	Vibratory removal	Steel H	8:39	8:41	1	H pile from old Pier 58 missed during the initial demolition. Used zone buffers from 2022 Pier 63 removal IHA.	-
Wednesday, October 4, 2023	7:22	15:57	Vibratory installation of 3 piles and vibratory removal of 1 H-pile	Vibratory install	Steel 30 inch	10:06	15:27	3	Piles: A21, A20, and AB20	-
Thursday, October 5, 2023	7:30	16:40	Vibratory installation of 2 piles and impact proofing of 5 piles. Delayed work from 08:10- 09:28 due to poor visibility, and from 09:28 to 09:56 whilePSOs investigated reported orca activity near the exclusion zone.	Vibratory install	Steel 30 inch	10:05	12:06	2	Piles: Z18 and B17. Work delayed from 08:10–9:56 before the start of this work activity.	-
Thursday, October 5, 2023	7:30	16:40	Vibratory installation of 2 piles and impact proofing of 5 piles. Delayed work from 08:10- 09:28 due to poor visibility, and from 09:28 to 09:56 whilst PSOs investigated reported orca activity near the exclusion zone.	Impact install	Steel 30 inch	13:33	16:10	5	Piles: A20, A21, AB20, B17, and Z18.	2,621
Friday, October 6, 2023	7:30	17:15	Vibratory installation of 3 piles, impact proofing of 3 piles, restrikes on 2 previously impacted piles.	Vibratory install	Steel 30 inch	8:21	10:51	2	Piles: A19 and AB19	-
Friday, October 6, 2023	7:30	17:15	Vibratory installation of 3 piles, impact proofing of 3 piles, restrikes on 2 previously impacted piles.	Vibratory install	Steel 30 inch	12:27	13:47	1	Pile: B19	-
Friday, October 6, 2023	7:30	17:15	Vibratory installation of 3 piles, impact proofing of 3 piles, restrikes on 2 previously impacted piles.	Impact install	Steel 30 inch	14:10	16:45	5	Piles: A19, A20, AB19, B19, Z18. Piles A20 and Z18 were previously impacted.	3,308
Monday, October 9, 2023	7:30	17:30	Vibratory and impact proofing of 3 piles. Work stopped for approximately 30 minutes for a possible humpback sighting; not confirmed.	Vibratory install	Steel 30 inch	8:03	13:09	3	Piles: B14, B13, B12. Work stopped from 09:54–10:31 for a possible humpback sighting by a PSO. The whale did not reemerge, so we were unable to confirm the species.	-
Monday, October 9, 2023	7:30	17:30	Vibratory and impact proofing of 3 piles. Work stopped for approxiamtely 30 minutes for a possible humpback sighting; not confirmed.	Impact install	Steel 30 inch	14:43	16:26	3	Piles: B14, B13, B12	2,722
Tuesday, October 10, 2023	7:30	16:13	Vibratory and impact proofing of 3 piles, and restrike on 1 test pile	Vibratory install	Steel 30 inch	8:31	11:43	3	Piles: B10, B9, B8	-
Tuesday, October 10, 2023	7:30	16:13	Vibratory and impact proofing of 3 piles, and restrike on 1 test pile	Impact install	Steel 30 inch	13:37	15:43	4	Piles: A6, B8, B9, B10	2,871
Wednesday, October 11, 2023	7:30	16:39	Vibratory and impact proofing of 3 piles. Worked delayed for 22 minutes in the morning due to poor visibility.	Vibratory install	Steel 30 inch	9:07	12:40	3	Piles: B7, B6, and B5. Poor visibility from 07:45–09:01. Contractor in position to work at 08:39	-

Table A-1  
Pier 58 Project Protected Species Observers Summary

Date	Daily Monitoring Start Time	Daily Monitoring End Time	Daily Notes	Pile Activity	Pile Type	Start Time	Stop Time	Total Number of Piles	Time Period Notes (shutdowns/delays/WQ issues/pile names)	Strike Count During Time Period
Wednesday, October 11, 2023	7:30	16:39	Vibratory and impact proofing of 3 piles. Worked delayed for 22 minutes in the morning due to poor visibility.	Impact install	Steel 30 inch	14:14	16:09	3	Piles: B5, B6, and B7	2,581
Thursday, October 12, 2023	7:30	15:24	Vibratory and impact proofing of 2 piles. Lengthy work delay in the morning due to poor visibility. Orca groups spotted within the exclusion zone on twice during this delay.	Vibratory install	Steel 30 inch	11:49	13:06	2	Piles: A3 and B4. Poor visibility 07:30–11:43. Contractor in position to work at 08:24. Orcas spotted in Level B zone at 08:10–08:20 and 10:06–11:00.	-
Thursday, October 12, 2023	7:30	15:24	Vibratory and impact proofing of 2 piles. Lengthy work delay in the morning due to poor visibility. Orca groups spotted within the exclusion zone on twice during this delay.	Impact install	Steel 30 inch	13:45	14:54	2	Piles: A3 and B4	1,271
Monday, October 16, 2023	8:00	15:56	Vibratory installation of 2 piles. Several work delays due to poor visibility.	Vibratory install	Steel 30 inch	12:13	12:54	1	Pile: A4. Installation delayed twice due to poor visibility. Pile not lifted into position until after first clear, then delayed once in position.	-
Monday, October 16, 2023	8:00	15:56	Vibratory installation of 2 piles. Several work delays due to poor visibility.	Vibratory install	Steel 30 inch	14:48	15:26	1	Pile: A5. Work delayed twice during installation; once before driving began, then again when the install paused.	-
Tuesday, October 17, 2023	7:30	16:36	Vibratory installation of 4 piles and impact proofing on 5 piles.	Vibratory install	Steel 30 inch	8:26	9:47	2	Piles: A7 and A8	-
Tuesday, October 17, 2023	7:30	16:36	Vibratory installation of 4 piles and impact proofing on 5 piles.	Vibratory install	Steel 30 inch	10:49	12:01	2	Piles: A9 and A10	-
Tuesday, October 17, 2023	7:30	16:36	Vibratory installation of 4 piles and impact proofing on 5 piles.	Impact install	Steel 30 inch	13:12	16:06	5	Piles: A8, A10, A9, A7, A5	4,190
Wednesday, October 18, 2023	7:33	15:38	Vibratory installation of 4 piles and impact proofing on 5 piles.	Impact install	Steel 30 inch	8:06	8:29	1	Pile: A4	742
Wednesday, October 18, 2023	7:33	15:38	Vibratory installation of 4 piles and impacts on 5 piles.	Vibratory install	Steel 30 inch	9:52	13:36	4	Piles: A11, A12, A13, A14	-
Wednesday, October 18, 2023	7:33	15:38	Vibratory installation of 4 piles and impacts on 5 piles.	Impact install	Steel 30 inch	14:08	15:08	4	Piles: A11, A12, A13, A14	2,357
Thursday, October 19, 2023	7:34	15:33	Vibratory installation and impacts on 4 piles.	Vibratory install	Steel 30 inch	8:04	11:49	4	Piles: A15, A16, A17, A18	-
Thursday, October 19, 2023	7:34	15:33	Vibratory installation and impacts on 4 piles.	Impact install	Steel 30 inch	13:06	15:03	4	Piles: A15, A16, A17, A18	2,898
Friday, October 20, 2023	7:35	13:41	Vibratory removal of 3 mooring piles installed last season.	Vibratory removal	Steel 24 inch	10:08	11:34	2	Vibratory removal of 3 mooring piles installed last season.	-
Friday, October 20, 2023	7:35	13:41	Vibratory removal of 3 mooring piles installed last season.	Vibratory removal	Steel 24 inch	13:02	13:11	1	Vibratory removal of 3 mooring piles installed last season.	-

Notes:  
-: no data  
WQ: water quality

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Monday, September 25, 2023	Pier 58	Alki	Light Rain, Moderate Rain, Fog	CASL	1	No	6:59	7:21	No	No	246	5085	Foraging	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Alki	Moderate Rain, Light Rain, Fog	HS	1	No	8:06	8:15	No	No	244	5639	Foraging	No Pile Activity	No Take	Observed foraging in front of beach.
Monday, September 25, 2023	Pier 58	Alki	Moderate Rain, Light Rain, Fog	CASL	1	No	8:45	9:13	No	No	250	6009	Foraging	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Alki	Moderate Rain, Light Rain, Fog	CASL	1	No	9:17	9:26	No	No	246	5900	Foraging	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Alki	Moderate Rain, Light Rain, Fog	HS	1	No	9:50	9:58	No	No	244	5121	Swimming	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Alki Point	Moderate rain, light rain, fog	CASL	1	No	10:12	10:56	No	No	250	4930	Swimming	No reaction observed	Level B	
Monday, September 25, 2023	Pier 58	Alki	Moderate Rain, Light Rain, Fog	CASL	3	No	11:57	12:03	No	No	250	5265	Intermittent	No Pile Activity	No Take	Observed floating around as a group before moving underwater and dispersing
Monday, September 25, 2023	Pier 58	Alki	Moderate Rain, Light Rain, Fog	CASL	1	No	13:05	13:06	No	No	245	5161	Swimming	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Alki	Light Rain, Fog	CASL	2	No	15:29	15:50	No	No	247	4861	Swimming	No Pile Activity	No Take	Observed jumping out of water and belly flopping/porpoising multiple times. Appears to be male and female pair.
Monday, September 25, 2023	Pier 58	Construction Site	Light Rain	CASL	1	No	8:16	8:25	No	No	277	103	Foraging	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Construction Site	Light Rain	HS	1	No	9:25	9:30	No	No	253	11	Foraging	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Construction Site	Light Rain	CASL	2	No	11:26	11:27	No	No	276	197	Swimming	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Construction Site	Light Rain	CASL	1	No	13:07	13:09	No	No	248	115	Swimming	No reaction observed	Level B	
Monday, September 25, 2023	Pier 58	Seattle-Bainbridge ferry	Light Rain, Light Wind	CASL	1	No	8:45	8:50	No	No	529	383	Swimming	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	CASL	1	Yes	13:55	13:57	No	No	529	383	Swimming	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	2	No	7:15	7:20	No	No	302	5022	Intermittent	No Pile Activity	No Take	
Monday, September 25, 2023	Pier 58	Magnolia	Light Rain, Overcast	HS	3	Yes	8:17	8:22	No	No	302	5090	Swimming	No Pile Activity	No Take	Three small seals swimming along the shore.
Monday, September 25, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	No	8:33	8:38	No	No	303	4960	Swimming	No Pile Activity	No Take	One large harbor seal milling around.
Monday, September 25, 2023	Pier 58	Magnolia	Overcast, moderate rain, fog	HS	1	No	9:55	10:00	No	No	300	5429	Intermittent	No reaction observed	Level B	One seal swimming around.
Monday, September 25, 2023	Pier 58	Magnolia	Overcast, fog, light rain	CASL	4	No	10:42	10:47	No	No	298	5405	Swimming	No reaction observed	Level B	Three sea lions swimming in a group with one swimming farther away from group.
Monday, September 25, 2023	Pier 58	Magnolia	Overcast, fog, light rain	HS	3	Yes	10:53	10:58	No	No	301	5200	Intermittent	No reaction observed	Level B	Three previously observed seals still in area
Monday, September 25, 2023	Pier 58	Magnolia	Overcast, fog, light rain	CASL	1	No	12:04	12:10	No	No	281	6495	Swimming	No reaction observed	None	
Monday, September 25, 2023	Pier 58	Magnolia	Overcast, fog, light rain	CASL	3	Yes	12:24	12:29	No	No	294	5731	Swimming	No reaction observed	None	
Monday, September 25, 2023	Pier 58	Magnolia	Overcast, fog, light rain	HS	1	No	12:42	12:47	No	No	298	5349	Swimming	No reaction observed	None	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Monday, September 25, 2023	Pier 58	Magnolia	Overcast	HS	2	Yes	14:07	14:12	No	No	299	4924	Intermittent	No reaction observed	None	
Tuesday, September 26, 2023	Pier 58	Alki	Overcast, Light Rain	CASL	1	No	10:00	10:06	No	No	244	3391	Swimming	No Pile Activity	No Take	
Tuesday, September 26, 2023	Pier 58	Alki	Overcast, Light Rain	CASL	1	Yes	10:13	10:16	No	No	245	3284	Swimming	No Pile Activity	No Take	
Tuesday, September 26, 2023	Pier 58	Alki Point	Overcast, moderate rain	HS	1	No	13:28	13:30	No	No	249	3598	Swimming	No reaction observed	Level B	
Tuesday, September 26, 2023	Pier 58	Alki	Overcast, Moderate Rain	HS	1	Yes	13:55	13:57	No	No	249	3593	Swimming	No Pile Activity	No Take	
Tuesday, September 26, 2023	Pier 58	Alki	Moderate Rain, Sunny, Overcast	HS	1	Yes	14:07	14:08	No	No	249	3598	Swimming	No Pile Activity	No Take	
Tuesday, September 26, 2023	Pier 58	Alki Point	Sunny, light rain	CASL	1	Yes	14:25	14:27	No	No	248	3483	Swimming	No reaction observed	None	
Tuesday, September 26, 2023	Pier 58	Construction Site	Overcast, Sunny	CASL	1	No	7:13	13:18	No	No	241	132	Deseased	No Pile Activity	No Take	Animal dead- appears to be just drifting past site and not a project related death.
Tuesday, September 26, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	CASL	1	No	12:08	12:15	No	No	235	403	Resting	No Pile Activity	No Take	
Tuesday, September 26, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	CASL	1	No	14:30	14:30	No	No	265	11078	Intermittent	No reaction observed	None	
Tuesday, September 26, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	HS	1	No	16:10	16:15	No	No	265	11030	Intermittent	No reaction observed	None	
Tuesday, September 26, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	HS	1	No	16:26	16:31	No	No	276	12381	Intermittent	No reaction observed	None	
Tuesday, September 26, 2023	Pier 58	Magnolia	Overcast, heavy rain, snow/sleet/hail, light rain, moderate rain	CASL	6	No	8:59	9:00	No	No	302	5144	Swimming	No reaction observed	None	
Tuesday, September 26, 2023	Pier 58	Magnolia	Overcast, light rain, moderate rain, heavy rain, snow/sleet/hail	HS	1	No	16:51	16:57	No	No	300	5122	Foraging	No reaction observed	None	
Wednesday, September 27, 2023	Pier 58	Alki	Light Rain, Overcast	CASL	3	No	9:48	10:00	No	No	254	3608	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Alki	Overcast, Light Rain	CASL	1	Yes	10:32	10:34	No	No	252	3581	Foraging	No Pile Activity	Level B	
Wednesday, September 27, 2023	Pier 58	Alki Point	Overcast	CASL	1	Yes	10:48	11:30	No	No	252	3651	Foraging	No reaction observed	None	Previously marked as take.
Wednesday, September 27, 2023	Pier 58	Alki Point	Overcast	CASL	1	Yes	11:12	11:18	No	No	251	3529	Resting	No reaction observed	None	
Wednesday, September 27, 2023	Pier 58	Alki	Overcast	HS	1	No	11:40	11:47	No	No	251	3920	Resting	No Pile Activity	Level B	
Wednesday, September 27, 2023	Pier 58	Alki	Overcast	CASL	1	No	12:06	12:12	No	No	245	3330	Foraging	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Alki	Overcast	HS	1	No	13:15	13:30	No	No	250	3460	Foraging	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Alki	Overcast	CASL	1	No	13:25	13:37	No	No	250	3288	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Alki Point	Light rain, overcast	CASL	1	No	15:10	15:15	No	No	255	4019	Sailing	No reaction observed	Level B	
Wednesday, September 27, 2023	Pier 58	Construction Site	Moderate Rain, Fog	CASL	1	No	8:58	8:59	No	No	230	253	Swimming	No Pile Activity	No Take	



Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Wednesday, September 27, 2023	Pier 58	Construction Site	Light Rain	HS	1	No	15:04	15:04	No	No	218	24	Swimming	No Pile Activity	No Take	Animal was not observed for 15 minutes prior to activity.
Wednesday, September 27, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	HS	1	No	10:46	10:47	No	No	260	1757	Swimming	No reaction observed	Level B	
Wednesday, September 27, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	CASL	1	No	10:54	10:55	No	No	264	5867	Swimming	No reaction observed	Level B	
Wednesday, September 27, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	CASL	2	No	16:23	16:25	No	No	278	11774	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Moderate Rain	HS	1	No	7:06	7:07	No	No	302	5101	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Moderate rain	HS	1	Yes	7:30	7:31	No	No	303	5074	Swimming	No pile activity	None	
Wednesday, September 27, 2023	Pier 58	Magnolia	Light Rain	HS	3	Yes	7:40	7:46	No	No	302	5276	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Moderate Rain	HS	1	Yes	8:08	8:08	No	No	303	5215	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Moderate Rain, Fog	HS	1	Yes	8:20	8:21	No	No	303	5182	Foraging	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Moderate Rain, Fog	HS	1	Yes	8:38	8:39	No	No	302	4949	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Moderate Rain, Fog	HS	1	Yes	8:38	8:39	No	No	302	5220	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Fog, Light Rain	HS	1	Yes	8:57	8:57	No	No	302	5003	Resting	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Fog, Moderate Rain, Overcast	HS	1	Yes	8:57	8:58	No	No	303	5228	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Fog, Overcast, Moderate Rain	HS	1	Yes	9:06	9:06	No	No	303	5176	Resting	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast, Fog, Moderate Rain	HS	1	Yes	9:06	9:08	No	No	303	5118	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Fog, Overcast, Light Rain	HS	1	Yes	9:15	9:18	No	No	303	5154	Resting	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast, Fog, Light Rain	HS	1	No	9:17	9:17	No	No	300	5231	Swimming	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Fog, Moderate Rain, Overcast	HS	1	Yes	9:40	9:41	No	No	303	5178	Resting	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast, Fog, Light Rain	HS	1	Yes	9:47	9:48	No	No	302	5002	Foraging	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast, Fog, Moderate Rain	HS	1	Yes	10:07	10:08	No	No	303	4960	Swimming	No Pile Activity	Level B	
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	Yes	10:31	10:31	No	No	303	4985	Resting	No Pile Activity	No Take	
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	10:51	10:52	No	No	303	5110	Swimming	No reaction observed	None	Previously marked as take.
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	11:01	11:02	No	No	302	5246	Swimming	No reaction observed	None	Previously marked as take.
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	11:18	11:19	No	No	303	5082	Swimming	No reaction observed	None	Previously marked as take.
Wednesday, September 27, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	Yes	14:32	14:40	No	No	302	4954	Resting	No Pile Activity	No Take	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Thursday, September 28, 2023	Pier 58	Alki Point	Overcast, sunny	CASL	1	No	12:03	12:04	No	No	246	3395	Swimming	No reaction observed	Level B	
Thursday, September 28, 2023	Pier 58	Alki Point	Moderate rain, overcast, sunny	CASL	3	No	13:35	14:15	No	No	247	3182	Foraging	No reaction observed	None	Observed a fishing boat with a long net nearby throwing fish back into the water.
Thursday, September 28, 2023	Pier 58	Alki	Sunny, Overcast	HS	1	No	14:26	14:28	No	No	264	2937	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Alki	Sunny, Overcast	CASL	1	Yes	14:31	14:32	No	No	252	3323	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Alki Point	Sunny, overcast	CASL	1	Yes	14:38	14:39	No	No	263	2973	Swimming	No reaction observed	Level B	
Thursday, September 28, 2023	Pier 58	Alki Point	Overcast	CASL	1	Yes	14:50	14:52	No	No	253	3499	Swimming	No reaction observed	Level B	
Thursday, September 28, 2023	Pier 58	Alki Point	Overcast	HS	1	No	14:57	15:03	No	No	247	2940	Swimming	No reaction observed	Level B	
Thursday, September 28, 2023	Pier 58	Alki Point	Light rain, overcast	CASL	1	Yes	15:45	16:00	No	No	241	3156	Foraging	No reaction observed	None	
Thursday, September 28, 2023	Pier 58	Alki Point	Overcast	CASL	1	Yes	15:59	16:05	No	No	251	3462	Swimming	No reaction observed	None	
Thursday, September 28, 2023	Pier 58	Alki Point	Whitecaps, overcast	CASL	1	Yes	17:07	17:08	No	No	258	2514	Foraging	No reaction observed	None	
Thursday, September 28, 2023	Pier 58	Alki Point	Light wind, overcast	CASL	1	Yes	17:19	17:22	No	No	248	3412	Foraging	No reaction observed	None	Previously marked as take.
Thursday, September 28, 2023	Pier 58	Construction site	Overcast	CASL	1	No	7:40	7:45	No	No	263	250	Swimming	Reaction observed	Level B	Changed swimming direction to leave work area.
Thursday, September 28, 2023	Pier 58	Construction Site	Overcast	HS	1	No	9:38	9:39	No	No	299	70	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Construction Site	Light Rain	HS	1	Yes	11:00	11:02	No	No	294	58	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Construction site	Sunny	CASL	1	No	12:05	12:06	No	No	275	238	Swimming	No reaction observed	Level B	
Thursday, September 28, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast, light rain, light wind	CASL	2	No	7:37	7:39	No	No	276	11040	Swimming	No reaction observed	None	
Thursday, September 28, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast, light wind	CASL	1	No	8:38	8:39	No	No	182	447	Swimming	No reaction observed	None	
Thursday, September 28, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast, Light Wind	CASL	1	No	8:55	8:56	No	No	268	3412	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast, Light Wind	CASL	1	No	9:09	9:13	No	No	271	11194	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast, Light Wind	CASL	2	No	9:52	9:54	No	No	272	9177	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Seattle-Bainbridge ferry	Moderate Rain, Light Wind, Overcast	HS	1	No	13:38	13:39	No	No	271	5204	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Seattle-Bainbridge ferry	Moderate rain, overcast, light wind	CASL	1	No	14:09	14:11	No	No	278	195	Swimming	No reaction observed	Level B	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	No	7:53	7:53	No	No	303	5122	Swimming	No reaction observed	None	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	9:53	10:08	No	No	303	5081	Swimming	No reaction observed	None	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	10:20	10:55	No	No	303	5130	Swimming	No reaction observed	None	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	11:12	11:17	No	No	303	5172	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	No	11:35	11:37	No	No	303	5203	Resting	No Pile Activity	Level B	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	No	11:39	11:40	No	No	302	4960	Swimming	No Pile Activity	Level B	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	11:44	11:45	No	No	302	5166	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Thursday, September 28, 2023	Pier 58	Magnolia	Sunny, overcast	HS	1	Yes	11:51	11:52	No	No	302	5270	Resting	No reaction observed	None	Previously marked as take.
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast, sunny	HS	1	Yes	11:57	11:58	No	No	303	4942	Resting	No reaction observed	None	Previously marked as take.
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast, sunny	HS	1	Yes	12:06	12:07	No	No	302	5000	Resting	No reaction observed	None	Previously marked as take.
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	12:15	12:18	No	No	303	4977	Swimming	No reaction observed	None	Previously marked as take.
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast, sunny	HS	1	No	12:22	12:25	No	No	301	5261	Resting	No reaction observed	Level B	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast, light rain	HS	1	Yes	12:53	12:54	No	No	303	4979	Swimming	No reaction observed	Level B	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	14:00	14:13	No	No	302	4985	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	14:16	14:31	No	No	301	5130	Swimming	No Pile Activity	No Take	
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	15:08	15:09	No	No	301	5449	Foraging	No reaction observed	None	Previously observed and marked as take.
Thursday, September 28, 2023	Pier 58	Magnolia	Overcast	HS	1	No	15:27	16:15	No	No	303	5146	Swimming	No reaction observed	Level B	
Friday, September 29, 2023	Pier 58	Alki Point	Sunny, light wind	HS	1	No	8:22	8:25	Yes	Yes	221	174	Swimming	Reaction observed	None	Spent time on the surface while traveling in an unusual way. Also observed and marked as a take by PSO at construction site.
Friday, September 29, 2023	Pier 58	Alki Point	Overcast, light wind	CASL	2	No	9:43	9:50	No	No	239	3468	Swimming	No reaction observed	None	Both swimming from south to north about 100 meters apart.
Friday, September 29, 2023	Pier 58	Alki	Overcast, Light Wind	CASL	1	No	10:19	10:22	No	No	239	3487	Swimming	No Pile Activity	No Take	Observed swimming from south to north
Friday, September 29, 2023	Pier 58	Alki	Sunny, Whitecaps, Heavy Wind	CASL	2	No	15:05	15:10	No	No	243	3362	Swimming	No Pile Activity	No Take	
Friday, September 29, 2023	Pier 58	Alki Point	Sunny, heavy wind, whitecaps	CASL	1	No	15:20	15:25	No	No	250	3475	Swimming	No reaction observed	Level B	Observed swimming from south to north.
Friday, September 29, 2023	Pier 58	Alki Point	Sunny, light wind	CASL	1	No	15:39	15:43	No	No	246	3349	Swimming	No reaction observed	Level B	Observed swimming south to north.
Friday, September 29, 2023	Pier 58	Construction site	Sunny	HS	1	No	8:25	8:30	Yes	Yes	205	199	Swimming	No reaction observed	Level A	
Friday, September 29, 2023	Pier 58	Construction Site	Sunny	CASL	1	No	8:45	8:45	No	No	258	168	Swimming	No Pile Activity	Level B	
Friday, September 29, 2023	Pier 58	Construction Site	Overcast	CASL	1	No	9:23	9:25	No	No	266	200	Swimming	No Pile Activity	Level B	
Friday, September 29, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny, Overcast, Light Wind, Whitecaps	HS	1	No	12:57	12:59	No	No	278	11896	Swimming	No Pile Activity	No Take	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Friday, September 29, 2023	Pier 58	Magnolia	Sunny	HS	2	No	14:26	14:27	No	No	297	5331	Swimming	No Pile Activity	No Take	
Monday, October 2, 2023	Pier 58	Alki Point	Overcast, light rain, fog	CASL	1	Yes	8:14	8:20	No	No	243	3376	Swimming	No reaction observed	None	
Monday, October 2, 2023	Pier 58	Alki	Overcast, Fog, Light Rain	CASL	1	Yes	10:20	10:22	No	No	242	3395	Foraging	No Pile Activity	No Take	Observed with a large fish in its mouth.
Monday, October 2, 2023	Pier 58	Alki	Overcast, Fog, Light Rain	CASL	2	No	12:57	12:58	No	No	242	3403	Swimming	No Pile Activity	No Take	
Monday, October 2, 2023	Pier 58	Construction Site	Sunny	HS	1	No	9:36	9:39	No	No	534	51	Swimming	No Pile Activity	No Take	
Monday, October 2, 2023	Pier 58	Construction Site	Overcast	CASL	1	No	13:54	13:56	No	No	236	501	Swimming	No Pile Activity	Level B	
Monday, October 2, 2023	Pier 58	Construction site	Overcast, light rain	CASL	1	No	14:10	14:12	No	No	253	202	Swimming	No reaction observed	Level B	
Monday, October 2, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	LBCD	2	No	12:50	13:09	No	No	295	6686	Swimming	No Pile Activity	No Take	
Monday, October 2, 2023	Pier 58	Magnolia	Overcast	HS	1	No	8:25	8:27	No	No	303	5118	Swimming	No reaction observed	None	
Monday, October 2, 2023	Pier 58	Magnolia	Moderate rain, light rain	HS	1	Yes	10:44	10:45	No	No	303	4966	Swimming	No reaction observed	None	
Monday, October 2, 2023	Pier 58	Magnolia	Light rain, moderate rain, overcast	CASL	2	No	14:15	14:17	No	No	301	5118	Swimming	No reaction observed	Level B	
Tuesday, October 3, 2023	Pier 58	Alki Point	Light rain, overcast, fog	CASL	1	No	7:28	7:32	No	No	242	3409	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Overcast	CASL	2	No	8:20	8:25	No	No	240	3180	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Overcast	HS	1	No	8:30	8:35	No	No	246	2453	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Overcast	CASL	1	No	8:50	8:55	No	No	259	3372	Foraging	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Overcast	CASL	2	Yes	8:53	8:58	No	No	244	3010	Foraging	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	10:00	10:05	No	No	244	3283	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	10:58	11:03	No	No	252	3315	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	CASL	1	Yes	11:17	11:22:00	No	No	243	3009	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	11:55	12:00	No	No	244	1923	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	CASL	1	Yes	12:00	12:05	No	No	291	2886	Foraging	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	HS	1	No	12:04	12:09	No	No	245	3364	Intermittent	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	HS	1	No	12:54	12:56	No	No	243	2959	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	13:03	13:08	No	No	285	3130	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	13:15	13:20	No	No	245	3221	Foraging	No reaction observed	None	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Tuesday, October 3, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	13:34	13:35	No	No	248	3344	Swimming	No reaction observed	None	
Tuesday, October 3, 2023	Pier 58	Construction site	Sunny	CASL	1	No	12:28	12:32	No	No	247	354	Swimming	No reaction observed	Level B	
Wednesday, October 4, 2023	Pier 58	Alki	Overcast	CASL	1	No	9:30	9:35	No	No	277	3015	Swimming	No Pile Activity	No Take	
Wednesday, October 4, 2023	Pier 58	Alki	Overcast	CASL	1	No	9:40	9:45	No	No	244	3344	Swimming	No Pile Activity	No Take	
Wednesday, October 4, 2023	Pier 58	Alki Point	Overcast	CASL	1	No	10:10	10:27	No	No	260	2449	Swimming	Reaction observed	Level B	Observed moving very quickly in a straight line away from construction activities
Wednesday, October 4, 2023	Pier 58	Alki Point	Sunny, overcast	HS	1	No	12:17	12:23	No	No	244	3303	Foraging	No reaction observed	Level B	Observed eating fish 0–50 meters offshore; does not appear to be affected by work activities.
Wednesday, October 4, 2023	Pier 58	Alki Point	Sunny, overcast	CASL	1	No	13:11	13:14	No	No	251	3065	Swimming	No reaction observed	Level B	
Wednesday, October 4, 2023	Pier 58	Construction site	Overcast	CASL	1	No	10:07	10:07	No	No	223	207	Swimming	No reaction observed	Level B	
Wednesday, October 4, 2023	Pier 58	Construction site	Overcast	CASL	2	Yes	10:35	10:38	No	No	273	208	Swimming	No reaction observed	None	Previously marked as take.
Wednesday, October 4, 2023	Pier 58	Construction site	Overcast	CASL	1	No	12:12	12:16	No	No	287	206	Foraging	No reaction observed	Level B	Observed intermittently diving and surfacing.
Wednesday, October 4, 2023	Pier 58	Magnolia	Overcast	HS	4	No	8:42	8:43	No	No	302	5137	Swimming	No reaction observed	None	
Wednesday, October 4, 2023	Pier 58	Magnolia	Sunny	HS	1	No	14:50	14:51	No	No	302	5109	Swimming	No reaction observed	Level B	
Thursday, October 5, 2023	Pier 58	Alki	Sunny, Fog	CASL	1	No	8:07	8:09	No	No	244	3380	Swimming	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	13:16	13:18	No	No	249	3525	Swimming	Reaction observed	None	
Thursday, October 5, 2023	Pier 58	Alki Point	Sunny	HS	1	Yes	15:34	15:37	No	No	247	3436	Swimming	No reaction observed	None	
Thursday, October 5, 2023	Pier 58	Construction site	Sunny	CASL	2	No	10:08	10:13	No	No	264	201	Swimming	No reaction observed	Level B	
Thursday, October 5, 2023	Pier 58	Construction Site	Sunny	CASL	1	No	12:50	12:55	No	No	240	224	Foraging	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny, fog, overcast	CASL	2	Yes	10:10	10:12	No	No	280	192	Foraging	No reaction observed	None	
Thursday, October 5, 2023	Pier 58	Magnolia	Fog	HS	4	No	7:40	7:47	No	No	303	4972	Swimming	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Magnolia	Fog	HS	3	No	7:40	7:51	No	No	303	5095	Swimming	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny, Fog	HS	1	No	7:55	7:55	No	No	301	5258	Swimming	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny, Fog	HS	1	Yes	7:59	8:26	No	No	302	5346	Resting	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Magnolia	Fog, Sunny	HS	1	Yes	8:01	8:02	No	No	303	5046	Swimming	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny, Fog	HS	1	Yes	9:09	9:09	No	No	302	5171	Swimming	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	2	Yes	9:46	9:53	No	No	303	5104	Swimming	No Pile Activity	Level B	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	1	Yes	9:48	9:57	No	No	303	5132	Swimming	No Pile Activity	No Take	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	1	Yes	10:29	10:30	No	No	302	5151	Swimming	No reaction observed	Level B	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	1	Yes	10:31	10:36	No	No	302	5184	Swimming	No reaction observed	None	Previously marked as take.
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	1	Yes	10:49	11:07	No	No	302	5129	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	1	Yes	11:28	11:33	No	No	302	5262	Swimming	No Pile Activity	Level B	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	2	Yes	11:40	11:41	No	No	303	4943	Swimming	No reaction observed	Level B	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	1	No	11:42	11:43	No	No	302	5258	Swimming	No reaction observed	Level B	
Thursday, October 5, 2023	Pier 58	Magnolia	Sunny	HS	2	Yes	12:02	12:03	No	No	302	5300	Swimming	No reaction observed	None	Previously marked as take.
Friday, October 6, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	9:00	9:03	No	No	250	3548	Swimming	No reaction observed	None	Previously marked as take.
Friday, October 6, 2023	Pier 58	Alki Point	Sunny	CASL	1	Yes	9:55	9:58	No	No	249	3494	Swimming	No reaction observed	None	Previously marked as take.
Friday, October 6, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	13:36	13:39	No	No	255	2308	Swimming	No reaction observed	Level B	
Friday, October 6, 2023	Pier 58	Alki Point	Sunny	CASL	1	No	15:44	16:13	No	No	247	3362	Swimming	No reaction observed	None	
Friday, October 6, 2023	Pier 58	Construction site	Sunny	CASL	1	No	9:04	9:06	No	No	254	248	Swimming	No reaction observed	Level B	
Friday, October 6, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	HP	2	No	7:25	7:30	No	No	260	10489	Swimming	No Pile Activity	No Take	Observed leaving Level B area prior to work starting
Friday, October 6, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	HS	1	No	7:40	7:45	No	No	276	12013	Intermittent	No reaction observed	None	
Friday, October 6, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	CASL	1	No	8:16	8:21	No	No	279	10997	Swimming	No reaction observed	Level B	
Friday, October 6, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	CASL	1	No	8:49	8:54	No	No	191	1031	Swimming	No reaction observed	Level B	
Friday, October 6, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	HS	2	No	9:35	9:40	No	No	279	12469	Swimming	No Pile Activity	Level B	
Friday, October 6, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	CASL	1	No	10:43	10:48	No	No	236	2088	Foraging	No reaction observed	Level B	
Friday, October 6, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	HS	2	No	16:40	16:45	No	No	278	11829	Swimming	No reaction observed	None	
Friday, October 6, 2023	Pier 58	Magnolia	Sunny	HS	3	No	7:30	7:36	No	No	302	5209	Swimming	No reaction observed	None	
Friday, October 6, 2023	Pier 58	Magnolia	Sunny	CASL	3	No	10:30	11:00:00	No	No	302	5002	Swimming	No reaction observed	Level B	
Monday, October 9, 2023	Pier 58	Construction Site	Light Rain	CASL	1	No	13:15	13:17	No	No	226	146	Swimming	No Pile Activity	Level B	
Monday, October 9, 2023	Pier 58	Seattle-Bainbridge ferry	Light Rain, Overcast, Light Wind	HS	1	No	7:42	7:46	No	No	278	12102	Swimming	No Pile Activity	Level B	
Monday, October 9, 2023	Pier 58	Seattle-Bainbridge ferry	Light rain, overcast, light wind	CASL	1	No	8:03	8:05	No	No	278	11566	Swimming	No reaction observed	Level B	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Monday, October 9, 2023	Pier 58	Seattle-Bainbridge ferry	Light rain, overcast, light wind	HP	1	No	9:51	9:53	No	Yes	281	9671	Swimming	No reaction observed	Level B	Could not positively ID; possibly a small humpback whale or harbor porpoise. Two blowhole sprays, then dove
Monday, October 9, 2023	Pier 58	Seattle-Bainbridge ferry	Light Rain, Overcast, Light Wind	HS	1	No	14:10	14:11	No	No	251	993	Swimming	No Pile Activity	No Take	
Monday, October 9, 2023	Pier 58	Magnolia	Overcast, light rain, moderate rain	HS	4	No	7:30	7:35	No	No	302	5175	Swimming	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, light rain	HS	1	No	7:49	7:54	No	No	247	3348	Intermittent	No reaction observed	None	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, light rain	HS	2	No	8:25	8:30	No	No	249	3401	Intermittent	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, light rain	CASL	1	No	8:27	8:32	No	No	252	3566	Swimming	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, moderate rain	CASL	1	No	8:56	9:01	No	No	251	3861	Swimming	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, fog, moderate rain	HS	1	No	9:07	09:12:00	No	No	251	3779	Intermittent	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, fog, light rain	CASL	2	No	9:22	9:27	No	No	260	3488	Swimming	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, fog, light rain	CASL	1	No	9:47	9:52	No	No	248	4331	Swimming	No reaction observed	None	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, fog, light rain	CASL	2	No	10:36	10:41	No	No	259	3960	Swimming	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Alki	Overcast	CASL	2	No	12:18	12:22	No	No	261	5141	Swimming	No Pile Activity	No Take	
Tuesday, October 10, 2023	Pier 58	Alki	Overcast, Fog, Light Rain	CASL	1	No	13:27	13:32	No	No	250	3163	Intermittent	No Pile Activity	No Take	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, fog, moderate rain	CASL	1	No	13:59	14:04	No	No	249	3029	Swimming	No reaction observed	None	
Tuesday, October 10, 2023	Pier 58	Alki Point	Overcast, fog, moderate rain	CASL	1	No	14:09	14:14	No	No	255	2850	Swimming	No reaction observed	None	
Tuesday, October 10, 2023	Pier 58	Construction Site	Light Rain	CASL	1	No	9:16	9:18	No	No	258	144	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Tuesday, October 10, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	HS	1	No	7:47	7:50	No	No	278	12695	Swimming	No Pile Activity	No Take	
Tuesday, October 10, 2023	Pier 58	Seattle-Bainbridge ferry	Light Rain	HS	1	No	8:01	8:05	No	No	278	12786	Swimming	No Pile Activity	No Take	
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	No	7:30	8:40	No	No	303	5139	Intermittent	No Pile Activity	Level B	
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	No	7:36	9:01	No	No	303	4945	Intermittent	No Pile Activity	Level B	
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	No	7:56	8:23	No	No	301	5499	Swimming	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	8:16	8:39	No	No	302	5208	Swimming	No Pile Activity	Level B	
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	2	Yes	8:49	8:50	No	No	303	5017	Swimming	No reaction observed	None	Previously marked as take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	Yes	9:19	9:20	No	No	302	5236	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	2	No	9:28	9:29	No	No	302	5270	Swimming	No Pile Activity	Level B	One individual has previously been observed.

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Tuesday, October 10, 2023	Pier 58	Magnolia	Fog, Light Rain	HS	1	Yes	9:29	9:30	No	No	302	5195	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	9:43	9:46	No	No	302	5221	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	2	Yes	9:45	10:18	No	No	303	4995	Resting	No Pile Activity	No Take	Previously Marked as Take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast, light rain	HS	1	Yes	9:51	9:52	No	No	302	5265	Swimming	No reaction observed	None	Previously marked as take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	10:15	10:16	No	No	301	5425	Resting	No reaction observed	None	Previously marked as take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	10:17	10:18	No	No	302	5123	Swimming	No reaction observed	None	Previously marked as take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	Yes	10:52	10:53	No	No	303	5007	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	Yes	10:57	10:58	No	No	303	4939	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	Yes	10:59	11:03	No	No	302	5294	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	CASL	1	No	11:20	11:21	No	No	302	5135	Swimming	No reaction observed	Level B	
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	11:28	11:30	No	No	302	4912	Swimming	No reaction observed	None	Previously marked as take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	3	Yes	11:34	11:45	No	No	302	4999	Swimming	No reaction observed	None	Previously marked as take.
Tuesday, October 10, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	11:57	11:58	No	No	302	5204	Swimming	No reaction observed	None	
Wednesday, October 11, 2023	Pier 58	Alki Point	Overcast, fog, light rain	CASL	1	No	8:02	8:07	No	No	258	3835	Swimming	No reaction observed	None	
Wednesday, October 11, 2023	Pier 58	Alki Point	Overcast, fog	CASL	2	No	10:08	10:13	No	No	275	4111	Swimming	No reaction observed	Level B	
Wednesday, October 11, 2023	Pier 58	Alki Point	Fog, overcast	CASL	1	No	10:20	10:22	No	No	269	2695	Swimming	No reaction observed	Level B	
Wednesday, October 11, 2023	Pier 58	Alki Point	Overcast, fog	CASL	1	Yes	10:34	10:39	No	No	271	4014	Swimming	No reaction observed	Level B	
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	2	No	7:36	8:00	No	No	303	5127	Resting	No Pile Activity	No Take	
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast, Fog, Light Rain	HS	1	Yes	7:42	8:04	No	No	303	5184	Resting	No Pile Activity	No Take	
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast, Fog, light rain	HS	1	No	9:11	10:36	No	No	302	4961	Resting	No reaction observed	Level B	
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast, light rain	HS	1	Yes	9:25	11:08	No	No	302	5164	Intermittent	No reaction observed	Level B	
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	No	10:37	10:38	No	No	303	4896	Swimming	No Pile Activity	Level B	
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast, light rain	HS	1	Yes	10:42	10:43	No	No	302	5315	Swimming	No reaction observed	None	Previously marked as take.
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	11:37	11:38	No	No	303	5025	Resting	No Pile Activity	No Take	Previously Marked as Take.
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	11:39	11:39	No	No	303	4882	Swimming	No Pile Activity	No Take	Previously Marked as Take.



Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	12:07	12:08	No	No	302	5218	Swimming	No Pile Activity	No Take	Previously Marked as Take.
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast	HS	1	Yes	12:21	12:22	No	No	302	5110	Resting	No reaction observed	None	Previously marked as take.
Wednesday, October 11, 2023	Pier 58	Magnolia	Overcast, Sunny	HS	1	Yes	13:05	13:06	No	No	302	4998	Resting	No Pile Activity	No Take	
Thursday, October 12, 2023	Pier 58	Alki	Overcast, Fog	HS	2	No	8:41	8:46	No	No	252	3088	Intermittent	No Pile Activity	No Take	
Thursday, October 12, 2023	Pier 58	Alki	Overcast, Fog	HP	2	No	10:30	10:35	No	No	257	7714	Swimming	No Pile Activity	No Take	Observed moving northeast.
Thursday, October 12, 2023	Pier 58	Alki Point	Overcast, fog	HP	2	Yes	11:20	11:25	No	No	301	3493	Swimming	No reaction observed	Level B	Possibly observed and reported earlier before construction started. These two were within Level B zone during work
Thursday, October 12, 2023	Pier 58	Alki Point	Overcast, sunny, fog	CASL	1	No	12:00	12:05	No	No	238	3030	Intermittent	No reaction observed	Level B	
Thursday, October 12, 2023	Pier 58	Construction Site	Overcast	CASL	1	No	9:00	9:05	No	No	266	192	Swimming	No Pile Activity	No Take	
Thursday, October 12, 2023	Pier 58	Construction Site	Fog	CASL	1	Yes	10:15	10:22	No	No	263	299	Swimming	No Pile Activity	No Take	Observed by Ferry PSO.
Thursday, October 12, 2023	Pier 58	Construction Site	Overcast	LBCD	6	Yes	10:35	10:45	No	No	263	206	Swimming	No Pile Activity	No Take	Observed by ferry earlier, possibly miss identified harbor porpoise.
Thursday, October 12, 2023	Pier 58	Construction Site	Sunny	HP	6	Yes	11:14	11:22	No	No	220	823	Swimming	No Pile Activity	Level B	Last spotted near Duwamish outlet
Thursday, October 12, 2023	Pier 58	Seattle-Bainbridge ferry	Fog, Overcast	KW	6	No	8:11	8:20	Yes	No	270	10814	Swimming and tail slap	No Pile Activity	No Take	Observed 4-10 in the group, at least 1 juvenile. Breaching and slapping tails.
Thursday, October 12, 2023	Pier 58	Seattle-Bainbridge ferry	Fog	LBCD	6	No	9:32	9:35	No	No	277	11568	Swimming	No Pile Activity	No Take	Observed briefly- moving very quickly like a dolphin, dark gray with straight dorsal fin. Overheard the captain call
Thursday, October 12, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast, Fog	CASL	1	No	9:58	10:00	No	No	530	596	Foraging	No Pile Activity	No Take	
Thursday, October 12, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast, Fog	KW	3	No	10:03	10:09	Yes	No	301	8202	Swimming	No Pile Activity	No Take	Too far away to see details, I was informed of their presence and but could barely see them with binoculars
Thursday, October 12, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny, Fog	CASL	1	No	10:07	10:27	No	No	180	348	Swimming	No Pile Activity	No Take	
Thursday, October 12, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast, Fog	LBCD	6	Yes	10:52	11:05	No	No	262	3428	Swimming	No Pile Activity	No Take	Same observation as earlier in the day. Dark grey/black, slim, straight dorsal, fin, moving very quickly like a
Thursday, October 12, 2023	Pier 58	Seattle-Bainbridge ferry	Fog, Sunny	CASL	1	No	13:22	13:24	No	No	275	11292	Foraging	No Pile Activity	No Take	
Thursday, October 12, 2023	Pier 58	Magnolia	Overcast, Sunny, Fog	HS	2	No	11:35	12:03	No	No	303	5195	Swimming	No Pile Activity	Level B	
Thursday, October 12, 2023	Pier 58	Magnolia	Sunny, overcast, fog	HS	1	No	11:44	11:52	No	No	302	4928	Swimming	No reaction observed	Level B	
Thursday, October 12, 2023	Pier 58	Magnolia	Overcast, fog, sunny	HS	1	No	11:50	13:03	No	No	302	5175	Intermittent	No reaction observed	Level B	
Thursday, October 12, 2023	Pier 58	Magnolia	Overcast, sunny, fog	HS	1	Yes	12:24	13:06	No	No	303	5087	Swimming	No reaction observed	None	Previously marked as take.
Thursday, October 12, 2023	Pier 58	Magnolia	Overcast, Sunny	HS	1	Yes	12:37	12:50	No	No	302	5175	Resting	No Pile Activity	No Take	Previously Marked as Take.
Thursday, October 12, 2023	Pier 58	Magnolia	Overcast, Sunny	HS	1	Yes	12:44	12:45	No	No	303	4897	Resting	No Pile Activity	No Take	Previously Marked as Take.
Thursday, October 12, 2023	Pier 58	Magnolia	Overcast, sunny	HS	1	Yes	13:09	13:10	No	No	302	5226	Swimming	No reaction observed	None	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Thursday, October 12, 2023	Pier 58	Magnolia	Overcast, Sunny	HS	1	Yes	13:28	13:32	No	No	303	4970	Resting	No Pile Activity	No Take	
Monday, October 16, 2023	Pier 58	Alki	Overcast, Light Wind, Light Rain, Heavy Rain	HS	1	No	14:29	14:35	No	No	242	5113	Foraging	No Pile Activity	No Take	
Monday, October 16, 2023	Pier 58	Magnolia	Sunny, Overcast, Light Rain, Moderate Rain	HS	1	No	8:00	8:05	No	No	302	5282	Swimming	No Pile Activity	No Take	
Tuesday, October 17, 2023	Pier 58	Alki Point	Overcast	CASL	1	No	8:00	8:10	No	No	245	2999	Swimming	No reaction observed	None	Observed swimming around the point slowly.
Tuesday, October 17, 2023	Pier 58	Alki Point	Overcast, light rain	CASL	1	No	9:37	9:47	No	No	261	3757	Foraging	No reaction observed	None	Sea lion was swimming back-and-forth and being attacked by a flock of seagulls.
Tuesday, October 17, 2023	Pier 58	Alki	Sunny, Light Rain	CASL	1	No	10:01	10:09	No	No	256	3458	Swimming	No Pile Activity	No Take	Possibly previously observed.
Tuesday, October 17, 2023	Pier 58	Alki	Overcast	HS	1	No	10:23	10:29	No	No	254	3489	Swimming	No Pile Activity	No Take	
Tuesday, October 17, 2023	Pier 58	Alki	Overcast	CASL	1	No	10:26	10:28	No	No	253	3283	Foraging	No Pile Activity	No Take	Possibly previously observed.
Tuesday, October 17, 2023	Pier 58	Alki	Sunny, Overcast	CASL	1	No	11:23	11:25	No	No	252	3489	Swimming	No Pile Activity	Level B	
Tuesday, October 17, 2023	Pier 58	Magnolia	Overcast	HS	3	No	7:50	8:20	No	No	302	4970	Intermittent	No reaction observed	Level B	Seals foraging/swimming prior to and during vibratory installation.
Tuesday, October 17, 2023	Pier 58	Magnolia	Sunny, Overcast	HS	1	Yes	8:34	8:37	No	No	303	5135	Swimming	No reaction observed	No Take	Previously Marked as Take.
Tuesday, October 17, 2023	Pier 58	Magnolia	Sunny, Overcast	HS	2	Yes	8:58	9:01	No	No	303	4894	Swimming	No reaction observed	No Take	Previously Marked as Take.
Tuesday, October 17, 2023	Pier 58	Magnolia	Overcast, Light Rain, Sunny	HS	3	Yes	9:30	9:50	No	No	303	4820	Intermittent	No reaction observed	No Take	Previously Marked as Take.
Tuesday, October 17, 2023	Pier 58	Magnolia	Sunny, Overcast	HS	2	Yes	10:50	11:10	No	No	301	4961	Intermittent	No reaction observed	No Take	Previously Marked as Take.
Tuesday, October 17, 2023	Pier 58	Magnolia	Overcast, Light Rain	HS	1	Yes	11:48	11:50	No	No	303	5109	Swimming	No reaction observed	No Take	Previously Marked as Take.
Wednesday, October 18, 2023	Pier 58	Alki Point	Sunny	CASL	2	No	14:20	14:30	No	No	249	3402	Other	Reaction observed	None	One juvenile
Wednesday, October 18, 2023	Pier 58	Construction Site	Sunny	CASL	1	No	8:24	8:25	No	No	263	217	Swimming	No Pile Activity	Level B	
Wednesday, October 18, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	HS	1	No	10:13	10:16	No	No	278	12663	Foraging	No reaction observed	Level B	
Wednesday, October 18, 2023	Pier 58	Seattle-Bainbridge ferry	Sunny	HS	1	No	12:21	12:23	No	No	278	12596	Swimming	No Pile Activity	Level B	
Thursday, October 19, 2023	Pier 58	Alki	Overcast	CASL	1	No	7:32	7:36	No	No	256	3655	Foraging	No Pile Activity	No Take	Observed feeding, thrashing around and jumping-also being attacked by seagulls
Thursday, October 19, 2023	Pier 58	Alki Point	Overcast	CASL	1	No	8:16	8:22	No	No	253	3381	Swimming	No reaction observed	Level B	Observed swimming east slowly.
Thursday, October 19, 2023	Pier 58	Construction Site	Sunny	HS	1	No	10:40	10:40	No	No	311	67	Swimming	No Pile Activity	Level B	
Thursday, October 19, 2023	Pier 58	Construction Site	Sunny	HS	1	No	10:53	10:53	No	No	244	90	Swimming	No Pile Activity	Level B	
Thursday, October 19, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	HP	3	No	7:26	7:31	No	No	219	618	Swimming	No Pile Activity	No Take	
Thursday, October 19, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	CASL	1	No	8:24	8:29	No	No	269	10338	Swimming	No reaction observed	Level B	

Table A-2  
Pier 58 Project Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individuals	Previously Observed	Observation Start Time (PDT)	Observation End Time	Work Delay	Work Stop	Bearing From Pile (absolute)	Distance From Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Thursday, October 19, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	CASL	1	No	9:07	9:12	No	No	301	531	Intermittent	No reaction observed	Level B	
Friday, October 20, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	CBND	5	No	9:46	9:51	No	No	269	10270	Swimming	No reaction observed	Level B	Observed swimming with the ferry and wake-riding.
Friday, October 20, 2023	Pier 58	Seattle-Bainbridge ferry	Overcast	HS	1	No	11:26	11:31	No	No	278	11840	Intermittent	No reaction observed	Level B	
Friday, October 20, 2023	Pier 58	Magnolia	Sunny, Overcast	HS	5	Yes	7:30	7:33	No	No	301	5260	Swimming	No reaction observed	No Take	

Notes:  
CBND: common bottlenose dolphin  
CASL: California sea lion  
KW: killer whale  
LBCD: long beaked common dolphin  
HP: harbor porpoise  
m: meter  
HS: harbor seal  
PDT: Pacific Daylight Time  
PSO: protected species observer

**Table A-3****Pier 58 Project Daily Summary of California Seal Lion Level B Takes, Observations with No Takes, and Totals**

Date	California Sea Lion Level B Takes					California Sea Lion Observations with No Takes				
	Construction Site	Alki Point	Magnolia	Seattle-Bainbridge Ferry	Level B Total	Construction Site	Alki Point	Magnolia	Seattle-Bainbridge Ferry	No Take Total
Monday, September 25, 2023	1	1	4	0	6	3	9	1	1	14
Tuesday, September 26, 2023	0	0	0	0	0	1	1	6	2	10
Wednesday, September 27, 2023	0	2	0	1	3	1	5	0	2	8
Thursday, September 28, 2023	2	3	0	1	6	0	3	0	7	10
Friday, September 29, 2023	2	2	0	0	4	0	5	0	0	5
Monday, October 2, 2023	2	0	2	0	4	0	2	0	0	2
Tuesday, October 3, 2023	1	0	0	0	1	0	10	0	0	10
Wednesday, October 4, 2023	2	2	0	0	4	0	2	0	0	2
Thursday, October 5, 2023	2	0	0	0	2	1	2	0	0	3
Friday, October 6, 2023	1	1	3	3	8	0	2	0	0	2
Monday, October 9, 2023	1	0	0	1	2	0	0	0	0	0
Tuesday, October 10, 2023	0	6	1	0	7	1	6	0	0	7
Wednesday, October 11, 2023	0	4	0	0	4	0	1	0	0	1
Thursday, October 12, 2023	0	1	0	0	1	1	0	0	3	4
Monday, October 16, 2023	0	0	0	0	0	0	0	0	0	0
Tuesday, October 17, 2023	0	1	0	0	1	0	4	0	0	4
Wednesday, October 18, 2023	1	0	0	0	1	0	2	0	0	2
Thursday, October 19, 2023	0	1	0	2	3	0	1	0	0	1
Friday, October 20, 2023	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>15</b>	<b>24</b>	<b>10</b>	<b>8</b>	<b>57</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>85</b>

**Table A-4****Pier 58 Project Daily Summary of Harbor Seal Level B Takes, Observations with No Takes, and Totals**

Date	Harbor Level B Takes					Harbor Seal Observations with No Takes				
	Construction Site	Alki	Magnolia	Ferry	Level B Total	Construction Site	Alki	Magnolia	Ferry	No Take Total
Monday, September 25, 2023	0	0	4	0	<b>4</b>	1	2	4	0	<b>7</b>
Tuesday, September 26, 2023	0	1	0	0	<b>1</b>	0	0	1	2	<b>3</b>
Wednesday, September 27, 2023	0	1	1	1	<b>3</b>	1	1	2	0	<b>4</b>
Thursday, September 28, 2023	0	1	5	0	<b>6</b>	1	1	1	1	<b>4</b>
Friday, September 29, 2023	0	0	0	0	<b>0</b>	0	1	2	1	<b>4</b>
Monday, October 2, 2023	0	0	0	0	<b>0</b>	1	0	1	0	<b>2</b>
Tuesday, October 3, 2023	0	0	0	0	<b>0</b>	0	3	0	0	<b>3</b>
Wednesday, October 4, 2023	0	1	1	0	<b>2</b>	0	0	4	0	<b>4</b>
Thursday, October 5, 2023	0	0	7	0	<b>7</b>	0	0	8	0	<b>8</b>
Friday, October 6, 2023	0	0	0	2	<b>2</b>	0	0	3	3	<b>6</b>
Monday, October 9, 2023	0	0	4	1	<b>5</b>	0	0	0	1	<b>1</b>
Tuesday, October 10, 2023	0	3	6	0	<b>9</b>	0	1	0	2	<b>3</b>
Wednesday, October 11, 2023	0	0	3	0	<b>3</b>	0	0	2	0	<b>2</b>
Thursday, October 12, 2023	0	0	4	0	<b>4</b>	0	2	0	0	<b>2</b>
Monday, October 16, 2023	0	0	0	0	<b>0</b>	0	1	1	0	<b>2</b>
Tuesday, October 17, 2023	0	0	3	0	<b>3</b>	0	1	0	0	<b>1</b>
Wednesday, October 18, 2023	0	0	0	2	<b>2</b>	0	0	0	0	<b>0</b>
Thursday, October 19, 2023	2	0	0	0	<b>2</b>	0	0	0	0	<b>0</b>
Friday, October 20, 2023	0	0	0	1	<b>1</b>	0	0	0	0	<b>0</b>
<b>Total</b>	<b>2</b>	<b>7</b>	<b>38</b>	<b>7</b>	<b>54</b>	<b>4</b>	<b>13</b>	<b>29</b>	<b>10</b>	<b>56</b>

**Table A-5****Pier 58 Project Daily Summary of Harbor Porpoise Level B Takes, Observations with No Takes, and Totals**

Date	Harbor Porpoise Level B Takes					Harbor Porpoise Observations with No Takes				
	Construction Site	Alki Point	Magnolia	Seattle-Bainbridge Ferry	Level B Total	Construction Site	Alki Point	Magnolia	Seattle-Bainbridge Ferry	No Take Total
Monday, September 25, 2023	0	0	0	0	0	0	0	0	0	0
Tuesday, September 26, 2023	0	0	0	0	0	0	0	0	0	0
Wednesday, September 27, 2023	0	0	0	0	0	0	0	0	0	0
Thursday, September 28, 2023	0	0	0	0	0	0	0	0	0	0
Friday, September 29, 2023	0	0	0	0	0	0	0	0	0	0
Monday, October 2, 2023	0	0	0	0	0	0	0	0	0	0
Tuesday, October 3, 2023	0	0	0	0	0	0	0	0	0	0
Wednesday, October 4, 2023	0	0	0	0	0	0	0	0	0	0
Thursday, October 5, 2023	0	0	0	0	0	0	0	0	0	0
Friday, October 6, 2023	0	0	0	0	0	0	0	0	0	0
Monday, October 9, 2023	0	0	0	1	1	0	0	0	0	0
Tuesday, October 10, 2023	0	0	0	0	0	0	0	0	0	0
Wednesday, October 11, 2023	0	0	0	0	0	0	0	0	0	0
Thursday, October 12, 2023	6	2	0	0	8	0	2	0	2	4
Monday, October 16, 2023	0	0	0	0	0	0	0	0	0	0
Tuesday, October 17, 2023	0	0	0	0	0	0	0	0	0	0
Wednesday, October 18, 2023	0	0	0	0	0	0	0	0	0	0
Thursday, October 19, 2023	0	0	0	0	0	0	0	0	3	3
Friday, October 20, 2023	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>7</b>

**Table A-6****Pier 58 Project Daily Summary of Common Bottlenose Dolphin Level B Takes, Observations with No Takes, and Totals**

Date	Common Bottlenose Dolphin Level B Takes					Common Bottlenose Dolphin Observations with No Takes				
	Construction Site	Alki Point	Magnolia	Seattle-Bainbridge Ferry	Level B Total	Construction Site	Alki Point	Magnolia	Seattle-Bainbridge Ferry	No Take Total
Monday, September 25, 2023	0	0	0	0	0	0	0	0	0	0
Tuesday, September 26, 2023	0	0	0	0	0	0	0	0	0	0
Wednesday, September 27, 2023	0	0	0	0	0	0	0	0	0	0
Thursday, September 28, 2023	0	0	0	0	0	0	0	0	0	0
Friday, September 29, 2023	0	0	0	0	0	0	0	0	0	0
Monday, October 2, 2023	0	0	0	0	0	0	0	0	0	0
Tuesday, October 3, 2023	0	0	0	0	0	0	0	0	0	0
Wednesday, October 4, 2023	0	0	0	0	0	0	0	0	0	0
Thursday, October 5, 2023	0	0	0	0	0	0	0	0	0	0
Friday, October 6, 2023	0	0	0	0	0	0	0	0	0	0
Monday, October 9, 2023	0	0	0	0	0	0	0	0	0	0
Tuesday, October 10, 2023	0	0	0	0	0	0	0	0	0	0
Wednesday, October 11, 2023	0	0	0	0	0	0	0	0	0	0
Thursday, October 12, 2023	0	0	0	0	0	0	0	0	0	0
Monday, October 16, 2023	0	0	0	0	0	0	0	0	0	0
Tuesday, October 17, 2023	0	0	0	0	0	0	0	0	0	0
Wednesday, October 18, 2023	0	0	0	0	0	0	0	0	0	0
Thursday, October 19, 2023	0	0	0	0	0	0	0	0	0	0
Friday, October 20, 2023	0	0	0	0	5	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Table A-7  
Don Armeni Project Protected Species Observers Summary

Date	Daily Monitoring Start Time	Daily Monitoring End Time	Daily Notes	Pile Activity	Pile Type	Start Time	Stop Time	Total Number of Piles	Time Period Notes (shutdowns/delays/WQ issues/pile names)	Strike Count During Time Period
Don Armeni Boat Ramp Project										
Monday, February 5, 2024	8:30	11:05	Vibratory removal of 3 timber piles. Work ended early due to choppy sea.	Vibratory removal	Timber	9:50	10:15	3	Three timber piles from old dock removed	-
Tuesday, February 6, 2024	7:30	14:54	Vibratory removal of 1 timber pile and installation of 1 pile.	Vibratory removal	Timber	8:15	8:24	1	Removal of one timber pile from old dock	-
Tuesday, February 6, 2024	7:30	14:54	Vibratory removal of 1 timber pile and installation of 1 pile.	Vibratory install	Steel 16 inch	10:31	12:03	0	Installation not completed.	-
Tuesday, February 6, 2024	7:30	14:54	Vibratory removal of 1 timber pile and installation of 1 pile.	Vibratory install	Steel 16 inch	13:11	14:24	1	Installation of one 16-inch steel pile completed.	-
Wednesday, February 7, 2024	7:30	15:06	Vibratory installation of 4 steel piles.	Vibratory install	Steel 16 inch	8:27	8:44	1	Installation of one 16-inch steel pile completed.	-
Wednesday, February 7, 2024	7:30	15:06	Vibratory installation of 4 steel piles.	Vibratory install	Steel 16 inch	9:57	12:08	2	Installation of two 16-inch steel piles completed.	-
Wednesday, February 7, 2024	7:30	15:06	Vibratory installation of 4 steel piles.	Vibratory install	Steel 16 inch	13:27	14:36	1	Installation of one 16-inch steel pile completed.	-
Thursday, February 8, 2024	7:30	16:35	Vibratory installation of 2 steel piles.	Vibratory install	Steel 16 inch	8:37	16:05	2	Installation of two 16-inch steel piles completed.	-
Friday, February 9, 2024	7:30	15:43	Unsuccessful vibratory installation attempts made for 2 steel piles (piles installed in temporary locations) and vibratory removal of 3 timber piles.	Vibratory install	Steel 16 inch	8:08	9:10	1	Installation not completed due to an obstruction at target location.	-
Friday, February 9, 2024	7:30	15:43	Unsuccessful vibratory installation attempts made for 2 steel piles (piles installed in temporary locations) and vibratory removal of 3 timber piles.	Vibratory removal	Timber	10:15	10:41	3	Three timber piles from old dock removed.	-
Friday, February 9, 2024	7:30	15:43	Unsuccessful vibratory installation attempts made for 2 steel piles (piles installed in temporary locations) and vibratory removal of 3 timber piles.	Vibratory install	Steel 16 inch	11:30	11:36	2	Adjustments made to the two piles installed the day before.	-
Friday, February 9, 2024	7:30	15:43	Unsuccessful vibratory installation attempts made for 2 steel piles (piles installed in temporary locations) and vibratory removal of 3 timber piles	Vibratory install	Steel 16 inch	13:04	15:13	2	Installations not completed due to obstructions at both target locations.	-
Tuesday, February 13, 2024	7:30	11:40	Unsuccessful vibratory installation attempts made for 1 steel piles (pile installed in temporary location).	Vibratory install	Steel 16 inch	8:57	11:38	1	Installation not completed due to an obstruction at target location.	-
Wednesday, February 14, 2024	9:30	14:48	Unsuccessful vibratory installation attempts made for 1 steel piles (pile installed in temporary location) after removing debris from target location.	Vibratory install	Steel 16 inch	13:47	14:18	1	Installation not completed due to an obstruction at target location.	-
Thursday, February 15, 2024	7:30	11:10	Unsuccessful vibratory installation attempts made for 2 steel piles after removal of debris from target locations. Two remaining piles dead pulled from temporary locations and placed on barge.	Vibratory install	Steel 16 inch	8:37	9:57	2	Installations not completed due to obstructions at both target locations.	-

Notes:  
-: no data  
WQ: water quality



Table A-8  
Don Armeni Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individual	Previously Observed	Observation Time Start (PDT)	Observation Time End (PDT)	Work Delay	Work Stop	Bearing from Pile (absolute)	Distance from Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Pier 57	Overcast, light rain	CASL	1	No	8:00	8:15	No	No	101	1005	Swimming	No pile activity	None	Swimming away from the mouth of the Duwamish River.
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Pier 57	Overcast, light rain	HP	5	No	8:18	8:28	No	No	91	1389	Swimming	No reaction observed	None	Pod observed swimming around near harbor island.
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Construction Site	Overcast	CASL	1	No	8:39	8:40	No	No	115	153	Swimming	No pile activity	Level B	
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Construction Site	Light rain	CASL	1	No	9:28	9:32	No	No	66	105	Swimming	No pile activity	None	
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Construction Site	Light rain	CASL	1	No	9:51	9:52	No	No	146	30	Swimming	No pile activity	None	
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Construction Site	Overcast	HS	1	No	11:19	11:20	No	No	38	41	Swimming	No reaction observed	Level B	
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Construction Site	Overcast	HS	1	Yes	11:56	11:59	No	No	97	25	Swimming	No reaction observed	Level B	Previously observed, but not marked as a take. Individual is the same size and coloration as previously observed harbor seal.
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Pier 57	Overcast	HS	1	No	14:35	14:36	No	No	62	3193	Swimming	No pile activity	None	
Tuesday, February 6, 2024	Don Armeni Boat Ramp	Pier 57	Overcast	HP	1	No	14:45	14:46	No	No	357	1755	Swimming	No pile activity	Level B	This individual is probably one of the harbor porpoises observed this morning.
Wednesday, February 7, 2024	Don Armeni Boat Ramp	Pier 57	Sunny, light wind	CASL	3	No	8:04	8:09	No	No	135	386	Swimming	No reaction observed	Level B	Observed right on the line of being within the take B zone or outside of it and just playing together then left heading away from Don Armeni.
Wednesday, February 7, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Overcast	HS	2	No	8:06	8:07	No	No	11	3565	Swimming	No pile activity	None	Observed barely outside of Level B zone.
Wednesday, February 7, 2024	Don Armeni Boat Ramp	Pier 57	Sunny	CASL	5	Yes	8:21	8:46	No	No	35	256	Foraging	No reaction observed	Level B	A group of five California sea lions that look to be foraging. Three were previously observed.
Wednesday, February 7, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Overcast	HS	1	No	8:31	8:32	No	No	13	3148	Swimming	No reaction observed	Level B	
Wednesday, February 7, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Overcast	HS	1	No	9:25	9:26	No	No	23	2299	Resting	No pile activity	None	
Wednesday, February 7, 2024	Don Armeni Boat Ramp	Pier 57	Sunny, light wind	CASL	3	Yes	9:55	10:45	No	No	117	400	Swimming	No reaction observed	None	Previously observed individuals remaining in the same general area.
Wednesday, February 7, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Partial overcast	HS	1	No	13:22	13:24	No	No	14	2773	Resting	No pile activity	Level B	
Wednesday, February 7, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Partial overcast	HS	1	No	14:10	14:11	No	No	16	3209	Swimming	No reaction observed	Level B	
Thursday, February 8, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Overcast	HS	2	No	7:56	7:58	No	No	7	3736	Swimming	No pile activity	None	
Thursday, February 8, 2024	Don Armeni Boat Ramp	Construction Site	Light rain	HS	1	No	8:16	8:16	No	No	52	147	Swimming	No pile activity	Level B	

Table A-8  
Don Armeni Pile-Driving and Removal Activity Summary

Date	Active Project	Monitoring Location	Weather Conditions	Species	Number of Individual	Previously Observed	Observation Time Start (PDT)	Observation Time End (PDT)	Work Delay	Work Stop	Bearing from Pile (absolute)	Distance from Pile (m)	Marine Mammal Behavior	Reaction to Pile Activity	Takes	Notes
Thursday, February 8, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Overcast	HS	2	Yes	8:45	8:47	No	No	3	3577	Swimming	No pile activity	None	
Thursday, February 8, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Sunny	HS	1	Yes	14:11	14:13	No	No	7	3733	Intermittent	No reaction observed	None	
Thursday, February 8, 2024	Don Armeni Boat Ramp	Construction Site	Overcast	HS	1	No	16:05	16:07	No	No	157	160	Swimming	No reaction observed	None	Not within the Level B zone
Friday, February 9, 2024	Don Armeni Boat Ramp	Pier 57	Overcast	HS	1	No	7:47	7:48	No	No	115	356	Swimming	No pile activity	Level B	
Friday, February 9, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Overcast	HS	1	Yes	8:13	8:14	No	No	4	3713	Intermittent	No reaction observed	None	
Friday, February 9, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Sunny	HS	1	Yes	12:44	12:45	No	No	4	3781	Intermittent	No pile activity	None	
Friday, February 9, 2024	Don Armeni Boat Ramp	Elliott Bay Fishing Pier	Sunny	HS	1	No	15:09	15:10	No	No	6	3324	Intermittent	No reaction observed	Level B	
Wednesday, February 14, 2024	Don Armeni Boat Ramp	Pier 57	Sunny, light wind	CASL	1	No	9:55	9:58	No	No	50	2212	Swimming	No reaction observed	None	California sea lion observed swimming, only observed for a short time before it dove underwater.
Wednesday, February 14, 2024	Don Armeni Boat Ramp	Pier 57	Sunny, light wind	HS	5	No	10:07	10:10	No	No	126	456	Swimming	No reaction observed	None	A group of five California sea lions swimming and possibly feeding
Wednesday, February 14, 2024	Don Armeni Boat Ramp	Pier 57	Sunny, light wind	CASL	1	Yes	10:16	10:19	No	No	110	393	Swimming	No reaction observed	None	Appears to be one of the sea lions from the larger group observed before. Still swimming and diving

Notes:  
CASL: California sea lion  
HP: harbor porpoise  
m: meter  
HS: harbor seal  
PDT: Pacific Daylight Time

**Table A-9****Don Armeni Project Daily Summary of California Seal Lion Level B Takes, Observations with No Takes, and Totals**

Date	California Sea Lion Level B Takes				California Sea Lion Observations with No Takes			
	Construction Site	Pier 57	Elliott Bay Fishing Pier	Level B Total	Construction Site	Pier 57	Elliott Bay Fishing Pier	No Take Total
Monday, February 5, 2024	0	0	0	0	0	0	0	0
Tuesday, February 6, 2024	1	0	0	1	2	1	0	3
Wednesday, February 7, 2024	0	8	0	8	0	0	0	0
Thursday, February 8, 2024	0	0	0	0	0	0	0	0
Friday, February 9, 2024	0	0	0	0	0	0	0	0
Tuesday, February 13, 2024	0	0	0	0	0	0	0	0
Wednesday, February 14, 2024	0	0	0	0	0	1	0	1
Thursday, February 15, 2024	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>4</b>

**Table A-10****Don Armeni Project Daily Summary of Harbor Seal Level B Takes, Observations with No Takes, and Totals**

Date	Harbor Seals Level B Takes				Harbor Seal Observations with No Takes			
	Construction Site	Pier 57	Elliott Bay Fishing Pier	Level B Total	Construction Site	Pier 57	Elliott Bay Fishing Pier	No Take Total
Monday, February 5, 2024	0	0	0	<b>0</b>	0	0	0	<b>0</b>
Tuesday, February 6, 2024	2	0	0	<b>2</b>	0	1	0	<b>1</b>
Wednesday, February 7, 2024	0	0	3	<b>3</b>	0	0	3	<b>3</b>
Thursday, February 8, 2024	1	0	0	<b>1</b>	1	0	2	<b>3</b>
Friday, February 9, 2024	0	1	1	<b>2</b>	0	0	0	<b>0</b>
Tuesday, February 13, 2024	0	0	0	<b>0</b>	0	0	0	<b>0</b>
Wednesday, February 14, 2024	0	0	0	<b>0</b>	0	5	0	<b>5</b>
Thursday, February 15, 2024	0	0	0	<b>0</b>	0	0	0	<b>0</b>
<b>Total</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>

**Table A-11****Don Armeni Project Daily Summary of Harbor Porpoise Level B Takes, Observations with No Takes, and Totals**

Date	Harbor Seals Level B Takes				Harbor Seal Observations with No Takes			
	Construction Site	Pier 57	Elliott Bay Fishing Pier	Level B Total	Construction Site	Pier 57	Elliott Bay Fishing Pier	No Take Total
Tuesday, February 6, 2024	0	1	0	1	0	5	0	5
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>