

**MARINE PROTECTED SPECIES INTERIM MONITORING REPORT  
FOR THE NAVY'S PIER 302 REPLACEMENT PROJECT AT  
NAVAL BASE POINT LOMA, CALIFORNIA**

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Submitted to:

**Office of Protected Resources,  
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Prepared by:

**Naval Facilities Engineering Systems Command Southwest**

For:

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## 1.0 Introduction

This interim report summarizes the protected species monitoring efforts that the United States (U.S.) Navy (Navy) was required to undertake during the construction of the Pier 302 Replacement Project (Project) at the Naval Information Warfare Center Pacific Bayside Complex on Naval Base Point Loma (NBPL), California (Figure 1-1). Marine mammal monitoring efforts were conducted in accordance with the Marine Mammal Protection Act (MMPA) Incidental Harassment Authorization (IHA) issued by the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) for the incidental Take of the following species: California sea lion (*Zalophus californianus*); Pacific harbor seal (*Phoca vitulina*); northern elephant seal (*Mirounga angustirostris*); coastal bottlenose dolphin (*Tursiops truncatus*); common dolphin including long- and short-beaked (*Delphinus capensis* and *D. delphis*); and Pacific white-sided dolphin (*Lagenorhynchus obliquidens*). The current IHA authorizes all applicable working days from 01 October 2023 through 30 September 2024. Per the requirements of the IHA, if a Project is scheduled to go beyond the current end date of the IHA a preliminary report must be submitted, along with a request for an IHA renewal, at least 60 days before the end of the IHA time period. This report summarizes results from both the protected species and acoustic monitoring efforts that occurred for 11 days between 01-20 March 2024. During this timeframe, Project activities covered under the IHA included the installation of structural piles for the new Pier 302. As such, this report has been generated to fulfill the IHA requirements.

Incidental Take in the form of Level B harassment was expected as a result of the Project. Table 1-1 presents the total authorized Take for species covered under the current IHA, as well as the documented Take for the Project thus far.

**Table 1-1. Authorized and Observed Amount of Taking by Level A/B Harassment, by Species.**

Species	Authorized Take 01 Oct. 2023 - 30 Sep. 2024		Documented Take 1 Mar. 2021 - 22 Jun. 2022		
	Level A	Level B	Level A	Level B	Percent of Authorized
California sea lion	0	480	0	4	0.83%
Pacific harbor seal	0	32	0	2	6.25%
Northern elephant seal	0	32	0	0	0.00%
Coastal bottlenose dolphin	0	288	0	0	0.00%
Common dolphin including long- and short-beaked	0	32	0	0	0.00%
Pacific white-sided dolphin	0	7	0	0	0.00%
<b>Total</b>	<b>0</b>	<b>871</b>	<b>0</b>	<b>6</b>	<b>0.69%</b>

Protected Species Observers (PSOs) observed only three species covered under the IHA: California sea lions, Pacific harbor seals, and coastal bottlenose dolphins. No other species covered under the current IHA were observed. Furthermore, no other MMPA-covered species were observed, nor were any Endangered Species Act (ESA)-covered species, such as green sea turtles (*Chelonia mydas*), observed.



**Figure 1-1. Regional Location of the Fuel Pier Replacement Project.**



As of 20 March 2024, all in-water sound-producing demolition of the old Pier 302 and pile installation of the structural piles for the new Pier 302 was completed. Vibratory pile driving of seventeen 6-inch round steel guide piles is scheduled to occur in Fall 2024 to avoid the breeding/nesting season of the ESA-listed California least tern (*Sternula antillarum browni*). Further monitoring will be necessary to complete this work and will require the renewal of the existing IHA.

## 1.1 Project Description

### 1.1.1 Project Location

The Project includes replacement of Pier 302 at NBPL in San Diego Bay (see Figure 1-1). Constructed by the Navy in 1937, Pier 302 was partially modified in 1987. During a 2018 engineering assessment (Collins 2018), Pier 302 was rated as having "Poor" portions of the steel beams making up the superstructure, as well as several corroded concrete piles and deteriorated timber decking. To maintain safe and secure access to the mammal pens and small vessels utilized by the Navy marine mammal program, the assessment recommended replacement of the deck and superstructure.

### 1.1.2 Project Activities

The demolition and construction activities at Pier 302 are summarized in Table 1-2. The proposed methods presented in this table were the activities that were covered under the IHA for Pier 302 (Merkel & Associates, Inc. 2022). Note that for the demolition phase, several alternative methods were approved in the IHA. However, all demolition activities to date have only employed the dead pulling of piles (Table 1-2). As this approach does not produce underwater sound resulting in Level A/B "Take," the remaining sections of this interim report focus the construction activities which employed the use of the impact hammer for 18-inch octagonal concrete piles and 14-inch square concrete piles (Table 1-2). The vibratory hammer will be used to install the final set of seventeen 6-inch round steel piles in Fall 2024.

**Table 1-2. Completed Activity Summary for Demolition and Construction Activities.**

Pile Type	Installation/Demolition Method		Number of Piles	
	Proposed <sup>1</sup>	Actual	Proposed	Actual
<b>Demolition Activities</b>				
18-inch Octagonal Concrete	Vibratory Extraction High-pressure Water Jetting Hydraulic Pile Clipper Hydraulic Chainsaw Wire Saw, Dead Pull	Dead Pull	22	22
18-inch Round Steel	Vibratory Extraction, Dead Pull	Dead Pull	3	3
14-inch Round Timber	Dead Pull	N/A	up to 10	0
<b>Total</b>			<b>25+</b>	<b>25</b>
<b>Installation Activities</b>				
24-inch Octagonal Concrete	Impact Hammer	Impact Hammer	30	30
14-inch Square Concrete	Impact Hammer	Impact Hammer	2	2
6-inch Round Steel <sup>2</sup>	Vibratory Hammer	To Be Determined	17	0
<b>Total</b>			<b>49</b>	<b>32</b>

**Notes:** <sup>1</sup>Per the IHA application, a high-pressure water jetting may have been used to assist pile installation/demolition and a hydraulic cutter may have been used to clip piles at the mudline; <sup>2</sup>These piles are to be installed in the second half of September 2024.

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## 2.0 Monitoring Methods

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### 2.1 Marine Species Monitoring

As per the IHA monitoring plan (Merkel & Associates, Inc. 2022), PSOs monitored the buffered shutdown zones and zones of influence (ZOIs) for each relevant activity during all days of in-water construction that has the potential to result in Level A or Level B harassment.

#### 2.1.1 Level A and Level B Harassment Monitoring and Shutdown Zones

Per the information presented in Table 2-1, the demolition activities did not use pile demolition methods that generated Level A/B ZOIs. For pile installation, the maximum potential distances to calculated Level A ZOIs associated with the pile driving activities ranged from less than 1 meter (m) to 62.4 m (3.3 to 205 feet [ft]; Merkel & Associates, Inc. 2022). To simplify the monitoring efforts, and to maintain consistency with the ESA-listed species monitoring zones, any Level A ZOI that was less than 10 m (33 ft) was buffered out to 20 m (66 ft). The single calculated level ZOI that was greater than 20 m (66 ft) was for the installation of the 24-inch Octagonal Concrete piles using an impact hammer. This ZOI was buffered out to 70 m (230 ft). Table 2-1 and Figure 2-1 summarize these ZOIs relative to the Project area.

#### 2.1.2 Monitoring Periods

PSOs conducted pre-activity monitoring for at least 30 minutes prior to the commencement of in-water construction activities (hereinafter referred to as “Pre-Con”). PSOs conducted monitoring during both active pile extraction and pile installation (hereinafter referred as “During”), as well as in-between active construction monitoring (hereinafter referred to as “Pre-/Post-”). Once construction was complete for the day, PSOs conducted post-activity monitoring for a total of 30 minutes (hereinafter referred to as “Post-Con”).

#### 2.1.3 Monitoring Zones and PSO Locations

The ZOIs for impact and vibratory pile driving were determined using NMFS Technical Guidance (NMFS 2018), including the NMFS User Spreadsheet and practical spreading loss model (NMFS 2020). Figure 2-1 presents the ZOIs and the PSO locations for the Project thus far.

The Pier 302 monitoring plan (Merkel & Associates, Inc. 2022) initially suggested potential PSO locations at the end of the Alpha and Charlie fingers of Pier 160. Prior to the initiation of IHA-covered activities at Pier 302, the Navy received permission from NOAA to revise these PSO locations to enhance visibility of the shutdown zone and ZOIs. This permission was granted through emails exchanged on 24-25 January 2024, between Todd McConchie (Naval Facilities Engineering Systems Command Northwest) and Jessica Taylor (Office of Protected Resources, NMFS). The PSO locations shown in Figure 2-1 differ from those in the original monitoring plan in the following ways:

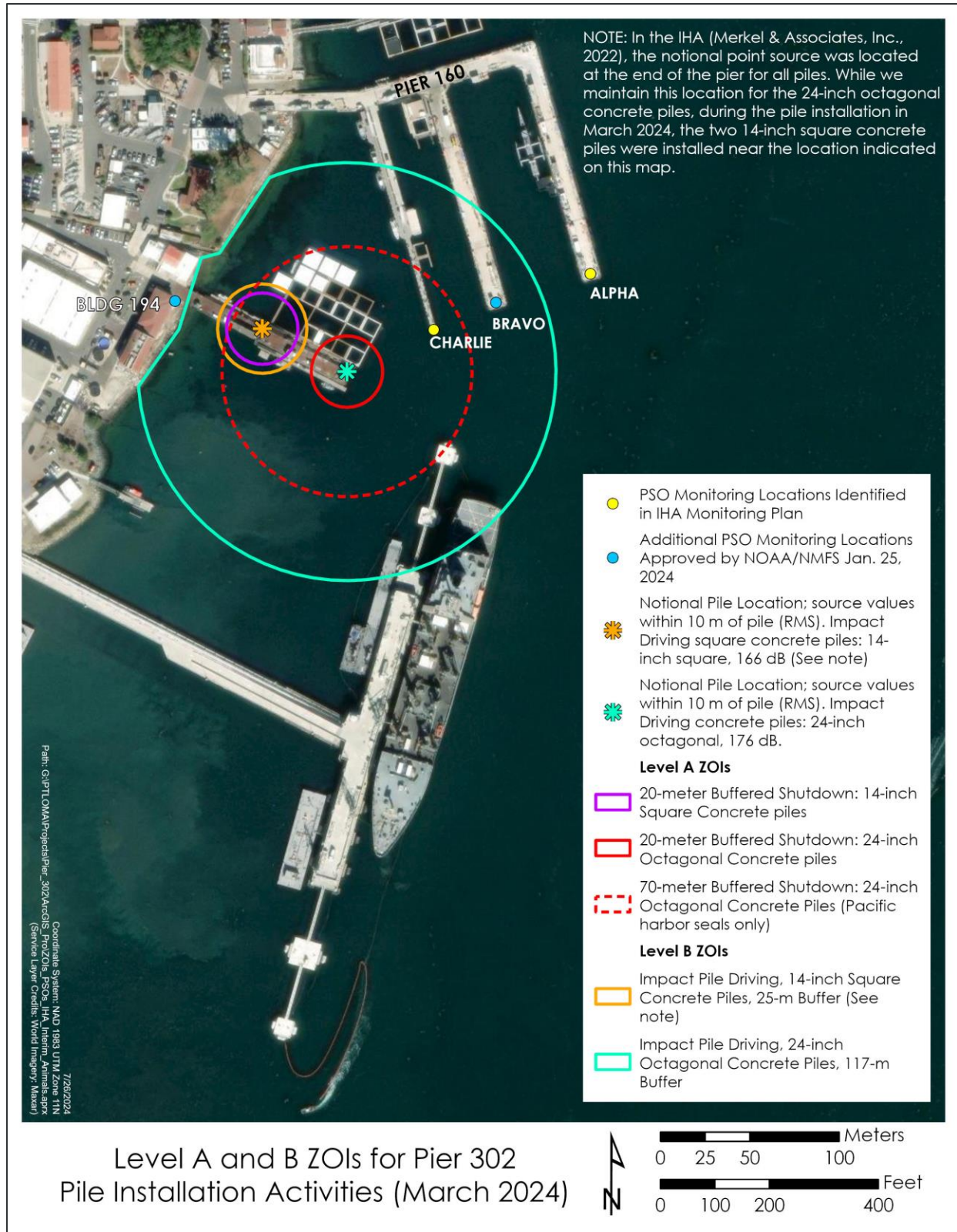
- The Command PSO was originally set for the Charlie position at Pier 160. Prior to monitoring for IHA-covered activities, it became clear to PSO monitoring under ESA protocols that this position was inadequate to properly observe construction activities since the barge that supported the retrofit of Pier 302 would obstruct the view of the shutdown zone. As an alternative, the Navy proposed the use of the second-floor balcony of Building 194 just to the west and south of Pier 302. This would provide an elevated and closer view of the Pier and shutdown zone.

**Table 2-1. Monitored Distances to Underwater Level A Thresholds by Marine Mammal Hearing Group.**

Method	Pile Type and Size	Estimated Blow Count <sup>1</sup>	Estimated Duration per Pile (mm:ss) <sup>1</sup>	Peak Sound Pressure (dB re 1 μPa) <sup>2,3</sup>	SEL (dB re 1 μPa 2 sec) <sup>2,3</sup>	Mean Maximum RMS SPL (dB re 1 μPa) <sup>2,3</sup>	Monitored Level A ZOIs (m [ft]) <sup>4</sup>			Monitored Level B ZOIs (m [ft]) <sup>4</sup>
							MF	PW	OW	
Pile Demolition Activities										
Vibratory Extraction	18-inch Octagonal Concrete	N/A	15:00	N/A	N/A	162	20 (66)	20 (66)	20 (66)	1,445 (4,742)
	18-inch Steel Pipe	N/A	15:00	N/A	N/A	156	20 (66)	20 (66)	20 (66)	575 (1,888)
Pile Installation Activities										
Impact Hammer	24-inch Octagonal Concrete	500	N/A	188	166	176	20 (66)	70 (230)	20 (66)	117 (383)
	14-inch Square Concrete	250	N/A	183	154	166	20 (66)	20 (66)	20 (66)	25 (85)
Vibratory Hammer	6-inch Round Steel	N/A	1:00	171	155	155	20 (66)	20 (66)	20 (66)	494 (1,619)

**Notes:** <sup>1</sup>Estimated durations and blow counts as provided by the construction contractor. <sup>2</sup>References for source level data by pile type and activity are in Table 6-4 and Table 6-5 of the IHA for this project (Merkel & Associates, Inc. 2022). <sup>3</sup>As measured, or calculated, at 10 m (33 ft). <sup>4</sup>The Level B ZOIs for continuous pile demolition and installation activities are based on the distance for noise to decay to ambient levels (129.6 dB re 1 µPa), while 160 dB was used for impulsive sound. Assumes Practical Spreading Loss.

**Abbreviations:** RMS = root mean square, dB re 1 µPa = decibels referenced to a pressure of 1 microPascal, m = meters, ft = feet, MF = mid-frequency cetaceans, PW = phocid pinnipeds, OW = otariid pinnipeds, ZOI = Zone of Influence



**Figure 2-1. PSO/Command Positions and Monitored ZOIs.**

- Similarly, depending on the ZOIs associated with the various piles, it made sense for the PSO position at the Pier 160 Alpha position to have the option to move to the Bravo position as needed.

#### 2.1.4 Project Staffing

Staff included the Project manager (PM), on-site field supervisor (FS), database administrator (DA), and PSOs (Table 2-2). PSOs were experienced in marine species identification and were approved by the Navy as well as NMFS. Furthermore, prior to beginning their observations, all PSOs received training on identifying the marine species likely to be present in San Diego Bay, the specifics of the ZOIs, and the Project activities likely to occur. Prior to all Project-related activities, acoustic technicians were trained in how to use the acoustic data logging equipment as well as how to run analyses on the data collected.

**Table 2-2. Project Staff.**

Company/Organization	Name	Role(s)
Tierra Data, Inc.	Karen Green	PM
	Robert Wolf	APM, DA, CC
	Daniel Conley	PSO, Primary FS, CC
	Jim Kellogg	PSO, FS
	Cai Leao	PSO, FS
	Robert Hanna	PSO
	Beth Sabiston	PSO, FS
	Scott Snover	PSO

**Abbreviations:** PM = Project Manager; APM = Assistant Project Manager; PSO = Protected Species Observer; FS = Field Supervisor; DA = Database Administrator; CC = Company Contact.

#### 2.1.5 Shutdown and Delay Procedures

If a marine mammal entered the buffered shutdown zone during pile driving operations, pile installation was to be either: 1) halted if installation was in progress, or 2) delayed if installation was not currently active, but imminent. A shutdown or delay was in place until either the animal had voluntarily left and been visually confirmed beyond the shutdown zone, or 15 minutes had passed without a re-detection of the animal(s) from the last observation time.

If a marine mammal species not covered in the IHA entered the Level B harassment zone, all pile installation or demolition activities were to be halted until the animal(s) had been either observed to have left the applicable Level B ZOI or was not observed for at least one hour.

### 3.0 Monitoring Results

The results of the marine species and acoustic monitoring efforts associated with this Project are presented in Section 3.1 and Section 3.2 and detail the data collected during March 2024. Appendix A provides the distance and bearing to animals that were observed during active pile installation, as well as the distance and bearing from all animals to the observation point.

#### 3.1 Monitoring Effort

Over the course of 11 days, the construction contractor completed the installation of 32 structural and fender pile installation for the Project (Table 3-1). A total of 25 piles were removed via dead-pull, which did not require PSO(s) relative to the IHA.

**Table 3-1. Pier 6 Construction Activities by Pile Type.**

Pile Size/Type	Activity	Method	Total Piles	Date Ranges	Days of Activity <sup>1</sup>
24-inch Octagonal Concrete Piles	Install	IPD	30	3/1/2024 - 3/20/2024	11
14-inch Square Concrete Fender Piles	Install	IPD	2	3/20/2024	1

**Note:** <sup>1</sup>Pile installation of 24-inch octagonal and 14-inch square concrete piles overlapped on 20 March 2024.

**Abbreviation:** IPD = Impact Pile Driving

#### 3.2 Marine Species Monitoring

Marine species data were collected on 11 days and over 181 hours of observer effort (Table 3-2), with an average observation time per day of 8.25 hours per PSO. The number of PSOs remained consistent during all monitoring efforts, with a single command position stationed at Building 194, and a PSO stationed at either Alpha or Bravo finger of Pier 160 (see Figure 2-1).

**Table 3-2. Summarized PSO Observation Time by Month and Activity.**

Month	Number of Observers per Day <sup>1</sup>	Monitoring Activity						Total Monthly Hours <sup>2</sup>
		Pre-Con <sup>2</sup>	Pile Installation <sup>2,3</sup>	Pre-/Post <sup>2</sup>	Delay <sup>2</sup>	Shutdown	Post-Con <sup>2</sup>	
March	2	11:00:00	10:34:34	147:53:24	0:26:32	0:32:20	11:00:00	<b>181:26:50</b>

**Notes:** <sup>1</sup>Daily PSOs were a single command position at Building 194, and Pier 160-based PSO. <sup>2</sup>All time in hh:mm:ss. Times presented are the product of the number of observers (2) and the elapsed time for each activity of the course of a month. <sup>3</sup>Includes both impact pile driving and impact soft start.

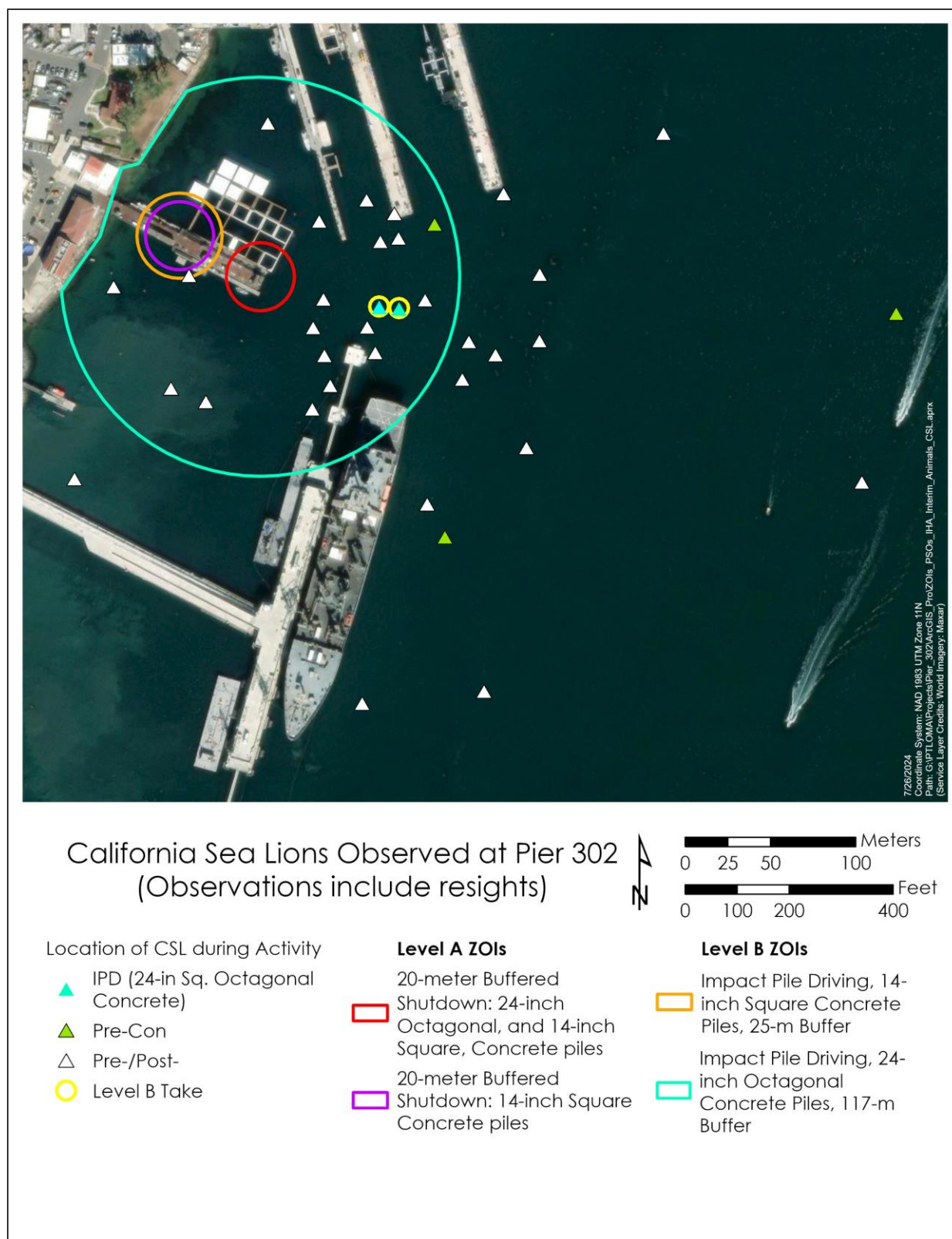
The following sections summarize the protected species that were observed during the monitoring effort from 01-20 March 2024. Table 3-3 presents the number of animals observed during the construction activities. Figure 3-1 and Figure 3-2 depict the locations of animals observed as well as the construction activity that coincided with the observation. In all, there were 46 observations of 61 protected animals, excluding resights.

**Table 3-3. Species Observed by Construction Activity, includes resights.**

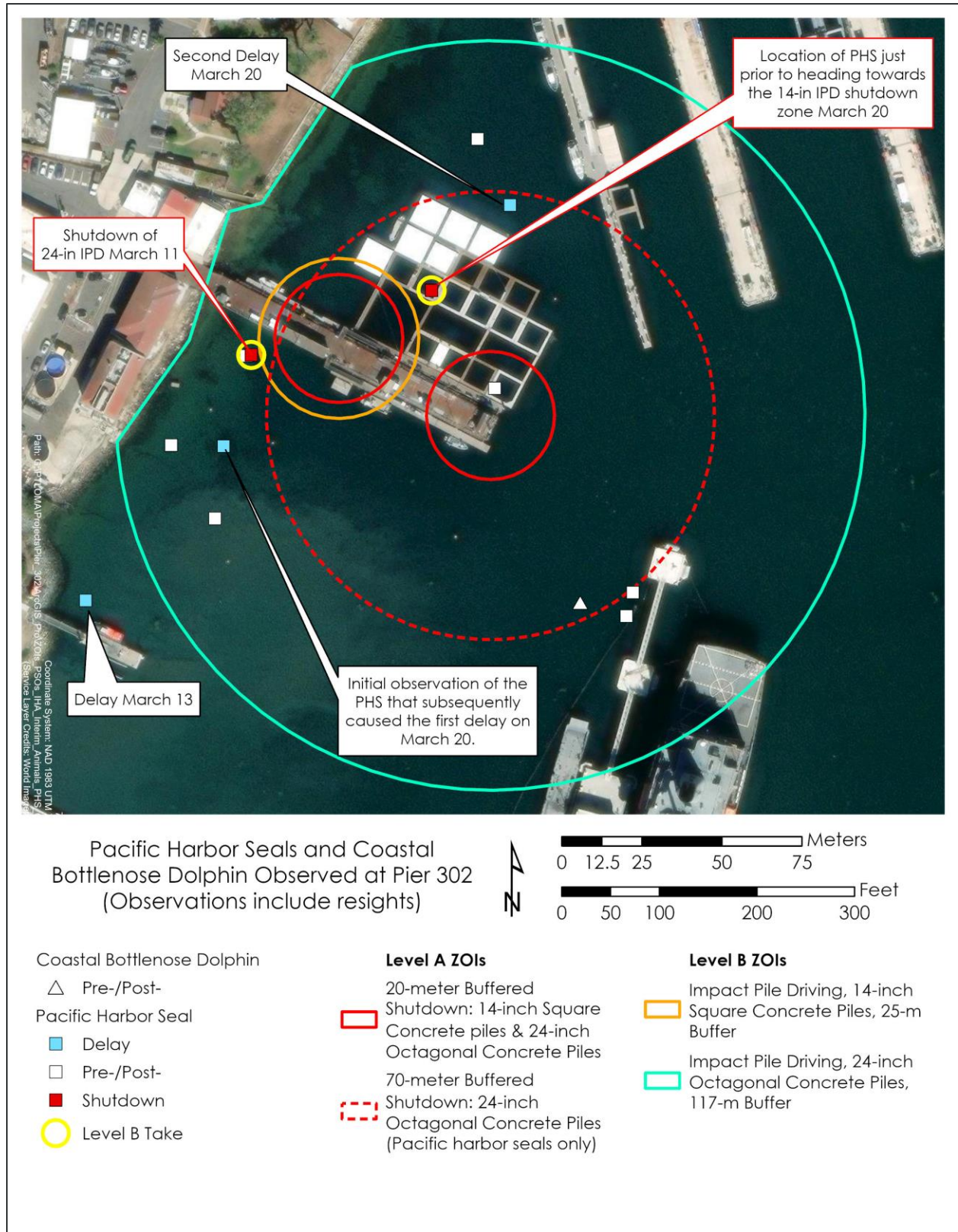
Species	Pile Driving Monitoring [Individuals (Sightings)]			Non-Construction Monitoring [Individuals (Sightings)]		
	IPD	Shutdown	Delay	Pre-Con	Pre-/Post-	Post-Con
California sea lion	4 (2)	0 (0)	0 (0)	4 (3)	40 (31)	0 (0)
Coastal bottlenose dolphin	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)
Harbor seal	0 (0)	2 (2)	3 (3)	0 (0)	10 (7)	0 (0)
<b>TOTAL</b>	<b>4 (2)</b>	<b>2 (2)</b>	<b>3 (3)</b>	<b>4 (3)</b>	<b>51 (40)</b>	<b>0 (0)</b>

**Abbreviations:** IPD = Impact pile driving; Pre-Con = Pre-construction monitoring; Pre-/Post- = Pre-/Post-construction monitoring; Post-Con = Post-construction monitoring





**Figure 3-1. California Sea Lion Observations Recorded During Monitoring.**



**Figure 3-2. Pacific Harbor Seal and Coastal Bottlenose Dolphin Observations Recorded During Monitoring.**



### 3.2.1 California Sea Lion

California sea lions were the most frequently observed marine mammal species. While typically seen as solitary individuals, they were occasionally spotted in groups of two to three. Notably, during the 11 days of monitoring, a lone California sea lion was the only species observed hauled-out in the Project vicinity. Table 3-4 presents California sea lion observations.

**Table 3-4. California Sea Lion Observations (not including resights).**

Month	Days Monitored	Indiv. Observed	Obs.	Group Size			Avg. Indiv./ Day	Observer Hrs.	Obs./ Observer Hrs.
				Mean	Min	Max			
March	11	47	35	1.34	1	3	4.3	181:26:50	0.193

**Abbreviations:** Indiv. = Individuals; Obs. = Observations; Avg. = Average; Hrs. = Hours

### 3.2.2 Coastal Bottlenose Dolphin

A single adult coastal bottlenose dolphin was observed on March 4 during a Pre-/Post- at the northern end of the NBPL Fuel Pier heading south-east.

**Table 3-5. Coastal Bottlenose Dolphin Observations (not including resights).**

Month	Days Monitored	Indiv. Observed	Obs.	Group Size			Avg. Indiv./ Day	Observer Hrs.	Obs./ Observer Hrs.
				Mean	Min	Max			
March	11	1	1	1	1	1	0.09	181:26:50	0.006

**Abbreviations:** Indiv. = Individuals; Obs. = Observations; Avg. = Average; Hrs. = Hours

### 3.2.3 Pacific Harbor Seal

Pacific harbor seals were observed on five of the 11 days of IHA monitoring. On three occasions, pairs of Pacific harbor seals were recorded, identified as a cow and pup. The presence of individual seals near the project led to three delays and two shutdowns, totaling 29 minutes and 26 seconds. Table 3-6 presents harbor seal observations.

**Table 3-6. Pacific Harbor Seal Observations (not including resights).**

Month	Days Monitored	Indiv. Observed	Obs.	Group Size			Avg. Indiv./ Day	Observer Hrs.	Obs./ Observer Hrs.
				Mean	Min	Max			
March	11	13	10	1.3	1	2	1.18	181:26:50	0.055

**Abbreviations:** Indiv. = Individuals; Obs. = Observations; Avg. = Average; Hrs. = Hours

### 3.2.4 Delays and Shutdowns During Monitoring Efforts

A total of three delays (Table 3-7) and two shutdowns (Table 3-7; see Figure 3-1 and Figure 3-2) occurred during the monitoring efforts, all due to Pacific harbor seals. The first delay lasted over 11 minutes, while the subsequent two delays lasted just under one minute each. Similarly, one shutdown lasted under one minute while the other lasted 15 minutes and 15 seconds.

### 3.2.5 Distance and Bearing

The distances and bearings of each marine mammal observed during pile installation or demolition are provided in Appendix A.

**Table 3-7. Delays and Shutdowns in Project Activities Due to Protected Species Observed Within the Shutdown Zone at Pier 6.**

Date	Species	No. of Individ.	Start	Stop	Duration	Activity	Description
3/11/2024	PHS	1	12:13:30	12:28:45	00:15:15	Shutdown IPD 24-inch Octagonal Concrete Pile	At 11:58:00, the crew conducted a soft start sequence on Pile 4 before beginning IPD at 12:00:50. The crew stopped briefly at 12:01:28 and resumed at 12:04:10. After approximately 441 hits, a single PHS surfaced approximately 26 m (85 ft) southeast of Pile 4 (within the PHS shutdown zone) at 12:13:30 for 2-3 seconds before diving towards the pile being driven resulting in Level B Take. As soon as it surfaced, Command issued a shutdown over the radio. The crew chief repeated the order, and driving was stopped. Hydro-jetting resumed almost immediately, but all other activities ceased for 15 minutes while the monitors searched for the PHS. Since it did not reappear, and for extra caution, the Command PSO instructed the crew to conduct another full soft start sequence before resuming driving. The second soft start began at 12:28:46. No further sightings of the PHS occurred for the rest of the day.
3/13/2024	PHS	1	10:16:01	10:27:21	00:11:20	Delay IPD 24-inch Octagonal Concrete Pile	After an IPD session of 28 hits on Pile 11 was complete, the command immediately issued a delay a 10:16:01 to monitor a PHS that appeared shortly after impact pile driving had stopped. Although the seal did not enter the shutdown zone, this delay was requested to ensure it was not swimming towards the area. When the animal was observed leaving the area, IPD resumed at 10:27:22.
3/20/2024	PHS	1	11:48:50	11:49:47	0:00:57	Delay IPD 14-inch Square Concrete Pile	After an ISS sequence on Pile 30, the construction contractor performed impact pile driving on Pile 30 for approximately 30 seconds starting at 11:47:14 AM. During the subsequent Pre-/Post- period in which the crew were moving a hose to continue impact pile driving, an adult Pacific harbor seal surfaced at the eastern edge of the floating docks south of Pier 302 (see Map 3-2), and dove in the direction of Pile 30. The Pacific harbor seal entered the shutdown zone, and a delay was called at 11:48:50. The Pacific harbor seal was subsequently observed north of Pier 302, 60-80 ft from shore, outside of the shutdown zone, and the delay was ended at 11:49:47. Impact pile driving resumed at 11:52:00.
3/20/2024	PHS	1	11:52:10	11:53:05	0:00:55	Shutdown IPD 14-inch Square Concrete Pile	After six hits from the impact hammer, the Pacific harbor seal surfaced for a moment just north of the crane barge and then dove again in the direction of Pile 30, a shutdown was immediately called at 11:52:10, though four more hits occurred as the machinery was being shutdown. The animal was presumed to be, but not observed, within the shutdown zone. Then after less than one minute the Pacific harbor seal resurfaced again near Pier 160 outside of the IPD ZOI and swam showing no signs of aberrant behavior. As the animal was both outside of the Shutdown Zone and ZOI for the pile, the Shutdown was ended at 11:53:05.
3/20/2024	PHS	1	11:53:06	11:54:05	0:00:59	Delay IPD 14-inch Square Concrete Pile	After the Shutdown (discussed immediately above) the command position had the construction contractor hold IPD at 10:53:06 to ensure the animal would not return. It swam northwest along the surface for approximately 30 seconds before diving below Pier 160 where the Pier connects to the shore. After a brief wait to confirm that it would not be returning, the command gave the crew the all-clear to resume work at 11:54:05. NOTE: The seal returned well after the cessation of IPD and foraged in the area around Pier 302 for a few minutes before swimming away. It appears superficially that the seal might have been purposely swimming toward the pile as it was being driven, similar to the shutdown/Take event on March 11.

**Abbreviations:** PHS = Pacific harbor seal; IPD = Impact Pile Driving; ZOI = Zone of Influence; PSO = Protected Species Observer; m = meters; ft = feet

### 3.2.6 Environmental Data

Six-minute tide data was accessed from NOAA's U.S. Tsunami Program Coastal Water Level Data Inventory (NOAA 2024) and matched to each animal observation. Table 3-8 presents the numbers of individuals observed during ebb and flood tides observed for each species.

**Table 3-8. Individuals Observed by Tidal Cycle.**

Species	Indiv. Observed (Ebb)		Indiv. Observed (Flood)		Indiv. Observed
California Sea Lion	29	49%	18	29%	47
Coastal Bottlenose Dolphin	1	2%	-	-	1
Pacific Harbor Seal	8	13%	5	8%	13
<b>Grand Total</b>	<b>38</b>	<b>62%</b>	<b>23</b>	<b>38%</b>	<b>61</b>

**Abbreviation:** Indiv. = Individuals

For each observation, PSOs collected Beaufort sea state (Table 3-9), visibility (Table 3-10), and sky cover (Table 3-11). The tables below summarize the information for these environmental variables.

**Table 3-9. Individuals Observed by Beaufort Sea State.**

Beaufort Sea State	0	1	2	3	4	Total Indiv. Observed
California Sea Lion	3	20	24	-	-	47
Coastal Bottlenose Dolphin	-	-	1	-	-	1
Pacific Harbor Seal	-	10	3	-	-	13
<b>Grand Total</b>	<b>3</b>	<b>30</b>	<b>28</b>	<b>-</b>	<b>-</b>	<b>61</b>
<b>Percentage of Total</b>	<b>5%</b>	<b>50%</b>	<b>45%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

**Abbreviation:** Indiv. = Individuals

**Table 3-10. Individuals Observed by Visibility.**

Beaufort Sea State	Excellent (>20 km)	Good (10-20 km)	Moderate (5-10 km)	Poor (0.5-5 km)	Bad (<0.5 km)	Total Indiv. Observed
California Sea Lion	11	26	9	1	-	47
Coastal Bottlenose Dolphin	-	1	-	-	-	1
Pacific Harbor Seal	-	6	5	2	-	13
<b>Grand Total</b>	<b>11</b>	<b>33</b>	<b>14</b>	<b>3</b>	<b>-</b>	<b>61</b>
<b>Percentage of Total</b>	<b>18%</b>	<b>54%</b>	<b>23%</b>	<b>5%</b>	<b>0%</b>	<b>100%</b>

**Abbreviations:** Indiv. = Individuals; km = Kilometer(s)

**Table 3-11. Individuals Observed by Sky Cover.**

Sky Cover	Clear	Partly Cloudy	Cloudy	Overcast	Hazy	Fog	Total Indiv. Observed
California Sea Lion	8	27	4	7	1	-	47
Coastal Bottlenose Dolphin	-	1	-	-	-	-	1
Pacific Harbor Seal	1	4	6	2	-	-	13
<b>Grand Total</b>	<b>9</b>	<b>32</b>	<b>10</b>	<b>9</b>	<b>1</b>	<b>-</b>	<b>61</b>
<b>Percentage of Total</b>	<b>14%</b>	<b>53%</b>	<b>16%</b>	<b>15%</b>	<b>2%</b>	<b>0%</b>	<b>100%</b>

**Abbreviation:** Indiv. = Individuals

### 3.3 Summary of Observed Level B Take (March 1, 2024, to March 20, 2024)

Marine Mammal Protection Act Level B Take at Pier 302 has been significantly less than authorized under the IHA. As of now, the total Level B Take number for California sea lions is 4, representing only 0.83% of the total authorized Take for California sea lions (Table 3-12). While two Pacific harbor seals entered the shutdown zone during impact pile driving, immediately resulting in a shutdown, subsequent monitoring suggested no evidence of Level A Take. These two Pacific harbor seals are recorded as Level B Take, and are presented as such in Table 3-12. These two Level B Takes represents 6.25% of the total allotted Take for Pacific harbor seals. The six total individuals that have been incidentally harassed account for 9.8% of the total in-water individuals (n=61) observed thus far.

**Table 3-12. Summary of Total Authorized and Observed Level B Take.**

Species	Total Number of Animals Observed in the Water		Authorized Level B “Take” Total	Observed Level B “Take” Total Individuals (Sightings)
	Indiv.	Sightings		
California sea lion	47	35	480	4 (2)
Coastal bottlenose dolphin	1	1	32	0 (0)
Pacific harbor seal	13	10	32	2 (2)

**Abbreviation:** Indiv. = Individuals

The monitoring protocols have proven effective in allowing comprehensive observation of the monitoring zone during IPD. With reference to the two shutdowns that occurred on 11 March and 20 March, we believe that there was no evidence of Level A Take, i.e. injury or mortality as a result of the project activities for the following reasons:

- The project strictly adhered to the prescribed mitigation measures, including constant monitoring of shutdown zones and implementation of soft start procedures. These measures were designed to minimize the risk of injury to marine mammals.
- Continuous monitoring by trained observers ensured that any marine mammals entering the vicinity of the construction area were promptly detected. This allowed for immediate implementation of delay or shutdown procedures when necessary, preventing any potential for Level A Take.
- There were two instances where marine mammals entered the shutdown zones during impact pile driving. In each case, operations were halted immediately, effectively preventing any harm to the animals.
- There were no recorded instances of injury or mortality. This absence of Level A Take is a positive indication that the mitigation measures and monitoring efforts were successful.
- The monitoring team remained vigilant and responsive throughout the project, ensuring that all protective measures were consistently applied.

Table 3-13 presents the total number of Takes by construction activity as of 20 March 2024. Since all pile demolition to date has been conducted via dead pull, there was no potential for underwater sound to impact animals covered under this IHA. All observed Takes occurred during impact pile driving.

**Table 3-13. Number of Takes by Construction Activity**

Construction Activity	Vibratory Pile Installation	Impact Pile Driving
Number of Takes	N/A	6
Percentage of Total Take	N/A	100%

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## 4.0 Future In-Water Project Activities

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The remaining in-water pile installation will consist of seventeen 6-inch round steel piles. The planned pile installation method is to use the vibratory hammer, with expected duration of approximately four days. The work is planned to start in the second half of September 2024, after the end of the California least tern nesting season. Because these activities may occur after the current IHA time period (01 October 2023 to 30 September 2024), the Navy will request a one-year renewal of the current IHA, per provisions outlined in the current IHA permit. While this work is expected to be completed in Fall 2024, this renewal would extend the IHA until 30 September 2025.

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## 5.0 References

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- Collins Engineers, Inc. 2018. Warfront Facilities Inspections & Assessments at Navy Base Point Loma. Section 3.4 - Pier 302. July 2018. 38 pp.
- Merkel and Associates, Inc. 2022. Incidental Harassment Authorization Application for The Pier 302 Replacement Project At Naval Information Warfare Center Pacific Bayside Complex On Naval Base Point Loma October 1, 2023 Through September 30, 2024.
- National Oceanic and Atmospheric Administration (NOAA). 2024. Tsunami Capable Tide Stations. Available online at: <https://tidesandcurrents.noaa.gov/tsunami/>. Last Accessed March 30, 2024.
- National Marine Fisheries Service (NMFS). 2018. 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.1): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. U.S. Department of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-59, 167 pp.
- National Marine Fisheries Service (NMFS). 2020. Companion User Spreadsheet to: Technical Guidance for Assessing the Effects of Anthropogenic Noise on Marine Mammal Hearing: Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts (Version 2.0). U.S. Department of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-59, 167 pp.

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## Appendix A: Distances and Bearings to Animals Observed During Active Construction

**Table A-1. Distance from in-water activities to marine mammals, and distance from the marine mammal to the observation point.**

Species	Pile No.	Activity	Distance to Activity (m)	Bearing to Animal from Activity (Deg)	Distance to Observer (m)	Bearing to Observer from Animal (Deg)
California bottlenose dolphin	-	Pre-/Post-	-	-	111.4	28
California sea lion	5 (24-inch Octagonal Concrete)	IPD	152.0	113	171.9	289
California sea lion	3 (24-inch Octagonal Concrete)	IPD	170.0	206	57.1	3
California sea lion	-	Pre-Con	-	-	192.2	353
California sea lion	-	Pre-/Post-	-	-	171.3	307
California sea lion	-	Pre-/Post-	-	-	66.5	307
California sea lion	-	Pre-/Post-	-	-	144.5	299
California sea lion	-	Pre-/Post-	-	-	312.6	301
California sea lion	-	Pre-/Post-	-	-	156.2	333
California sea lion	-	Pre-/Post-	-	-	160.4	47
California sea lion	-	Pre-/Post-	-	-	85.5	334
California sea lion	-	Pre-/Post-	-	-	60.1	263
California sea lion	-	Pre-/Post-	-	-	104.3	356
California sea lion	-	Pre-/Post-	-	-	15.7	8
California sea lion	-	Pre-/Post-	-	-	49.2	8
California sea lion	-	Pre-/Post-	-	-	94.6	122
California sea lion	-	Pre-/Post-	-	-	21.8	32
California sea lion	-	Pre-/Post-	-	-	69.2	41
California sea lion	-	Pre-/Post-	-	-	88.4	294
California sea lion	-	Pre-Con	-	-	295.6	281
California sea lion	-	Pre-/Post-	-	-	285.1	350
California sea lion	-	Pre-/Post-	-	-	249.0	290
California sea lion	-	Pre-/Post-	-	-	159.8	254
California sea lion	-	Pre-/Post-	-	-	171.9	355
California sea lion	-	Pre-/Post-	-	-	172.0	305
California sea lion	-	Pre-/Post-	-	-	157.9	4
California sea lion	-	Pre-/Post-	-	-	22.2	99
California sea lion	-	Pre-/Post-	-	-	183.6	297
California sea lion	-	Pre-/Post-	-	-	110.5	314
California sea lion	-	Pre-/Post-	-	-	140.8	43
California sea lion	-	Pre-/Post-	-	-	115.5	338
California sea lion	-	Pre-Con	-	-	20.2	297
California sea lion	-	Pre-/Post-	-	-	4.9	74
California sea lion	-	Pre-/Post-	-	-	53.4	342
California sea lion	-	Pre-/Post-	-	-	289.1	4
California sea lion	-	Pre-/Post-	-	-	173.4	293
California sea lion	-	Pre-/Post-	-	-	46.0	348

Species	Pile No.	Activity	Distance to Activity (m)	Bearing to Animal from Activity (Deg)	Distance to Observer (m)	Bearing to Observer from Animal (Deg)
Pacific harbor seal	4 (24-inch Octagonal Concrete)	IPD	20.1	161	29.7	272
Pacific harbor seal	30 (14-inch Square Concrete)	IPD/Shutdown	36.7	59	77.8	270
Pacific harbor seal	-	Pre-/Post-	-	-	87.4	70
Pacific harbor seal	-	Pre-/Post-	-	-	101.6	23
Pacific harbor seal	-	Pre-/Post-	-	-	103.3	243
Pacific harbor seal	-	Pre-/Post-	-	-	28.8	314
Pacific harbor seal	-	Delay	-	-	101.7	16
Pacific harbor seal	-	Pre-/Post-	-	-	48.9	16
Pacific harbor seal	-	Pre-/Post-	-	-	72.3	353
Pacific harbor seal	-	Pre-/Post-	-	-	72.3	355

**Abbreviations:** IPD = Impact pile driving; Pre-Con = Pre-construction monitoring; Pre-/Post- = Pre-/Post-construction monitoring.