

Marine Mammal Monitoring Plan for the Trinidad Pier Replacement Project

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Project Description

The Trinidad Pier, located on Trinidad Bay, is an antiquated structure that requires reconstruction in order to maintain public safety and to redress certain environmental deficiencies in the existing structure. The 540 ft. long pier is located on tidelands granted by the State of California to the City of Trinidad and leased by the Trinidad Rancheria. The project area consists of the pier (0.31 acres) and a nearby staging area (0.53 acres). The existing pier was constructed in 1946 to serve commercial fishing and recreational uses. Since that time the creosote-treated wood piles which support the pier, as well as the wood decking, have deteriorated and are proposed to be replaced by cast-in-steel-shell (CISS) concrete piles and pre-cast concrete decking, respectively. This will improve the safety of the pier. Existing utilities which will require replacement include electrical, water, sewer, and phone. Additional dock amenities that will be replaced include lighting, railing, four hoists, three sheds, a saltwater intake pipe used by the Telonicher Marine Laboratory, and a water quality sonde utilized by the Center for Integrative Coastal Observation, Research, and Education. The proposed construction schedule is from August 1, 2011 to May 1, 2012.

Potential Project Related Effects

Marine mammals potentially occurring in Trinidad Harbor include killer whale (transient stock), gray whale, Steller sea lion, California sea lion, and harbor seal. Killer whale and Steller sea lion observations are very rare (less than one per year), but the gray whale and California sea lion are observed commonly, and harbor seals are seldom absent from the harbor. These marine mammals are protected under the Marine Mammal Protection Act, under which it is illegal to “take” a marine mammal without prior authorization from National Marine Fisheries Service (NMFS). Take is defined as harassing, hunting, capturing, killing, or attempting to harass, hunt, capture, or kill any marine mammal. Harassment is defined as any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal in the wild, or has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including but not limited to migration, breathing, nursing, breeding, feeding, or sheltering.

Current NMFS practice regarding exposure of marine mammals to high-level sounds is that cetaceans and pinnipeds exposed to impulsive sounds of 180 and 190 dB RMS or above, respectively, have the potential to be injured (i.e., Level A harassment). NMFS considers the potential for behavioral (Level B) harassment to occur when marine mammals are exposed to sounds below injury thresholds but at or above 160 dB_{RMS} threshold for impulse sounds (e.g., impact pile driving) and 120 dB_{RMS} threshold for continuous noise (e.g., vibratory pile driving). The project will not generate impulsive noise.

Pile Driving

As indicated in the biological assessment for the project, noise levels associated with piling removal and piling installation vary depending upon the type of noise-generating activity involved. The level A harassment thresholds of 180 and 190 dB_{RMS} are not expected to be exceeded anywhere in the project area at any time. Impulsive noise will not be generated and the 160 dB_{RMS} Level B threshold for impulsive noise is not expected to be exceeded anywhere in the project area at any time. The 120 dB_{RMS} Level B threshold for continuous noise is expected to be exceeded. The exceedance, and thus the potential area within which exceedance occurs, varies for the three types of underwater noise-generating activity that will occur: removal of old piles, augering for new piles, and placement of new piles. These activities may affect marine mammals in Trinidad Harbor (Figure 1). The principal uses of the harbor by pinnipeds include foraging areas and haul-outs for harbor seals and California sea lions. Due to the complex, rocky topography in the harbor, there are many sites within the harbor that are used for both purposes. Additionally, gray whales have been observed within the harbor.

Waters within the area of effect will be monitored by a NMFS-approved observer. The use of a marine mammal monitor during pile driving will reduce the potential for any individual marine mammal to be harmed during pile driving.

Monitoring Activities

This monitoring plan is intended to ensure the safety of marine mammals by minimizing their exposure to dangerous levels of underwater noise; however, it is also in the best interest of these animals for the project to be completed as quickly as possible to avoid prolonging these dangers. A balance must be struck between protecting the animals and avoiding unnecessary construction delays. Alterations to this plan may be proposed based on the assessment of the biological monitor during observations of how pinnipeds react/respond to pile driving at the project site. Any subsequent changes to this plan will be documented and submitted to NMFS for review and approval.

1. An approved marine mammal observer shall attend the project site one hour prior until one hour after construction activities cease each day throughout the construction window.

2. The observer shall be approved by NMFS.
3. The observer shall search for marine mammals within behavioral harassment threshold areas as identified in Table 1 and Figure 1 [of the Plan]. The area observed shall depend upon the type of underwater sound being produced: pile extraction, augering, or pile installation.
4. The observer shall be present on the pier during pile driving, augering, and pile extraction to observe for the presence of marine mammals in the vicinity of the activity. All such activity will occur between one-half hour after sunrise and one-half hour before sunset. If inclement weather limits visibility within the area of effect, the observer will perform visual scans to the extent conditions allow, but activity will be stopped at any time that the observer cannot clearly see the water surface out to a distance of at least 100 feet from the activity. In conditions of good visibility, observers will likely be able to detect pinnipeds out to a range of approximately 0.5 miles from the pier, and to detect whales out to a range of approximately 1.0 miles from the pier. Animals at greater distances likely would not be detected.
5. The observer will also perform auditory monitoring, and will report any auditory evidence of marine mammal activity. Auditory detection will be based only on the use of the human ear. Auditory monitoring is highly effective for detecting gray whales. Auditory monitoring prior to the start of the noise-generating activity occurs in the absence of masking noise and thus helps to ensure that the auditory monitoring is effective. Note that there will also be many quiet periods between individual noisy activities, during which whales can be detected. Most of the work day is spent in preparing for a few noisy intervals. Auditory monitoring is less effective for pinnipeds.
6. The observer will scan the area of effect for at least 30 minutes continuously prior to any episode of in-water work to determine whether marine mammals are present, and will continue to scan the area during the period of in-water work. The scan will continue for at least 30 minutes after each in-water work episode has ceased. The scan will involve two visual "sweeps" of the area using the naked eye and binoculars. Typically, the sweep would be conducted slowly as follows: one sweep going from left to right and the other returning from right to left. The length of time it takes to do the sweep will depend on the amount of area that needs to be covered, weather conditions, and the time it takes the monitor to thoroughly survey the area.
7. Pile driving will not be curtailed if the only marine mammals detected within the area of effect are harbor seals. If any other marine mammals besides harbor seals are observed within the area of effect, pile driving will not commence. If a marine mammal swims into the area of effect during pile driving, the observer will identify the mammal and, if it is not a harbor seal, will notify the Project Engineer who will notify the Contractor, and pile driving will stop. If the animal has been observed to leave the area of effect, or 15 minutes have passed since the last observation of the animal, pile driving will proceed.

8. If a marine mammal is sighted by the observer, the observer shall record the following information: date and time of initial sighting, tidal stage, weather conditions, sea state, species, behavior (activity, group cohesiveness, direction and speed of travel, etc.), number, group composition, distance to sound source, number of animals impacted, construction activities occurring at time of sighting, and monitoring and mitigation measures implemented (or not implemented). These observations will be reported to NMFS in a letter report to be submitted on each Monday, describing the previous week's observations.
9. A final report will be submitted summarizing all in-water construction activities and marine mammal monitoring during the time of the authorization, and any long term impacts from the project. All sightings of marine mammals other than harbor seals will be similarly recorded and documented, and will be included in the weekly letter report.