The City of SAN DIEGO

Public Works Department

March 6, 2019

Ms. Amy Fowler
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway, F/PR1 Room 13805
Silver Spring, Maryland 20910

Subject: Construction Monitoring Report for the Coast Boulevard Improvements Project in La Jolla California

Dear Ms. Fowler:

The City of San Diego hereby submits the Monitoring Report for construction activities associated with the Coast Boulevard Improvements Project located in La Jolla, California for your review. Construction and required monitoring activities began on July 25, 2018 and were completed on December 9, 2018.

If you have any questions you may reach me by email at spaver@sandiego.gov or by phone at (619) 533-3629 or please feel free to contact Derek Langsford, Tierra Data Inc., at derek.langsford@tierradata.com or (760) 751-6169 with any questions regarding the monitoring report.

Sincerely,

Sean Paver
Senior Environmental Planner

Enclosure: Coast Boulevard Walkway Monitoring Report, dated March 2019

cc: Jordan Carduner, Office of Protected Resources, National Marine Fisheries Service
Nikki Lewis, Senior Engineer, Public Works Department
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MONITORING REPORT
FOR THE CITY OF SAN DIEGO'S
COAST BOULEVARD WALKWAY IMPROVEMENTS

25 July 2019 to 9 December 2018

Submitted to:

Office of Protected Resources,
National Marine Fisheries Service,
National Oceanographic and Atmospheric Administration
1315 East-West Highway
Silver Spring, MD 20910

Submitted by:

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March 2019

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Acronyms and Abbreviations

%	Percent
BSS	Beaufort Sea State
City	City of San Diego
dB	decibels
dB rms	dB root mean square referenced to 20 microPascals
dBZ	unweighted dB
ft	feet
IHA	Incidental Harassment Authorization
LD	Larson Davis
m	meters
MMPA	Marine Mammal Protection Act
NMFS	National Marine Fisheries Service
SLM	Sound Level Meter
SPL	Sound Pressure Level
ZOI	Zone of Influence

1.0 Introduction

This report summarizes the monitoring efforts that the City of San Diego (City) was required to undertake during the improvements to an existing public parking lot, sidewalk, and landscaping areas adjacent to Coast Boulevard in La Jolla, California (Project). In accordance with the Marine Mammal Protection Act (MMPA) of 1972, as amended, the City applied for an Incidental Harassment Authorization (IHA; City 2017a) associated with the Coast Boulevard Walkway Improvements Project (Figure 1-1). The IHA was issued on May 25, 2018 and addressed the potential for work on 164 days from June 1, 2018 to December 14, 2018 (National Oceanic and Atmospheric Administration's National Marine Fisheries Service [NMFS] 2018). Of the 164 days of Project-related activities, 108 days were anticipated to potentially exceed regulatory airborne noise thresholds. This is the second IHA issued for the Project with the first IHA issued in May 2017 for work performed from June 2, 2017 to December 14, 2017. Work for the first IHA was summarized in a monitoring report submitted to NMFS in October 2017 (City 2017b).

As part of the regulatory review process, a California Environmental Quality Act Mitigated Negative Declaration was adopted for this Project in 2015 (City 2015). A subsequent Biological Letter Report (Tierra Data Inc. 2016) was also prepared that identified the potential for impacts to marine mammals and the need for an IHA. An IHA was issued for work performed in 2017 (NMFS 2017), with a monitoring report that summarized both the marine mammal and acoustic monitoring efforts performed during a subset of activities in July 2017 (City 2017b). This work was associated with the first phase of the Coast Boulevard walkway improvements (Figure 1-1).

During the 2018 monitoring period, the City determined that noise from Project-related demolition and construction may potentially rise to the level of harassment, as defined under the MMPA. Per the IHA application (City 2017a), three species of pinnipeds are known to regularly haul out at the Children's Pool and a nearby public beach (Figure 1-1), and may have been temporarily exposed to sound pressure levels (SPLs) that have been identified by NMFS as in-air acoustic thresholds for behavioral (Level B) harassment. These species include the harbor seal (*Phoca vitulina richardii*), California sea lion (*Zalophus californianus*), and northern elephant seal (*Mirounga angustirostris*). No exposure to underwater noise associated with the potential for behavioral (Level B) or injury (Level A) harassment were anticipated as part of the Project activities.

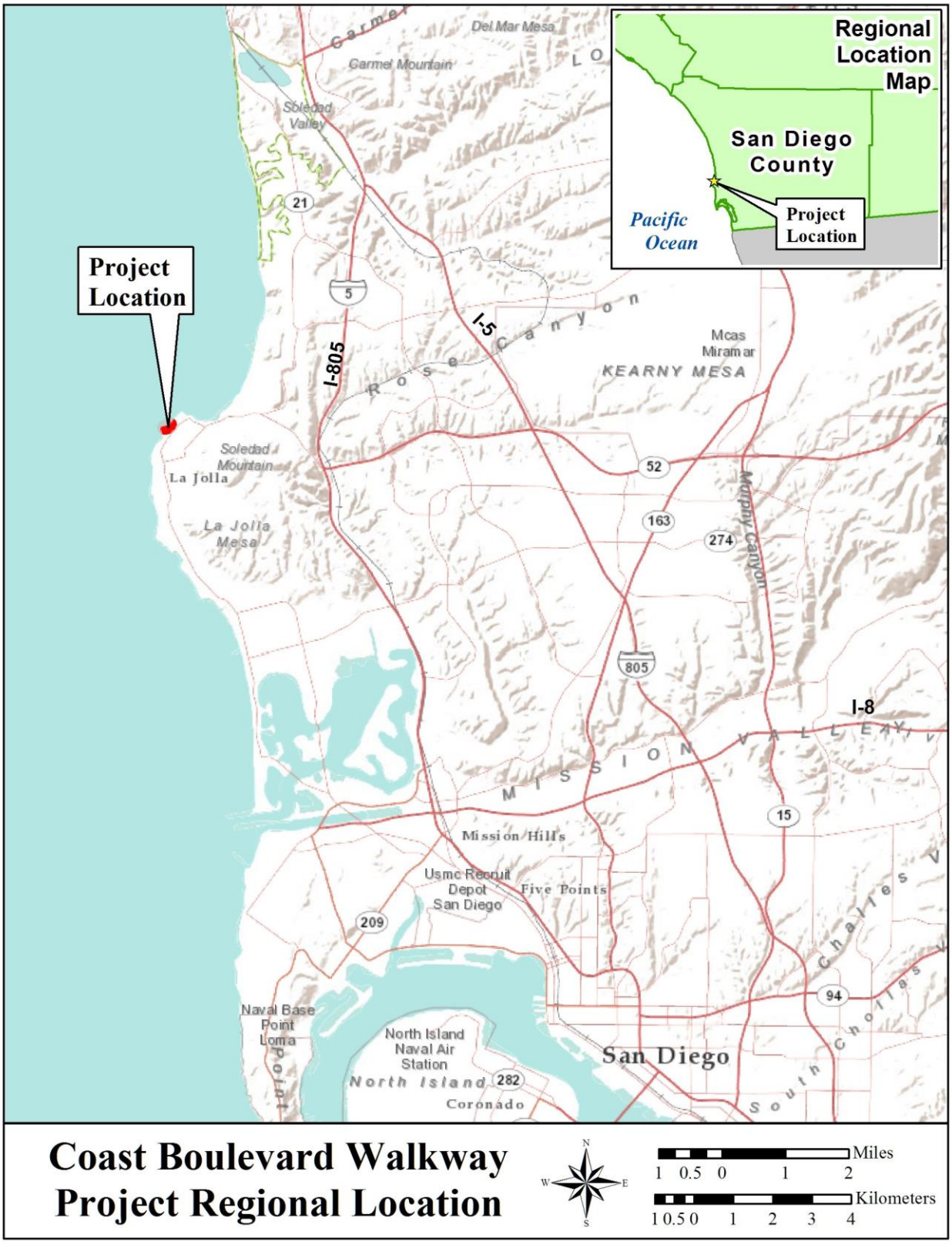

Figure 1-1. Regional Location of the Project.

1.1 Project Description

The Project area is located approximately 5 to 12 meters (m; 16 to 40 feet [ft]) above a public beach (Children's Pool). The total area of disturbance was approximately 1,214 square meters (13,000 square feet) in an area in-between Coast Boulevard and the bluffs overlooking the beach. No Project-related activities extended to the Children's Pool Beach itself. The Project-related demolition and construction began on July 25, 2018 with preparation of the site for demolition activities and was completed on November 21, 2018 with the completion of lane striping and installation of skate stops on walls in the Project area. The site was officially opened to the public on December 9, 2018. Activities during the whole of the Project timeframe included, demolition of the existing walkways within the Project area, reconfiguration of the walkways and planters, construction of new seating walls and planters, and final striping for parking. During these activities noise generating machinery used included concrete breakers, jackhammers, backhoes, bobcats, concrete saws, grinders, compressors, dump trucks, cement/pump trucks, pavers, and rollers.

1.2 Monitoring Efforts

1.2.1 Airborne Acoustic Monitoring

The primary purpose of acoustic monitoring was to record in-air SPLs during Project-related activities. Environmental data was collected to provide information on the weather, visibility, sea state, and tide conditions during the monitoring efforts. Data collected were used to determine the zone of influence (ZOI) within which SPLs may have met, or exceeded, airborne Level B harassment acoustic thresholds for harbor seals (90 decibels [dB] root mean square referenced to 20 microPascals [dB rms re 20 µPa]) and all other pinnipeds (100 dB rms re 20 µPa). Microphones can be configured to account for recording data based on the hearing thresholds of the potential receptor (called “weighting”). Per regulations for seals and sea lions, airborne noise data should be collected without weighting (‘Z’ weighting) and is shown as dBZ.

1.2.2 Marine Mammal Monitoring

The primary objective of marine mammal monitoring was to detect and document potential impacts from Project-related activities. Monitoring was conducted during all Project-related activities to assess marine mammal use patterns and behavioral responses on the Children's Pool Beach both within and outside the Level B ZOIs, as determined by the acoustic monitoring during the Project-related activities.

Marine mammals are known to frequent the beaches and exposed rocks in the Project vicinity during all times of the year (identified by the green dots in Figure 1-2). Because of the potential for marine mammals to occur in the Project area, marine mammal monitoring was utilized to assess the potential impacts from the Project, either from physical or acoustical disturbance. Three known haulout locations are associated with the Project area, with the main area of potential effect being at the Children’s Pool Beach (Figure 1-2). Rocks on the eastern side of the Children's Pool breakwater wall (identified by the long curving line to the west of the Children's Pool in Figure 1-2) were also monitored. The rocks directly to the west of the breakwater were also monitored because marine mammals that were on the beach were observed to move to this location

throughout the day. Casa Beach to the south and west of the Project site was evaluated for the potential for effect but was deemed as too far away from the southernmost extent of the Project to warrant monitoring.

Note: Haul out sites include beach and adjacent rocky areas

Figure 1-2. Project Location and Known Haul Out Sites in the Project Area

2.0 Methods

2.1 Overview of the Monitoring Program Methods

To fulfill the requirements of all applicable regulatory documents, data were collected on the presence of marine species and airborne sound during Project-related activities. Marine species and acoustic monitoring occurred from July 25 to December 9, 2018, with the monitoring effort focused on the area above the Children's Pool Beach and on the beach itself (Figure 2-1). The acoustic monitoring locations were based on estimated distances from modeled marine mammal Level B behavioral ZOIs, which were determined using available acoustic data for similar types of equipment used for similar projects (City 2017a).

2.2 Acoustic and Marine Mammals Monitoring Methods

The following sections describe equipment and methods used in monitoring sound in the environment as well as marine mammals on the beach and rocks in the Project area. Data collection methods were based on the information provided in the Monitoring Plan that was developed and included with the IHA application (City 2017a).

2.2.1 Acoustic Measurements

2.2.1.1 Acoustic Monitoring Equipment

For airborne sound recordings, a Larson Davis (LD) 831 Sound Level Meter (SLM) unit fitted with a preamplifier (PCB PRM 831) and microphone (PCB 377BO2) was used to collect sound level recordings in multiple locations adjacent to the demolition and/or construction activities above the Children's Pool Beach as well as at three locations on the beach itself (Figure 2-1). The airborne sound LD 831 SLM unit was affixed to a tripod adjusted to a 1.5 m (5 ft) height and placed at various distances from Project activities. During recording intervals, the LD 831 SLM unit recorded continuously in 1-second time-histories at 16 kilohertz, providing several real-time acoustic metrics. All data were archived over the recorded observation period.

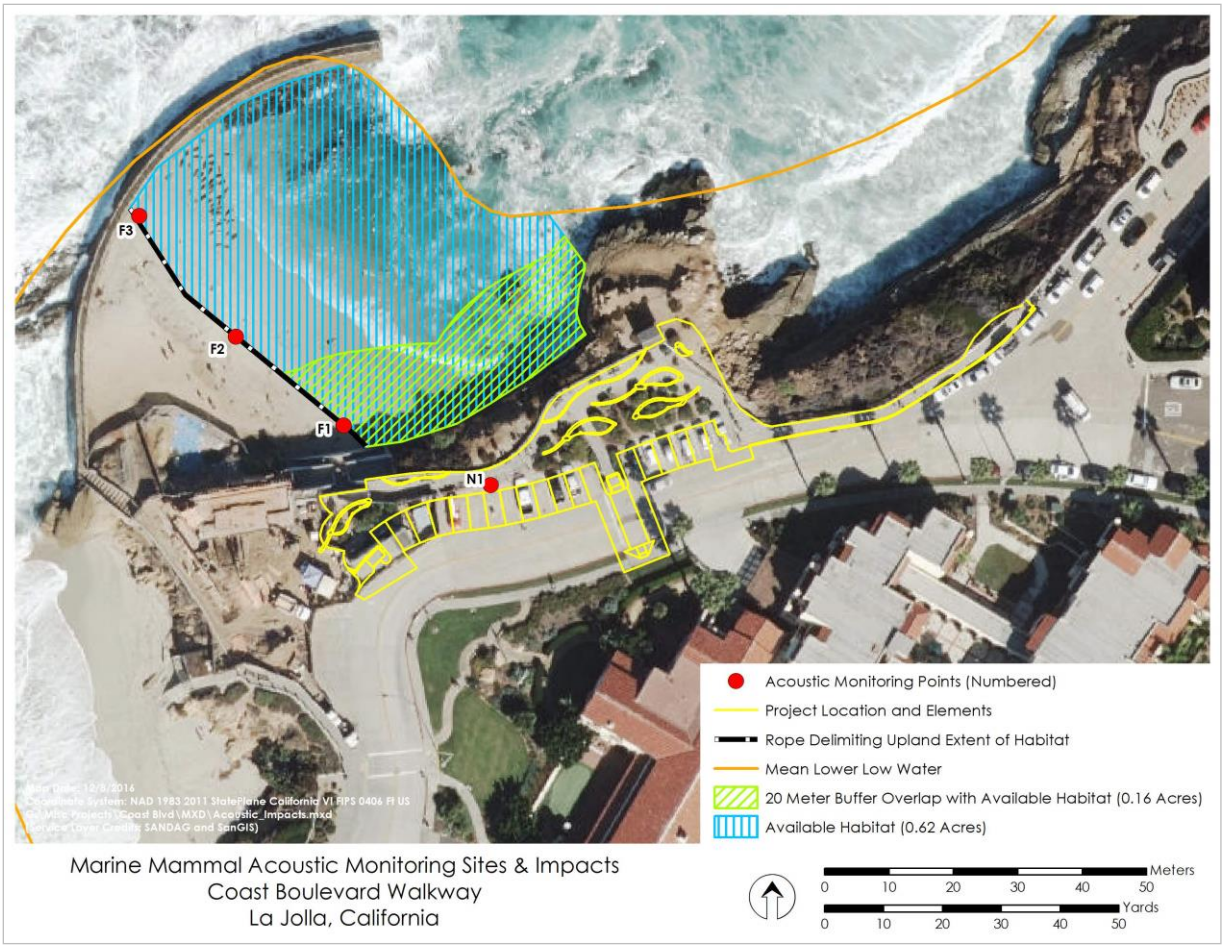

Figure 2-1. Representative Acoustic and Marine Mammal Monitoring Areas Associated with the Project Site.

The PCB microphones were calibrated prior to Project activities, with the calibration tone recorded for at least 60 seconds to establish relative received voltage sensitivity relationships needed for post-processing. Calibrations were made using an ETMC 42AC pistonphone equipped with a custom coupler designed for a 96-min hydrophone and PCB microphone. The piston phone generates a consistent 100-Pascal signal and calibrations were made at 134.0 dB re 20 µPa at 250 Hertz for PCB microphones.

2.2.1.2 Airborne Acoustic Data Collection and Protocols

Airborne sound recordings were collected at (15.2 m [50 ft] as well as at various distances (up to 90 m [295 ft ft]) from Project activities, with the LD unit positioned with a direct line of sight to the activities (Figure 2-1). Data collected at 15.2 m (50 ft) is considered as the "source" noise level and creates a baseline metric to draw comparisons between different types of equipment. The far-field locations (F1, F2, and F3 in Figure 2-1) were identified as representative areas on the beach where data could be collected to attempt to identify sound transmission loss over distance relative to potential pinniped haulout locations. Airborne data were collected for three two-minute periods at each monitoring location during noise-producing activities. If a Project-related activity was occurring, and previously recorded acoustic data showed that the scheduled activities did not

exceed the 90 or 100 dBZ thresholds, then acoustic data was not collected. If the acoustician was on-site, and crews were on break, then ambient data were collected at four monitoring locations (N-1, F-1, F-2 and F-3). All data (i.e., location of recording, observed dBZ level, noise sources) were recorded on a hardcopy datasheet, which was then transcribed to an electronic datasheet.

Specific acoustic monitoring protocols followed included:

- *Pre-Activity Surveys*
  - At least 30 minutes prior to the start of demolition and/or construction activities, the acoustic monitor recorded the time of observations, environmental conditions, and maximum ambient SPLs at a location at the top of the bluff adjacent to the Project Site (see N1 in Figure 2-1 for an example location), and at three far-field locations (F1, F2, F3.
- *Activity Surveys*
  - Every hour, the monitor recorded time of observations, environmental conditions, and maximum SPLs at near-field (N1 and/or N2, as applicable) and far-field (F1, F2, F3) locations. If applicable, the ZOI boundary location(s) were determined and the SPLs recorded. The N1 station was as close to possible to 15.2 m (50 ft) from the source of the noise. If applicable, a second mobile near-field station (N2) was as close as possible to a location that was in-between the activity and hauled out animals on the Children's Pool Beach.
  - The acoustician also noted the start and end times of Project-related activities that may have an acoustic impact.
- *Post-Activity Survey*
  - At least 30 minutes after the completion of demolition and/or construction activities, the acoustic monitor recorded the time of observations, environmental conditions, and maximum ambient SPLs at a location at the top of the bluff adjacent to the Project Site (see N1 in Figure 2-1), and at three far-field locations (F1, F2, F3).

The number of days of acoustics monitoring required after the first day of monitoring (noted above) for each new construction phase depended on the results of the acoustic monitoring, as follows:

A. If acoustic monitoring on the first day of a new phase documented sound levels of 90 dBZ or greater at any far-field location and could be directly attributed to Project-related activities, then daily monitoring was required throughout that phase of construction.

B. If acoustic monitoring on the first day of a new phase documented sound levels of 90 dBZ or greater at the near-field locations, but not at any far-field location, then a minimum of two additional days of monitoring were required to confirm far-field sound levels remained less than 90 dBZ for the demolition and/or construction phase (with durations of less than four weeks). Acoustic monitoring was conducted weekly to confirm far-field sound levels remained less than 90 dBZ for phases with durations of

greater than four weeks. If during the additional monitoring, sound levels of 90 dBZ or greater were recorded at any far-field location, then daily monitoring was required until the end of that phase.

C. If acoustic monitoring on the first day of a new phase documented sound levels of less than 90 dBZ at the near-field locations, then one additional day of monitoring was conducted to confirm near-field sound levels remained less than 90 dBZ. If a sound level of greater than 90 dBZ was measured at the near-field locations on the second day of monitoring, then additional days of monitoring were conducted consistent with the specification listed under item B above.

At the end of each day, the airborne data were processed using the LD SLM Uutility-G3™ (version 2.205) software, which generated a Microsoft Excel (Excel) spreadsheet for each analysis file. These individual files were then added to a summary spreadsheet for final analysis of all acoustic data.

2.2.1.3 Acoustic Data Analysis

Acoustic data collected during Project activities were post-processed to identify the potential for exposure to Level B airborne noise thresholds (90 dBZ for harbor seals, and 100 dBZ for all other pinnipeds). Processed and analyzed data included the mean, minimum, and maximum values for the Level Z, fast (LZF_{max}) from each of the monitoring locations. The LZF_{max} value recorded by the SLM represents the maximum value recorded for any 125-millisecond time frame during each individual recording.

2.2.2 Marine Mammals

2.2.2.1 Marine Mammal Monitoring Equipment

All observers used the naked eye, binoculars (7X50 with built-in compass), Global Positioning System units, and hardcopy datasheets to document species presence as well as behaviors on the beaches or rocks in the Project vicinity.

2.2.2.2 Marine Mammal Data Collection and Protocols

All monitors used during Project-related activities were experienced in identifying marine mammal species, with a focus on pinniped species. Monitors counted the number of marine mammals on the Children's Pool Beach every hour relative to the beach "regions" (i.e., F1 to F2, F2 to F3, seawall/rocks) identified in the Monitoring Plan submitted with the IHA application (City 2017a). As presented in the Monitoring Plan (City 2017a), monitors recorded all reactions to stimuli during monitoring efforts. Reactions were categorized into five classes (Vocalization, Alert, Flush, Movement, and Other; Table 2-1) with seven stimuli categories (Aircraft, Human Activity, Intraspecies, Interspecies, Swimmer/Diver, Construction, and Other). Of the reactions identified in Table 2-1, per direction from NMFS, only the flush and movement categories were considered as Level B "take" relative to the Project-related activities (NMFS 2018).

Table 2-1. Types of Responses to Noise and Defintions.

Type of Reaction	Definition
Vocalization	Seal vocalizes in response to a stimulus, or stimuli.
Alert	Seal head orientation or brief movement in response to disturbance, which may include turning head towards the disturbance, craning head and neck while holding the body rigid in a u-shaped position, changing from a lying to a sitting position, or brief movement of less than twice the animal's body length.
Movement	Movements in response to the source of disturbance, ranging from short withdrawals at least twice the animal's body length to longer retreats over the beach, or if already moving a change of direction of greater than 90 degrees.
Flush	All retreats (flushes) to the water.
Other	Any other reaction not listed above.

Surveys were performed at least 30 minutes prior to the start of Project-related activities, during activities, and then for 30 minutes after activities, with a final count at the 30-minute mark. The location of the hauled-out pinnipeds was noted relative to the "regions" discussed above. All other specific requirements identified in the Monitoring Plan that was included with the IHA Application (City 2017a) were followed.

2.2.2.3 Marine Species Data Analysis

After the data was transcribed into an Excel format, the data were separated into behavioral reaction data, and hourly count data. Data on human presence in the Project area was also logged relative to the overlooks, the water, and the Children's Pool Beach itself. This data was then further processed and separated into the data points presented in Section 3.0 (Results).

3.0 Results

3.1 Summary of Monitoring Effort

Based on the IHA Application (City 2017a), a total of 164 days from June 1, 2018 to December 14, 2018 were allotted for demolition and construction of the Coast Boulevard Walkway. While 164 days were available for Project-related activities, construction occurred on 61 days (37.2% of available days), with marine mammal monitoring occurring on all 61 days, and acoustic monitoring occurring on 12 of those 61 days. The Monitoring Plan included with the IHA Application (City 2017a) stipulated that acoustic monitoring only needed to occur when new noise-generating activities were scheduled to occur. As such, most of the acoustic monitoring effort occurred in July, August, and September over 12 non-consecutive days. Table 3-1 provides a summary of the monitoring efforts during the Project.

Table 3-1. Summary of Marine Mammal and Acoustic Monitoring Efforts.

Month	Marine Mammals[1]			Acoustics[1]		
	Hours	Days	Hours/Day	Hours	Days	Hours/Day
July	33:20	4	08:20	33:30	4	08:22
August	184:10	20	09:12	39:00	5	07:48
September	185:28	19	09:45	27:45	3	09:15
October[2]	128:43	16	08:02	-	-	-
November	07:10	1	07:10	-	-	-
December	02:30	1	02:30	-	-	-
TOTAL	**541:21**	**61**		**100:15**	**12**	

Note: [1]All time in hours:minutes; [2]Because two datasheets were lost, the hours per day are based on 14 days of monitoring effort.

3.2 Summary of Acoustic Results

3.2.1 Ambient Data

Ambient acoustic data were collected on 12 days throughout the monitoring period starting at approximately 30 minutes prior to construction activity, ending at various times throughout the day, and approximately 30 minutes after construction activities had been completed for the day (see Table 3-1). Acoustic data were considered to be ambient during quiet periods when no Project-related noise was occurring (e.g., before demolition/construction, during lunch breaks, or after demolition/construction). These data were collected to characterize general acoustic conditions at the Children's Pool Beach.

When evaluating average LZF_{max} data relative to locations in the Project area, F-2 (in the center of the Children's Pool Beach) had the highest mean ambient noise values at 85.9 dBZ (n=64). At the location closest to the construction area N-1 (adjacent to the parking lot), mean ambient noise values were 85.8 dBZ (n=70). At the other two locations on the Children's Pool Beach, the F-1

position (near the eastern portion of the beach) had the lowest mean ambient noise values at 83.4 dBZ (n=69), followed by the F-3 position (adjacent to the break wall) at 84.3 dBZ (n=58) (Table 3-2).

At all locations, the maximum daily LZF_{max} values exceeded the 90.0 dBZ threshold. The N-1 location (adjacent to the parking lot) had the highest maximum ambient noise values of 101.1 dBZ (n=70). On the beach itself, the highest maximum ambient noise value was at the F-2 location (95.1 dBZ, n=64), followed by the F-3 location (92.5 dBZ, n=58), and the F-1 location (91.6 dBZ, n=69) (Table 3-2).

When evaluating the morning vs. afternoon time periods, average LZF_{max} ambient noise values were higher at all locations during the afternoon when compared to the morning (Table 3-2). The highest morning average ambient value was at the F-2 location at 83.4 dBZ (Table 3-2, n=30). All other locations (F-1, F-3, and N-1) had the same average ambient values at 82.8 dBZ (n=30, 30, and 32, respectively) (Table 3-2). For afternoon average ambient noise values, the N-1 location had the highest value at 88.3 dBZ (Table 3-2, n=38). On the beach, the highest afternoon average ambient value was at the F-2 location (88.1 dBZ, n=34), followed by the F-3 (85.9 dBZ, n=28, and then the F-1 location (83.8 dBZ, n=39) (Table 3-2).

When evaluating the morning versus afternoon time periods, LZF_{max} maximum ambient noise values were generally higher during the afternoon, with the highest ambient values at the N-1 location above the Children's Pool Beach and the F-2 location on the beach. The F-1 location was the only location to have a lower afternoon ambient LZF_{max} value (Table 3-2). The highest morning maximum ambient value was at the N-1 location (94.6 dBZ, n=3) (Table 3-2), while on the beach the highest morning maximum ambient value was at the F-2 location (94.1 dBZ, n=30), followed by the F-3 location (92.4 dBZ, n=30), and the F-1 location (91.6 dBZ, n=30) (Table 3-2). The highest afternoon maximum ambient value was also at the N-1 location (101.1 dBZ, n=38), while on the beach, the highest afternoon maximum ambient value was at the F-2 location (95.1 dBZ, n=34), followed by the F-3 location (92.5 dBZ, n=28), and the F-1 location (91.6 dBZ, n=39) (Table 3-2).

Table 3-2. Summary of Acoustic Data (Average and Maximum) for Ambient Noise at Four Monitoring Locations.

Time Period	LZF_{max} (dBZ)							
	F-1		F-2		F-3		N-1	
	Average	Max	Average	Max	Average	Max	Average	Max
Daily	83.4	91.6	85.9	95.1	84.3	92.5	85.8	101.1
Morning	82.8	91.6	83.4	94.1	82.8	92.4	82.8	94.6
Afternoon	83.8	91.1	88.1	95.1	85.9	92.5	88.3	101.1

3.2.2 Construction Noise Data

During the Project timeframe acoustic noise data were collected for 15 different Project-related activities (Table 3-3). Relative to acoustic data collection locations, average LZF_{max} data on the top of the bluff (N-1) had the largest range of values from 79.8 to 96.6 dBZ followed by the N-2 location, with values ranging from 85.2 to 85.7 dBZ (Table 3-3). On the beach, the F-3 location had the largest range of average LZF_{max} values (81.4 to 91.8 dBZ), followed by the F-2 location (81.4 to 91.0 dBZ), and F-1 (82.8 to 87.7 dBZ) (Table 3-3). For maximum LZF_{max} data relative to Project locations on the bluff, the largest range of values were also at N-1 location (81.9 to 104.9 dBZ), followed by N-2 (89.0 to 95.1) (Table 3-3). On the beach, the F-2 location had the largest range of maximum LZF_{max} values (81.9 to 104.9 dBZ), followed by F-1 (85.3 to 96.3 dBZ) and F-3 (83.9 to 94.4 dBZ) (Table 3-3).

Out of the 15 noise-producing Project-related activities with acoustic data, nine recordings showed maximum LZF_{max} values above the 90 dBZ threshold for harbor seals and five Project-related activities had average LZF_{max} values that exceeded the 90 dBZ threshold (Table 3-3). No average values recorded during Project-related activities exceeded the 100 dBZ threshold for all other pinnipeds. The recording with the loudest LZF_{max} was during the excavator use, specifically concrete breaking and loading, with the highest maximum value of 104.9 dBZ at the N-1 location, followed by the F-1 location 96.3 dBZ, the F-2 location 95.9 dBZ, the N-2 location 95.1 dBZ, and the F-3 location 94.4 dBZ (Table 3-3). Recordings made during combined excavator and concrete saw use had the second highest maximum values of 102.8 dBZ at the N-1 location, followed by 89.0 dBZ at the N-2, F-1, and F-3 location and 87.4 dBZ at the F-2 location (Table 3-3). For acoustic recordings made during mounted jack hammer, maximum LZF_{max} values were 99.7 and 92.2 dBZ at the N-1 and N-2 locations, respectfully, followed by 91.0 dBZ at the F-2 location, 87.8 dBZ at the F-1 location, and 87.6 at the F-3 location (Table 3-3). During carpentry activity maximum LZF_{max} values were 99.1 dBZ at the N-1 location, followed by 97.0 dBZ at the F-2 location, 92.8 dBZ at the F-3 location, and 91.0 dBZ at the F-1 location (Table 3-3). During fencing activities noise values at the N-1 location were 97.9 dBZ, followed by 91.4 dBZ at the N-2 and F-2 locations, 86.4 dBZ at the F-1 location, and 85.9 dBZ at the F-3 location (Table 3-3). Excavator and compactor activity recording values were 95.7 dBZ at the N-1 location, followed by 92.5 dBZ at the F-3 location, 90.6 dBZ at the F-2 location, and 90.5 dBZ at the F-1 location (Table 3-3). During concrete pouring and finishing activities noise values were 95.6 dBZ at the F-1 location, followed by 94.9 dBZ at the N-2 location, 93.7 dBZ at the N-1 location, 92.6 dBZ at the F-2 location, and 90.3 dBZ at the F-3 location (Table 3-3). At the F-2 location, the maximum noise value during handheld jack hammer and concrete saw activities was 93.0 dBZ, followed by 87.1 dBZ at the N-1 location, 85.3 dBZ at the F-1 location, and 85.1 dBZ at the F-3 location. During biofilter placement maximum noise value at the N-1 location was 90.8 dBZ, followed by 89.3 dBZ at the F-1 location, 89.2 dBZ at the F-2 location, and 87.3 dBZ at the F-3 location (Table 3-3).

Table 3-3. Summary of Acoustic Data (Average and Maximum) for Project-related Activities at the Five Monitoring Locations.

Activity	LZF_{max} (dBZ)[1,2]									
	F-1		F-2		F-3		N-1		N-2	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
Backup Beeper	ND	ND	ND	ND	ND	ND	85.6	87.4	ND	ND
Biofilter Placement	87.3	89.3	88.0	89.2	85.6	87.3	86.4	90.8	ND	ND
Carpentry	85.6	91.0	89.7	97.0	86.4	92.8	87.8	99.1	ND	ND
Concrete Pouring + Concrete Finishing	82.8	95.6	82.7	92.6	83.9	90.3	86.0	93.7	85.2	94.9
Excavator	84.0	96.3	85.0	95.9	84.2	94.4	89.0	104.9[3]	88.7	95.1
Excavator + Soil Compactor	87.7	90.5	86.9	90.6	91.8	92.5	89.5	95.7	ND	ND
Excavator + Concrete Saw	83.8	89.0	84.7	87.4	83.8	89.0	96.6	102.8	87.5	89.0
Excavator + Front End Loader	ND	ND	81.4	83.5	81.4	85.1	ND	ND	ND	ND
Fencing	85.0	86.4	90.3	91.4	83.9	85.9	88.0	97.9	85.4	91.4
Front End Loader	86.0	88.7	85.7	87.1	84.0	86.6	79.8	81.9	ND	ND
Jack Hammer (Hand-held)	85.9	87.1	ND	ND	ND	ND	86.4	86.4	ND	ND
Jack Hammer (Hand-held) + Concrete Saw	83.2	85.3	91.0	93.0	83.3	85.1	86.9	87.1	ND	ND
Jack Hammer (Mounted)	84.8	87.8	84.5	91.0	82.9	87.6	92.5	99.7	86.7	92.2
Jack Hammer (Mounted) + Concrete Saw	84.6	87.1	84.9	88.5	83.9	83.9	ND	ND	ND	ND
Set-up	84.5	89.4	83.9	88.1	83.7	89.5	84.2	88.9	ND	ND

Note: [1]ND=No Data, Avg=Average, Max=Maximum; [2]Acoustic data was not recorded for all Project related activities at every location due to the timing of activities; [3]There were two instances of noise exceeding 100 dBZ for data collected for the Excavator (102.8 and 104.9 dBZ)

During Project related activities there were three recordings with dBZ values which exceeded the 100 dBZ threshold and 107 values which exceeded the 90 dBZ threshold (Table 3-4). Of these exceedances, 43 (39.1%) were attributable to Project-related noise (Table 3-4). Other causes of exceedance included wind (n=48; 43.6%), human activity (n=6; 5.5%), offshore naval training (n=5; 4.5%), surf (n=4; 3.6%), helicopters (n=3; 2.7%), and airplanes (n=1; 0.9%) (Table 3-4). Relative to location on the bluff, the N-1 location had the highest number of exceedances (n=57; 51.8%), with 36 (63.1%) attributable to Project-related noise. Of the 36 exceedances, three exceeded the 100 dBZ threshold (Table 3-3 and Table 3-4). This was followed by the N-2 location (n=12; 10.9%), with 6 (5.5%) exceedances directly attributable to Project-related noise (Table 3-4). On the beach, the F-2 location had the highest number of exceedances (n=24; 21.8%). with the F-1 and F-2 locations showing 5 (4.5%) and 12 (10.9%) exceedances, respectively (Table 3-4).

However, none of the exceedances on the Children's Pool Beach were attributable to Project-related noise (Table 3-4) and most were attributed to wind noise (n=26, 63.4%).

Table 3-4. Summary of Exceedance Data for 100 and 90 dBZ Thresholds by Site and Activity.

Cause of Exceedance	Number of Exceedances					
	F-1	F-2	F-3	N-1	N-2	Total
Project Related Noise	0	0	0	36[1]	6	**43 (39.1%)**
Airplane	0	0	1	0	0	**1 (0.9%)**
Helicopter	1	1	1	0	0	**3 (2.7%)**
Human Activity	0	0	2	4	0	**6 (5.5%)**
Naval Training	3	0	2	0	0	**5 (4.5%)**
Surf	1	1	2	0	0	**4 (3.6%)**
Wind	0	22	4	17	6	**48 (43.6%)**
Total	**5 (4.5%)**	**24 (21.8%)**	**12 (10.9%)**	**57 (51.8%)**	**12 (10.9%)**	**110**

Note: [1] Three recordings at N-1 were in exceedance of the 100 dBZ threshold.

3.3 Summary of Marine Mammal Monitoring Results

Marine mammal monitoring consisted of hourly counts of the total number of marine mammals in the Project area as well as behavioral reactions to any disturbance that occurred, whether part of the Project activities or otherwise. In doing so, the goal was to identify trends in marine mammal presence on the beach and surrounding rocks relative to Project-related activities.

There was a total of 3,391 observations (hourly and behavioral reactions) logged during the monitoring efforts. Six species of marine mammals were observed on the beach and in the surrounding waters around the Children's Pool Beach. The species observed included harbor seals, California sea lion, northern elephant seals, coastal bottlenose dolphins (*Tursiops truncatus*), common dolphins (*Delphinus sp.*), Pacific gray whales (*Eschrichtius robustus*), and killer whales (*Orcinus orca*). Unidentified large whales and dolphins were also observed but were too far away to identify to the species level. The greatest species diversity was during the month of September with five species observed (harbor seals, California sea lions, northern elephant seals, common dolphins, and killer whales), followed by August and October with four species observed (Figure 3-1). Of the Pinniped species, the harbor seal was only species observed during all monitored days, followed by the California sea lion (n=23 days) and the northern elephant seal (n=4 days). A majority of the California sea lions observed were males (46.8%), followed by females (20.3%). All of the northern elephant seals noted were juveniles. All other marine mammal species observed were seen on 3 days or less during monitoring efforts. All cetacean species were observed in the water to the west of the Children's Pool breakwater wall (Figure 3-1).

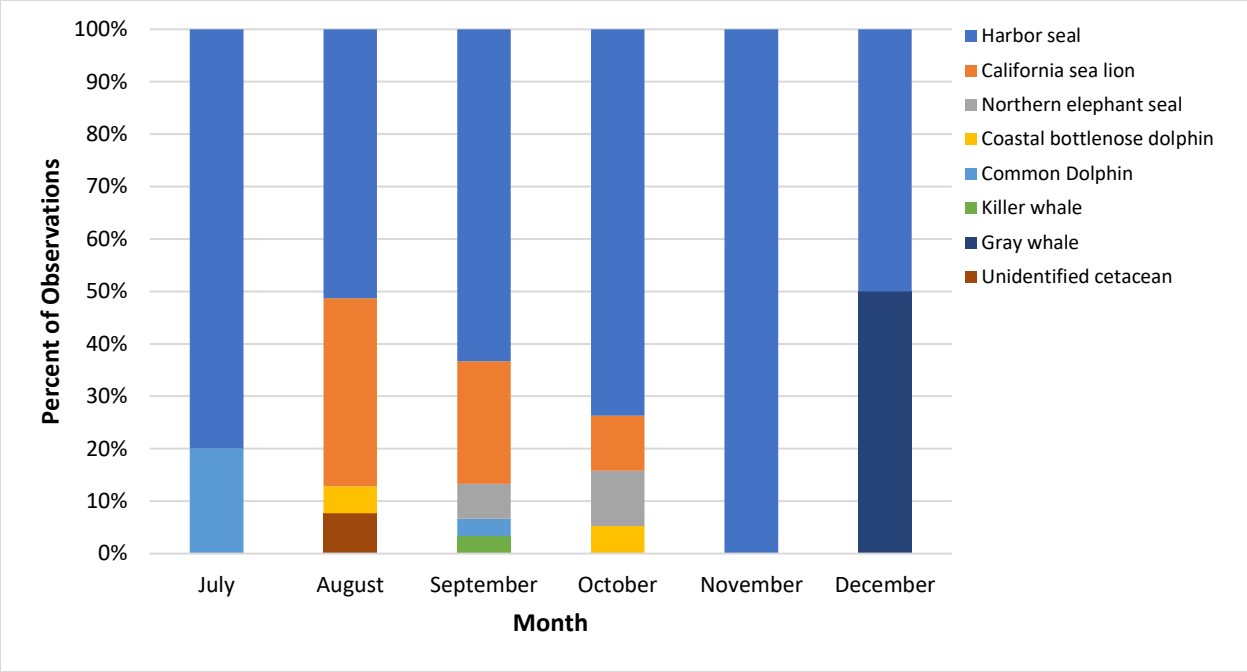

Figure 3-1. Percent of Observations of Species by Month.

3.3.1 Weather Conditions

Weather conditions for monitoring were generally favorable with Beaufort Sea States (BSS), overall visibility, and cloud cover conducive to monitoring. During the monitoring effort the BSS was recorded with an average of 1.6, with a majority of the observations having BSS ratings of from 1 to 3 (95.6%; Figure 3-2a). The BSS relates wind speed to observed conditions in the area, with a dead calm classified as a BSS of 0, and hurricane force winds classified as a BSS of 13. The highest average BSS for the monitoring efforts was in November with an average BSS of 1.8, and the lowest average BSS was 1.0 in December, but both of these data points are based on a single day of monitoring during those months. When these two days are eliminated from the analysis, the average Project BSS rises to 1.7. A majority of the observations (74.6%) had visibility ratings of either Good (visibility of from 10 to 20 kilometers [6.2 to 12.4 miles]) or Excellent (visibility of greater than 20 kilometers [12.4 miles]; Figure 3-2b). Most observations (89.8%) associated with the monitoring efforts were during cloud cover of Partly Cloudy, Overcast, or Clear (Figure 3-2c).

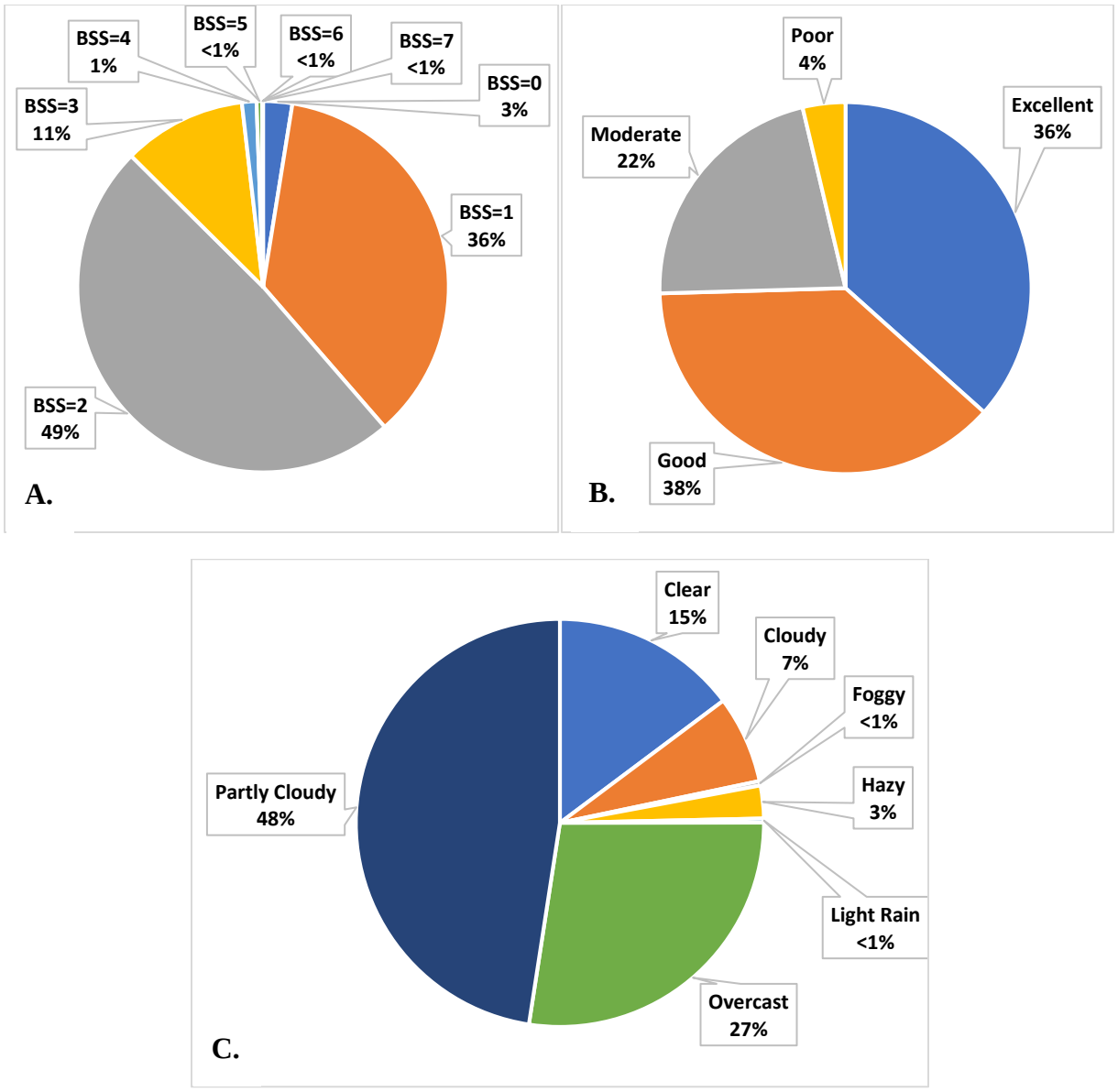

Figure 3-2. Weather Conditions in the Project Area Relative to: A. Beaufort Sea State, B. Visibility, and C. Cloud Cover

3.3.2 Hourly Count Data

Hourly counts were taken of the marine mammals on the beach and rocks in the Project area within the designated zones (see Figure 2-1) on the beach. From July 25th to December 9th, a total of 1,516 hourly counts were recorded during monitoring efforts over 61 days. Datasheets from two days were lost, so the 1,516 observations are based on 59 days of monitoring. Human activity in the Project area was separated into three distinct areas (overlooks above the beach, in the water, and on the Children's Pool Beach) and the number of visitors were logged in these areas. When evaluating the presence of harbor seals relative to human presence, as the average number of humans per hour in the Project area increased the number of harbor seals decreased and then stabilized before dropping at the end of the monitoring (Figure 3-3).

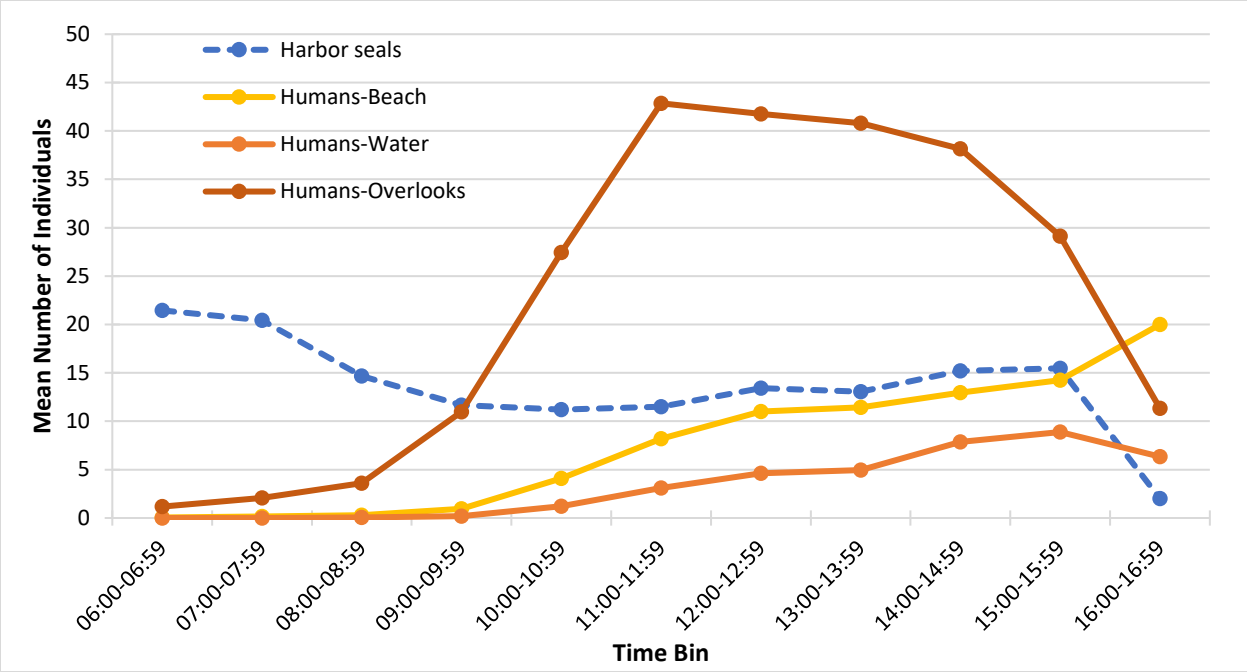

Figure 3-3. Mean Number of Humans and Harbor Seals in the Project Area per Hour.

Throughout the day harbor seals generally tended to stay on the western side of the beach (F2 to F3) near the Children's Pool breakwater rather than on the eastern side of the beach (F1 to F2; Figure 3-4). The human presence in the Project area started to increase during the 09:00 to 10:00 hour and, as there was an increase in the number of humans in the Project area (including the overlooks, in the water, and on the Children's Pool Beach), there was a decline in the number of individuals on the eastern side of the beach (F1 to F2). Starting during the 06:00 hour, there was a steady decline in the mean number of harbor seals on the beach until numbers stabilized after approximately 10:00. The numbers of individuals in the F2 to F3 section remained relatively constant after the initial decline in numbers between 09:00 and 10:00 on the beach, with slight fluctuations at the end of the monitoring day (Figure 3-4).

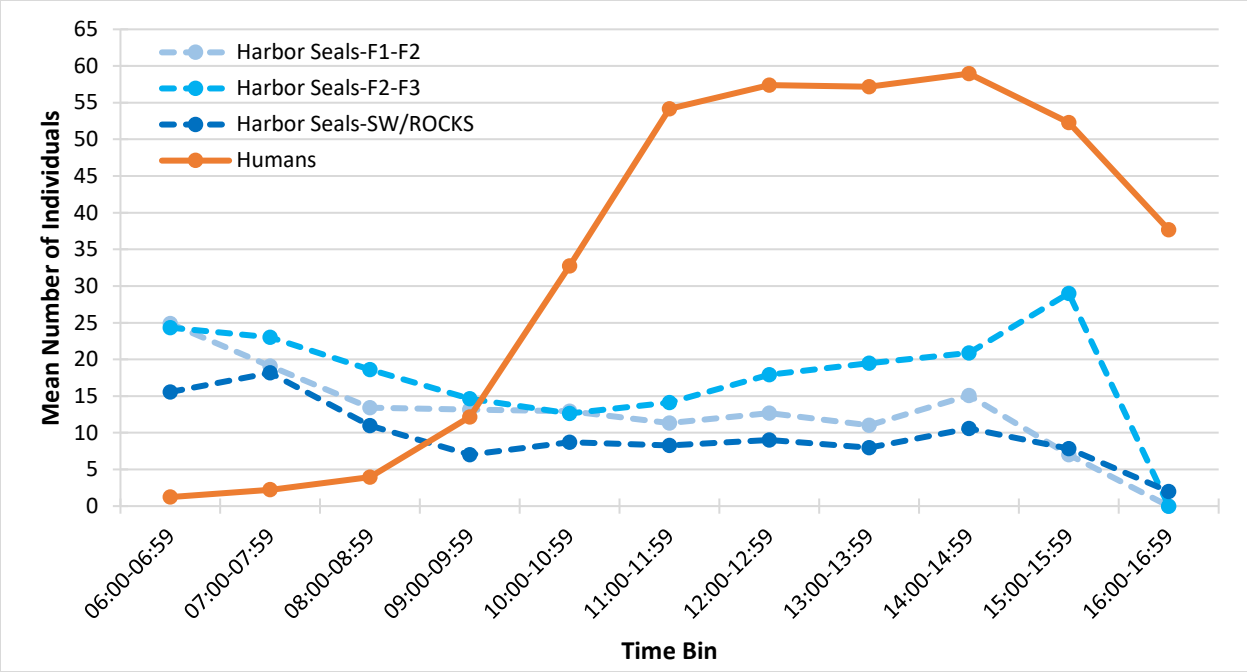

Figure 3-4. Mean Number of Humans and Harbor Seals in the Project Area per Hour and by Beach Section.

Human presence in the monitoring area was dominated by the number of individuals on the overlooks above the Children's Pool Beach (see Figure 3-3). When evaluating the number of humans present in areas that there may have been in direct, or incidental, contact with harbor seals (e.g., in the water, or on the Children's Pool Beach), there was a decrease in average harbor seal numbers as the human presence increased (Figure 3-5). Both the mean hourly number of humans in the water and the harbor seals in the Project area began to drop at the end of the monitoring period (during the 16:00 hour), while the mean number of humans on the beach increased. This would indicate that the mean number of humans on the beach had a greater influence on the mean number of harbor seals in the Project area than humans in the water.

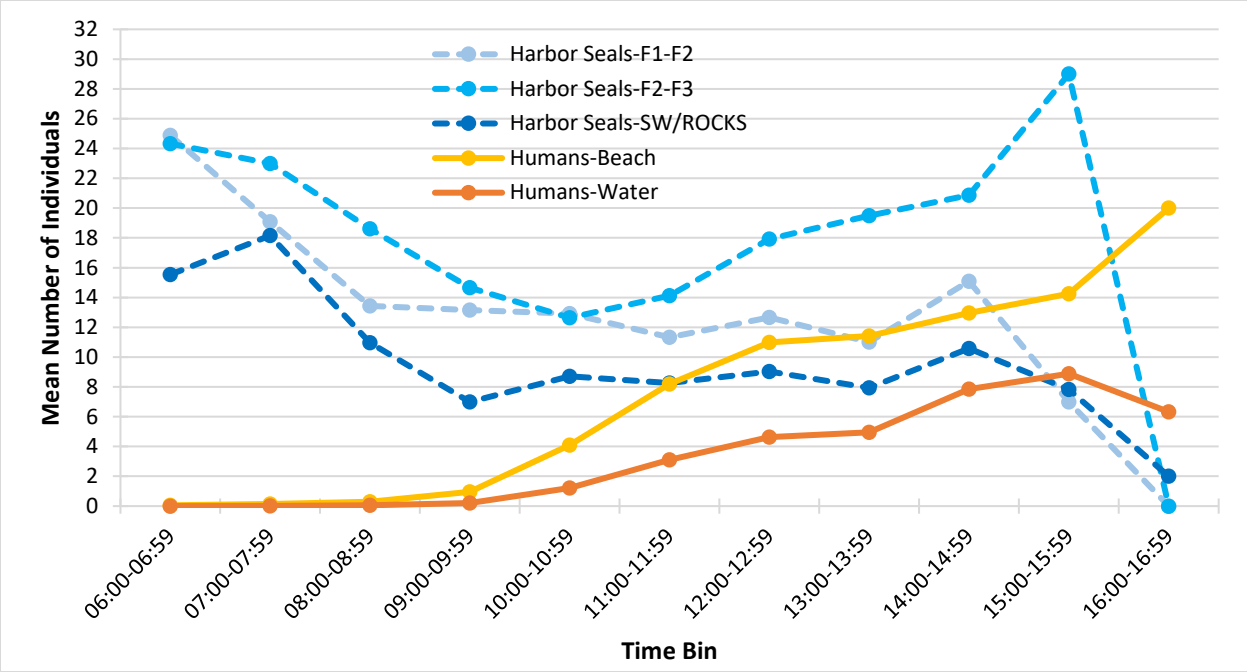

Figure 3-5. Mean Number of Humans and Harbor Seals in the Project Area with the Potential for Interaction.

Sexual dimorphism is not obvious in harbor seals, with the presence of a pup or observations of genital slits being the two primary means of telling males from females (Jefferson et al. 2015). Because differentiation of males and females from the observation location was problematic with the available monitoring equipment, all individuals were classified as unknown sex, unless a pup was present and associated with an adult. The only verified female presence was when a stillborn pup was born on October 5th, 2018. At approximately 12:00, western gulls (*Larus occidentalis*) were observed converging on a spot on the beach in the F2-F3 sector. After observing the gulls for a few minutes, an assumed still born harbor seal pup was observed on the beach. While the birth itself was not seen by the monitor, a harbor seal was observed to be moving away from the stillborn. Within two-and-a-half hours the pup had been completely consumed by gulls. A detailed report was submitted to the City in compliance with the IHA (NMFS 2018) and is included as Appendix A to this monitoring report.

Most of the individuals observed were juveniles (mean of 4.3 individuals per day) or adults (mean of 12.3 individuals per day). A single stillborn pup and an associated female was observed in early October (see above and Appendix A for a description of the event). There were several observations of small tagged individuals that appeared smaller than other juveniles on the beach, but since these individuals were likely released from the local stranding network, and presumably weaned, they were considered as juveniles.

3.3.3 Marine Mammal Reaction Data

The IHA application (City 2017a) predicted that the 90 dBZ airborne threshold for harbor seals would extend to approximately halfway between the F1 and F2 airborne monitoring stations, depending on the location of the noise source (see Figure 2-1). As such, the Monitoring Plan

included in the IHA Application (City 2017a), instructed the monitors to record reactions, and the apparent causes of the reactions, of marine mammals on the Children's Pool Beach, regardless of the stimulus. The stimuli were classified into seven categories including: Aircraft, Human Activity, Intraspecies, Other Animal, Swimmer/Diver, Construction, and Other[1]. Reactions to stimuli were classified into five categories: Vocalization, Alert, Movement, Flush, and Other[2].

During all monitoring efforts, there were a total of 9,310 reactions observed and attributed to stimuli in the Project area. Of the reactions observed, human activity was the most often observed stimulus (n=5,818; 62.5%), followed by construction-related activities (n=1,690; 18.2%) and swimmers/divers in the water (n=548; 5.9%). Alerts were the most observed reaction (n=6,031; 64.8%), followed by flushes (n=1,799; 19.3%), and movements (n=1,347; 14.5%). Table 3-5 provides a summary of the data collected relative to stimuli and reactions to those stimuli.

Table 3-5. Summary of All Observed Reaction Data in the Project Area.

Stimulus	Reaction Type					TOTAL
	Vocalization	Other	Alert	Movement	Flush	
Aircraft	0	0	507	24	8	**539 (5.8%)**
Human Activity	53	49	3,640	827	1,249	**5,818 (62.5%)**
Intraspecies	0	16	123	82	40	**26 (2.8%)**
Interspecies	1	4	169	29	46	**249 (2.7%)**
Other	0	3	49	64	89	**205 (2.2%)**
Swimmer/Diver	1	3	239	101	204	**548 (5.9%)**
Project	0	3	1,304	220	163	**1,690 (18.2%)**
TOTAL	**55 (0.6%)**	**78 (0.8%)**	**6,031 (64.8%)**	**1,347 (14.5%)**	**1,799 (19.3%)**	**9,310**

When evaluating only those activities that were of concern in the IHA Monitoring Plan (Alert, Movement, Flush; City 2017a) and directly attributable to the Project (n=1,687; see Table 3-5), a majority of the recorded reactions were for harbor seals (n=1,681; 99.6%). The harbor seal reactions were predominantly related to noises generated by equipment (n=1,583 reactions; 94.1%), followed by visual disturbances (n=99 reactions; 5.9%). Of the 1,583 reactions to noise, most were alerts (n=1,248; 78.8%), followed by movements (n=215; 13.6%), and flushes (n=12; 7.6%) (Table 3-6). The remaining reactions to visual stimuli (n=99; 5.9%) were more evenly split between alerts (n=54; 55.6%) and flushes (n=43; 43.4%). Over the 61 days of monitoring effort, Project-related alerts, movements and flushes equated to 21.3 alerts per day, 3.54 movements per

[1] Other stimuli included waves, incoming tide, or unknown stimuli.
[2] Other reactions included flipper waving/slapping, lunging at other animals/humans, or rotating their head towards the water, but not moving.

day, and 2.67 flushes per day. This is in comparison to the non-Project-related reactions which were 77.5 alerts per day, 18.5 movements per day, and 26.8 flushes per day.

Reactions attributed to the other two species observed (California sea lion and northern elephant seal) occurred during less than 1% of the observations (Table 3-6). Of the reactions attributed to California sea lions and northern elephant seals, a single California sea lion alerted to the MMO on the wall, and there were five northern elephant seal reactions (1 alerted, 4 moved) to Project-related activities including saw cutting, an excavator loading concrete, backup beepers, and a dirt compactor (Table 3-6).

3.3.4 Summary of Observed Level B "Take"

While all reactions to perceived stimuli were recorded regardless of Project-related activities occurring at the time of the observation, during the IHA permit process only three specific reactions (alert, movement, and flush) were deemed as requiring specific attention (see Table 2-1 for definitions). Of those three reactions to stimuli, only movements and flushes were considered as Level B "take" relative to the authorized "take" limits identified in the IHA (NMFS 2018). No Level A "take" was authorized in the IHA (NMFS 2018).

Based on the acoustic data collected during the Project timeframe, no pinnipeds were exposed to sounds directly attributable to the Project at levels greater than the acoustic thresholds of 90 dBZ (harbor seals) or 100 dBZ (all other pinnipeds). Therefore all "take" presented in Table 3-7 is based on physical disturbance due to Project-related activities, and not based on exposure to potential harassment from noise sources.

During the monitoring timeframe, there were a total of 3,146 reactions (Movement: 1,347; Flush: 1,799) that fell into the two relevant categories for Level B "take" (see Table 3-5). Of those observations, 383 (10.7%) reactions were directly attributable to Project-related activities. Table 3-7 summarizes the observed reactions to Project-related stimuli that were considered as Level B "take". Based on the data provided in Table 3-7, the authorized Level B "take" was not exceeded during the Project.

Table 3-6. Summary of Project-related Observed Reaction Data in the Project Area.

Stimulus	Reaction								
	Alert			Movement			Flush		
	Harbor Seal	CA Sea Lion	Northern Elephant Seal	Harbor Seal	CA Sea Lion	Northern Elephant Seal	Harbor Seal	CA Sea Lion	Northern Elephant Seal
Noise Disturbance									
Backhoe	193			50			2		
Backup Beeper[1]	169			16			13		
Concrete Breaker	45			18			10		
Concrete Pouring	6								
Concrete Saw	95			7			2		
Crane	1								
Excavator	96			2			8		
Front End Loader	171		1	40		4	18		
General Construction Noise	257			4			27		
Generator	9								
Jack hammer (Excavator Mounted)	4						4		
Jack hammer (Hand-held)	157			52			10		
Sandblasting							9		
Soil Compactor	26			26			17		
Truck	19								
SUBTOTAL	**1,248**	**0**	**1**	**215**	**0**	**4**	**120**	**0**	**0**
Visual Disturbance									
Crane	3						27		
General Construction Activities	12						1		
Monitor (Acoustics)	12						14		
Monitor (Marine Mammals)	27	1		1			1		
SUBTOTAL	**54**	**1**	**0**	**1**	**0**	**0**	**43**	**0**	**0**
TOTAL	**1,302**	**1**	**1**	**216**	**0**	**4**	**163**	**0**	**0**

Notes: [1]Includes backup beepers for Bobcats, Backhoes, Cranes, Excavators, and Trucks.

Table 3-7. Summary of Observed Level B "Take" During Project-related Activities.

Species	Authorized Level B "Takes"	Observed Level B "Takes"		
		Movement	Flush	TOTAL (Percent Observed to Authorized)
Harbor seal	1,620	216	163	383 (23.6%)
California sea lion	36	0	0	0
Northern elephant seal	14	4	0	4 (28.6%)

4.0 Discussion

4.1 Acoustics

Based on the acoustic data collected as part of the Project, the 90 dBZ threshold for harbor seals, and the 100 dBZ threshold for all other pinnipeds were not exceeded on the Children's Pool Beach. While the data shows that these thresholds were exceeded at the N-1 and N-2 positions (closest to the demolitions/construction), this area was on top of the bluffs above the beach, and the Project-related noise did not appear to extend to the beach itself. This is likely a result of masking of the noise sources due to the cliff face, specifically at the F-1 position, as well as the distances form the noise sources for the F-2 and F-3 monitoring locations. The acoustician diligently watched the dBZ levels during all recording sessions, and noted that factors such as wind, surf, and aircraft flying overhead were the primary noise sources that exceeded 90 dBZ on the beach (see Table 3-3 and Table 3-4). Based on this data, no dBZ levels on the beach exceeded either the 90 or 100 dBZ thresholds. As a result, no animals on the beach were exposed to noise levels associated with Level B harassment thresholds.

The IHA Application (City 2017a) assumed a simplistic spherical spreading loss model to estimate the distances to the 90 and 100 dBZ ZOIs, with the 90 dBZ thresholds assumed to be reached at from 10 to 20 m (33 to 66 ft) with a source level of 110 dBZ at 15.2 m (50 ft). The N-1 and N-2 positions were the closest to a "source" values and were from 15 to 50 m (50 to 164 ft), depending on the location of the activity and the monitor. Based on the data presented in Table 3-3, the maximum dBZ levels did not exceed the assumed 110 dBZ, but were greater than the 90 dBZ threshold. Because the maximum dBZ levels for the beach monitoring positions were generally similar to the N-1 and N-2 dBZ levels, but were further away from the Project activities, we assume that the levels on the beach were unrelated to the Project. Furthermore, the bluff face likely masked a majority of the sound from the top of the bluff, especially for the F-1 recording location. Any attempt to determine propagation loss from the available data would need to account for this variable, and the data collected thus far does not allow for an accurate representation of transmission loss for the Project-related equipment. Furthermore, environmental variables associated with the Project area (specifically wind and surf), polluted the data making it impossible to determine the actual transmission loss associated with the Project-related activities.

4.2 Marine Mammals

While no Project-related noise conclusively exceeded 90 dBZ on the Children’s Pool Beach, pinnipeds were observed to react to Project-related activities, with a majority of the reactions being alerts, followed by movement, and then flushes into the water (see Table 3-6 and Table 3-7). A majority of the observed reactions were due to non-Project-related activity on the beach and the overlooks, with a 62.5% of the observed reactions on the beach due to human activity (which includes both direct and indirect interactions with animals on the beach; see Table 3-5). Overall, Project-related reactions were the second highest cause of reactions, with 18.2% of all observed reaction. Given that the Project used equipment that potentially produced sudden loud (or sometimes sustained) noises and visual stimuli, this shows that the Project did have short-term impacts on the animals on the Children's Pool Beach; However, it should be noted that the average

daily reactions due to non-Project-related human activity in the Project area were up to ten times higher than the Project-related reactions (Alerts: 3.6 times higher, Movements: 5.1 times higher, and Flushes: 10.0 times higher). This would indicate that the overall pressure on the animals on the beach were likely impacted more by the presence of people in the water, on the beach, or on the overlooks than the Project.

5.0 Conclusion

Level B “take” occurred exclusively as a result of disturbance from Project-related noise or visual stimuli, but not due to exposure to noise greater than airborne regulatory thresholds. While animals reacted to Project-related activities, the data provided in this document indicates that the monitored Project-related activities did not have an adverse impact on observed marine mammal species. The acoustic data collected showed that while some noise on the Children's Pool Beach exceeded regulatory thresholds for pinniped species, there were likely factors outside of the Project that impacted the beach-based data collection points. It was also apparent that a simplistic spherical spreading loss model did not accurately predict the transmission loss associated with the Project area. This was more likely because environmental variables (e.g., wind and/or surf), masking, or human presence, directly impacted the far-field measurements. Overall, the authorized Level B "take" allowed by the IHA by the Project (NMFS 2018) was not exceeded.

6.0 List of Preparers

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Appendix

Summary of Stillborn Harbor Seal Observation, October 5, 2018

Appendix A: Summary of Stillborn Harbor Seal Observation

On October 5, 2018 at approximately 12:08, the Marine Species Observer (MSO) at the Coast Boulevard Project (Project) site observed western gulls (*Larus occidentalis*) converging on a spot on the beach (in the F2-F3 sector, per the monitoring plan). The MSO then noted that they were obviously pecking at something on the sand. While it is not unusual for western gulls to be on the beach, having gulls congregate in one distinct location is an unusual event, and the MSO was drawn to the activity. After observing what the gulls were pecking at through binoculars, as well as seeing a trail of blood and placenta from an adult harbor seal, it was determined that a harbor seal had just given birth to a presumably stillborn pup.

Project-related activities along Coast Boulevard earlier in the day, as well as at the time of the observation, included:

- Earlier in day:
    - 0700-1030: Hand-held grinder to set plaque into stone in middle of work area, generator to power grinder.
- At time of observation:
    - Shoveling by hand.
    - Grading by hand.
    - Concrete mixing by hand.

Work in the last few weeks has been characterized by lower sound levels associated with shoveling soil and material by hand, concrete pouring and grading, concrete mixers, concrete forming, and generators to power hand-held equipment (e.g., stone grinding using a hand-held grinder). All of these activities have been acoustically measured and noise levels at the Children's Pool beach below the Project site have not exceeded regulatory thresholds for harbor seals (90 decibels, z-weighted). Based on the Project-related activities before and during the stillbirth, it is not believed that Project-related activities resulted in the event.

The timeline below provides an outline of the sequence of events that followed the initial observation:

12:08 – MSO observed western gulls on the ground pecking at something on the beach.

12:15 – MSO identified it as a stillborn harbor seal on beach via binoculars. The MSO notified the MSO Coordinator (MC) via text (Figure A-1 [red box identifies the location of the stillborn]).

12:33 – MC received text, asked MSO to contact him via phone.

12:33 – MC texted the Project Manager ([PM] the PM was unavailable).

12:35 – MC and MSO talk via phone.

12:40 – MSO sends images of stillborn via text.

12:44 – MC and PM discuss via phone.

12:55 – MC and former foreman speak via phone and the MC asks the former foreman for the current foreman's contact information…former foreman contacts current foreman.

13:00 – Current foreman calls the MC and the MC asks that they pause work while the PM contacts the City. Foreman agrees to pause work while TDI/the City determine the next steps.

13:01 – PM leaves a message for the City Marine Monitoring Coordinator (MMC).

13:09 – MC contacts the MSO to let them know of the situation.

13:12 – PM contacts the Resident Engineer via phone asking for contact information of the City biologist.

13:13 – MSO contacted the MC saying that the western gulls have mostly consumed the body.

13:19 – MSO contacted the MC via text saying that the foreman gave his workers permission to continue with non-noisy work.

13:25 – The City MMC and the PM spoke via phone. The City MMC asked that TDI generate a memo for the record, and that the PM contact the City's Project biologist.

14:00 – MC left a message with the local stranding network to alert them of the stillborn.

14:30 – Stillborn pup has been completely consumed by western gulls (Figure A-2).

Figure A-1. Photos showing stillborn harbor seal pup at approximately 12:10 pm.

Figure A-2. Photo showing the location of the stillborn harbor seal pup at approximately 14:30 pm.