

# PROTECTED SPECIES MONITORING REPORT

## YEAR 2: MARCH 1, 2021 – FEBRUARY 28, 2022

### DEMOLITION AND REPLACEMENT OF PIER 32

Naval Submarine Base New London  
Groton, Connecticut

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*Prepared for:*



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**April 2022**



A.I.S., Inc.

## Protected Species Monitoring Report

# PROTECTED SPECIES MONITORING SERVICES DURING NAVAL SUBMARINE BASE NEW LONDON DEMOLITION AND REPLACEMENT OF PIER 32

## 2021 PSO REPORT



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**Date**

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**Confidentiality**

The information summarized in this Final Report was collected by A.I.S., Inc. for Weeks Marine and the U.S. Navy to be distributed to the National Marine Fisheries Service per the issued letter of authorization associated with the demolition and replacement of Pier 32 and demolition of Pier 10 at Naval Submarine Base New London in Groton, Connecticut.

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## 1. INTRODUCTION

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This report summarizes the protected species observations during Pier 32 related construction activities completed between March 2021 and March 2022 at Naval Submarine Base New London in Groton, Connecticut. Letter of Authorization (LOA) stipulations required monitoring and mitigation for marine mammals during pile driving and drilling activities. Monitoring was completed in accordance with the Navy Marine Mammal Observation and Acoustic Monitoring Plan for the Demolition/Replacement of Pier 32 and Demolition of Pier 10 at Naval Submarine Base New London at Groton, CT. In order to comply with the Navy Monitoring Plan and Letters of Authorization (LOA) stipulations, Weeks Marine, Inc. contracted with A.I.S., Inc. (AIS) to provide Protected Species Observers (PSO) to monitor for marine mammals during in water construction operations which occurred from March 2021 through August 2021. No noise generating activities occurred following the completion of monitoring in August 2021 through the end of the Year 2 reporting period which ended in March 2022. The Marine Mammal Protection Act was enacted to protect marine mammals and prohibits the "taking" of these animals. It is administered by the National Marine Fisheries Service (NMFS) which issues permits for activities that have the potential to "take" marine mammals.

On October 9, 2018, the Naval Submarine Base New London in Groton, CT was issued an LOA for activities associated with the demolition of Pier 10 and Pier 32 and construction of a new Pier 32 in the Thames River. Pier 10 and Pier 32 were constructed in 1959 and 1978 respectively and had neared the end of their life cycles. The LOA for this project is valid for the period of March 1, 2020, through February 28, 2025 with the first period of active in water construction operations for the new Pier 32 requiring PSO observation beginning in March 2021 and concluding in August 2021. Additional construction activities completed during the remainder of Year 2 did not require protected species monitoring.

The marine mammals of concern for this project are harbor and gray seals. These species have been documented transiting through the waters of the Thames River adjacent to the Naval Submarine Base New London and have the potential to be affected by acoustic disturbance from planned in-water construction and demolition operations. Incidental takes of other marine mammal species were not authorized for this project.

The distances to regulatory acoustic thresholds were calculated to determine the distance at which a potential marine mammal may be exposed to sound pressure levels (SPLs) at which permanent threshold shifts (Level A) or behavioral disturbance (Level B) could occur. Both Level A and B threshold distances varied based on the equipment that was being utilized.



Figure 1 Location of Pier 32 and Pier 10 related construction activities.

## 2. SUMMARY OF ACTIVITIES

The **Weeks 526** and **Weeks 568** barges were selected to conduct pile driving, pile removal, and rock drilling/socketing operations from March 2021 through August 2021 to initiate the process of replacing Pier 32 at Naval Submarine Base New London (NSBNL).

Due to the potential for harassment of marine mammals as a result of sound generated by pile driving, rock drilling/socketing, and pile removal operations, three (3) PSO were deployed on site to monitor the required mitigation zones in accordance with the NMFS issued LOA and the Marine Mammal Observation and Acoustic Monitoring Plan for the Demolition/Replacement of Pier 32 and Demolition of Pier 10 at Naval Subbase New London developed by the U.S. Navy.

One PSO (Lead) was stationed on the original Pier 32, directly adjacent to the new-Pier 32 construction site, and two PSO were stationed onboard the M/V In-Transit II to conduct on-water operations and monitor the required mitigation zones. Depending on the specific sound producing equipment being used, the M/V In-

Transit II monitored the appropriate corresponding Level A acoustic harassment monitoring zone, the Level B behavioral harassment monitoring zone, and the physical injury shutdown zone. Due to the daylight only restrictions on the construction and demolition activities, the PSO team worked during daylight hours to conduct mitigation monitoring accordingly.

### 3. PROTECTED SPECIES OBSERVATION METHODS

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To meet the protected species requirements of the LOA issued by NMFS, Weeks Marine, Inc. contracted AIS to provide PSOs to monitor for the presence of marine mammals during pile driving, pile removal and rock drilling/socketing operations. AIS operated under the Marine Mammal Observation and Acoustic Monitoring Plan for the Demolition/Replacement of Pier 32 and Demolition of Pier 10 at Naval Subbase New London developed by the U.S. Navy in accordance with LOA stipulations to minimize potential impacts of construction operations. PSO were stationed on watch during daylight hours when pile driving, pile removal, and rock drilling/socketing operations were planned to occur during 2021 operations.

The mitigation and monitoring measures associated with sound producing construction operations on the Pier 32 project were as follows:

- **Time Restrictions:** In water construction and demolition activities were only initiated during daylight hours when the shutdown and Level A acoustic harassment zones were visible and could be adequately monitored. If conditions (e.g. fog) prevented PSO from visually detecting marine mammals, activities with the potential to result in Level A acoustic harassment were not initiated.
- **Pre-Clearance of Monitoring Zones:** The PSO team implemented a 15-minute pre-clearance period of the project area prior to the initiation of all drilling/socketing, pile driving, and pile removal operations. During this period the Level A acoustic harassment monitoring zone, the Level B behavioral harassment monitoring zone, and the physical injury shutdown zones were visually monitored by PSOs. Operations were not initiated if any marine mammal was observed within the 10 m shutdown zone. If a marine mammal was observed within the 10 m shutdown area, the start of sound producing construction activities were delayed until the animal(s) left the shutdown zone. Operations were only initiated after the PSO determined that the animal(s) moved outside the shutdown zone. This was confirmed through a visual sighting of the animal outside the exclusion zone or by waiting 15 minutes with no further sightings.
- **Monitoring Zones:** PSOs established the harassment and physical injury zones prior to the start of operations, as follows:

**Table 1 Summary of protected species harassment and physical injury zones for construction/demolition operations within Pier 32 Project area for work conducted during Year 2 of this project.**

Operational Activity	Clearance Time	Level A Harassment Distance (m)	Level B Harassment Distance (m)	Physical Injury Avoidance Shutdown Distance (m)
Impact driving of 14-inch piles (and driving probe piles)	15 min.	536	631	10
Impact driving 36-inch concrete-filled steel piles*	15 min.	984	3,415	10
Vibratory & rock drilling/socketing installation of 36-inch concrete-filled steel piles*	15 min.	10	4,642	10
Vibratory and impact pile driving of 16-inch fiberglass piles*	15 min.	10	1,584	10
Vibratory extraction of 14-inch H-piles (and removing of probing piles)	15 min.	10	3,415	10
Vibratory extraction of 24-inch and 30-inch concrete piles*	15 min.	10	4,642	10

- **Soft Start:** Soft start requirements called for an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 1-minute waiting period. After the 1-minute waiting period, two subsequent three strike sets were performed. A soft start was required for any impact driving, including at the start of each day’s pile driving operations and at any time following cessation of impact pile driving for a period of 30 minutes or longer.
- **Shut-downs:** In the event that one of the following scenarios occurred, all pile driving, pile removal and rock drilling/socketing activities at the location would be halted and activities would not be resumed until the animal (s) were confirmed to have left the shutdown zone or if 15 minutes had passed without a subsequent sighting:
  - A harbor or gray seal was sighted approaching or entering the 10m physical injury shutdown zone,
  - Any other marine mammal entered the Level B behavioral harassment monitoring zone (Table 1),
  - The total allowable number of takes for harbor or gray seals was achieved, as specified in Table 2 and one of those species enters the Level B behavioral harassment monitoring zone.
- **Post-Clearance of Monitoring Zones:** Following the completion of pile driving/removal and drilling/socketing activities the PSO team implemented a 30-minute post-clearance period of the three zones around the sound producing equipment. During this period both harassment zones and the shutdown zones were monitored by PSOs using the appropriate visual technology, and any observed marine mammals were documented accordingly with a focus on reporting any unusual or abnormal behaviors.

**Table 2 Authorized number of protected species takes by harassment type**

Year	Species	Level A Harassment	Level B Harassment	Total Take Allowance
2	Harbor Seal	6	177	183
2	Gray Seal	2	59	61

### 3.1 Protected Species Observer Training and Compliance

All AIS PSOs deployed on the project were approved by NMFS and the U.S. Navy prior to the start of operations and were required to possess fit-for-sea duty medical clearance, and offshore safety training. Additionally, all PSOs attended the following trainings as required by Weeks Marine and the U.S. Navy:

- Weeks Pier 32 Safety Orientation
- RADCON Navy Training
- Navy Marine Species Awareness
- Navy Marine Mammal Monitoring for Pier 32 Project Training

In addition to the above-mentioned trainings, all PSO attended an AIS Weeks Pier 32 Project Training which covered the following topics:

- Permits and plans relevant to the project
- Environmental compliance requirements
- Health and safety requirements
- PSO requirements and scheduling
- Protected species mitigation methods
- Communication
- Authorized takes
- Data forms
- Use and maintenance of PSO equipment
- Protected species identification review

### 3.2 Monitoring Methods

There was a team of three (3) PSOs deployed on this project to monitor daytime operational activities with no “on-watch time” restrictions. However, best efforts were made to ensure that no individual PSO worked more than 12 hours in a 24-hour period to ensure diligent and thorough protected species observations. Two (2) PSO were deployed aboard the M/V In-Transit II and one (1) Lead PSO was stationed landside in various locations on Pier 32 to fulfill protected species monitoring and mitigation requirements.

The two (2) vessel-based PSOs’ primary focus was to effectively monitor the Level A and Level B harassment zones, which varied significantly based on the specific type of sound producing activities being conducted. They were positioned on the bow (1) and stern (1) of the vessel. Each operational activity required a unique Level A and Level B harassment zone to be monitored which was based on acoustic modeling results. For each activity, two stations were identified to show the maximum extent north and south of the projected in water sound propagation, and determined Level A and Level B monitoring zones, based on the specific pile driving, pile removal or rock drilling/socketing activity being conducted (Table 3). The M/V In-Transit II used those station’s coordinates to transit back and forth between the two locations to ensure maximum visual coverage of

respective Level A and Level B monitoring zones. An example of the Level A and Level B monitoring zones is depicted in the map shown in Figure 2. The complete set of Level A & B Zones can be found in Appendix A.

The Lead PSO was responsible for monitoring the 10-meter physical injury shutdown zone around each pile where active operations were occurring and was positioned on land at varying points along Pier 32, based on the best practicable vantage point for observing ongoing sound producing operations. While the PSO vessel was at either extreme end of the monitoring zone the Lead PSO on the original Pier 32 systematically scanned the opposite end of the monitoring zone with Big Eyes binoculars to ensure that all protected species were accounted for. All PSO monitoring locations were chosen taking into consideration security, safety, and space limitations to fulfill protected species monitoring and mitigation requirements.

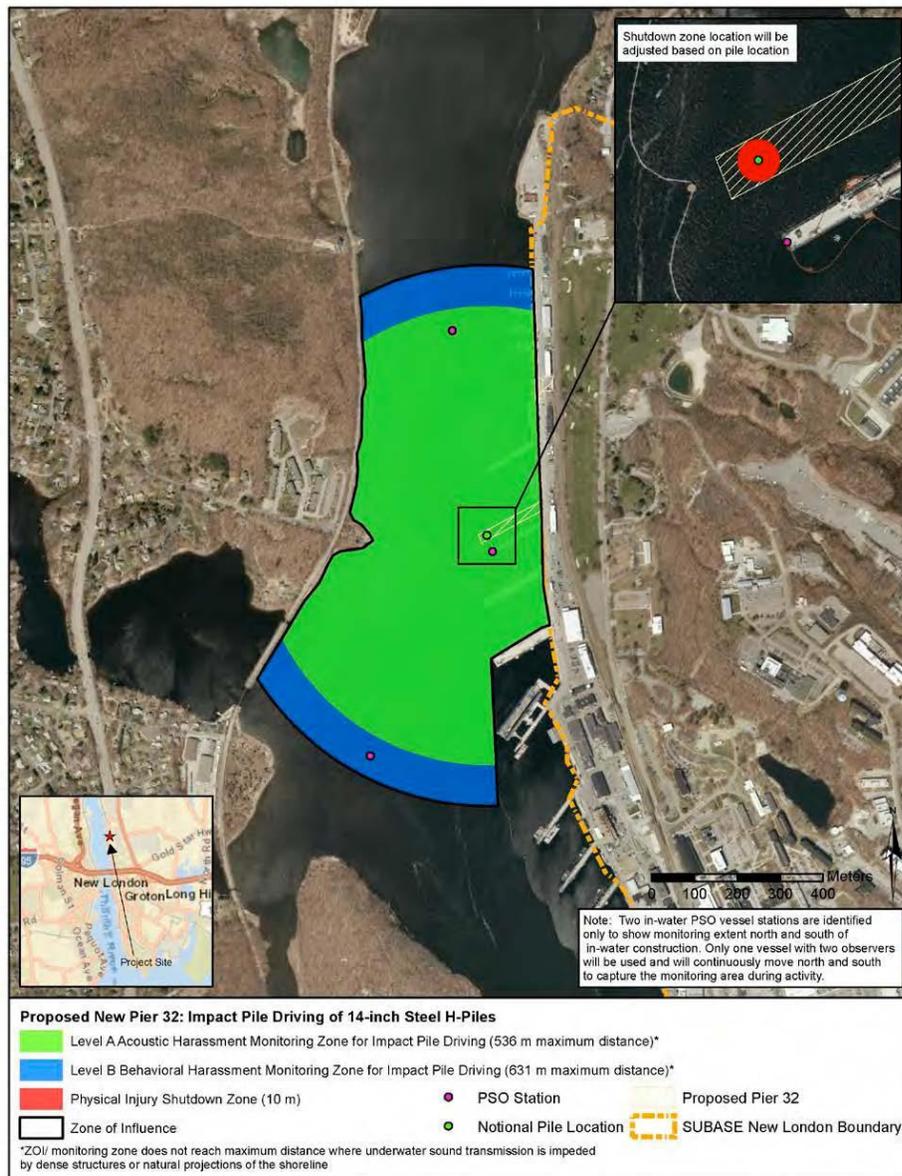


Figure 2 Level A Acoustic Harassment and the Level B Behavioral Harassment Monitoring Zones for Impact Pile Driving of 14-Inch Steel H-Piles

Table 3 On-Water Operations Monitoring Zone Extents.

Activity	Northern Extent		Southern Extent	
	Latitude	Longitude	Latitude	Longitude
<b>Vibratory &amp; rock drilling/socketing 36-inch piles</b>	41.432233	-72.095502	41.37025	-72.092992
<b>Impact driving 36-inch piles</b>	41.431646	-72.095974	41.3702359	-72.09474
<b>Vibratory installation of 16-in fiberglass pile</b>	41.414816	-72.094783	41.388903	-72.094397
<b>Vibratory Extraction of 14-inch, 24-inch and 30-inch Piles*</b>	41.431654	-73.095309	41.394835	-72.098764
<b>Vibratory Extraction of 33-inch Concrete Piles</b>	41.399744	-72.097176	41.358139	-72.086898

PSO duties included:

- Documenting all protected species sightings and environmental conditions on approved data forms and report all incidents including sightings, incidents requiring vessel strike avoidance measures and mitigation actions (none were required) to appropriate personnel.
- Recording operational activities during monitoring effort.
- Informing designated personnel if a protected species is heading towards or enters the Level A or Level B harassment zones or the physical injury shutdown zone.
- Advising captain and crew on vessel speed restrictions and activities in the event of protected species detections.
- Summarizing daily monitoring effort and submitting data forms to the appropriate staff.

PSOs recorded data on standard observation forms including details on survey operations, observer effort, environmental conditions, protected species sightings and incidents. PSOs regularly checked the Whale Alert app and the Right Whale Sighting Advisory System (RWSAS) for recent North Atlantic right whale sightings and established Dynamic Management Areas (DMAs) in the area. The Lead PSO was responsible for communicating the presence of protected species to the project manager and designated construction personnel, and for communicating and enforcing appropriate mitigation actions.

### 3.3 Visual Monitoring Equipment

The following PSO equipment was utilized during the project:

- Bushnell Marine 7x50 Waterproof Binoculars with Reticles
- Big Eye Binoculars (25x and 40x long range binoculars)
- Rangefinders
- GPS
- DSLR Cameras
- VHF Radios
- Laptop Computers
- Marine Mammal Identification Guides
- Clipboard, Pencils, and Waterproof Notebooks
- PPE

- Red and Green Flags for Communication

## 4. PILE DRIVING AND DRILLING SUMMARY

### 4.1 Monitoring and Operational Effort

During the 6 months of operations, visual observers maintained a watch, during daylight hours of the harassment and physical injury zones when sound producing activities were anticipated. Operations were monitored by PSOs conducting visual watches assisted by binoculars with reticles and Big Eye binoculars. Figure 3 provides a summary of PSO visual monitoring effort by month.

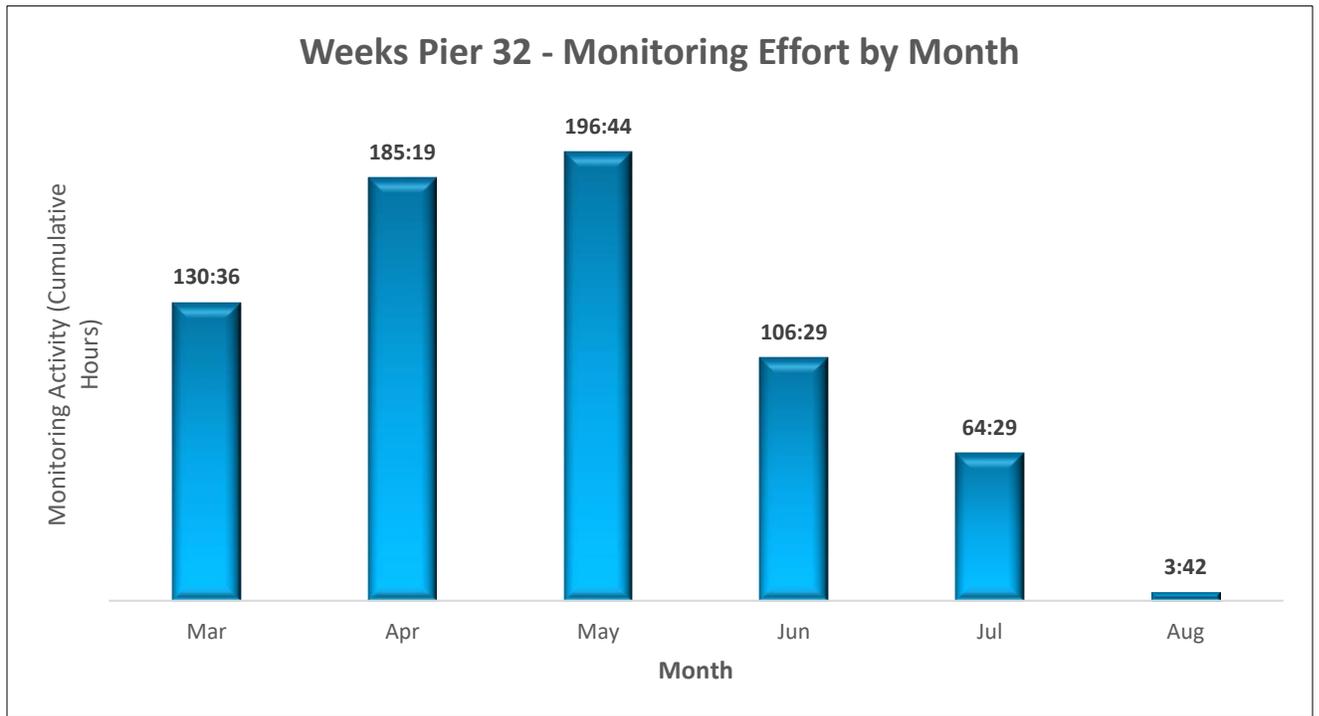
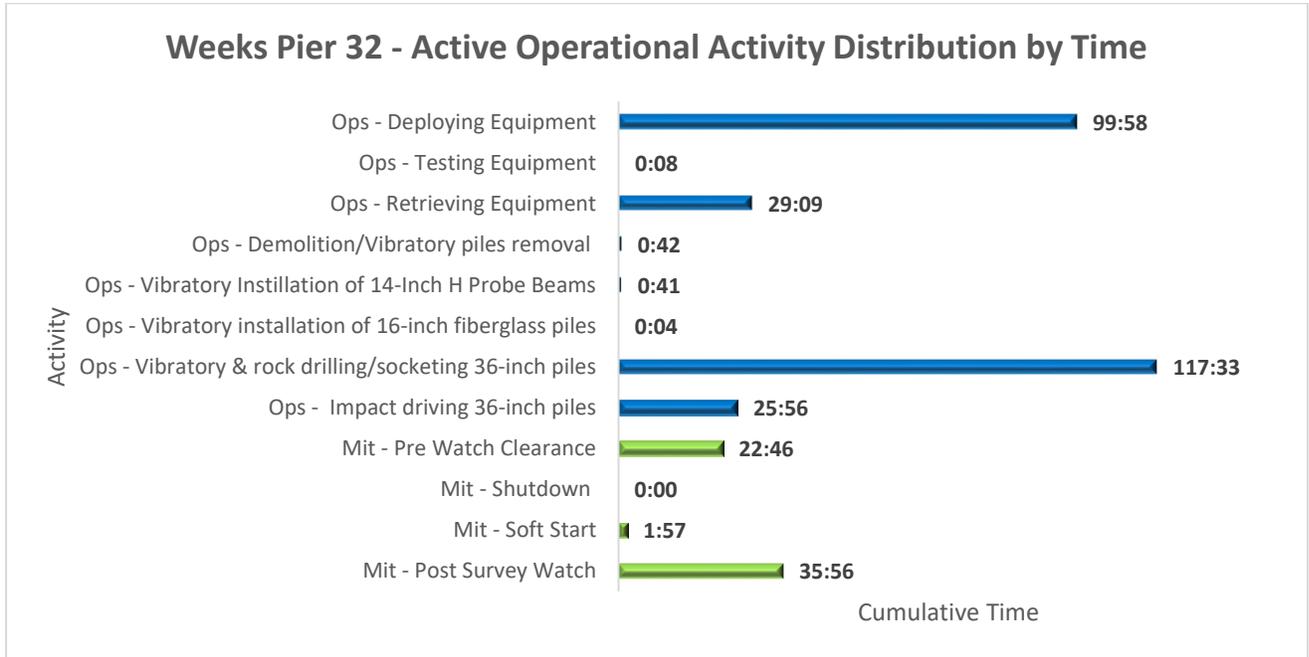


Figure 3 PSO Monitoring Effort by Month

In total, the AIS PSO teams visually monitored the area surrounding operations for 687 hours and 19 minutes. Figure 4 below breaks down the monitoring time per **active** operational activity. Active operational activity is defined as any activity where sound producing equipment is being used or where operations are being executed in anticipation of sound producing equipment being used. The majority of this time was spent monitoring vibratory instillations and/or rock drilling/socketing of 36-inch piles which occurred for 117 hours and 33 minutes, followed by deploying equipment activities for 99 hours and 58 minutes.

Because both the **Weeks 526** and **Week 568** barges were used for Pier 32 construction operations they were often completing two different activities concurrently. The PSO team recorded operations being conducted by both barges, even when these activities overlapped. As such, the time accounted for in Figure 4 contains the total number of active operational hours, inclusive of overlapping operations.



**Figure 4 Active Operational Activity Distribution by Time**

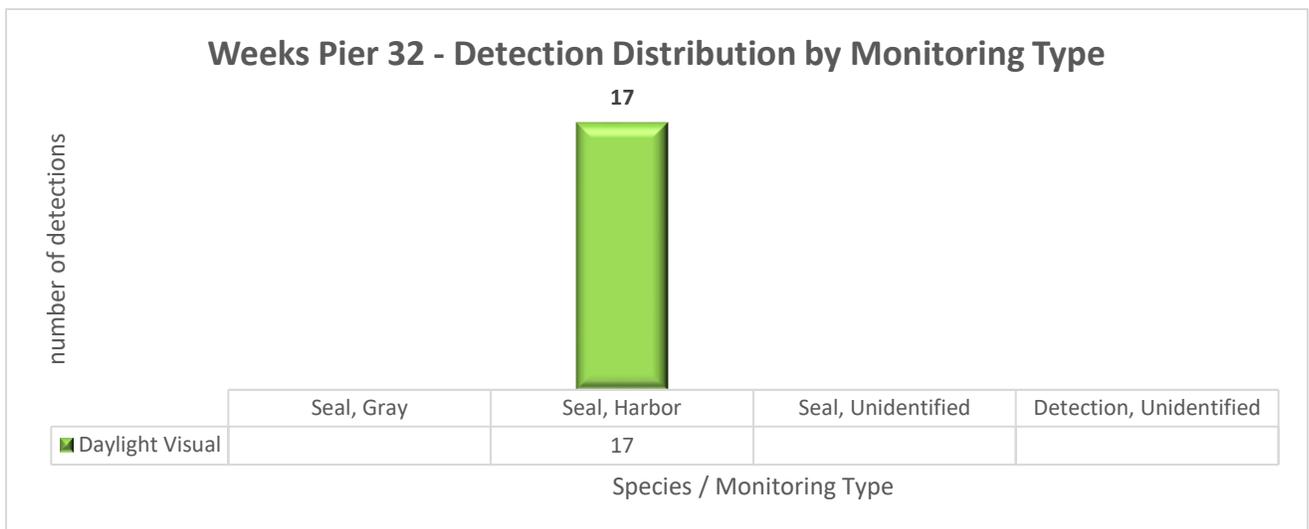
The required “Pre Watch Clearance”, “Soft Start” protocols and “Post Survey Watch” represented respectively 22 hours 46 minutes, 1 hour and 57 minutes, and 35 hours 56 minutes. The total impact pile driving time for all locations associated with the new pier amounted to 22 hours 36 minutes (with some piling operations occurring simultaneously from the two barges).

AIS PSOs also recorded periods where sound producing equipment was not being used or planned to be used, which was recorded as operational downtime. Examples of activities conducted by the construction team that were included under the category of operational downtime/inactive source included but were not limited to crane operations, removal of temporary pilings, pauses for U.S. Navy operations, installing and positioning pier templates, gear maintenance, splicing piles, welding preparations, and pauses during active operations. Operational downtime/inactive source accounted for 332 hours and 21 minutes.

## 4.2 Protected Species Detection Summary

Between March and August 2021, visual monitoring efforts resulted in a total of 17 protected species detections of 17 individual animals.

- All protected species detections were visual detections that occurred during daylight hours (Figure 5)
- All detections consisted of individual harbor seals, *Phoca vitulina* (Figures 5 and 6).
- None of the sightings occurred within the 10m shutdown or Level A or Level B mitigation zones or while pile driving/removal or drilling/socketing equipment was operational and thus no incidental take of marine mammals occurred during Year 2 of the project.



**Figure 5 Protected Species Detections by Monitoring Type**

Of the sightings that occurred, all were detected by PSO stationed onboard the M/V In-Transit II and no detections were sighted by the Lead PSO stationed on the pier/barge.



Figure 6 Harbor seal, *Phoca vitulina*, sighting aboard the M/V In-Transit II on March 12th, 2021

The majority of the harbor seals detected (82%) were initially observed either resting or slowly traveling at the surface of the water (Figure 7). After the initial observations most of the observed seals dove out sight (82%) and were not seen again. The remaining seals behavior were “looked” (12%) and “slowed down” (6%) respectively after being initially observed.

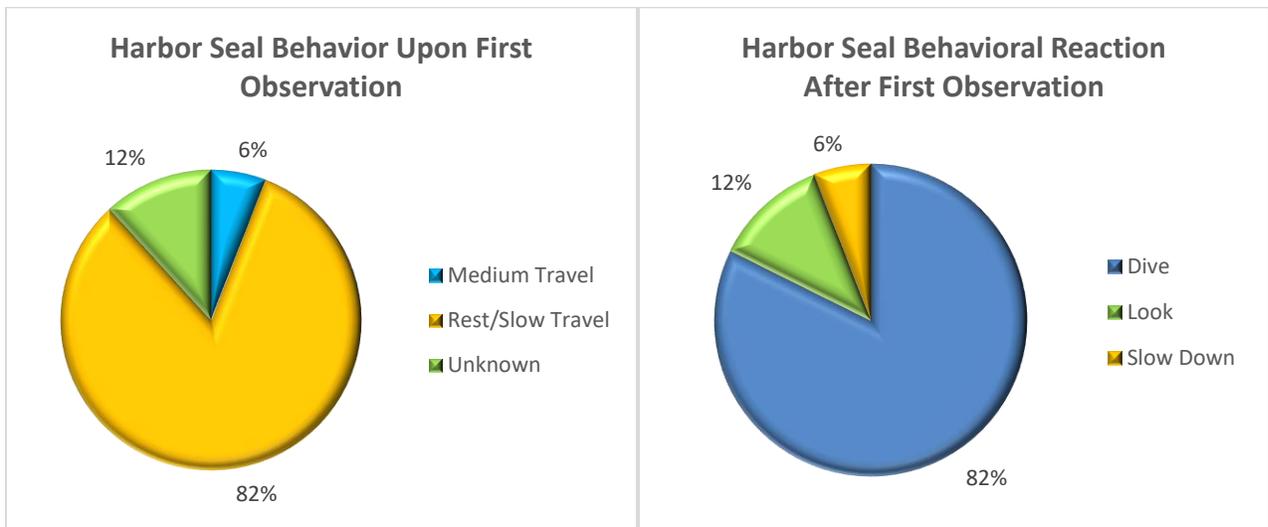


Figure 7 Harbor Seal Behaviors Upon Initial Observation and After Initial Observation

The sightings recorded from the M/V In-Transit II occurred during Deploying Equipment (35.3%), Operational Downtime/Inactive Source (23.5%) and Other Downtime (41.2%) - illustrated in Figure 8.

No detections occurred during pre-watch clearance periods or during pile driving, pile removal, or rock drilling/socketing activities on the Pier 32 project and thus no shutdown measures or additional delays were required.

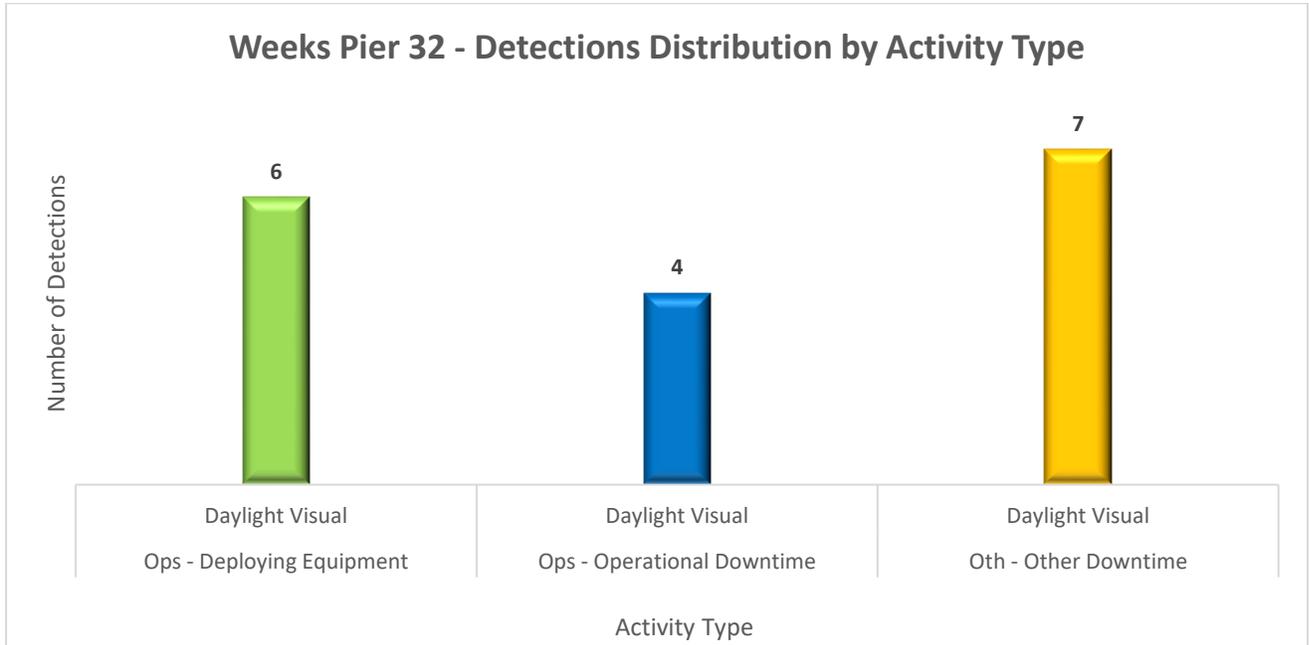


Figure 8 Protected Species Detections by Vessel Activity

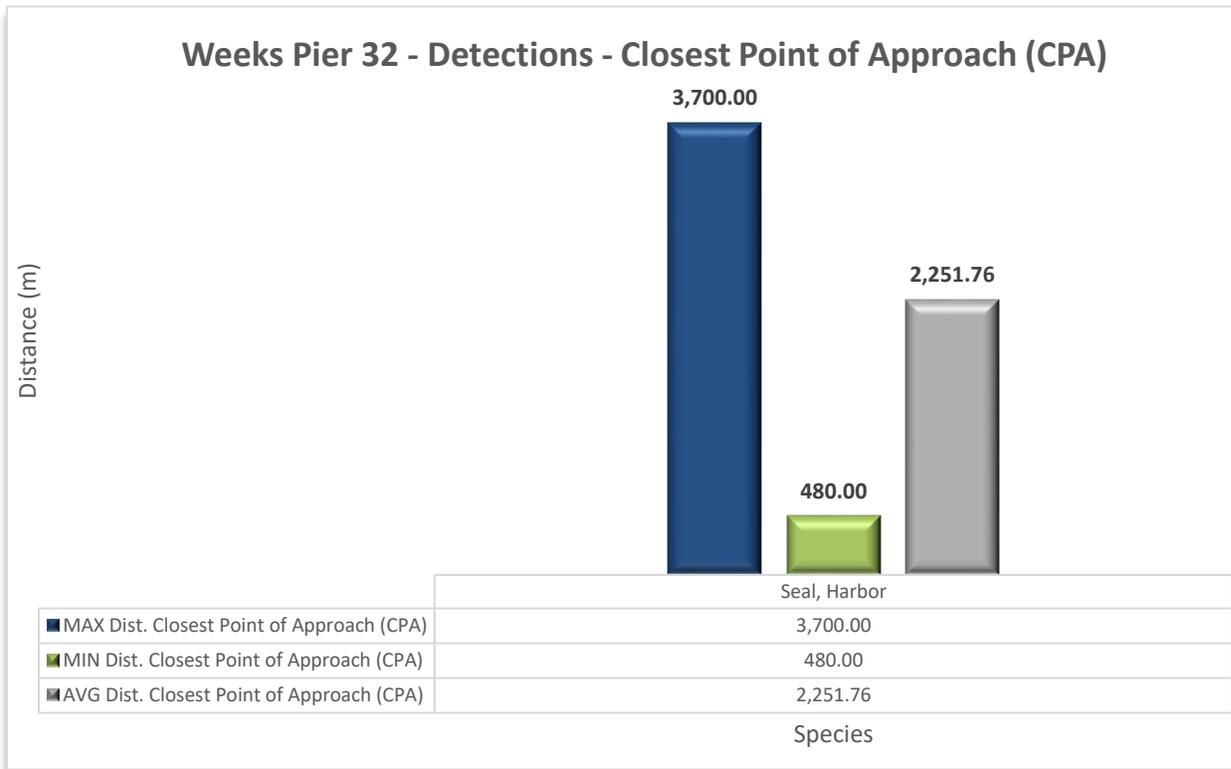


Figure 9 Protected Species Detections Closest Point of Approach in meters, to Sound Source

Figure 9 depicts the distance ranges of the 17 detections from the sound source. The closest distance a detection occurred from the sound source was 480 m while the furthest detection occurred when the animal was approximately 3700 m from the sound source.

Maps showing the locations of all 17 sightings can be found in Appendix B. Additional details for the 17 individual detections can be found in Appendix C.

## 5. EXPOSURE ASSESSMENT

The LOA received October 10, 2018 assessed all potential project sound sources being utilized during the planned construction activities and authorized a limited number of incidental takes of gray seals and harbor seals during the Pier 32 construction/demolition and Pier 10 demolition project. Incidental takes of other marine mammal species were not authorized for this project.

The distances to regulatory acoustic thresholds were calculated to determine the distance at which a potential marine mammal may be exposed to sound pressure levels (SPLs) at which permanent threshold shifts (Level A) or behavioral disturbance (Level B) could occur. Level A and B threshold distances varied based on the equipment that was being utilized. Two Level A exposures of gray seals and six Level A exposures of harbor seals were authorized during Year 2 of the project (Table 4).

Based on these distances and the detection records, animals reported by the PSOs as within each specified Level A and Level B zone while these sound sources are active would be considered a take by Level A or Level B harassment respectively under the Marine Mammal Protection Act (MMPA). There were **no incidental takes** detected during pile driving, pile removal, or rock drilling/socketing, operations associated with the construction or demolition of Pier 32 during Year 2 of the project, as summarized in Table 4. Additionally, there were no injured or dead protected species observed during pile driving and drilling operations associated with Pier 32 construction.

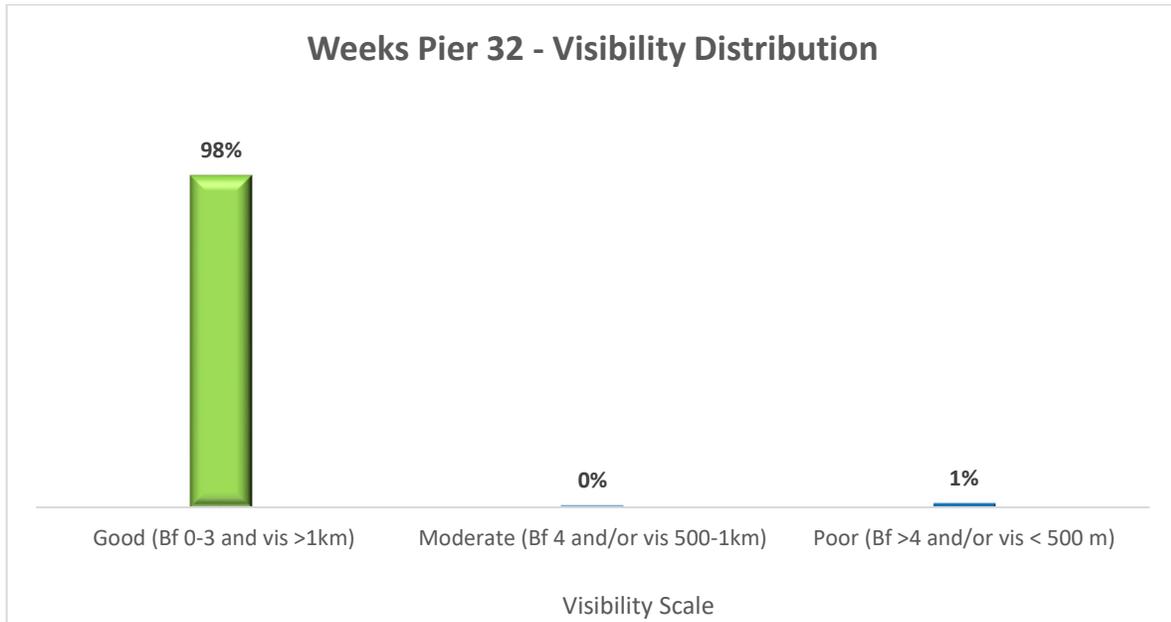
**Table 4 Authorized marine mammal takes and maximum estimated takes by harassment for pile driving and drilling conducted under the Letter of Authorization.**

<b>IHA - Marine Mammals Take Authorization</b>					
Name	Level A Occurrence (#)	Level A Authorized (#)	Name	Level B Occurrence (#)	Level B Authorized (#)
Seal, Gray	0	2	Seal, Gray	0	59
Seal, Harbor	0	6	Seal, Harbor	0	177

## 6. SUMMARY OF WEATHER & ENVIRONMENTAL CONDITIONS

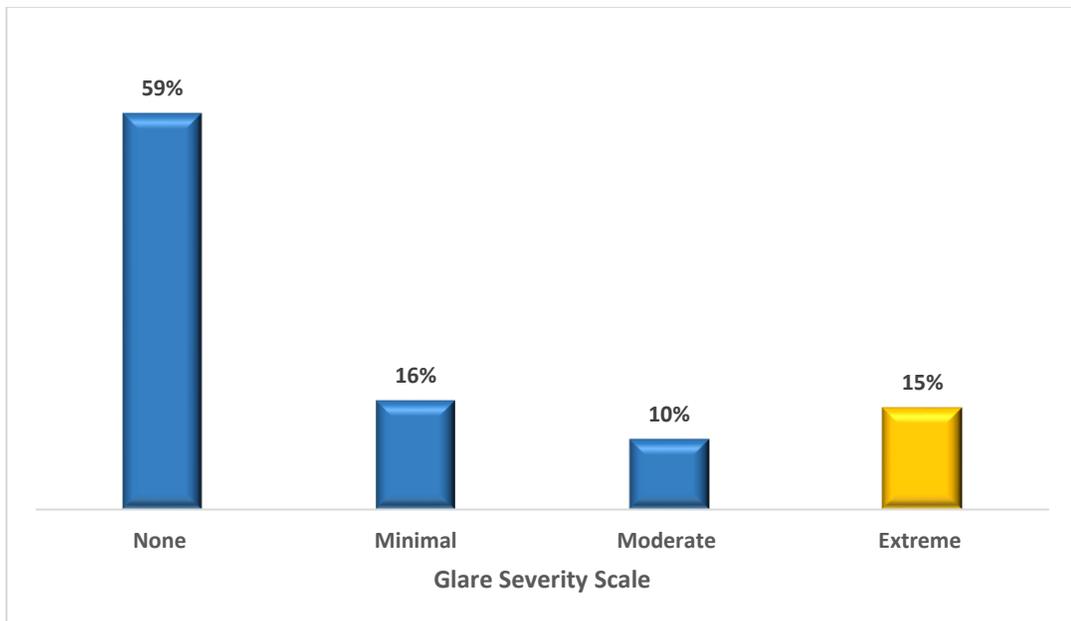
Part of the data collection associated with PSO monitoring includes weather and environmental conditions including cloud cover, wind speed, wind direction, precipitation, sun glare and visibility during observations. These factors can affect the PSO team’s visibility in various manners, inhibiting exclusion and mitigation zone clearance and ultimately delaying operations. The following figures describe the distribution of weather

conditions encountered on the days where visual monitoring occurred prior to and during pile driving, pile removal, and rock drilling/socketing operations.



**Figure 10 Visibility Distribution (Good = >1,000m, Moderate= 1,000 – 500m, Poor= <500m)**

Overall, visibility was good during 98% of operations (Figure 10). Moderate (>1%) and poor (1%) visibility conditions were limited to 4 days between March 22<sup>nd</sup>, 2021 and March 26<sup>th</sup>, 2021 during morning hours and did not contribute to any delay of pile driving or drilling operations. Other than those few days in late March 2021, visibility was good and allowed for pile driving, pile removal and rock drilling/socketing operations to commence when the construction teams were ready.



**Figure 11 Glare Severity Distribution (None=0%, Minimal=<25% Moderate=25-50%, Extreme=>50% )**

Another factor that can have an effect on PSOs ability to conduct visual observations is the presence of glare on the water. For over half of the PSO monitoring time (59%) no glare was present (Figure 11) and extreme glare was encountered for 15% of the monitoring period.

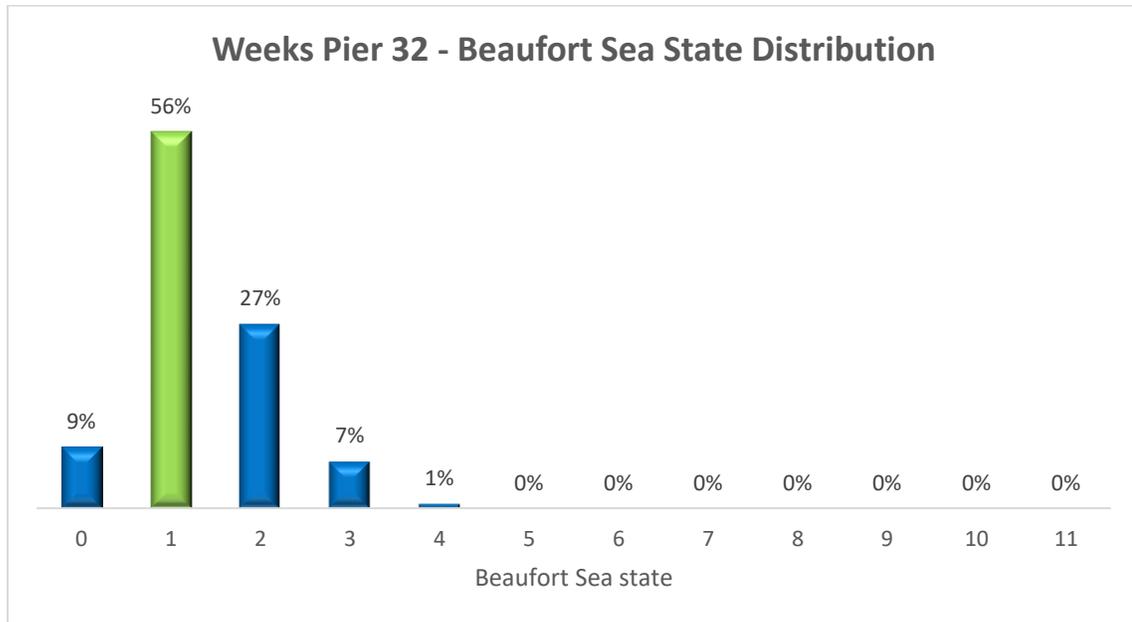


Figure 12 Beaufort Sea State Distribution

Sea state remained at a Beaufort 3 or less for the majority of the project (Figure 12). The PSO team encountered Beaufort 4 conditions on March 26<sup>th</sup>, 2021 and April 1<sup>st</sup>, 2021 but only for a brief period of time (less than 2 hours).

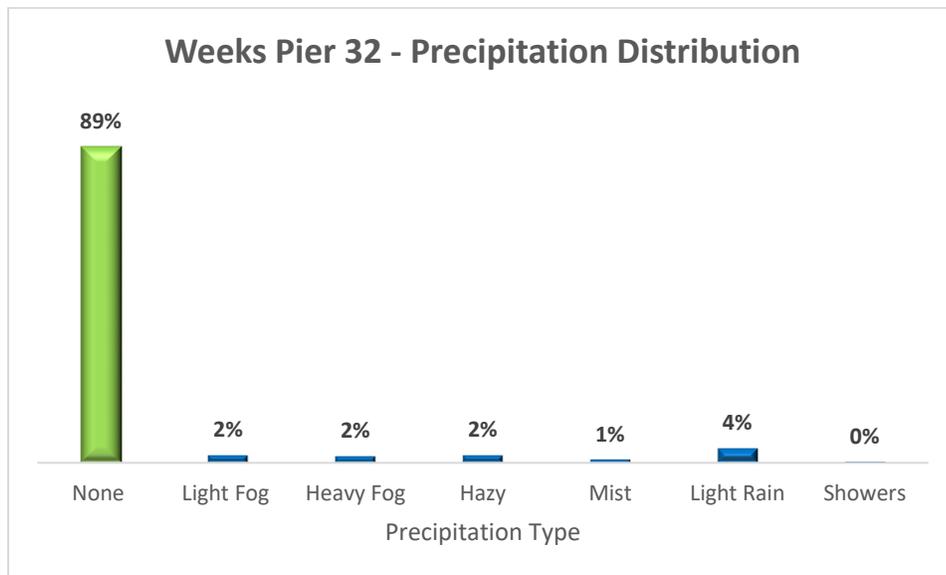


Figure 13 Precipitation Distribution

As illustrated in Figure 13, the majority of the time the AIS team was monitoring there was no precipitation (89%). Only minor instances of fog and haze, totaling less than 6% of the monitoring time, were encountered. These instances were generally confined to a few brief hours early in the morning or as the day was ending.

There were 2 days, March 26, 2021 and April 9, 2021 that fog and haze were present throughout the majority of the monitoring day.

At no time did glare, precipitation, or elevated Beaufort sea state seriously affect visibility, though there were minor instances of each throughout the six month deployment.

## **7. ASSESSMENT OF MONITORING METHODS**

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A three person PSO team, with two PSOs on watch from a transiting vessel and one on watch landside, provided adequate coverage during all daylight only operations to monitor the Level A harassment zone, the Level B harassment zone, and the physical injury shutdown zone. The Lead PSO stationed on Pier 32 utilized long range binoculars “Big Eyes” to increase the monitoring distance. These allowed for the Lead PSO to observe the monitoring zone more effectively than using regular binoculars, particularly at times when the vessel-based team was at either extreme end of the zone.

While there were some floating obstacles and the meandering nature of the Thames River that made monitoring the required zones challenging, the use of the monitoring vessel, M/V In-Transit II, was the most valuable asset in terms of mitigating for them. With strong cellular phone service and VHF radios, communications between the M/V In-Transit II and the Lead PSO on Pier 32 were effective, particularly in the case of detections of animals in relation to the construction and demolition operations. The mobility of the M/V In-Transit II and the effective communication were instrumental in ensuring the Level A and B monitoring zones as well as the 10m shutdown zone were effectively monitored during drilling and pile driving operations.

**Appendix A. Pier 32 Final Activity Summary Report**

REPORT SUMMARY



Client **Weeks Marine**  
 Project **Replace SSN Berthing Pier 32**



Report **FINAL**  
 Date **03-Mar-21** to **02-Aug-21**

Vessel Name **Weeks Barge 568** Survey Type **Impact driving 36" piles**

Total Visual Monitoring Time	(hh:mm)	<b>687:19</b>	Total Number of Detections	(#)	<b>17</b>
Total Operational Time	(hh:mm)	<b>274:11</b>	Total Number of Individual(s) Detected	(#)	<b>17</b>
Total Mitigation Downtime	(hh:mm)		Total Number of Level A take(s)	(#)	<b>0</b>
Total Number of Potential Non-Compliance	(#)	<b>0</b>	Total Number of Level B take(s)	(#)	<b>0</b>

(Mitigation Downtime = Delay Soft Start + Shutdown + Power Down)

**Survey Activity - Monitoring - Detections**

	Occurrence (#)	Duration (hh:mm)	Detection (#)	Individual (#)		Occurrence (#)	Duration (hh:mm)	Detection (#)	Individual (#)
Mit - Change Course					Ops - Vibratory/drilling/socketing 36-in	<b>397</b>	<b>117:33</b>		
Mit - Pre Watch Clearance	<b>87</b>	<b>22:46</b>			Ops - Vibratory installation 16-in piles	<b>1</b>	<b>0:04</b>		
Mit - Delay Soft Start					Ops - Impact driving 36-inch piles	<b>166</b>	<b>25:56</b>		
Mit - Soft Start	<b>33</b>	<b>1:57</b>			Ops - Demolition/Vibratory piles	<b>20</b>	<b>0:42</b>		
Mit - Shutdown					Ops - Retrieving Equipment	<b>102</b>	<b>29:09</b>		
Mit - Power Down					Ops - Operational Downtime	<b>967</b>	<b>715:09</b>	<b>4</b>	<b>4</b>
Mit - Post Survey Watch	<b>71</b>	<b>35:56</b>			Oth - Weather Downtime	<b>2</b>	<b>0:29</b>		
Ops - Deploying Equipment	<b>157</b>	<b>99:58</b>	<b>6</b>	<b>6</b>	Oth - Other Downtime	<b>157</b>	<b>104:37</b>	<b>7</b>	<b>7</b>
Ops - Testing Equipment	<b>1</b>	<b>0:08</b>			Oth - Vessel Transit	<b>1</b>	<b>2:05</b>		
Ops - Vibratory Instillation 14-In H	<b>14</b>	<b>0:41</b>							

**Species Detections [Number of Individual(s) Detected]**

Name	Visual (#)	Acoustic (N/A)	Thermal (N/A)	NVD (#)	Name	Visual (#)	Acoustic (N/A)	Thermal (N/A)	NVD (#)
Detection, Unidentified					Seal, Gray				
Dolphin, Bottlenose					Seal, Harbor	<b>17</b>			
Dolphin, Clymene					Seal, Harp				
Dolphin, Common					Seal, Unidentified				
Dolphin, Risso					Whale, Beaked species				
Dolphin, Spotted					Whale, Cuvier's Beaked				
Dolphin, Striped					Whale, False Killer				
Dolphin, Unidentified					Whale, Fin				
Dolphin, White-beaked					Whale, Humpback				
Dolphin, White-sided					Whale, Killer				
Kogia Species					Whale, Long-finned Pilot				
Porpoise, Harbour					Whale, Minke				
Sea Turtle, Green					Whale, North Atlantic Right				
Sea Turtle, Kemp's Ridley					Whale, Pilot species				
Sea Turtle, Leatherback					Whale, Sei				
Sea Turtle, Loggerhead					Whale, Sperm				
Sea Turtle, Unidentified					Whale, Unidentified				

**IHA - Marine Mammals Take Authorization**

Name	Level A	Level A	Level A	Level A	Name	Level B	Level B	Level B	Level B
	Occurrence (#)	Cummulative (#)	Authorized (#)	Diff. (#)		Occurrence (#)	Cummulative (#)	Authorized (#)	Diff. (#)
Seal, Gray			<b>2</b>	<b>2</b>	Seal, Gray			<b>55</b>	<b>55</b>
Seal, Harbor			<b>6</b>	<b>6</b>	Seal, Harbor			<b>166</b>	<b>166</b>

**Environmental Conditions**

Cloud cover Scale	Clear	Part Cloudy	Overcast	Cloudy	Glare Scale	None	Minimal	Moderate	Extreme
Cloud Cover	<b>27.79%</b>	<b>45.81%</b>	<b>14.88%</b>	<b>11.51%</b>	Glare	<b>24.01%</b>	<b>26.11%</b>	<b>32.63%</b>	<b>17.25%</b>
Beaufort Scale	0-2	3-5	6-8	9-12	Beaufort Scale	0-2	3-5	6-8	9-12
Wind Force	<b>25.30%</b>	<b>74.45%</b>	<b>0.25%</b>		Sea State	<b>82.34%</b>	<b>17.66%</b>		

**Appendix B. Pier 32 Protected Species Individual Summaries**



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	1

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/4/2021	3/4/2021	Daylight Visual	Oth - Other Downtime	Off	8
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
7:18:00 AM	8:00:00 AM	-	-	-	8:00:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4219	72.0952	41.4080	72.0956	2300	1800

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, v-shaped nostrils, large eyes, medium to dark brown coloration with light motling, small front flipper with large claws		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Slow	Rest/Slow Travel	Feeding on observed fish	Slow Down
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
212		10		Toward the sound source	
Detailed narrative of detection	Seal first seen off port side of In Transit II, approx. 100m away by both EF and JR. Monitoring vessel was hdg 290°, seal was seen at 10:00 clockface. Seal head was very low to water and milling. Vessel slowly approached and cut engines, and seal slowly swam around vessel at distance of 20m. Seal maintained eye contact while continuing to slowly swim around stern. Seal was observed with a fish (menhaden) in its mouth, and then promptly disappeared with slap. Seal was later seen headed slowly south, and the vessel followed at a distance. Seal was further observed eating the fish, often carrying fish in mouth with head low to water, but also turning on back and ripping at fish with front flippers. It was last seen at 08:00 still slowly headed south while milling and eating, and vessel passed to continue monitoring further south. No mitigation was required as the Weeks 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	2

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/5/2021	3/5/2021	Daylight Visual	Oth - Other Downtime	Off	8
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
7:27:00 AM	7:49:00 AM	-	-	-	7:49:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4230	72.0959	41.4155	72.0925	2400	1900

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small, round dog-like head, v-shaped nostrils, large eyes, medium brown coloration		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Slow	Rest/Slow Travel	Other	Look
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
212		10		Toward the sound source	
Detailed narrative of detection	Seal head first seen by EF off stern of In Transit II in vessel wake; appeared as dark object low to the water, approx. 150m behind vessel, before disappearing. Vessel turned around to a heading of 174 degrees and slowly approached where seal was thought to be, coordinates were taken. Seal was seen by EF & JR off the port side of the vessel, approx. 50m away; seal quickly looked toward the direction of the vessel, and then closed eyes and rested at the surface for less than a minute. Vessel waited for reappearance, and started motoring south after a few minutes had passed. Seal was seen one last time near an outcropping of rocks built around a channel marker 15, at an estimated distance of 500m from the location it was first seen. No mitigation was required as the Weeks 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	No	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	3

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/5/2021	3/5/2021	Daylight Visual	Oth - Other Downtime	Off	3
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
8:07:00 AM	8:06:00 AM	-	-	-	8:06:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.3864	72.0926	41.3864	72.0926	1600	1600

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, v-shaped nostrils, large eyes, medium brown coloration		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Other	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
212		8		Stationary	
Detailed narrative of detection	EF saw seal head approx. 200m off bow of In Transit II at the 1 o'clock position relative to the vessel; vessel heading was 205 degrees. Seal head was fully out of water resting and looking in the direction of the vessel. Vessel slowed approach but seal dove and did not reappear. No mitigation was required as the Weeks 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	No	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	4

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/5/2021	3/5/2021	Daylight Visual	Oth - Other Downtime	Off	9
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
9:30:00 AM	9:30:00 AM	-	-	-	9:30:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4328	72.0960	41.4328	72.0960	3500	3500

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, dark coloration, large eyes		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Other	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
212		11		Stationary	
Detailed narrative of detection	Seal first seen by the captain off the starboard side of In Transit II, approx. 50m away and then seen by both JR and EF. Monitoring vessel was heading 043°, seal was seen at 1:00 clockface. Seal head was fully out of water and facing East. Boat was brought to an idle and seal dove off not to be seen again. No mitigation was required as the Weeks 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	No



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	5

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/8/2021	3/8/2021	Daylight Visual	Oth - Other Downtime	Off	9
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
7:30:00 AM	7:47:00 AM	-	-	-	7:47:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4238	72.0965	41.4183	72.0925	2500	1900

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, short snout, v-shaped nostrils, medium brownish color, large eyes		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Slow	Rest/Slow Travel	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
212		11		Toward the sound source	
Detailed narrative of detection	Seal head first seen by JR approx. 100m off the bow of In Transit II at the 1:30 o'clock position relative to the vessel and roughly 10m from the red channel marker 16; vessel heading was 357 degrees. Vessel came to an idle and the seal dove and resurfaced 200m from the stern and was seen by EF toward the western shore parallel to the Red Top building on the east shore. Vessel turned around to slowly make its way closer to seal's location. The head of the seal was mostly above the surface, alternating between looking at the vessel and various points on shore, and slowly moving around with the current. At 07:34 seal was observed at 41.4209N -72.0951W very briefly before diving again. Occasionally the seal would dive and resurface, slowly making it's way southeast towards the green channel marker 15, where it was last observed. No mitigation was required as the Weeks 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	6

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/8/2021	3/8/2021	Daylight Visual	Oth - Other Downtime	Off	6
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
9:49:00 AM	9:49:00 AM	-	-	-	9:49:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4117	72.0951	41.4117	72.0951	1200	1200

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, dark coloration, large eyes		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Other	Feeding on observed fish	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
212		10		Stationary	
Detailed narrative of detection	Seal first seen by JR off the port side of the bow of In Transit II at the 11:00 o'clock position relative to the vessel, vessel was heading 305°. Seal head was clearly out of the water, facing north up the river, and observed with a fish in its mouth. The vessel came to an idle and the seal dove underwater and did not resurface. In total, the seal was observed for less than a minute. No mitigation was required as the Weeks 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	7

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/12/2021	3/12/2021	Daylight Visual	Oth - Other Downtime	Off	8
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
7:32:00 AM	7:32:00 AM	-	-	-	7:37:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4348	72.0947	41.4363	72.0934	3700	3700

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, brown with mottled coloration, large eyes, v-shaped nostrils.		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Slow	Rest/Slow Travel	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
126		5		Toward the sound source	
Detailed narrative of detection	First seen by JR on the bow of the monitoring vessel. The vessel reached the northern extent of the monitoring zone, and turned around with a heading of 126 degrees where coordinates were taken next to the ripples left behind from the seal diving underneath the water surface. The vessel went into idle and waited, and the seal reappeared at 07:37 off the starboard side of the vessel, approximately 100m away, where it was seen by JR & EF. The seal's head was above the surface of the water, and could be seen looking around and toward the vessel. The seal remained at the surface for less than a minute and then dove. Vessel waited but seal did not reappear. No mitigation was required as the 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	8

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/12/2021	3/12/2021	Daylight Visual	Ops - Deploying Equipment	Off	7
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
7:54:00 AM	8:15:00 AM	-	-	-	8:21:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4273	72.0976	41.4234	72.0961	2900	2400

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, upturned snout, dark coloration with mottling, large eyes		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Slow	Rest/Slow Travel	Other	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
126		5		Toward the sound source	
Detailed narrative of detection	Seal first seen at 07:54AM, with head out of water facing south away from vessel, before quickly diving. It was seen close to the shoreline, between channel marker #17 and the chemical plant on the western shore. The estimated distance of seal to be 160m from vessel when heading was 229 degrees and seen at the 01:30 clockface relative to bow. The vessel was put into idle, and the seal was seen resurfacing at 05:30 clockface approx. 250m behind the boat at 08:06AM. At this point, seal was observed swimming slowly, body horizontal to the surface, with head and top of dorsal back out of the water, before diving again. Seal resurfaced again at 08:14AM, slowly swimming in a serpentine motion in the middle of the river headed south. Seal was last seen near channel marker #16 slowly swimming horizontally before diving. No mitigation was required as the 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	No	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	9

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/12/2021	3/12/2021	Daylight Visual	Ops - Operational Downtime	Off	6
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
9:28:00 AM	9:28:00 AM	-	-	-	9:28:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4320	72.0961	41.4320	72.0961	3400	3400

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small upturned snout, large eyes, round head, light brown coloration with dark mottling		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Unknown	Other	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
126		5		Stationary	
Detailed narrative of detection	Seal was seen by JR approximately 30m off the bow of the monitoring vessel at 12:00 clockface; vessel heading was 037 degrees. The seal head was fully out of the water, facing east. JR immediately relayed for the captain to stop the vessel, and seal dove under water and was not seen again. Captain complied with request to stop, and no other mitigation was required as the 568 barge sound source was inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - Change Course	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	No



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	10

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/22/2021	3/22/2021	Daylight Visual	Ops - Deploying Equipment	Off	5
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
10:07:00 AM	10:18:00 AM	-	-	-	10:18:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4281	72.0973	41.4243	72.0970	2900	2400

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small snout, large eyes, webbed back flippers, dark coloration		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Unknown	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
126		5		Toward the sound source	
Detailed narrative of detection	Seal was seen by JR approx. 300m off bow of the monitoring vessel at 11:00 clockface; vessel heading was 050 degrees. JR only observed the dorsal side of the seal before it immediately dove. The boat came to an idle and the seal resurfaced 200m off the starboard side of the vessel at the 3:00 o'clock clockface, seen by EF (41.4276 N,-72.0971W). Head was really low in the water and looking west, then towards the vessel before diving. During the dive seal arched body so majority of the dorsal side was out of the water, followed by hind flippers. Monitoring vessel turned and started heading south and seal resurfaced again at the 12 o'clock clockface approx. 300m off the bow (around red channel marker 16). Seal head was observed before diving again to not be seen again. No other mitigation was required as the 568 & 526 barges sound source were inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	No	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	11

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/22/2021	3/22/2021	Daylight Visual	Ops - Deploying Equipment	Off	8
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
12:37:00 PM	12:37:00 PM	-	-	-	12:40:00 PM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4226	72.0955	41.4226	72.0955	2300	2300

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head with a small snout, light gray/tan coloration with dark mottling		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Rest/Slow Travel	Other	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
126		5		Stationary	
Detailed narrative of detection	First seen by EF approx. 200m off the starboard side of the monitoring vessel at the 2 o'clock clockface; vessel was heading 354 degrees. Boat came to an idle and seal was observed bottling with its head facing right up to the sky, toward the middle of the river between channel markers 15 & 16. Seal was observed looking north before diving below the surface. Seal resurfaced exhibiting bottling behavior and partially floating on back with head and neck pointed upwards. Seal then dove and was not seen again. Captain complied with request to stop, and no other mitigation was required as the 568 & 526 barges sound source were inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	12

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/23/2021	3/23/2021	Daylight Visual	Ops - Operational Downtime	Off	13
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
7:29:00 AM	7:31:00 AM	-	-	-	7:31:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.3890	72.0919	41.3905	72.0944	1400	1100

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small snout, dog-like head, gray coloration, large yes, ear holes		
Seal, Harbor	Best Guess				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Rest/Slow Travel	Look	Look
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
126		9		Stationary	
Detailed narrative of detection	First seen by capt Brian about 5m off bow of the monitoring vessel at the 12:00 o'clock clockface; vessel was heading 173 degrees. Capt was unsure if it was a seal but boat was brought to an idle and seal was detected by JR 300m off the starboard stern (~100m from Mamacoke Island shore) at the 5:30 o'clock clockface, less than a minute after initial detection. Seal head was low in the water, bobbing up and down, and facing East. Seal profile was clearly visible but the fog made it difficult to capture any photos and the seal dove in less than a minute to not be seen again. Captain complied with request to stop, and no other mitigation was required as the 568 & 526 barges sound source were inactive at the time of sighting.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	No



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	13

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/27/2021	3/27/2021	Daylight Visual	Ops - Deploying Equipment	Off	13
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
9:30:00 AM	9:30:00 AM	-	-	-	9:30:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.3962	72.0957	41.3962	72.0957	480	480

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Puppy-like face, round head, short snout, shiny coat		
Seal, Harbor	Best Guess				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Rest/Slow Travel	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
126		11		Stationary	
Detailed narrative of detection	First seen about 75 m off bow of the monitoring vessel at the 1:00 o'clock clockface; vessel was heading North, exact heading was not taken at the same time as coordinates. The seal looked like a rock at first but was identified when it brought its head out of the water and looked up and then back down. This behavior took about 5 seconds, and by the end of this behavior the seal was 30m from monitoring vessel. By the time the animal was recognized as a seal it dove when boat was about 25 meters away at the 1:00 o'clock clockface from the bow from monitoring vessel (heading 204, position 41.3962 N -72.0958W). The boat was brought to idle at about 15 meters from where the seal was when it dove and was facing East when brought to idle at 09:30. Captain complied with request to stop, and no other mitigation was required as no pile driving occurred today.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph aken
No	No	Yes	No	No	No



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	14

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
3/29/2021	3/29/2021	Daylight Visual	Ops - Operational Downtime	Off	10
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
9:28:00 AM	9:34:00 AM	-	-	-	9:34:00 AM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4307	72.0970	41.4307	72.0970	3200	3000

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Snout small, head dog like, dark brown-grey coloration		
Seal, Harbor	Best Guess				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Rest/Slow Travel	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
126		2		Stationary	
Detailed narrative of detection	First seen by RW about 75m off bow of monitoring vessel at the 1:00 o'clock clockface; vessel was heading SW 224 degrees. Seal was spotted off starboard bow about 150m from factory-industrial complex with its head low in the water facing NW. Vessel was brought to idle, and within seconds of sighting the seal dove. About 5 minutes passed and the vessel slowly made its way S. The seal was spotted again 6 minutes after the first detection, also at the 1:00 o'clock clockface off the starboard bow but farther - 125 meters away, about 75 meters from the shore, also looking NW, and dove again. Vessel was brought to idle again for several minutes but seal was not spotted again and the vessel continued heading South. No other mitigation was required as 568 and 526 barges were not pile driving.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes			12:00:00 AM	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	15

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
4/1/2021	4/1/2021	Daylight Visual	Ops - Deploying Equipment	Off	13
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
1:00:00 PM	1:00:00 PM	-	-	-	1:01:00 PM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.4279	72.0968	41.4279	72.0968	2900	2900

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, short snout, large eyes, light gray coloration with dark mottling		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Slow	Rest/Slow Travel	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
194		4		Away from the sound source	
Detailed narrative of detection	Seal first seen by JR at 13:00 off the port side of the stern of the In Transit II 400m away at 7:30 o'clock clockface. Vessel heading was 178 degrees and the location of vessel at seal sighting was 41.42635N -72.09816W. Seal was observed with head tilted far back, looking directly up to the sky, and swimming slowly north up the river. Boat was brought to an idle and seal was observed by RW as well. Seal, almost immediately, dove head back below the surface and was not seen again. The whole sighting lasted no longer than a minute. The monitoring vessel slowly approached to where seal was last located to get location, depth, and distance from the barge. No mitigation was required as there was no sound generating from the 526 & 568 barges.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	16

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
4/10/2021	4/10/2021	Daylight Visual	Ops - Deploying Equipment	Off	3
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
1:38:00 PM	1:43:00 PM	-	-	-	1:43:00 PM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.3814	72.0925	41.3814	72.0925	2300	2300

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, short snout, light gray coloration, large eyes, v-shaped nostrils		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Stationary	Rest/Slow Travel	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
194		10		Away from the sound source	
Detailed narrative of detection	<p>Firest seen by JR about 250m off the starboard side of the bow of the In Transit II at the 1:00 o'clock clockface. Vessel coordinates at first sighting were 41.38153 N -72.09248 W and the vessel heading was 066 degrees. The monitoring vessel was traveling south and had to cut the track lines short (~800m) of the southern extent due to a sailboat race on the river. When the vessel was turning the seal was spotted with head completely out of the water facing south. The In Transit II came to an idle and the seal turned to look at the vessel, head was bobbing up and down in the water. Seal was still looking at the monitoring vessel, head was still bobbing up and down. After less than a minute the seal dove and did not resurface again.. Coordinates used for sighting were the closest possible coordinates obtained. No mitigation was required as no pile driving was occurring from either the 526 or 568 Weeks barges.</p>				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes



## PROTECTED SPECIES - INDIVIDUAL VISUAL DETECTION SUMMARY

Barge Name	Vessel Name	Operational Type	Client	Operator	Detection Number
Weeks Barge 568	In Transit II	Pile Driving	Weeks Marine	US Navy	17

### Activity - Time - Location

Date First Detected	Date Last Detected	Observation Type	Survey Activity	Energy Source(s)	Water Depth (m)
4/17/2021	4/17/2021	Daylight Visual	Ops - Operational Downtime	Off	5
Time at first encounter (EDT)	Time of closest to source (EDT)	Time animal entered EZ (EDT)	Time animal left EZ (EDT)	Time animal in the EZ (hh:mm)	Time at end of encounter (EDT)
1:55:00 PM	1:58:00 PM	-	-	-	2:04:00 PM
Latitude when first Sighted	Longitude when first Sighted	Latitude when last Sighted	Longitude when last Sighted	Distance at first Sighting (m)	Closest Range to Animal (m)
41.3783	72.0930	41.3792	72.0922	2700	2400

### Detection Description

Animal Common Name	Certainty of Identification	Description of Animal(s)	Small dog-like head, v-shaped nostrils, large eyes, light gray coloration with dark mottling, short snout		
Seal, Harbor	Sure				
Best	Min	Max	Adults	Juveniles	Calves
1	1	1	1	0	0
Sex Class	Sighting Cue	Pace	Behavior state	Individual Behavior	Behavioral Reaction
Indeterminate	Head	Moderate	Medium Travel	Look	Dive
Vessel Heading (degree) - 0 = North		Relative Bearing to animal (clock face) Bow = 12:00		Direction of Travel (relative to vessel)	
123		10		Toward the sound source	
Detailed narrative of detection	Seal spotted swimming at a medium pace, traveling north up the river, by JR about 75m off the port side bow of the In Transit II at the 10:00 o'clock clockface. Vessel was traveling south, vessel heading was 123 degrees. Vessel was brought to an idle and the seal continued to swim for less than a minute before turning the head to look at the vessel and then dive. Seal continued to look at the monitoring vessel, head was bobbing in the water, and after less than a minute seal dove beneath the surface again. Two minutes later seal resurfaced, snout first, 200m away slightly more to the West at the 11:00 o'clock clockface. Seal was observed looking straight up to the sky and occasionally looking around, head was bobbing in the water. This behavior continued for four minutes before seal dove beneath the surface to not be seen again. No mitigation was necessary as there was no sound source coming from the Weeks 526 & 568 barges.				

### Mitigation – Compliance - Other

What action requested?	Was action implemented?	Time Mitigation Started (EDT)	Time Mitigation Ended (EDT)	Estimated Loss Time (Mitigation)	Regulatory Status
Mit - No Action required	Yes	-	-	-	Compliance
Take Level A (Yes/No)	Take Level B (Yes/No)	Vessel strike Avoidance	Injured/Death Marine mammal	Dual Detection	Photograph Taken
No	No	Yes	No	No	Yes

## **Appendix C. Pier 32 Detection Maps**

## Summary Map of all Sightings North of Operations

This map shows all sightings that occurred north of construction and demolition operations. Detections are labeled in order of observation. All sightings were of harbor seals, *phoca vitulina*, and occurred when the sound source was inactive. 12 of the 17 total sightings occurred north of the sound source.

### Legend

#### Detection Location

#### Survey Source Activity During Sighting

- Ops - Deploying Equipment
- Ops - Operational Downtime
- Oth - Other Downtime

#### Sound Source Location

- ▲ Sound Source Location

### Detection Table

Detection Number	First Sighting Dist. (m) /Closest Dist. (m)	Source Activity	Source Status
1	2300/1800	Oth - Other Downtime	Off
2	2400/1900	Oth - Other Downtime	Off
4	3500/3500	Oth - Other Downtime	Off
5	2500/1900	Oth - Other Downtime	Off
6	1200/1200	Oth - Other Downtime	Off
7	3700/3700	Oth - Other Downtime	Off
8	2900/2400	Ops - Deploying Equipment	Off
9	3400/3400	Ops - Operational Downtime	Off
10	2900/2400	Ops - Deploying Equipment	Off
11	2300/2300	Ops - Deploying Equipment	Off
14	3200/3000	Ops - Operational Downtime	Off
15	2900/2900	Ops - Deploying Equipment	Off



## Summary Map of all Sightings South of Operations

This map shows all sightings that occurred south of construction and demolition operations. Detections are labeled in order of observation. All sightings were of harbor seals, *phoca vitulina*, and occurred when the sound source was inactive. 5 of the 17 total sightings occurred south of the sound source.

### Legend

#### Detection Location

#### Survey Source Activity During Sighting

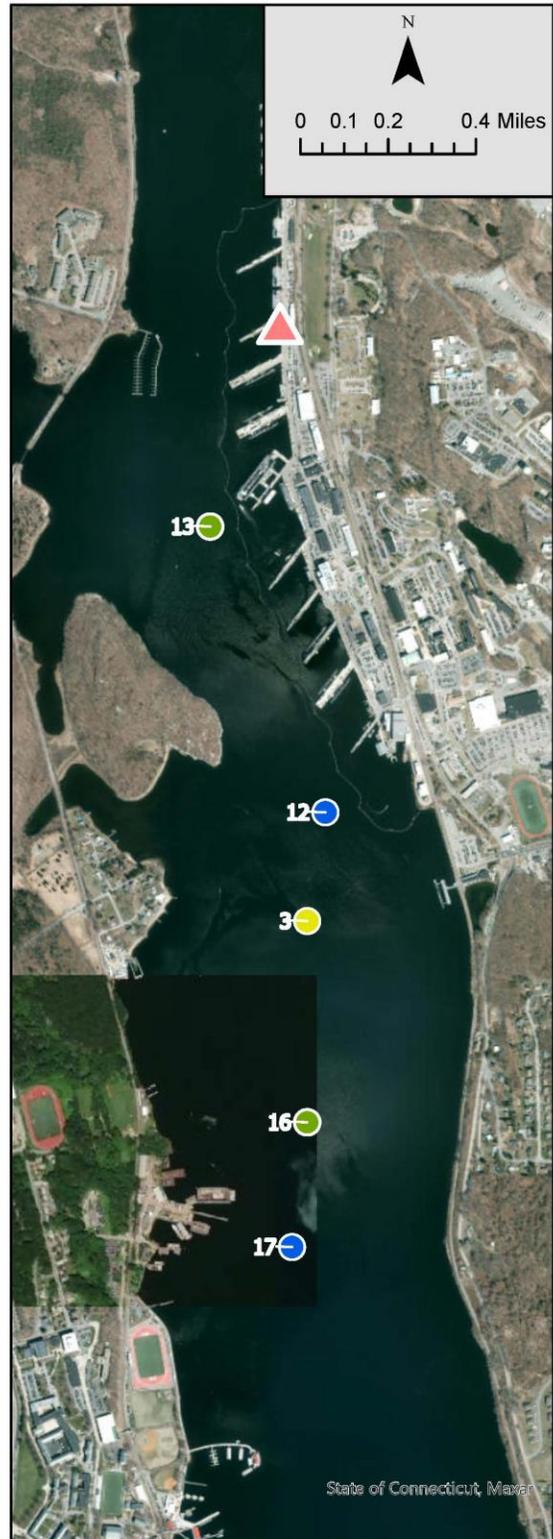
- Ops - Deploying Equipment
- Ops - Operational Downtime
- Oth - Other Downtime

#### Sound Source Location

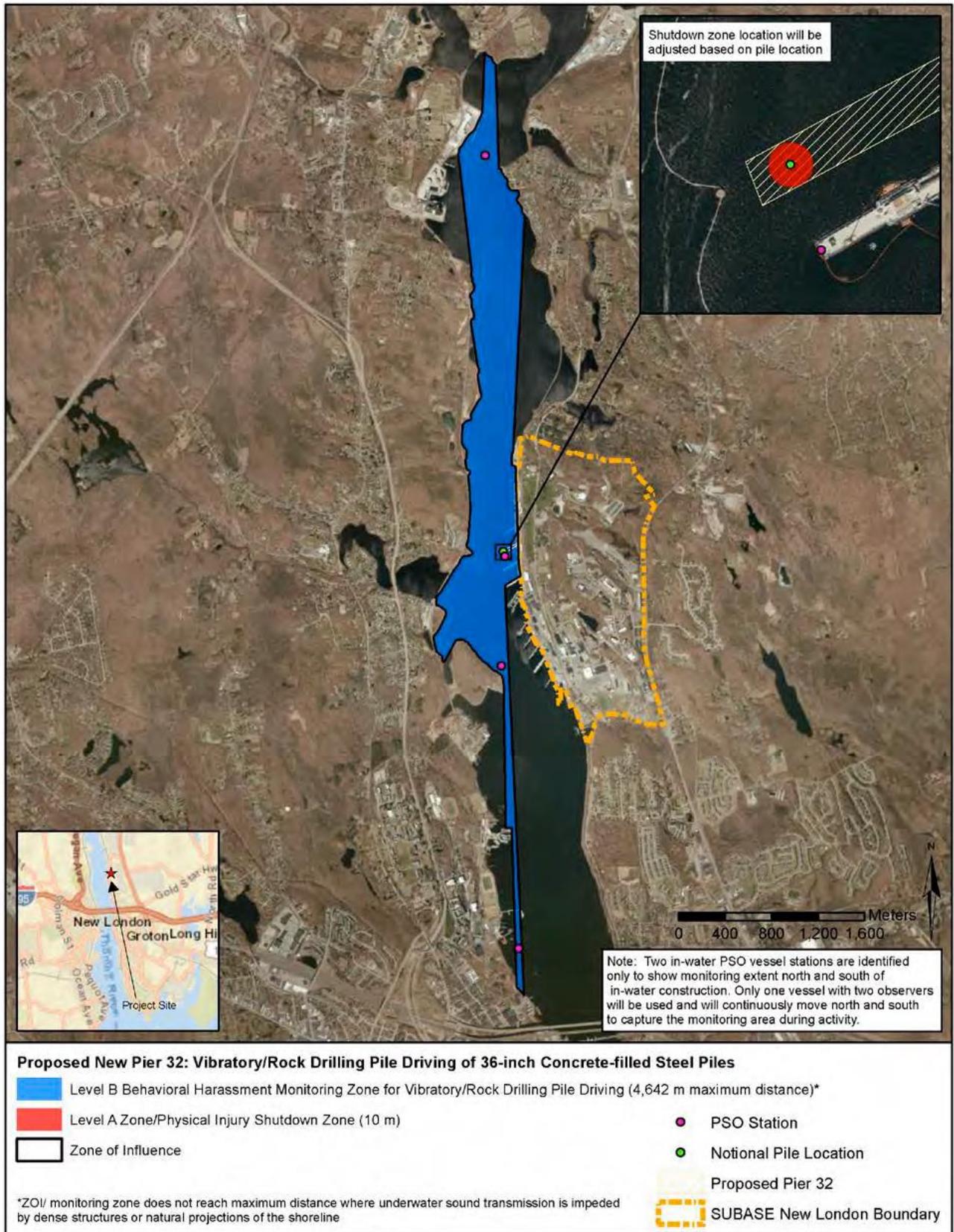
- ▲ Sound Source Location

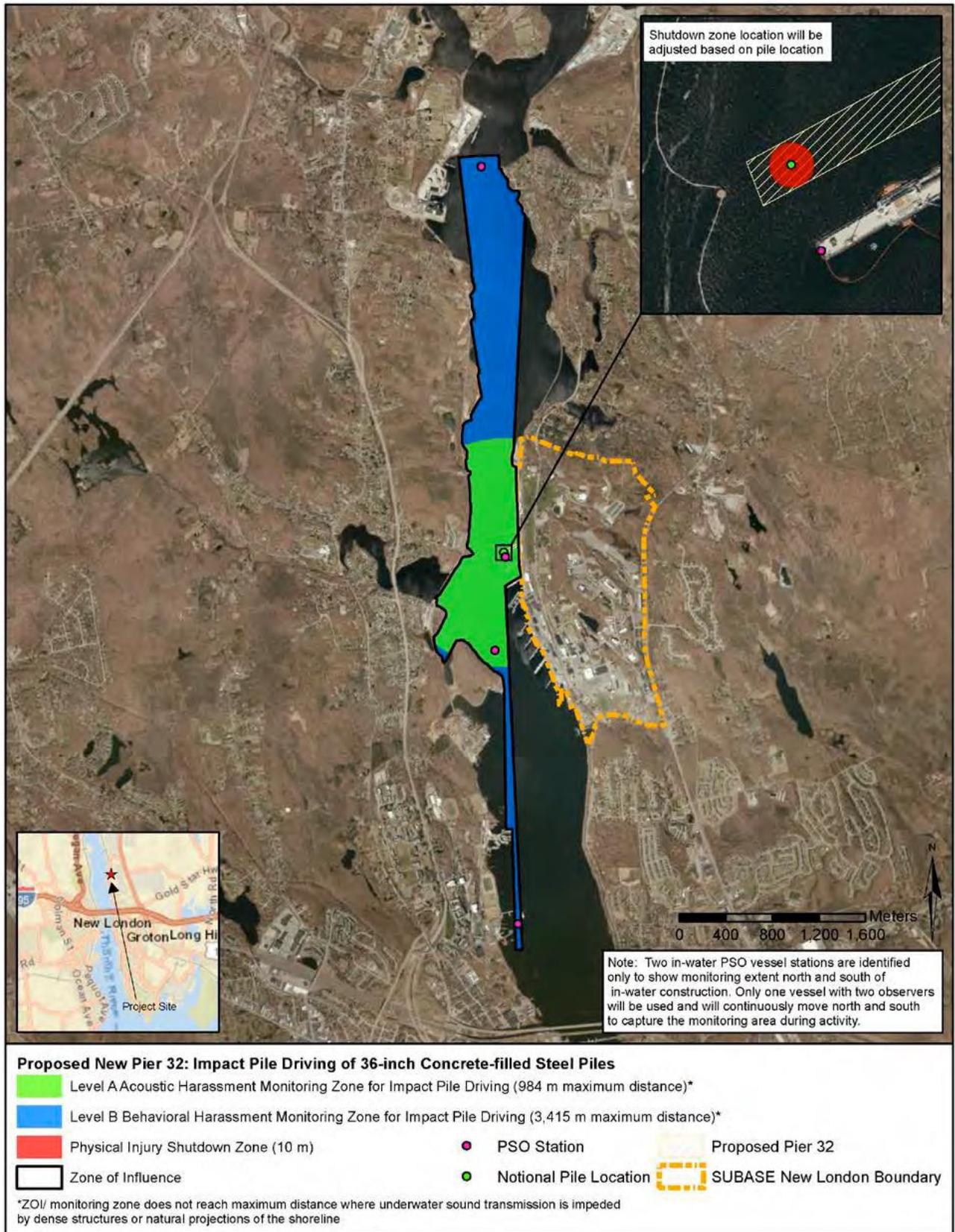
### Detection Table

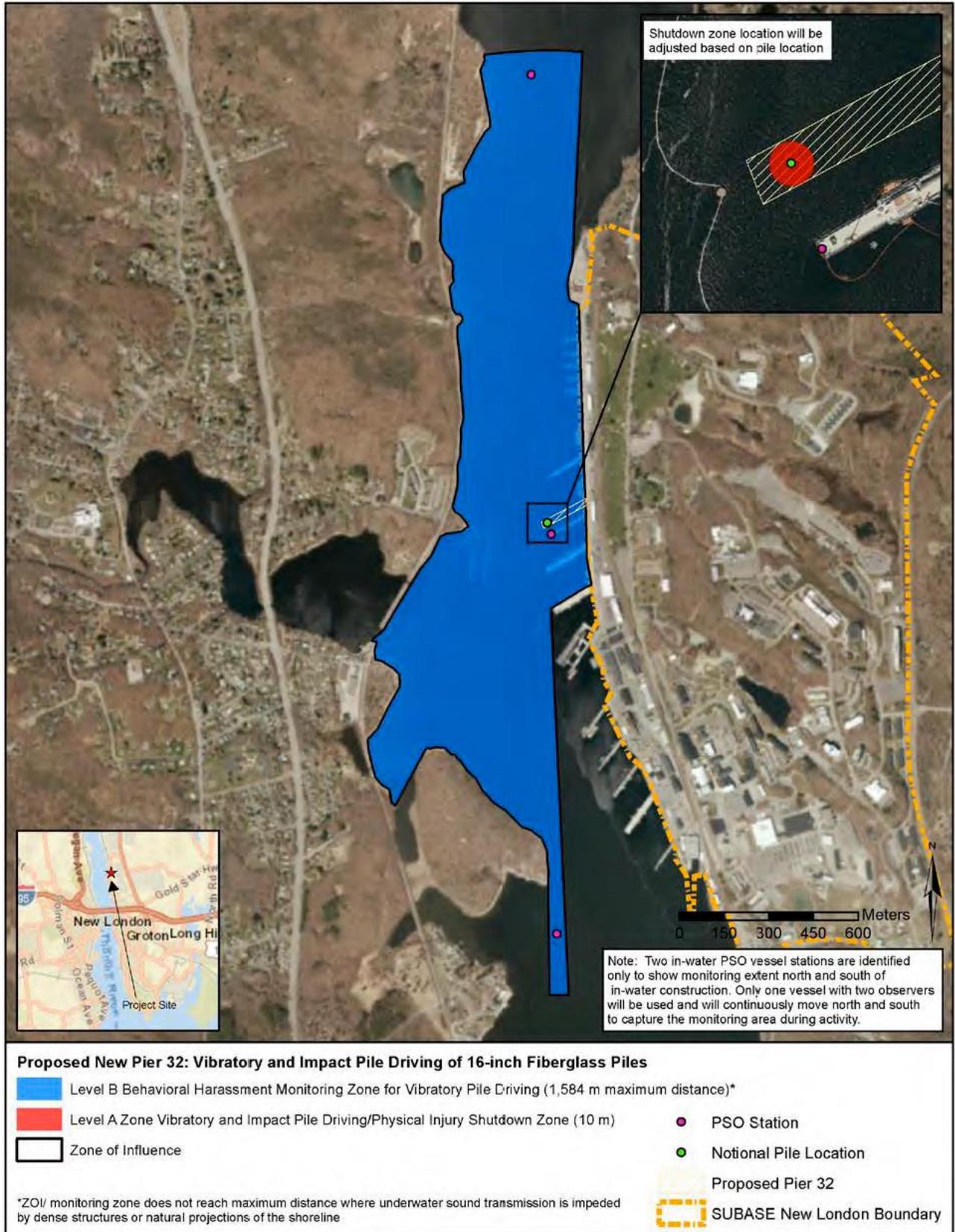
Detection Number	First Sighting Dist. (m) /Closest Dist. (m)	Source Activity	Source Status
3	1600/1600	Oth - Other Downtime	Off
12	1400/1100	Ops - Operational Downtime	Off
13	480/480	Ops - Deploying Equipment	Off
16	2300/2300	Ops - Deploying Equipment	Off
17	2700/2400	Ops - Operational Downtime	Off

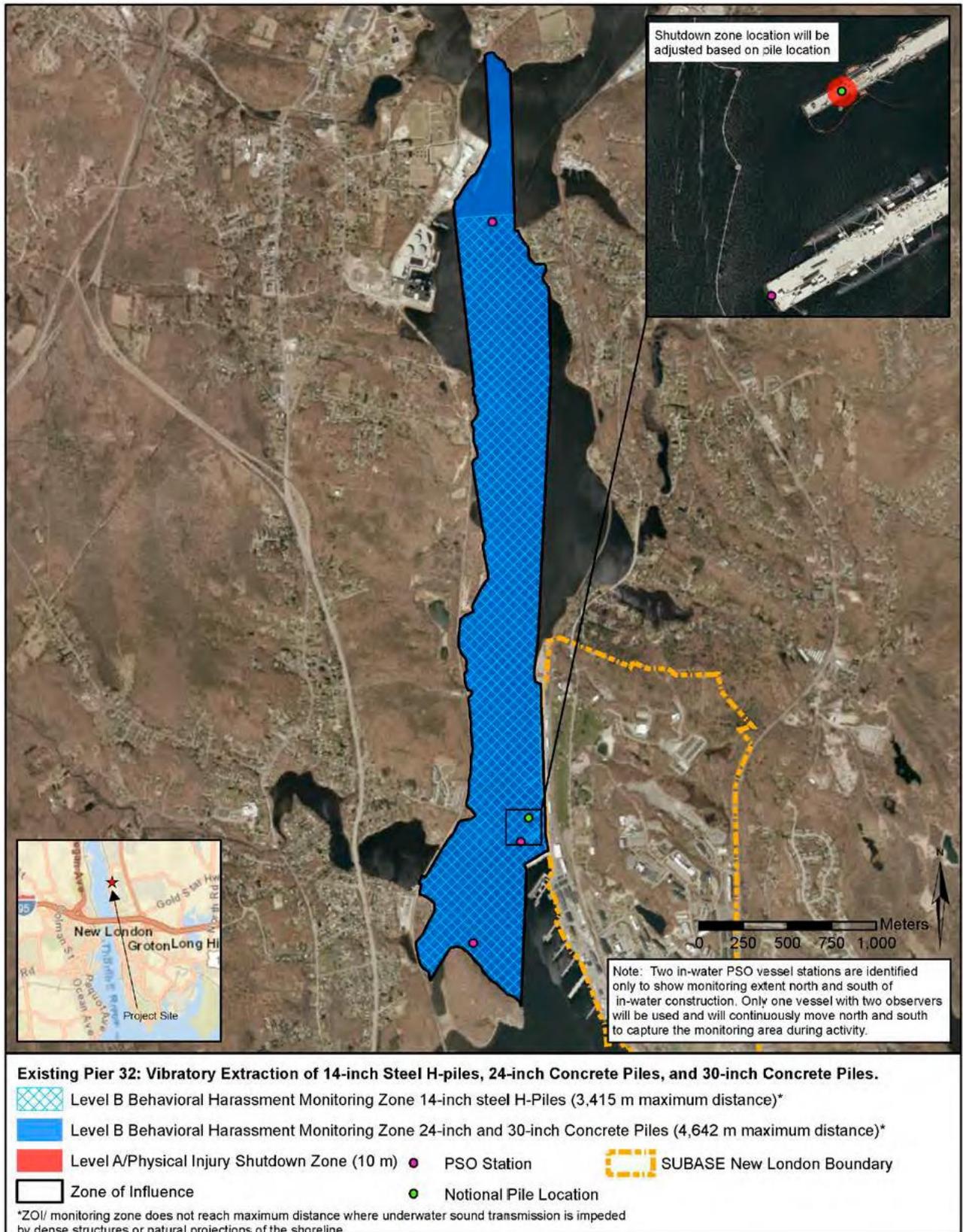


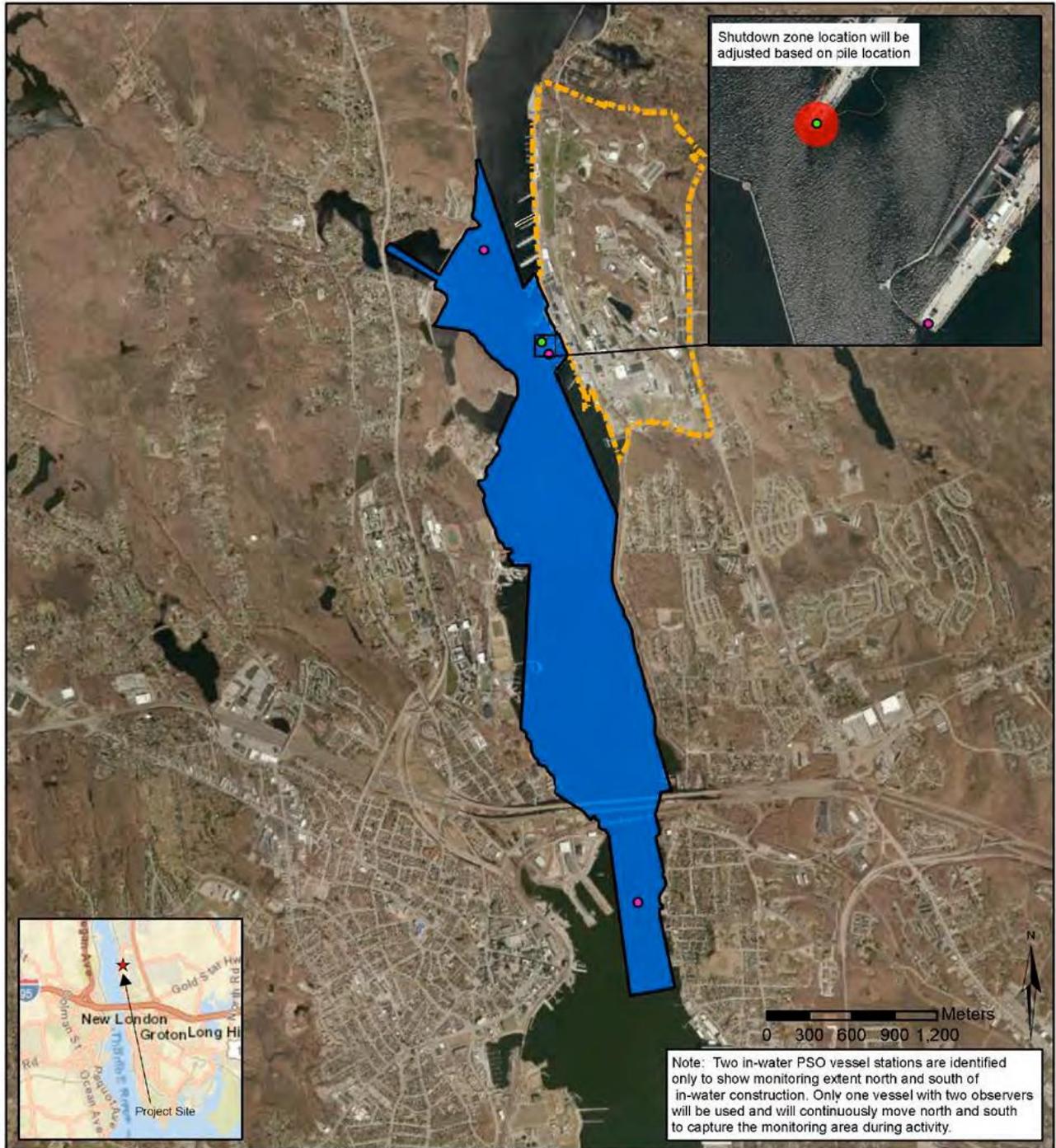
**Appendix D. Pier 32 Monitoring Zone Maps**











**Pier 10 Demolition: Vibratory Extraction of 33-inch Concrete Piles**

- Level B Behavioral Harassment Monitoring Zone (4,642 m maximum distance)\*
- Level A/Physical Injury Shutdown Zone (10 m)
- PSO Station
- Notional Pile Location
- SUBASE New London Boundary

\*ZOI/ monitoring zone does not reach maximum distance where underwater sound transmission is impeded by dense structures or natural projections of the shoreline