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Leah Davis
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Subject: Annual Marine Mammal Monitoring Report - Alameda Marina Shoreline Improvement Project 2020-2021

Dear Leah Davis,

Please see attached the Marine Mammal Monitoring Report for the Alameda Marina Shoreline Improvement Project. This report summarizes monitoring conducted from August 1, 2020 to July 31, 2021 in accordance with the Incidental Harassment Authorization (IHA). No Level A take was recorded during the monitoring period and Level B take for all species was within thresholds prescribed by the IHA.

We trust that this report contains sufficient information for your needs. If you have any questions, please contact me at the contact information listed below.

Best Regards,

Jenerro Lockhart | Principal Ecologist
Alluvion Biological Consulting

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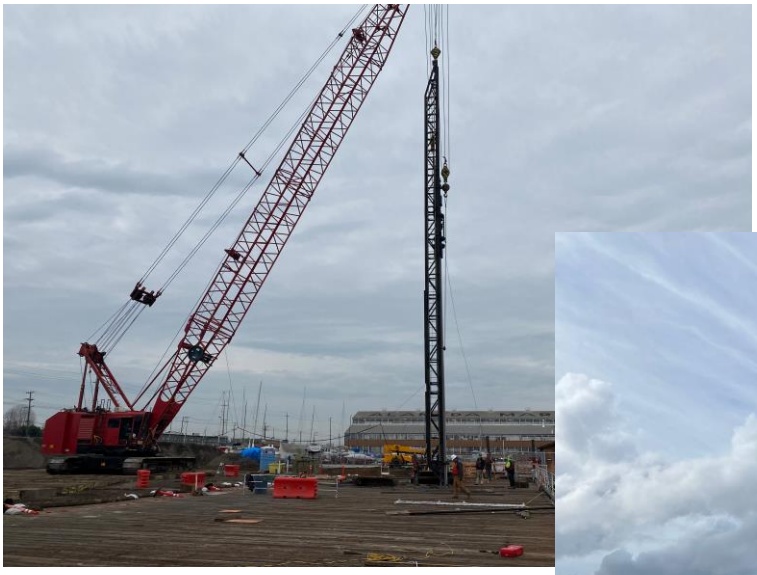
Alameda Marina Shoreline Improvement Project- Marine Mammal Monitoring 2020-2021 Annual Report



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October 15, 2021, First Draft
December 2, 2021, Address NMFS Comments

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Introduction

The Alameda Marina Shoreline Improvement Project (Project) is located on a 20.9-acre area along the Oakland Estuary (Estuary) in the City of Alameda, California (Figure 1). The aim of the Project is to update existing marina facilities, create a new waterfront park, and improve seismic and climate resiliency. Project activities include riprap removal and placement, seawall maintenance, wharf refurbishment, outfall installation, marina reconfiguration, and a boat hoist installation and removal, and other activities associated with mobilization and demobilization. In-water pile driving, both with impact and vibratory hammers, and pile removal are integral to many phases of construction.

The Marine Mammal Protection Act (MMPA) prohibits the "take" of marine mammals including harassment. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 et seq.) allow, upon request, the incidental taking of small numbers of marine mammals by parties who engage in a specified activity within a specified region, if the taking is limited to harassment. Authorizations for incidental take are only granted if National Marine Fisheries Service (NMFS) finds that the take will have negligible impact on the species and will not have unmanageable adverse impact on the greater population of the species. Six species of marine mammals were included for Level B incidental harassment authorizations (IHAs): Common bottlenose dolphin (*Tursiops truncates*), harbor porpoise (*Phocoena phocoena*), California sea lion (*Zalophus californianus*), Northern fur seal (*Callorhinus ursinus*), Northern elephant seal (*Mirounga angustirostris*), and harbor seal (*Phoca vitulina*).

Marine mammal monitoring was conducted by NMFS-approved marine mammal observers (MMOs) for all in-water pile driving and pile removal. This monitoring was conducted in coordination with a hydroacoustic monitoring team (see attached hydroacoustic report).

The objectives of marine mammal monitoring were as follows:

- Mitigate impacts on marine mammals by monitoring the presence of these species within the project area and requesting shut-down of hammer operation when marine mammals were seen within specified safety zones representing distances close enough to potentially cause physical injury.
- Document the number of animals of each species present in the vicinity of sound transmissions.
- Evaluate the reactions of marine mammals to the sound transmissions at different distances from construction.

Figure 1 - Aerial map of Alameda Marina Project (Haase 2019)

Methods

Monitoring Zones

Predetermined Level A Marine Mammal Exclusion Zones (MMEZs) and Level B Marine Mammal Monitoring Zones (MMZs) were prescribed by the marine mammal monitoring plan for this project (Haase, 2019). These zones were employed for the entirety of monitoring unless modification was deemed necessary given hydroacoustic data. In all cases, these zones were more conservative than those initially prescribed (i.e., larger in radius). Tables 1 and 2 outline the Level A MMEZs and the Level B MMZs employed during monitoring.

Table 1 - Distances in meters to Level A and Level B harassment threshold criteria for vibratory pile driving.

Pile Description	Maximum Piles Installed per Day	Level A/PTS Shutdown Zone		Level B (120 dB RMS) Behavioral Monitoring Zone for All Species
		Porpoise (HF)	Dolphin (MF), Phocid (PW), & Otariid (OW)	
36-in Steel Pipe Pile	2	25	10	21,544
30-in Steel Pipe Pile	1	25	10	21,544
W 40x99 Wide Flange Beam	4	10	10	2,154
PZC 13, PZ 27, and PZ 35 Steel Sheet Pile	20	10	10	4,642
16-in Timber Pile Removal	10	10	10	1,359
12-in Concrete Pile Removal	10	10	10	2,154

Table 2 - Distances in meters to Level A and Level B harassment threshold criteria for impact pile driving.

Pile Description	Attenuation	Number Piles Installed per Day	Level A/PTS Shutdown Zone			Level B (160 dB RMS) Behavioral Monitoring Zone for All Species
			Porpoise (HF)	Dolphin (MF) & Otariid (OW)	Phocid (PW)	
36-in Steel Pipe Pile	Attenuated	1	260	10	120	541
		2	400	25	190	
30-in Steel Pipe Pile	Attenuated	1	140	25	70	341
W 40x99 Wide Flange Beam	Attenuated	4	300	25	140	631
24-in Square Concrete Pile	Unattenuated	4	140	25	70	117
16-in Square Concrete Pile	Unattenuated	4	30	25	25	25
14-in Square Concrete Pile	Unattenuated	4	30	25	25	25

General Approach

Impact driving and vibratory driving were monitored by three MMOs. The lead observer (MMO 1) was stationed at the active pile driving rig or at the best vantage point practicable to monitor the MMEZs for marine mammals and implement shutdown and delay procedures when applicable through communication with the crane and hammer operators (Figure 2). MMO 1 was in constant radio contact with the second MMO (MMO 2) and third MMO (MMO 3) for the purposes of tracking and monitoring observed marine mammals. MMO 1 monitoring was predominately conducted from the Promenade Wharf (~5m elevation, Figure 3), with some monitoring conducted from the balcony of Building 14 (~15m elevation). These monitoring stations provided complete visual coverage of all MMEZs. Portions of the MMZs within Alameda Marina were obscured from MMO 1 by vessels parked in the surrounding boat slips. MMO 2 and MMO 3 were able to provide supplemental coverage of the obscured MMZs from their respective monitoring stations.

The second MMO (MMO 2) was positioned at the terminus of Pier 1 on a platform approximately .3 meters above water level and, depending on the location of construction activity, 170m-200m from the work area. This position provided and unobstructed view of the estuary channel between the marina and the Coast Guard island, all Level A MMEZs and most Level B MMZs. As with MMO 1, MMZs within Alameda Marina were obstructed from view to MMO 2 due to parked vessels, however MMO 1 and MMO 3 provided supplemental visual coverage of MMZs within the marina.

A third MMO (MMO 3) was used to assist with observation of the Level B MMZs for vibratory driving (11/18/2020 – 11/30/2020 and 7/16/2021-7/19/2021) and for supplemental MMEZ and MMZ coverage during impact driving (1/4/2021 - 1/13/2021). During vibratory driving, MMO 3 was positioned at the terminus of pier 7 on a platform approximately .3 m above water level, with an unobstructed view of the estuary channel. Depending on the location of driving, this monitoring position was 250m - 290m from the driving locations. From this position, MMO 3 was also able to monitor areas of the marina that were obstructed from view to the other MMOs by vessels parked in slips. During impact driving, MMO 3 was positioned on the balcony of Building 14 (~15m elevation, 100-150m from driving) which provided supplemental coverage of the MMEZs and MMZs within the marina.

During vibratory driving, the use of three MMOs, rather than two (as recommended in the IHA) was found to allow for greater visual coverage of the MMZs. This was especially true for MMZs within the marina, as vessels parked in slips created numerous visual obstacles, making it difficult to effectively evaluate MMZs within the marina for mammal presence. Further, the monitoring station suggested for MMO 2 in the IHA (barge docked at pier 5) was no longer present and the vessel replacing it was not accessible to the monitoring team.

Conversely, the presence of MMO 3 during impact pile driving for 16-inch concrete piles was found to be largely redundant given the relatively compact monitoring zones for this work. All MMEZs and MMZs were effectively covered by MMO 1 and MMO 2 during this work. Future impact driving for similar pile types will likely only necessitate 2 MMOs.

Figure 2 - MMO stations for pile driving/removal activities

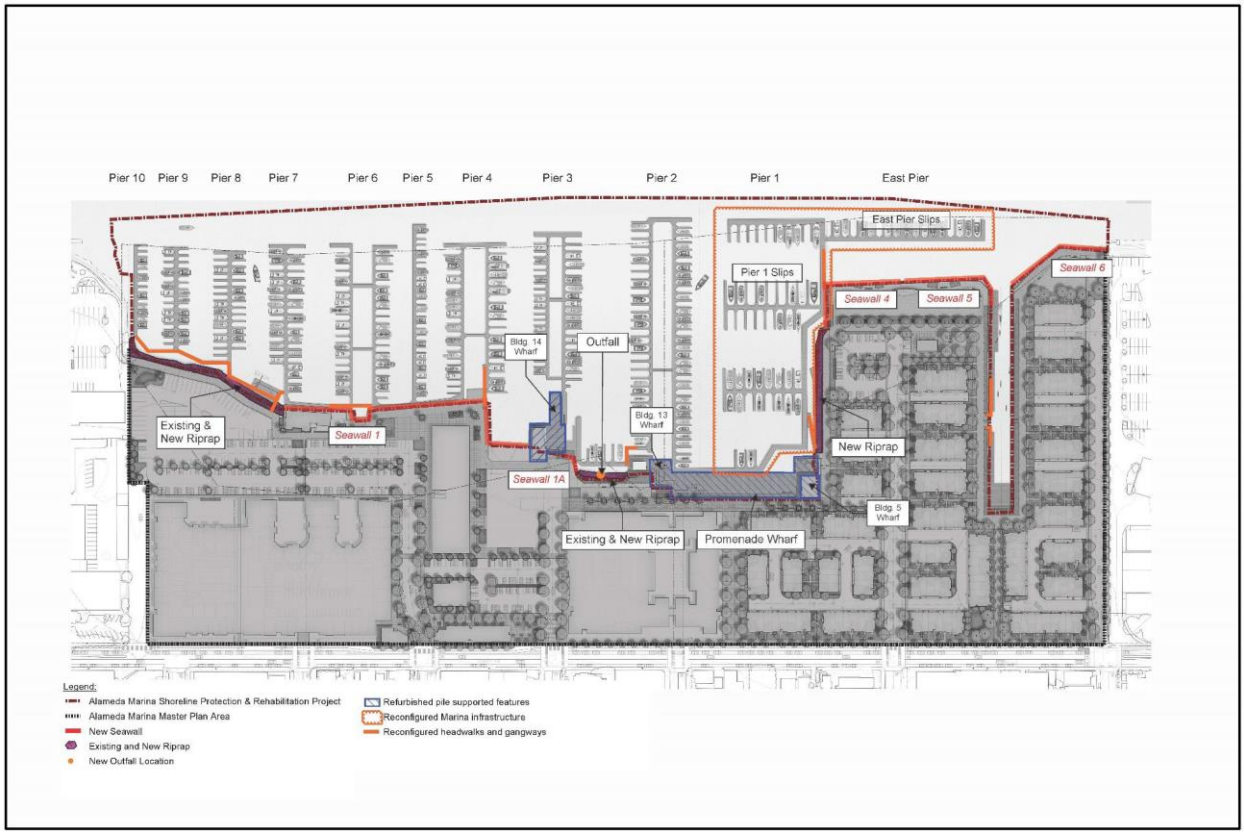

Figure 3 - Project landmarks and construction/monitoring locations (Illingworth and Rodkin, 2020).

Monitoring was conducted daily for all pile driving activities and commenced, at minimum, 30 minutes prior to the on-set of pile driving activities through 30 minutes post-completion of pile driving activity. Pile driving did not commence until MMO 1 declared the MMEZs clear of all marine mammals. Observations were made using binoculars (10x42 or similar), spotting scopes, and the naked eye during daylight hours.

When a marine mammal was observed entering or within an MMEZ, pile driving was halted until the animal left voluntarily and was visually confirmed outside of the MMEZ. MMOs were instructed to call for a shut-down when a marine mammal was seen inside the MMEZ or close enough to the MMEZ that given measurement-error could be within the MMEZ. Shut-down was also considered when animals were outside the MMEZ, but it appeared likely that the direction of travel of the animal would result in it being within the MMEZ shortly. If the animal could not be visually confirmed outside of the shutdown zone, work was allowed to recommence after 15 minutes had passed without subsequent detections of marine mammals in the MMEZ.

Each MMO recorded data on all mammal observations continuously throughout the monitoring day on standardized datasheets. Datasheets included observer on duty and weather conditions (wind speed, cloud cover, precipitation, visibility, etc.). For each sighting the time, species, group size, surface behavior and orientation were recorded.

Distances to sightings were determined using range finders or estimated using known distances from nearby landmarks. This was then used to evaluate whether a sighting was within an MMZ or MMEZ.

Several measures were taken to prevent overcounting mammals within the MMZs. All practicable measures were taken to identify distinctive features (e.g. color, age class, sexual dimorphism, scarring) of each marine mammal sighted. These features were communicated contemporaneously to the entire MMO team via radio during monitoring and recorded in datasheets. Further, MMOs communicated via radio in the field to alert adjacent MMOs of a mammal transiting into their field of view. This helped to prevent double counting of mammals between monitors. A mammal with no discernable distinctive characteristics was automatically categorized as a unique individual if no mammal sightings of that same species had been recorded in the prior 15 minutes.

Pile Driving Protocol

A soft start technique was employed during impact pile driving. At the beginning of each driving day, 1-3 reduced energy “dead blow” strikes were used followed by a 30 second pause in hammer operation. This process was repeated two more times before full strength hammer blows were allowed. This soft-start procedure was repeated throughout the day prior to any new driving following a 30 minute or greater period of inactivity.

Steel pipe piles and wide-flange beam piles were outfitted with bubble curtains to conform to the following standards:

1. The bubble curtain must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.
2. The lowest bubble ring must be in contact with the mudline for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent mudline contact. No parts of the ring or other objects shall prevent full mudline contact.
3. Air flow to the bubblers must be balanced around the circumference of the pile.

Monitoring Summary

Construction Summary

In total, 17 days of pile driving/removal were monitored by the MMO team. During this monitoring period two(2) 36” steel pipe piles, three(3) wide-flange beams, and 16 steel sheet piles were installed using a vibratory hammer. Further, 45 square concrete piles (16”) were installed with an impact hammer. Finally, 12 steel sheet piles and two(2) wide-flange beams were removed with a vibratory hammer. A daily breakdown of pile driving/removal can be found in Tables 7-10.

Environmental Conditions

Weather conditions during monitoring were favorable for detection and tracking of marine mammals (Table 11). Winds generally did not exceed 15mph, and Beaufort Sea states ranged from 0-2. Some precipitation was recorded during monitoring in January, however no pile

driving occurred within at least 30 minutes of the conclusion of precipitation. This allowed for a full 30 minutes of monitoring with unobstructed views prior to hammer activation.

Monitoring Zone Modification

Hydroacoustic data acquired in the field necessitated the alteration (i.e. expansion) of MMEZs on several occasions. (See accompanying hydroacoustic report). Tables 3 and 4 illustrate these changes. All expansions to MMEZs, once implemented, were maintained for the entirety of pile driving activity. Further, these expansions were also applied retroactively to previous monitoring where applicable. Level A zones were not expanded if said expansion would retroactively place an animal previously spotted in an MMZ (Level B take) into an MMEZ (Level A take).

Table 3 - Adjusted distances in meters to Level A and Level B harassment threshold criteria for vibratory pile driving. Modifications were made in response to hydroacoustic data collected during construction.

Pile Description	Maximum Piles Installed per Day	Level A/PTS Shutdown Zone		Level B (120 dB RMS) Behavioral Monitoring Zone for All Species
		Porpoise (HF)	Dolphin (MF), Phocid (PW), & Otariid (OW)	
36-in Steel Pipe Pile	2	250*	10*	21,544
PZC 13, PZ 27, and PZ 35 Steel Sheet Pile	20	10**	10**	4,642

*Increased Level A shutdown zones on 11/19/20 based on hydroacoustic data collected during driving.
** Increased Level A shutdown zones on 11/24/20 based on hydroacoustic data collected during driving.

Table 4 - Adjusted distances in meters to Level A and Level B harassment threshold criteria for impact pile driving. Modifications were made in response to hydroacoustic data collected during construction.

Pile Description	Attenuation	Number Piles Installed per Day	Level A/PTS Shutdown Zone			Level B (160 dB RMS) Behavioral Monitoring Zone for All Species
			Porpoise (HF)	Dolphin (MF) & Otariid (OW)	Phocid (PW)	
16-in Square Concrete Pile	Unattenuated	10*	98.3*	25	44.2*	25

* Increased Level A shutdown zones on 1/5/21 based on hydroacoustic data collected during driving to accommodate increased pile production.

Mammal Observations Within MMZs

Cumulatively, 77 marine mammals were observed (includes two re-sightings) by the MMO team during monitoring (Tables 12-19). These represented two species of marine mammals. Harbor seals were the most frequently sighted with occasional California sea lion sightings. No

cetaceans (e.g. harbor porpoise) were observed. Of these, 21 were observed within MMZs during pile driving/removal (Table 6).

It is possible that the total recorded count of observed marine mammals is higher than the actual number of individual animals. Identification of distinctive features on many animals was difficult given the brief periods of time many of them surfaced. Additionally, several instances of recorded sightings, greater than 15 minutes apart, were made for animals with no discernable distinctive features surfacing in the same general area.

Visual coverage of MMZs during impact driving is estimated to be at or near 100% given that the MMEZs and MMZs for all species could be tracked within Alameda Marina or immediately outside by the monitoring team. For vibratory driving of sheet, pipe, and wide-flange beams, the MMZs are effectively identical; visual coverage of the vibratory MMZs was approximately 80% given that the MMZs extended beyond the coast guard island in some cases and out of view of the monitors. Therefore, we estimate that the total number of Level B takes for this year is 1.2x the recorded count for vibratory driving and 1x for impact driving. Applying these coefficients to the observed mammal counts increases our assumed Level B take to 24 harbor seals and 1.2 California sea lions

Orientation And Behavior of Marine Mammals

Most marine mammals observed within MMZs and MMEZs were either in transit or resting in place. Of the 21 mammal sightings in MMZs during pile driving/removal, only three were observed at the transition from hammer inactivity to hammer activation. Only one of these animals demonstrated any change of behavior once the hammer was activated (resting to diving) while the remaining two demonstrated no change in behavior. Most of the sightings within the MMZ occurred while the impact or vibratory hammer were fully active or fully inactive, making it hard to evaluate whether animals were reacting to the sounds generated by construction. No marine mammals demonstrated obvious signs of distress (e.g. erratic motion, flailing) and direction of travel did not appear to be influenced by pile driving operation.

No groups or pods of mammals of three individuals or greater were observed during monitoring. Most mammals were solitary, but pairs of harbor seals were occasionally observed foraging together.

Shut-Downs for Marine Mammal Mitigation

Pile driving operations were requested to be suspended on five occasions related to the presence of marine mammals (Table 5). These suspensions were all in the form of a hammer activation delay. No instances of immediate hammer shutdown were necessary during the monitoring period. All requested suspensions were due to animals present in or in close proximity to MMEZs. All suspensions were for harbor seals.

Table 5 - Cases where pile driving suspensions were requested due to marine mammal occurrence.

Date	Time	Resume Driving	Hammer Type	Pile Type	Delay or Shutdown?	Reason for Request	Comments
1/5/21	13:40	13:55	Impact	16-inch concrete	Delay	Proximity of Harbor Seal <30m	Pile driving resumed after 15 minutes of no further sightings.
1/5/21	14:07	14:14	Impact	16-inch concrete	Delay	Proximity of Harbor Seal <30m	Driving had briefly paused for adjustments when seal first spotted. Pile driving resumed after seal was tracked out of MMEZ
1/6/21	11:22	11:26	Impact	16-inch concrete	Delay	Proximity of Harbor Seal <40m	Pile driving resumed after seal was tracked out of MMEZ
1/6/21	1409	14:24	Impact	16-inch concrete	Delay	Proximity of Harbor Seal <30m	Pile driving resumed after 15 minutes of no further sightings.
1/7/21	15:57	16:22	Impact	16-inch concrete	Delay	Proximity of Harbor Seal <30m	Pile driving resumed after seal was tracked out of MMEZ

Conclusions and Recommendations

The species encountered during monitoring were consistent with what would be expected in the region. Harbor seals are considered the most common marine mammals in the estuary channel near the marina. The sightings of California sea lions near the project are also in line with expectations.

No Level A take was recorded for the entirety of the monitoring period and Level B harassment of marine mammals was well within the limits set forth within the IHA for Year 1 (68 for harbor seal and 14 for California sea lion). Delays of pile driving/removal activities proved effective in preventing five instances of Level A take for 4 harbor seals.

Table 6 - Mammals observed within MMZs grouped by operational status and type of pile driving. These results reflect data unadjusted by the correction factor of 1.2x.

Species	No Driving or outside of MMZ	Vibratory Pipe Pile Install	Vibratory Sheet Pile Install	Vibratory Sheet Pile Removal	Vibratory Wide-Flange Beams Install	Vibratory Wide-Flange Beams Removal	Impact 16-inch Concrete Install	Total Observed	Level B Take Observed
Harbor Seals	38	0	17	3	0	0	0	58	20
California Sea Lion	2	0	1	0	0	0	0	3	1
Unknown Pinniped	0	0	0	0	0	0	0	0	0
Total	55	0	19	3	0	0	0	77	21

Table 7 - In-water pile driving activity during each monitoring day

Date	Monitoring Begin	Monitoring End	Vibratory or Impact Hammer	Pile Type	# of Piles driven	Pile driving start	Pile Driving stop	Pile Driving Location
11/18/2020	09:15	15:40	Vibratory	36" Steel Pipe	1	14:06	15:10	Building 13 Wharf
11/19/2020	07:00	15:30	Vibratory	36" Steel Pipe	1	08:02	11:00	Building 13 Wharf
11/20/2020	07:15	15:15	Vibratory	Wide Flange Beam	3	10:33	11:20	Slope 2 Cofferdam
						11:50	12:13	
						12:57	14:45	
11/23/2020	07:00	17:07	Vibratory	Steel Sheet Pile	1	15:24	16:37	Slope 2 Cofferdam
11/24/2020	07:22	17:17	Vibratory	Steel Sheet Pile	6	08:35	09:24	Slope 2 Cofferdam
						10:08	10:24	
						11:00	11:55	
						12:40	13:30	
						14:30	14:40	
						15:20	15:41	
						16:09	16:47	
11/25/2020	07:00	15:52	Vibratory	Steel Sheet Pile	6	07:23	07:58	Slope 2 Cofferdam
						08:28	08:47	
						09:20	11:04	
						11:42	13:20	
						14:22	14:47	
						15:21	15:52	
11/30/2020	07:00	12:30	Vibratory	Steel Sheet Pile	3	07:50	08:56	Slope 2 Cofferdam
						09:56	10:08	
						10:54	12:00	

Table 8 - In-water pile driving activity during each monitoring day pt. 2

Date	Monitoring Begin	Monitoring End	Vibratory or Impact Hammer	Pile Type	# of Piles driven	Pile driving start	Pile Driving stop	Pile Driving Location
1/4/2021	07:21	17:04	Impact	Concrete 16-inch	1	15:51	16:34	Promenade Wharf
1/5/2021	07:24	16:44	Impact	Concrete 16-inch	5	08:03	08:36	Promenade Wharf
						09:27	10:15	
						11:21	11:42	
						13:55	14:36	
						15:39	16:14	
1/6/2021	07:24	16:09	Impact	Concrete 16-inch	5	08:12	09:05	Promenade Wharf
						10:31	11:07	
						11:26	11:38	
						13:18	13:46	
						14:24	14:48	
1/7/2021	07:24	16:54	Impact	Concrete 16-inch	8	08:09	08:32	Promenade Wharf
						08:52	09:02	
						09:37	10:04	
						10:56	11:06	
						11:46	11:59	
						13:21	13:36	
						14:14	14:35	
						15:22	15:33	
						16:22	16:29	

Table 9 - In-water pile driving activity during each monitoring day pt. 3

Date	Monitoring Begin	Monitoring End	Vibratory or Impact Hammer	Pile Type	# of Piles driven	Pile driving start	Pile Driving stop	Pile Driving Location
1/8/2021	07:24	16:26	Impact	Concrete 16-inch	7	08:16	08:39	Promenade Wharf
						09:14	09:38	
						10:16	10:34	
						11:09	11:30	
						13:41	13:51	
						14:28	14:55	
						15:30	15:56	
1/11/2021	07:24	15:50	Impact	Concrete 16-inch	6	8:28	8:39	Promenade Wharf
						8:51	8:59	
						9:18	9:50	
						10:17	10:47	
						11:49	12:28	
						14:29	15:20	
1/12/2021	07:24	17:06	Impact	Concrete 16-inch	6	8:24	8:53	Promenade Wharf
						10:19	11:04	
						11:37	12:02	
						13:45	14:08	
						15:00	15:33	
						16:07	16:36	

Table 10 - In-water pile driving activity during each monitoring day pt. *4*

Date	Monitoring Begin	Monitoring End	Vibratory or Impact Hammer	Pile Type	# of Piles driven	Pile driving start	Pile Driving stop	Pile Driving Location
1/13/2021	07:21	16:40	Impact	Concrete 16-inch	7	9:02	9:10	Promenade Wharf
						9:52	9:59	
						10:51	10:58	
						11:49	12:13	
						13:38	14:05	
						14:34	14:57	
						15:40	16:09	
7/16/2021	12:00	15:10	Vibratory	Sheet Pile (removal)	3	13:36	13:43	Slope 2 Cofferdam
						13:56	14:00	
						14:36	14:41	
7/19/2021	07:28	14:43	Vibratory	Sheet Pile (removal) and Wide-Flange Beam (removal)	9 sheet piles 2 WFB	07:58	07:59	Slope 2 Cofferdam
						08:19	08:21	
						08:43	08:45	
						09:14	09:19	
						09:44	09:47	
						10:10	10:13	
						10:34	10:37	
						10:57	11:02	
						11:16	11:20	
						13:30	13:39	
						13:59	14:13	

Table 11 - Environmental Conditions recorded at the beginning of each monitoring day

Date	Wind Speed (mph)	Beaufort	Visibility (%)	Cloud Cover (%)	Precipitation	Comments
11/18/2020	5-10	0-1	100	95	No	
11/19/2020	5-10	0-1	50-100	25	No	Fog in early morning allowed ~150m of visibility until clearing at 08:30
11/20/2020	5-10	0-1	100	25	No	
11/23/2020	0-5	0-1	100	0	No	
11/24/2020	0-5	0-1	100	0	No	
11/25/2020	0-5	1-2	100	25	No	
11/30/2020	0-5	0-1	100	0	No	
1/4/2021	10-15	1-2	50-100	100	Yes	Light rain ceased around 12:00, well before driving commenced
1/5/2021	0-5	0-1	100	25	No	
1/6/2021	0-5	0-1	100	70	Yes	Some light precipitation at 12:44, dissipated within 15-20 minutes
1/7/2021	0-5	0-1	100	30	No	
1/8/2021	0-5	0	100	75	No	
1/11/2021	0-5	0	100	15	No	
1/12/2021	0-5	0-1	100	75	No	
1/13/2021	0-5	0-1	100	80	No	
7/16/2021	0-5	0-1	100	75	No	
7/19/2021	0-5	0-1	100	5	No	

Table 12 - Marine Mammal Sightings grouped by monitoring day pt. 1

Date	First Sighted	Last Sighted	Species	Age Class	Sex	Initial Direction of Travel (Degrees)	Minutes Observed in Level B w/Hammer Active	Closest Distance from Work (Meters)	Behavior
11/18/2020	09:38	09:52	Harbor Seal	Adult	Unknown	180	0	150	Stationary at surface, looking around
11/19/2020	10:05	10:06	Harbor Seal	Adult	Unknown	330	1	300	Resting
11/23/2020	09:07	09:08	California Sea Lion	Juvenile	Unknown	315	0	250	Surfaced and was startled by presence of observer. Dove immediately afterwards and was next sighted 150 ft west of initial observation
	14:17	14:53	Harbor Seal	Adult	Unknown	110	0	375	transiting
	15:28	15:43	Harbor Seal	Adult	Unknown	110	15	700	Resting and milling
	15:45	15:57	Harbor Seal	Adult	Unknown	190	12	400	Initially transiting towards marina and then reversing direction and moving away from work.
	16:33	17:01	Harbor Seal	Adult	Unknown	90	4	300	Diving and surfacing in same area. Presumed foraging
11/24/2020	07:25	07:26	Harbor Seal	Adult	Unknown	180	0	300	Resting at surface
	07:38	07:38	Harbor Seal	Adult	Unknown	225	0	350	Resting at surface
	08:05	08:06	Harbor Seal	Adult	Unknown	270	0	475	Resting at surface
	08:52	08:52	Harbor Seal	Adult	Unknown	180	1	250	Resting at surface

Table 13 - Marine Mammal Sightings grouped by monitoring day pt. 2

Date	First Sighted	Last Sighted	Species	Age Class	Sex	Initial Direction of Travel (Degrees)	Minutes Observed in Level B w/Hammer Active	Closest Distance from Work (Meters)	Behavior
11/24/2020	11:40	11:40	Harbor Seal	Adult	Unknown	180	1	250	Resting at surface
	11:46	11:46	Harbor Seal	Adult	Unknown	90	1	250	Resting at surface
	11:53	11:54	Harbor Seal	Adult	Unknown	90	1	450	Resting at surface
	13:01	13:13	Harbor Seal	Adult	Unknown	270	12	700	slow travel east
	13:16	13:21	Harbor Seal	Adult	Unknown	90	5	400	Resting at surface then transited north
	13:34	13:34	Harbor Seal	Adult	Unknown	190	0	270	Resting at surface
	16:08	16:37	Harbor Seal	Adult	Unknown	90	29	270	Resting at surface then dove
11/25/2020	07:40	08:05	Harbor Seal	Adult	Unknown	90	18	300	slow travel east transitioning to resting at 250m from construction
	07:48	07:48	Harbor Seal	Adult	Unknown	270	1	400	resting
	08:07	08:08	Harbor Seal	Adult	Unknown	90	0	520	slow travel east
	08:22	08:22	Harbor Seal	Adult	Unknown	90	0	425	slow travel east
	08:52	09:23	Harbor Seal	Adult	Unknown	15	3	225	Initially surfaced next to MMO 2, was visibly startled by presence of MMO on pier. Dove and proceeded to move north out of the area

Table 14 - Marine Mammal Sightings grouped by monitoring day pt. 3

Date	First Sighted	Last Sighted	Species	Age Class	Sex	Initial Direction of Travel (Degrees)	Minutes Observed in Level B w/Hammer Active	Closest Distance from Work (Meters)	Behavior
11/25/2020	09:45	09:45	Harbor Seal	Adult	Unknown	15	1	350	resting
	11:01	11:01	California Sea Lion	Juvenile	Unknown	60	1	170	foraging in association with gulls
	14:05	14:08	Harbor Seal	Adult	Unknown	0	0	250	resting in water bottling in place
	14:54	14:54	Harbor Seal	Adult	Unknown	0	0	350	resting in water bottling in place
11/30/2020	07:27	07:27	Harbor Seal	Adult	Unknown	270	0	400	transiting
	08:16	08:16	Harbor Seal	Adult	Unknown	225	0	400	looking around
	10:19	10:26	Harbor Seal	Adult	Unknown	340	0	600	transiting
	10:29	10:46	Harbor Seal	Adult	Unknown	270	0	350	resting in westward orientation and then began swimming east
	11:02	11:59	Harbor Seal	Juvenile	Unknown	0	57	120	several attempted haul outs on pier one docks. two successful attempts, but quickly abandoned.
	11:03	11:03	Harbor Seal	Adult	Unknown	340	1	650	briefly surfaced then dove
	11:07	11:07	Harbor Seal	Adult	Unknown	270	1	350	transiting
	12:07	12:21	Harbor Seal	Juvenile	Unknown	Unknown	0	650	transiting

Table 15 - Marine Mammal Sightings grouped by monitoring day pt. 4

Date	First Sighted	Last Sighted	Species	Age Class	Sex	Initial Direction of Travel (Degrees)	Minutes Observed in Level B w/Hammer Active	Closest Distance from Work (Meters)	Behavior
1/4/2021	08:24	08:55	Harbor Seal	Adult	Unknown	180	0	150	looking at MM2
	13:45	14:11	Harbor Seal	Adult	Unknown	Unknown	0	180	foraging and looking around
	16:35	16:35	Harbor Seal	Juvenile	Unknown	225	0	170	Slow swimming
1/5/2021	07:30	07:36	Harbor Seal	Adult	Unknown	270	0	350	fast swimming
	07:43	10:15	Harbor Seal	Adult	Unknown	90	0	130	Looking around and slow swimming repeatedly surfacing just outside and immediately within the marina. Presumed foraging. No change in behavior as driving commenced.
	12:43	13:40	Harbor Seal	Adult	Unknown	225	0	40	Repeated dives and looking around at surface. Presumed foraging. Work delay necessary until 15 minutes of no further observations.
	13:45	13:45	Harbor Seal	Adult	Unknown	90	0	300	Looking around at surface briefly
	14:07	14:09	Harbor Seal	Adult	Unknown	0	0	30	Same animal from 1243 reappeared in Level A during pause in driving. Work delay necessary. Work resumed after animal tracked out of Level A.

Table 16 - Marine Mammal Sightings grouped by monitoring day pt. 5

Date	First Sighted	Last Sighted	Species	Age Class	Sex	Initial Direction of Travel (Degrees)	Minutes Observed in Level B w/Hammer Active	Closest Distance from Work (Meters)	Behavior
1/5/2021	15:34	15:35	Harbor Seal	Adult	Unknown	340	0	400	fast swimming midchannel of estuary
1/6/2021	07:27	08:00	Harbor Seal	Adult	Unknown	90	0	50	Milling, looking around
	07:50	08:14	Harbor Seal	Juvenile	Unknown	Unknown	0	130	Looking around, attempted haul out onto pier one complex (prior to driving). Moved out of area shortly after driving commenced
	07:53	08:03	Harbor Seal	Adult	Unknown	270	0	175	Slow swimming/transiting, diving repeatedly
	09:59	09:59	Harbor Seal	Adult	Unknown	270	0	225	resting at surface
	11:22	11:29	Harbor Seal	Juvenile	Unknown	110	0	40	Slow travel towards pile, work delayed until individual surfaced 150m from pile
	11:40	11:40	Harbor Seal	Juvenile	Unknown	270	0	30	Sam individual at 1122 Slow swimming towards pile shortly after pile driving concluded
	13:45	13:45	Harbor Seal	Adult	Unknown	0	0	125	resting at surface
	14:09	14:09	Harbor Seal	Adult	Unknown	270	0	30	briefly surfaced, looked around, then dove. Work delayed until 1424 after no further sightings
	14:20	14:20	Harbor Seal	Adult	Unknown	Unknown	0	200	briefly surfaced

Table 17 - Marine Mammal Sightings grouped by monitoring day pt. 6

Date	First Sighted	Last Sighted	Species	Age Class	Sex	Initial Direction of Travel (Degrees)	Minutes Observed in Level B w/Hammer Active	Closest Distance from Work (Meters)	Behavior
1/6/2021	14:54	14:54	Harbor Seal	Adult	Unknown	Unknown	0	95	briefly surfaced
	15:25	15:25	Harbor Seal	Juvenile	Unknown	Unknown	0	190	briefly surfaced
1/7/2021	07:24	08:12	Harbor Seal	Adult	Unknown	Unknown	0	90	Hauled out on Pier 1, dove into water and tracked out of marina (approximately 200m from pile)
	07:24	07:50	Harbor Seal	Juvenile	Unknown	Unknown	0	90	Hauled out adjacent to adult. Dove in prior to pile driving and was tracked out of marina approximately 250m from pile
	13:25	13:25	Harbor Seal	Adult	Unknown	90	0	300	Transiting briefly at surface
	14:56	15:03	Harbor Seal	Adult	Unknown	90	0	175	resting at surface with intermittent diving
	15:57	16:18	Harbor Seal	Juvenile	Unknown	180	0	30	Animal milling and looking around. Driving delayed until 1622 after no further sightings were made in Level A. Sighted at 1618 200m away from pile.
	16:44	16:50	Harbor Seal	Adult	Unknown	90	0	400	Diving and briefly surfacing, presumed foraging.
1/8/2021	08:03	08:03	Unknown Pinniped	Adult	Unknown	270	0	275	Only dorsal surface observed, unable to ID
	08:08	08:08	Harbor Seal	Adult	Unknown	270	0	300	Swimming at surface

Table 18 - Marine Mammal Sightings grouped by monitoring day pt. 7

Date	First Sighted	Last Sighted	Species	Age Class	Sex	Initial Direction of Travel (Degrees)	Minutes Observed in Level B w/Hammer Active	Closest Distance from Work (Meters)	Behavior
1/8/2021	08:15	08:20	Harbor Seal	Adult	Unknown	90	0	200	fast swimming at surface before diving
	12:50	13:30	Harbor Seal	Juvenile	Unknown	90	0	60	Repeated dives and looking around at surface. Presumed foraging. Tracked out of marina prior to hammer being turned on.
	13:04	13:04	Harbor Seal	Adult	Unknown	Unknown	0	100	Spy hopping, at surface looking around.
	14:25	14:25	Harbor Seal	Adult	Unknown	270	0	300	briefly surfacing and diving multiple times, presumed foraging
1/11/2021	09:44	09:49	Harbor Seal	Adult	Unknown	270	0	250	Resting at surface, dove as hammer was turned on after a brief pause on 0944, resurfaced at 0949 while hammer was still running
	15:43	15:44	Harbor Seal	Adult	Unknown	270	0	300	Resting at surface
1/12/2021	07:48	07:52	California Sea Lion	Adult	Male	90	0	200	Looking around then dove and surfaced farther east, mid-estuary
	13:12	13:35	Harbor Seal	Adult	Unknown	90	0	200	repeated dives and looking around at surface, presumed foraging
	14:41	15:04	Harbor Seal	Adult	Unknown	Unknown	0	200	repeated dives, presumed foraging, no change in behavior when hammer initiated
1/13/2021	09:45	09:48	Harbor Seal	Adult	Unknown	0	0	9	slowly traveling or resting. Tracked out of marina prior to driving

Table 19 - Marine Mammal Sightings grouped by monitoring day pt. 8

Date	First Sighted	Last Sighted	Species	Age Class	Sex	Initial Direction of Travel (Degrees)	Minutes Observed in Level B w/Hammer Active	Closest Distance from Work (Meters)	Behavior
1/13/2021	09:45	09:50	Harbor Seal	Juvenile	Unknown	Unknown	0	10	tracked out of level A @09:50. Work allowed to proceed at 09:52
7/19/2021	07:36	08:48	Harbor Seal	Adult	Unknown	180	5	200	repeated diving in estuary channel, presumed foraging
	08:39	10:52	Harbor Seal	Adult	Unknown	220	15	150	repeated diving in estuary channel, presumed foraging
	11:25	11:30	Harbor Seal	Adult	Unknown	Unknown	0	325	briefly surfacing
	11:52	11:52	Harbor Seal	Adult	Unknown	Unknown	0	290	briefly surfacing
	14:33	14:34	Harbor Seal	Adult	Unknown	Unknown	0	300	briefly surfacing

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/19/20 Start/End Time 1345 / 1540 MMO Mark Oates Observing Location Island Light Hill or Log

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) [illegible]

Number and type of piles driven/removed? Vibratory or impact? [illegible]

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

[1]Species Abbreviations:
California Sea Lion = CASL
Pacific Harbor Seal = HASE
Northern Elephant Seal = NOES
Harbor Porpoise = HAPO
Unknown seal, sea lion = UNK-P
Unknown dolphin, porpoise = UNK-D

[2]Species Age Classes:
CASL = juvenile, subadult male, adult male
HASE = juvenile, adult
HAPO = calf, adult

[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/18/2020 Start/End Time 0915 / 1540 MMO N. Scharbrough Observing Location Pier #7 Alameda Marina

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) Beaufort 3, vis excellent 95% cc Ø precipitation; 1200 Beaufort 2, cc 85%, wind 10.4 mph SSW

Number and type of piles driven/removed? Vibratory or impact? 36" steel piles, #2 vibe

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Harbor Porpoise = HAPO
Unknown seal, sea lion = UNK-P
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[2]Species Age Classes:
CASL = juvenile, subadult male, adult male
HASE = juvenile, adult
HAPO = calf, adult

[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/18/20 Start/End Time 09:15 / 15:40 MMO 2 Observing Location Pier 1

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) Mostly Cloudy, 8 mph wind S, 0.1 in precip., 9 mi visibility

Number and type of piles driven/removed? Vibratory or Impact? 2 - 36 inch steel pile driven

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 09:38 Last: 09:52	HASE	Adult	-spots	Level B zone	S	Stationary at surface, looking around
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Harbor Porpoise = HAPO
Unknown seal, sea lion = UNK-P
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[2]Species Age Classes:
CASL = juvenile, subadult male, adult male
HASE = juvenile, adult
HAPO = calf, adult

[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 19 NOV 20 Start/End Time 0725 / 1528 MMO IML Observing Location PIER 7

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) CALM, B=0, 50 m, 100% FOG; NO PRECIPITATION @ 0725 I-
N 3-6 MPH, B=2, VIS 7 800 m, 2% CLOUD COVER, NO PRECIP @ 1528

Number and type of piles driven/removed? Vibratory or impact? VIBRATORY 36" STEEL

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 1005 Last: 1006	PV	A	NONE	LEVEL B	330°	RESTING AT SURFACE
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

[1]Species Abbreviations:
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[2]Species Age Classes:
CASL = juvenile, subadult male, adult male
HASE = juvenile, adult
HAPO = calf, adult

[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/19/20 Start/End Time 07:35 / 15:30 MMO 2 Observing Location Pier 1

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 50°F, Mostly Cloudy, overcast/stratus layer, 3 mph wind N, 2 nm. vis., 0 inch. precip.

Number and type of piles driven/removed? Vibratory or impact? 2 driven vibratory, 1-36in steel pipe

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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[2]Species Age Classes:
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HASE = juvenile, adult
HAPO = calf, adult

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[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO 2nd Island Yacht Club building

Date 1-9-20 Start/End Time 0700 / 1130 (1230 / 530) MMO Mark Oates Observing Location 1st Street to Stern building

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) ___ fog cleared by 0830 ___ remainder of day was mostly clear 5-10mph winds

Number and type of piles driven/removed? Vibratory or impact? 36 in steel Vibratory commenced @ 0802 concluded 1130
H-beams for cofferdam Vibratory commenced @ N/A Out of water

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11-20-2020 Start/End Time 0730 / _____ MMO N. SCARBOROUGH Observing Location END PIER 7, Alameda Marina
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) Wind S 5 mph ENE, Beaufort 0, Vis Excellent, 25% cc, 0% prec.

Number and type of piles driven/removed? Vibratory or impact? H piles #3

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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[2]Species Age Classes:
CASL = juvenile, subadult male, adult male
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HAPO = calf, adult

[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/20/20 Start/End Time 07:10 / 14:50 MMO 2 Observing Location Pier 1
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 48-64°F, Mostly clear & sunny, 2 mph N wind, 0 in. precip, 9 mi. visibility
Number and type of piles driven/removed? Vibratory or impact? driven vibratory @ 08:17, @ 10:33, @ 11:50

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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[2]Species Age Classes:
CASL = juvenile, subadult male, adult male
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HAPO = calf, adult

[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/29/20 Start/End Time 0715 / 1515 MMO Mark Oates Observing Location Island Light Alameda Bay

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) mostly clear, 25 mph, 21 Beau, 1027 mb, vis >, no precip 50°F

Number and type of piles driven/removed? Vibratory or impact? V. bratory H-pile 1033-1120 1150-1213 1257-

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Northern Elephant Seal = NOES
Harbor porpoise = HAPO
Unkn, sea lion = UNK-P
Unkn, porpoise = UNK-D

[2]**Species Age Classes:**
CASL = juvenile, subadult male, adult male
HASE = juvenile, adult
HAPO = calf, adult

[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/23/20 Start/End Time 337 / 777 MMO Mark Oates Observing Location Island Yacht Club balcony
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) Clear, 0-5 mph, Dir. Calm, 100% vis, no precip

Number and type of piles driven/removed? Vibratory or impact? Vibratory sheet pile 1 Driving commenced @ 1524 concluded @ 1527

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

[1]Species Abbreviations:
California Sea Lion = CASL
Pacific Harbor Seal = HASE
Northern Elephant Seal = NOES
Harbor Porpoise = HAPO
Unknown seal, sea lion = UNK-P
Unknown dolphin, porpoise = UNK-D

[2]Species Age Classes:
CASL = juvenile, subadult male, adult male
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[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

15:24 vibe

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/23 Start/End Time ____ / 17:07 MMO Lori Berain Observing Location #3 Pier 7

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) ____

Number and type of piles driven/removed? Vibratory or impact? ____

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 9:07 Last: 9:08	CASL	juv		6 ft 150 yds	291 NW	Was startled seeing observer + dove, next seen 150 ft to W/NW near docked boats
First: 14:17 Last: (MMO#2 saw 1st)	HASE	Adult	all gray	Mid channel 1/3 btw pier + CG boat	E/SE	transiting/swimming
First: 14:40 Last:	HASE	Adult	" "	Mid channel 1/2 btw Pier 7 + CG boat	E/SE	" "
First: 14:44 Last:	HASE	Adult		Mid channel	E/SE	" "
First: 14:53 Last:	HASE			300 yds S. to NW mid channel 255 w/ feeding pelicans + cormorants		? opportunistic forage ? birds cont. E, SE - did not resurf HASE
First: 15:28 Last: 15:43	HASE HASE / 15:47 cont E, SE slow travel			300 yds W of Pier 7 50 yds from plane	N/A	Resting @ surface + Mid channel then slow travel N TRAVELING E near CG boats
First: 16:03 Last:	"					Milling 250 yds NW of me
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11-23-2020 Start/End Time 0735/_____ MMO N. SCARBOROUGH Observing Location _____
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) Wind 3.4 mph (N), Beaufort 1, 56°, 98% CC, good vis

Number and type of piles driven/removed? Vibratory or impact? 1 sheet pile driven, vibe hammer

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 1545 Last: 1557	HASE	ADULT	DARK GRY/BRN VERY LARGE HEAD MOTTLED	LEVEL B AT LEAST 100' FROM END OF PIER 1	INITIALLY TOWARD MARINA THEN OPPOSITE: AWAY	TRAVELING AT SURFACE TOWARD MARINA, dove from view & resurfaced a bit closer after 9 min, dove, popped up 1 min later & heading away, looking back, dove from view
First: 1633 Last: 1701	HASE	Adult	dark silhouette	Level B, 500 yd E of pier 1, 50' from seawall	diving & resurfacing same area	@ surf 30-60 sec, then diving, repeat about every 4 min same location
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 25 NOV 20 Start/End Time 0703 / 1555 MMO [illegible] Observing Location [illegible]
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) [illegible]
Number and type of piles driven/removed? Vibratory or impact? [illegible]

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0748 Last: 0748	HASE	AD	N/A	B 250m	→ W	AT SURFACE FEEDING 250m @ 45°
First: 0807 Last: 0808	HASE	AD	N/A	B 375 m	E	SWIMMING AT SURFACE 375 m @ 320°
First: 0822 Last: 0822	HASE	AD	N/A	B 275 m	E	SWIMMING @ SURFACE 275 m @ 50
First: ~~0829~~ 0845 Last: ~~0829~~ 0845	HASE	AD	N/A	B 200 m	E	AT SURFACE 200 m @ 55°
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/25/20 Start/End Time 0700 / 1552 MMO Mark Oates Observing Location Island Yacht Club bulkhead, marina, Level A
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 7-5mph, Partly Cloudy, 77%, VIS 1-2 Beau, 25% Humidity,

Number and type of piles driven/removed? Vibratory or impact? Vibratory Sheet piles

Number of strokes	Day			
1111	0725	0828	0920	1142	1422	1521
11	0752	0847	1104	1320	1447	1552

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/25/20 Start/End Time 7:00 / 11:56-13:54-15:53 MMO #1 am Observing Location Pier 1

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 5 Knts Wind from NW, Beaufort 1-2, Cloud Cover 20%
(Time update) Wind 10 Knts W/NW, BSS: 2, CC: 5% (14:00)

Number and type of piles driven/removed? Vibratory or impact?

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 7:40 Last:	HASE	ADULT	DARK Head	200 M off Pier 1	Drifting E	Transiting slow
First: 8:05 Last:	HASE	"	"	50 m off Pier 1	FACING S Marina	REST @ surface
First: 8:52 9:04 → 9:15 → Last: 9:20 →	HASE moved W - now inside moved N, NE - now 10-15 drifted while bottling	" 	spotted 15 M from ?? Many from Pier	7 M from Pier 1 5 M from Piers 1+2 Pier - Bottling up to drift	Facing construction fling away	: Was skirting to observe marina - was startled by sight of MMO + dove
First: 9:23 → Last:	" exited E	exited E - 17	M from E	now 100 M from Pier 1	Pier 1	
First: 11:01 Last:	CASL	JUV		60 M from Pier 1 200 M from Zone A	E/NE	swimming/traveling pass foraging in area w/ gulls
First: 14:05 14:08 - Last:	HASE - - -	ADULT - - -	DARK head - - -	150 M slightly NE of 100 M E of Pier 1	stationary	resting in water, bottle up position
First: 14:54 Last:	HASE	ADULT		200 M N of Pier 1	"	"
First: Last:						

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Weather @ 1714: Beau. 2, SW wind @ 3-5 MPH, 0% clouds < 100m

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

→ WERE LIGHT, LESS 4 MIN EARLIER THAN END OF OBS PERIOD DUE TO SAFETY

Date 24 NOV 22 Start/End Time 0714 / 1714 MMO MM2 Observing Location MMD 2 PIER 1

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) B=0, W=S, 100% VIS 7800m, 0% CLOUD, NO PRECIP @ 0714
GLARE TO THE EAST @ 0714 → ~0800

Number and type of piles driven/removed? Vibratory or impact? 6 SHEET PILES INSTALLED VIBRATORY

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0725 Last: 0726	HASE	A	N/A	LEVEL B 200m	S	AT SURFACE RESTING 200m @ 100°
First: 0738 Last: 0738	HASE	A	N/A	B 250 m	225°	AT SURFACE RESTING 250m 315°
First: 0805 Last: 0806	HASE	A	N/A	B 375m	W	AT SURFACE RESTING 375m 15° UNDER BRIDGE
First: 1153 Last: 1154	HASE	A	N/A	B 350m	E	AT SURFACE RESTING 350m 0°
First: 1316 Last: 1321	HASE	A	N/A	B 100m + 300m	E N	AT SURFACE RESTING, THEN DIVE 100m @ 290° 300m @ 60°
First: 1608 Last: 1609	HASE	A	N/A	B 80m	E	AT SURFACE RESTING, THEN DIVE 80m 20°
First: 1611 Last: 1614	HASE	A	FUTOUS HEAD	B 150m, 200m	N N	AT SURFACE RESTING 150m 50° & 200m 0° POSSIBLY SAME INDIV AS 1608
First: 1633 Last: 1653	HASE	A	N/A	B 350m	E	AT SURFACE RESTING 350m 10° → E ADJ. TO BRIDGE

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 24 NOV 13 Start/End Time _____/_____ MMO 1141 Observing Location _____

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) _____

Number and type of piles driven/removed? Vibratory or impact? _____

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 1637 Last: 1637	HASE	A	RUFOUS HEAD	B 225m	SE	AT SURFACE SHY HOP 225m 30° POSSIBLE SAME INDIV AS 1608, 1611, 1633
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/7/20 Start/End Time 7:22 / 2:?? MMO LORI PEKALA #3 Observing Location #3 Pier 7
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) clear, BSS 1 0% clouds over, ice floes

Number and type of piles driven/removed? Vibratory or impact?

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 7:52 Last:	HASE	ADULT	DARK	5 meters W of Pier 7 MMO # 3 5m from dock	N/A	Resting Facing Marina
First: 11:40 Last:	"	"	"	"	N/A " "	"
First: 11:46 Last:	HASE	ADULT	BROWN SPOTTED	50M E of Pier 7 250M from pile driving		Slow Travel E Re crew flies
First: 13:01 13:13 Last:	HASE	"	DARK	500m NW of Pier 7 mid channel	W	slow travel / Rest
First: 13:34 Last:	HASE	"	"	75M W of Pier 7 10m off Marina	facing Marina	Resting
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 6-24-20 Start/End Time 0722 / 1717 MMO 1-Mark Oates Observing Location Island Yacht Club

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) Clear, 45° 3-5 knots, 25 mph, 100% vis

Number and type of piles driven/removed? Vibratory or impact? Vibratory Sheet piles 0933 1008 1100 1433 1520 1609 1024 1155 1440 1541 1647 240 13"00

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						Each sheet pile is actually two stuck together
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/30/2020 Start/End Time 0715 / _____ MMO N. SCARBOROUGH Observing Location PIER 1, Alameda Marina
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) ~~0715~~ temp 50°F, wind 5.7mph ESE, beaufort 1, vis excellent, slight glare to East, <15% cloud cover, 0% precip.
Number and type of piles driven/removed? Vibratory or impact? sheet piles driven via vibe hammer

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0816 Last: 0816	HASE	Adult	dark grey white whiskers	Level B 300' No. of pier 1	At surface facing SW	at surface momentarily looking around. dove from view
First: 1102 Last: 1159	HASE	Juvenile	med grey spotted	Level B within Pier 1 complex	Popped up all over complex	Swimming between docks, looking around, a few attempts to haul out on dock, 2x successful but dove back w/in 1 minute, periscoping, very active
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 30 NOV 20 Start/End Time 0702 / 1232 MMO IML Observing Location PIER 7

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 0702: CALM, B=0, VIS 7800m, 0% CLOUDS, NO PRECIP
1232 B=1, W=NW, 2-3 MPH, 0% CLOUD, NO PRECIP

Number and type of piles driven/removed? Vibratory or impact? 3 STEEL PILES VIBRATORY

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0726 Last: 0727 DOVE	HASE	AD	N/A	B 250 meters	W	SWIMMING @ SURFACE 45° 250m → WEST
First: 1019 Last: 1020 - DOVE	HASE	AD	N/A	B 450 meters	NNW	SWIMMING @ SURFACE 57° 450m BTN COAST GUARD BOAT + BRIDGE
First: 1026 Last: 1026						30° 200m → W
First: 1029 Last: 1029	HASE	AD	N/A	B 200 meters	W	RESTING @ SURF. 335° 200m DOVE @ 1037
First: 1038 Last: 1046	HASE	AD	N/A	B 180 meters	E	SWIMMING @ SURFACE 8° 200m → E 1038 55° 180m → E 1045
First: ~~1103~~ Last: ~~1103~~	~~HASE~~	~~AD~~	~~N/A~~	B ~~500m~~	~~NNW~~	70° ~~300m~~ 300m → E 1046
First: 1103 Last: 1103	HASE	AD	N/A	B 500m	NNW	65° 500m → NNW @ SURFACE DOVE @ 1103
First: 1107 Last: 1107	HASE	AD	N/A	B 200m	W	44° 200m → W SWIMMING AT SURFACE 1107 DOVE

SAME INDIV

SAME INDIV

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date _____ Start/End Time _____/_____ MMO _____ Observing Location _____

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.)_____

Number and type of piles driven/removed? Vibratory or impact?_____

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 1207 Last: 1221	HASE	J?	N/A	B 500m	N	~~30~~ 70° 500m → N @ 1207 SWIMMING AT SURFACE
First: Last:						↳ POSSIBLY JUVENILE FROM PIER 1 AREA
First: Last:						335° 300m → W SWIMMING
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

[1]Species Abbreviations:
California Sea Lion = CASL
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Level A
75 meters
Level B
300

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/4/21 Start/End Time 0724/1120 MMO Nancy Observing Location MM3 end of pier 7

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 100% cloud cover, light rain, Beaufort 1 wind 16.1 mph S20 steady

Number and type of piles driven/removed? Vibratory or impact? concrete piles - 1 pile

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 1713 Last: 1716	CASL	A	[illegible]	[illegible] channel [illegible]	So	cruising @ mid channel 100 m from MM3 [illegible] [illegible] about 100 meters further So
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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1245 - 1302 LUNCH
1407 - 1410 CAR

NO MMO SIGHTINGS

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 6/20/21 Start/End Time 0712 / _____ MMO 1ML MM2 Observing Location BLDG 14

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 50% CLOUD ~~SUN~~ CALM, P=1, VIS=300M-500M
@1040 25 MPH / NW, P=0-1, 15% CLOUD, DRY

Number and type of piles driven/removed? Vibratory or impact? 4 16" PILES IMPACT

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/13/21 Start/End Time 07:21 / 16:40 MMO 2 Observing Location Pier 1

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 51-64°F, some cloud cover, 8 mi visibility, 0 in precip. SE 2 mph winds, sunny

Number and type of piles driven/removed? Vibratory or impact? 17 cement piles, driven, impact

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 09:46 Last: 09:49	HASE	juvenile	Grey, w/ spots (lighter on head)	Level B, 9 m from driving	N	Stationary at surface, swimming slowly, looking around
First: 09:46 Last: 09:48	HASE	adult	Spots darker head	Level B, 10 m from driving	N	Slowly swimming, stationary at surface
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/11/21 Start/End Time 0724 15:50 MMO 3 Observing Location varies

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 43 -58°F, East 3 mph winds, cloud cover, sunny, 0 precip.

Number and type of piles driven/removed? Vibratory or impact? 6 total piles driven, 4 PDA piles driven, 2 cement piles driven, All impact

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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1234-1319 LUNCH

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11 JAN 21 Start/End Time 0721 / 1552 MMO IML MM3 Observing Location PIER 1

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) @ 0721 <15% CLOUD, CALM. BEUF = 0, VIS > 300-500m, DRY
@ 1550 - 3-5 KNOTS SW. B = 2, V > 600 m, <15% CLOUD, DRY

Number and type of piles driven/removed? Vibratory or impact? 2 NEW CONCRETE PILES 16" IMPACT

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0944 Last: 0949	HASE	AD	N/A	275m 34° 250m 349°	W NW	~~SURFACED RESTING~~, DOVE AS HAMMER STARTED @ 0944 RE-SURFACED @ 0949 (HAMMER ON)
First: 1543 Last: 1544	-n-	-n-	N/A	300m 7°	W	RESTING @ SURFACE (HAMMER ON) DOVE @ 1544
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First:						

eviations:
on = CASL
l = HASE
eal = NOES
O
= UNK-P
se = UNK-D

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1-12-21 Start/End Time 0723/1106 MMO Nancy S Observing Location Pier 1 Alameda marina
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 50% cloud cover 52°F, wind 6.9 mph SE, Beaufort 0-1 good visibility
Number and type of piles driven/removed? Vibratory or impact? 76 concrete piles / impact

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0747 Last: 0752	CASL	A		Level B 15' to 25' from end of pier 1	East	At surface looking around, dove heading East. Surfaced near the Baltimore barge in main channel 200m East of Pier 1
First: 1512 Last: 1335	HASE	A	some spotting of back	Level B 15 m off pier 1 post	facing East	@ surface looking around, repeated dives; surfacing ea 5-6 min
First: 1441 Last: 1504	HASE	A	" Likely same animal as above	Level B 20m from pier 1	various directions	mostly @ surface looking this way diving for just seconds; coming up again?
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/12/21 Start/End Time 07:23/17:06 MMO 3 Observing Location Building 14, Island [redacted] Yacht Club

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 48-57°F, [redacted] cloud cover, E. 4 mph winds, 0 % precip., mostly [redacted] mostly cloudy

Number and type of piles driven/removed? Vibratory or impact? 6 cement piles driven by impact

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
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* SAME INDIV THAT FIRST SPOTTED BY MM1 @ 1258

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 8 JAN 21 Start/End Time 0714 / 1627 MMO IML / MM3 Observing Location PIER 1

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.)

Number and type of piles driven/removed? Vibratory or impact?

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
* First: 1322 Last: 1322	HASE	J	N/A	BETWEEN BRANCH 2+3 MIDWAY	UNKN	SURFACED
* First: 1326 Last: 1326	HASE	J	N/A	75m 282°	W	AT SURFACE SWIMMING N. LEFT MARINA, ENTERING MAIN CHANNEL
* First: 1329 Last: 1330	HASE	J	N/A	300m 300°	W	SWIMMING AT SURFACE
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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1200-1243 WNCH
* SAME INDIV [illegible] FIRST SPOTTED BY MM1 @ 1258

P.1

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 8 JAN 21 Start/End Time 0714 / 1627 MMO MM2/MM3 Observing Location PIER 1

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) DRY, 90% CLOUD, B=0, <1MPH WIND, V = 300m, GLARE IN EAST
1627 = <5MPH NW B=1, VIS = 500m <5% CLOUDS, DRY ~0829-0855 DRIZZLE

Number and type of piles driven/removed? Vibratory or impact? [illegible] CONCRETE PILES - IMPACT

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0803 Last: 0803	UNK-P	A	[illegible]	330° 275m	W	ONLY SAW DORSAL AS ANIMAL DOVE
First: 0808 Last: 0808	HASE	A	N/A	313° 300m	W	SWIMMING AT SURFACE
First: 0815 Last: 0815	-h-	A	N/A	290° 90m	UNKN	FIRST SPOTTED BY MM3 DOVE @ 0815 ONLY DORSAL OBSERVED
First: 0820 Last: 0820	-h-	A	N/A	0° 150m	N	AT SURFACE, THEN DOVE. HAMMERLON POSSIBLY SAME INDIV AS ABOVE 0815
* First: 1258 Last: 1258	-h-	J	N/A	BETWEEN BRANCH 2+3 (MIDDLE AREA)	N	FIRST OBSERVED BY MM1 PIER 1 MARINA
First: 1304 Last: 1304	-h-	A	N/A	103° 100m	UNKN	AT SURFACE LOOKING AROUND (SPYHOP)
* First: 1309 Last: 1309	-h-	J	GREEN STRIPE ON FOREHEAD TO BETWEEN EYES	BETWEEN BRANCH 4+5	UNKN	AT SURFACE
* First: 1310 Last: 1310	-h-	J	N/A	AT END OF BRANCH 4 (EAST)	UNKN	SWIMMING CLOSE TO BOTTOM OF DOCK, POSSIBLY FORAGING.

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 11/30/20 Start/End Time 0700 / 1230 MMO Mark Oates Observing Location Island Yacht Club balcony
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 45°, clear, 05 mph, 3-4 beaufort, 100% vis

Number and type of piles driven/removed? Vibratory or impact? Vibratory sheet piles III 0750 0950 1054 @1230 all remaining piles were driven above tideline
0856 1008 1200 vibe broke

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4] (low tide is ~ -.6 at 6pm)
First: Last:						First pile was out of water to start but tide rose to it @ 0850
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

Level A 45 m radius

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES. 669-216-0341, "MM1" ON RADIO

Date 1-8-21 Start/End Time 0724 / _____ MMO Nancy S Observing Location Balcony of Bldg above Pier 3 - West

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 75% cloud cover, good visibility, 52°F, Beaufort 0, windspeed 3.4 mph from North

Number and type of piles driven/removed? Vibratory or impact? concrete piles – impact driven

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0815 Last: 0815	HASE	A	spotted	Level B @ least 200m from pile driving	East	Near edge of marina between piers 2 & 3 cruising @ surface – dove from view
First: 1425 Last: 1426	HASE	A	dark gray	Level B 300 m from hammer	West	@ surf and diving observed 2X close together mid-channel btwn pier 2 and CG bridge dove from view
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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(0710: NONE HAULED OUT @ DAWN)
(0711 large HASE in BRANCH 5 poking head, then >20m outside marina @ 0713, 0715, +0720)

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/7/2021 Start/End Time 0710 / 1654 MMO #2 KITTING Observing Location MM2 SE CORNER of Pier 1 complex, Alameda Marina
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) CALM, THIN CLOUDS

Number and type of piles driven/removed? Vibratory or impact? [illegible] PILES AERATONICALLY

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0733 Last:	HASE	[illegible] + medium dark, pale	large dark	hauled out on float between branches 3+4	none	medium went into water
First: → 0800 video of largest + smallest Last: (until ~0810 [illegible] minutes after eastward, separate demolition earthmoving)						
First: 0812 Last: 0816	" HASE	med. adult large, dark	→ →	25m outside marina ~60m out, ~50m W		medium/pale pokes head, 2 min after entering water dark adult flat at surface w/ tail out
First: 1325 Last:	HASE	large adult	not dark	~100m out marina	swimming	eastward) 6 min after entering water
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL, CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 7 JAN 2021 Start/End Time 0719/1654 MMO MM1 Observing Location BLDG 14 (UPPER DECK)
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) FOG, 2 mph(S.) B=0, 100%, vis=500' (300m) LOW LIGHT @ 0719
1084 VIS = 550m ... B=0-1, VIS 600m, 30% CLOUD
Number and type of piles driven/removed? Vibratory or impact? 4 16" SQUARE PILES. FINISH HAMMERING TEST PILES FROM FRIDAY & TUESDAY. IMPACT

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 1456 Last: 1457	HASE	A	NM	300m 13°	E	AT SURFACE RESTING ONLY GOT OUT OF VIEW BY PIER 2 ROOF
First: 1503 Last: 1503	"	"	"	175m 358°	W	AT SURFACE RESTING ONLY DOVE OBSERVED
First: 1618 Last: 1618	"	J ?	RUFOUS HEAD	200m 0°	E	AT SURFACE SWIMMING. DOVE OBSERVED ONLY
First: 1644 Last: 1644	"	A	NA	400m 56°	E	AT SURFACE SWIMMING DOVE. OBSERVED ONLY
First: 1650 Last: 1650	"	A	NA	400m 65°	W	DOVE. ONLY OBS.
First: Last:						
First: Last:						
First: Last:						

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Harbor Porpoise = HAPO
Unknown seal, sea lion = UNK-P
Unknown dolphin, porpoise = UNK-D

[2]Species Age Classes:
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HASE = juvenile, adult
HAPO = calf, adult

[3]Approximate distance from pile driving if visible from your location. If construction is not visible, record distance from observer. Indicate unit of measurement (meters, feet, etc.).

[4]Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

(AND 3:55 Adult imaged at branch 5
3:56 " " 10m outside marina

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES 669-216-0341, "MM1" ON RADIO

Date 1/6/2021 Start/End Time 0713/ _____ MMO #2 KITTING Observing Location MM 1; SE Pier 1 Alameda Marina
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) Thin clouds, calm

Number and type of piles driven/removed? Vibratory or impact? narrow cement piles driving periodically after 30-s soft starts
(pre-monitoring)

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0727 Last: 0735	HASE "	adult "	-pale white stripe from eye to	5th branch of pier 1 (marina	right L	poking head up. looking then flat at surface
First: Last:	↓	(NM1 called juvenile ~0745				
First: 0750 Last: 0751		JUV	Small	4th branch		poked head attempted haul out
First: 0752 Last: 0755		Adult with white "		5th branch 15m outside marina	none "	flat at surface "
First: 0756 Last: 0759		JUV "	small "	4th branch attempt haulout 4th branch swimming eastward toward out of marina		imaged
First: 0804 Last: 0806		" "	"	5th branch 4th branch		poking
First: 0814 Last:		"		5m outside marina		
First: 1127 1128 Last: 1129	HASE	JUV (?)	small	4th branch moving out 5th " " " 10 m outside marina		imaged video w hammering/driving - splash + swim

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1420 HASE too distant, but not huge 30m out Marina entrance poking head
1454 HASE ~Red adult imaged backlit Branch 2, far side poking head imaged
1525 HASE ~SMALL none 20m outside marina "

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 6 JAN 2021 Start/End Time 0718 / _____ MMO 1ML Observing Location PIER 7 + BLDG 14

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 1009 25% CLOUDS

Number and type of piles driven/removed? Vibratory or impact? 5 CONCRETE 24" IMPACT

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0753 Last: 0753	HASE	A	NA		W	AT SURFACE
First: 0803 Last: 0803	HASE	A	NA	45m 040°	W	AT SURFACE SWIMMING POSSIBLY SAME ANIMAL AS ABOVE
First: 0959 Last: 0959	HASE	A	NA	30m 50°	~~UNKN~~ W	AT SURFACE RESTING
First: 1345 Last: 1345	HASE	A	NA	125m 9°	UNKN	AT SURFACE. IMPACT HAMMER ON
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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OBS LOCATION PIER 7

OBS LOCATION BLDG 14

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

IF YOU DETECT AN ANIMAL: CALL IT OUT ON RADIO USING YOUR MMO #. GIVE ANIMAL'S POSITION AND DIRECTION OF TRAVEL.
LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1-5-21 Start/End Time 0727/_____ MMO Nancy S Observing Location pier 7 and @ Alameda Marina
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) mostly clear skies, Beaufort 0-1, fog bank to West vis excellent, 45°F, wind sp 4.6mph from E
Number and type of piles driven/removed? Vibratory or impact? pile driving - impact concrete piles

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0730 Last: 0736	HASE	A	dark grey	~~400~~ 100m NE of mid channel	West	cruising @ surface, dove, re-surfaced last sighting 200m NW of mid generally heading away from Marina
First: 1345 Last: 1345	HASE	A	dark brown-grey	Level B	Facing East	@ surface looking around 20 sec dove from view
First: 1534 Last: 1535	HASE	A	dark grey w/ splotchy spots	Level B 150m from pier 7	North West	cruising @ surf between pier 7 & CG boat #752 (most Easterly boat) dove from view
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/5/2021 Start/End Time 0745 / 1245 MMO KATINA Observing Location SE Corner Pier 1 Alameda Marina

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 0-5 calm rare clouds

Number and type of piles driven/removed? Vibratory or impact? 1 pile this hour narrow cement piles

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0745	HASE	Adult	DARK (imaged below)	5m outside Marina Pier complex 1 2nd branch ~100m from pile	Looking + MOVING into MARINA	very slow MOVING + LOOKING
Last: 0749 after MM1 report		same				
First: 0750	"	"	(IMAGED)	3rd branch 130m from pile	STATIONARY	LOOKING
Last: \						" at me - IMAGED
First: "	"	"	"	15m outside MARINA	"	FLAT AT SURFACE (VIDEO) - long
Last: 0828	"	"	VIDEO	15m outside marina	Stationary	FLAT " + Looking (VIDEO)
First: 0832 (~0840 East of work/pile area)	"	"	VIDEO	+ 5m outside marina	"	" CLOSE
Last: 0851	"	"	"	"	"	" CLOSEST VIDEO
First: 0853	"	"	"	10m outside marina	"	" (40 video)
Last: 0910	"	"	"	"	"	" 40 Images
First: 0922	"	"	"	20m outside entrance	"	" "
Last: 0933	"	"	"	20m outside E. corner		" still image
First: 10:04 (leaving)	"	"	"	~10m outside E corner		" "
Last: ~10:15	"	"	"	20m "		" "
First: 1245 (after MM1 saw 1 at branch 2)	HASE	ADULT	appeared dark	10m outside marina	stationary	poked head up
Last:	"	"	"	then 4th branch = 150m from Pile		"

viations:
n = CASL
= HASE
eal = NOES
PO
= UNK-P
ise = UNK-D

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100m outside Marina

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from work west spot on dock

HASE ADULT? distant =300m from slow swimming westward (Imaged
- but imaged @ 16X power piles

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 1/5/2021 Start/End Time 0745 / 1245 MMO KITING Observing Location Alameda

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 1-2 calm, fair, clouds

Number and type of piles driven/removed? Vibratory or impact? 24" steel pipe piles, vibratory

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0745	HASE	adult	DARK (imaged below)	5m outside Marina Pier complex / 2nd branch ~100m	Looking MOVING into MARINA	VERY SLOW MOVING + LOOKING
Last: 0744 after MM1 report		some				
First: 0744	"	"	(IMAGED)	3rd branch 130m from pile	STATIONARY	LOOKING
Last: ↓				from pile	"	" at me - IMAGED
First:	"	"	"	15m outside MARINA	"	FLAT AT SURFACE (VIDEO) - hazy
Last: 0828			VIDEO	+5m outside marina	Stationary	FLAT + Looking (VIDEO)
First: 0832	"	"	VIDEO	+5m outside marina	"	" CLOSE
Last: 0851 (~0840 Exact of worst area)			"	"	"	CLOSEST VIDEO
First: 0853	"	"	"	10m outside marina	"	" (no video)
Last: 0910	"	"	"	"	"	" no image)
First: 0922	"	"	"	20m outside entrance	"	"
Last: 0934	"	"	"	25m outside E. corner	"	still image
First: 1[illegible]	"	"	"	15m outside E corner	"	"
Last: [illegible]:15	"	"	"	20m "	"	"
First: 12:45 (after MM1 saw 1 at branch #2)	HASE	ADULT	appeared dark	10m outside marina then 4th branch = 150m from Pile	stationary	poked head up
Last: ~1PM	"	"	"			"

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100m outside Marina

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from west spot on dock

3:22 HASE ADULT? distant but imaged @ 26X power ~300m from piles slow swimming westward (imaged 2x) pose

Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date JAN 4, 2021 Start/End Time 0723 / _____ MMO #2 KITTING Observing Location SE END PIER), ALAMEDA MARINA

Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) FROM SW ~ 10 kt calm waves >1 mi vis cloudy, periodic light rain

Number and type of piles driven/removed? Vibratory or impact? IMPACT on wood capped concrete piles along shore from SE end

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 0820 Last:	HASE	AJH	pale	Level B but not pile driving presently (~180 yd away)	surfaced same spot near marina entrance	looking at me
First: 0845 Last:	HASE	"	"	outside LEVEL B 20 m outside marina not pile driving ~150 yd	southward away)	"
First: Last:				twice		
First: 1345 1348 Last:	HASE	AJH	dark same individual	20 m outside marina ≈ 220 yds out but not DRIVING	none ↓	looking
First: 1351 Last: 1354		"	"	15m inside 10 m outside	"	"
First: 1357 1400 inside Last:	"	"	~60m inside marina	5 m outside ~130 m from channel	"	"
First: 1411 Last:	"	"	"	5 m outside marina		"
First: 1635 Last:	HASE	JUVENILE?	-	2 m outside swimming into marina then down	SW	swimming slowly

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 7/19/2021 Start/End Time 0730 / 1443 MMO Nancy S Observing Location Pier 7, Alameda Marina
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) calm, mostly clear, slight smoke from nearby fires Beaufort 1, 3% cloud cover, glare on water to East
Number and type of piles driven/removed? Vibratory or impact?

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 1008 Last: —	HASE	?	-grey	Zone B end of pier 3 (?)	WNW	@ surface briefly, dove from view
First: 1017 Last:	HASE	A	"	B zone 20 yds from Coast Guard 750 N side of channel	WNW	cruising @ surface, dove from view likely same animal as above
First: 1021 Last: 1028	"	"	"	mid-channel btwn pier 7 & CG ship	"	- cruising, dove - @ surface and - looking around, dove 100 yds back toward East
First: 1031 Last:	"	"	"		heading East	further East across from CG Bridge & mid channel
First: 1048 1052 Last:	"	"	"	20 yds off piers approx across from CG bridge	unclear	- nose up, turned around and dove - closer to mid channel, hanging out
First: 1125 Last: 1130	HASE	A	Light grey	20 yds off end of pier 7	dove	@ surface, nose up a few seconds then dove from view
First: 1152 Last: 1158	HASE	A		10 yds off end of pier 6	popped up & down	@ surf a few secand, dove down
First: Last:						

likely same animal

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 7/19/21 Start/End Time 0728/1443 MMO Mark Oates Observing Location Promenade wharf
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.)

Number and type of piles driven/removed? Vibratory or impact? Vibratory removal sheet piles 0755 0814 0843 0914 0944 1010 1034 1057 1116 1359
0755 0821 0845 0919 0947 1013 1037 1102 1120 1354
1357
1412

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: Last: N/A						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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Marine Mammal Observations - Alameda Marina Shoreline Improvement Project

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LEAD MONITOR - MARK OATES: 669-216-0341, "MM1" ON RADIO

Date 7/19/21 Start/End Time 7:30 / 14:43 MMO Vanessa Hernandez Observing Location Pier 1
Weather (windspeed and direction, Beaufort, vis., cloud cover, precip.) 7am: Light wind, no clouds. Light smoke.
11:00am - wind picked up, cloud coverage 60% Afternoon: mostly sunny.
Number and type of piles driven/removed? Vibratory or impact? 3 Sheet piles removed

Time of Observation	Species[1]	Age Class[2]	Identifying Marks	Location (Level A or Level B zone, initial and closest distance to pile driving)[3]	Direction of Travel	Behavior[4]
First: 7:36 Last: 8:48	HASE	adult		Level B ~500 yards pier 1 closest 200 yards	SE/E	coming up for breathing/diving slow swimming - eastbound @ 8:29 am 2 seals @ 8:48 in distance
First: 8:39 Last: 10:45	HASE	adult		Level B ~300 yards closest 150 yards	SE/W	Diving/hunting 9:40 - westbound seen again @ 10:39
First: 14:33 Last: 14:34	HASE	adult		Level B ~300 yards		Diving
First: Last:						
First: Last:						
First: Last:						
First: Last:						
First: Last:						

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