

INCIDENTAL HARASSMENT AUTHORIZATION

The California Department of Transportation (Caltrans) is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to harass marine mammals incidental to pier implosion and pile driving activity at the San Francisco-Oakland Bay Bridge, when adhering to the following terms and conditions.

1. This Incidental Harassment Authorization (IHA) is valid for a period of one year from the date of issuance.
2. This IHA is valid only for pier implosion and pile driving activities associated with the San Francisco – Oakland Bay Bridge.
3. General Conditions

- (a) A copy of this IHA must be in the possession of Caltrans, its designees, and work crew personnel operating under the authority of this IHA.
- (b) The species authorized for taking are summarized in Table 1 (attached).
- (c) The taking is limited to the species listed in condition 3(b). See Table 1 for numbers of take authorized.
- (d) The taking by serious injury or death of any of the species listed in condition 3(b) of the Authorization or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.
- (e) Caltrans shall conduct briefings between construction supervisors and crews, marine mammal monitoring team, acoustical monitoring team, and staff prior to the start of all construction and implosion activities, and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.

4. Mitigation Measures

The holder of this Authorization is required to implement the following mitigation measures:

- (a) In-water pile driving and pile removal activities and the controlled implosion of Piers E19 and E20 shall only be conducted during daylight hours and with enough time for pre and post activity monitoring, and with good visibility when the largest shutdown zone can be visually monitored.

- (b) For controlled implosion and test blasts of Piers E19 and E20, Caltrans shall install and use a Blast Attenuation System (BAS) prior to demolition to reduce the shockwave from the implosion.
- (c) Caltrans shall implement the following standards when using a bubble curtain:
 - (i) The bubble curtain must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column;
 - (ii) The lowest bubble ring shall 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; and
 - (iii) Caltrans shall require that construction contractors train personnel in the proper balancing of air flow to the bubblers, and shall require that construction contractors submit an inspection/performance report for approval by Caltrans within 72 hours following the performance test.
 - (iv) Corrections to the attenuation device to meet the performance standards shall occur prior to impact driving.
- (d) Establishment of shutdown zones
 - (i) For in-water heavy machinery work (such as debris removal or setting up the BAS), a minimum 10 m shutdown zone shall be implemented. If a marine mammal comes within 10 m of such operations, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions. This type of work could include (but is not limited to) the following activities: (1) vibratory pile driving; (2) movement of the barge to the pile location; (3) positioning of the pile on the substrate via a crane (i.e., stabbing the pile); (4) removal of the pile from the water column/substrate via a crane (i.e., deadpull); or (5) the placement of sound attenuation devices around the piles.
 - (ii) For controlled implosion and associated test blasting, as well as pile driving, Caltrans shall establish monitoring zones that are appropriate to specific marine mammal functional hearing groups for each implosion scenario (See Tables 2 & 3 attached).
- (e) Shutdown Zone Monitoring for Mitigation Measures
 - (i) Pre-activity monitoring shall take place from 30 minutes prior to initiation of activity and post-activity monitoring shall continue through 30 minutes post-completion for construction activity and 60 minutes post-completion for implosion and test blast activity. Pile driving may commence at the end of the 30-minute pre-activity monitoring period, provided observers have determined that the shutdown zone is clear of marine mammals, which includes delaying start of

pile driving activities if a marine mammal is sighted in the zone, as described in Table 3 (attached).

(ii) A determination that the shutdown zone is clear must be made during a period of good visibility (i.e., the entire shutdown zone and surrounding waters must be visible to the naked eye).

(iii) If a marine mammal approaches or enters the shutdown zone during activities or pre-activity monitoring, all pile driving or implosion activities at that location shall be halted or delayed, respectively. If activity is halted or delayed due to the presence of a marine mammal, the activity may not resume or commence until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than thirty minutes.

(iv) Caltrans shall use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. Soft start shall be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of thirty minutes or longer.

(v) Proofing of piles is limited to a maximum of two piles per day, for less than 1 minute per pile, with a maximum of 20 blows per pile.

(vi) If the number of authorized takes are reached, Caltrans shall shut down if a marine mammal is sighted within or approaching the monitoring zone.

(vii) If a species for which take is not authorized is sighted within or approaching the monitoring zone, Caltrans shall shut down.

5. Monitoring

The holder of this Authorization is required to conduct marine mammal monitoring during pier implosion, test blasts, and pile driving and removal activities. Monitoring and reporting shall be conducted in accordance with monitoring measures in Caltrans' application.

(a) For all pile driving activities, a minimum of two protected species observer (PSOs) shall be required, with at least one PSO stationed at the active pile driving rig or at the best vantage point(s) practicable to monitor the shutdown zone for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator. Other PSOs should be stationed at the best vantage point(s) practicable to observe the monitoring zone.

- (b) For all pier implosion activities and test blasts, a minimum of eight PSOs shall be required. One PSO shall be designated as the Lead PSO, who shall receive updates from other PSOs on the presence or absence of marine mammals within the PSO. This Lead PSO shall notify the Environmental Compliance Manager of a cleared shutdown zone before the start of the implosion(s). PSOs shall be positioned near the edge of each of the monitoring zones and shall utilize boats, barges, and bridge piers and roadway.
- (c) Caltrans shall perform hydroacoustic monitoring during the Pier E19/E20 implosion event. Caltrans shall collect measurements at approximately 200 feet, 500 feet, and a third location between 800 to 1,500 feet.
- (d) Caltrans shall conduct briefings for construction supervisors and crews, the monitoring team, and Caltrans staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures.
- (e) Monitoring of pile driving shall be conducted by qualified PSOs (see below), who shall have no other assigned tasks during monitoring periods. Caltrans shall adhere to the following conditions when selecting observers:
 - (i) Independent PSOs shall be used (i.e., not construction personnel);
 - (ii) At least one PSO must have prior experience working as a marine mammal observer during construction activities;
 - (iii) PSOs may substitute education (degree in biological science or related field) or training for experience;
 - (iv) Where a team of three or more PSOs are required, a lead observer or monitoring coordinator shall be designated. The lead observer must have prior experience working as a marine mammal observer during construction; and
 - (v) Caltrans shall submit PSO CVs for approval by NMFS;
- (f) Caltrans shall ensure that observers have the following additional qualifications:
 - (i) Ability to conduct field observations and collect data according to assigned protocols;
 - (ii) Experience or training in the field identification of marine mammals, including the identification of behaviors;
 - (iii) Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

- (iv) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- (v) Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.
- (g) If a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized takes are met, is observed approaching or within the monitoring zone (2,000 m), activities must shut down immediately using delay and shut-down procedures. Activities must not resume until the animal has been confirmed to have left the area or the observation time period has elapsed.
- (h) Caltrans shall conduct vessel- or shore-based surveys on each of the 3 days post-implosion to determine if any marine mammals were injured or stranded. If an injured or stranded animal is discovered, a NMFS-designated stranding team would retrieve the animal and veterinarians would treat the animal or conduct a necropsy. A NMFS-designated stranding facility be prepared to evaluate, assess, and treat marine mammals injured from the implosion and stranding crew and a veterinarian shall be on call near the site to recover and respond to any injured marine mammals.

6. Reporting

The holder of this Authorization is required to:

- (a) Submit a draft report on all monitoring conducted under the IHA within ninety calendar days of the completion of marine mammal and acoustic monitoring or sixty days prior to the issuance of any subsequent IHA for this project, whichever comes first. A final report shall be prepared and submitted within thirty days following resolution of comments on the draft report from NMFS. This report must contain the informational elements described in the application, at minimum, and shall also include:
 - (i) Date and time that monitored activity begins and ends for each day conducted (monitoring period);
 - (ii) Construction activities occurring during each daily observation period, including how many and what type of piles driven;
 - (iii) Deviation from initial proposal in pile numbers, pile types, average driving times, etc.;

- (iv) Weather parameters in each monitoring period (e.g., wind speed, percent cloud cover, visibility);
- (v) Water conditions in each monitoring period (e.g., sea state, tide state);
- (vi) For each marine mammal sighting
 - 1. Species, numbers, and, if possible, sex and age class of marine mammals;
 - 2. Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from pile driving activity;
 - 3. Location and distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point; and
 - 4. Estimated amount of time that the animals remained in the Level B zone;
 - 5. Description of implementation of mitigation measures within each monitoring period (e.g., shutdown or delay);
 - 6. Other human activity in the area within each monitoring period
- (vii) A summary of the following:
 - 1. Total number of individuals of each species detected within the Level B Zone, and estimated as taken if correction factor appropriate;
 - 2. Total number of individuals of each species detected within the Level A Zone and the average amount of time that they remained in that zone; and
 - 3. Daily average number of individuals of each species (differentiated by month as appropriate) detected within the the Level B Zone, and estimated as taken, if appropriate.
- (b) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as a serious injury or mortality, Caltrans shall immediately cease the specified activities and report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator. The report must include the following information:
 - (i) Time and date of the incident;
 - (ii) Description of the incident;

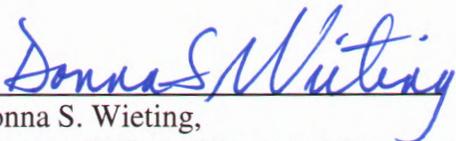
- (iii) Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
 - (iv) Description of all marine mammal observations in the 24 hours preceding the incident;
 - (v) Species identification or description of the animal(s) involved;
 - (vi) Fate of the animal(s); and
 - (vii) Photographs or video footage of the animal(s).
- (c) Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with Caltrans to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Caltrans may not resume their activities until notified by NMFS.
- (d) In the event that the Caltrans discovers an injured or dead marine mammal, and the lead observer determines that the cause of the injury or death is unknown and the death is relatively recent (e.g., in less than a moderate state of decomposition), Caltrans shall immediately report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator. The report must include the same information identified above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS shall work with Caltrans to determine whether additional mitigation measures or modifications to the activities are appropriate.
- (e) In the event that Caltrans discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), Caltrans shall report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. Caltrans shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.
7. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.
8. Renewals - On a case-by-case basis, NMFS may issue a second one-year IHA without additional notice when 1) another year of identical or nearly identical activities as described in the Specified Activities section is planned or 2) the activities would not be completed by the time the IHA expires and a second IHA would allow for completion of the activities beyond that described in the Dates and Duration section, provided all of the following conditions are met:
- (a) A request for renewal is received no later than 60 days prior to expiration of the current IHA.

(b) The request for renewal must include the following:

(i) An explanation that the activities to be conducted beyond the initial dates either are identical to the previously analyzed activities or include changes so minor (e.g., reduction in pile size) that the changes do not affect the previous analyses, take estimates, or mitigation and monitoring requirements.

(ii) A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.

(c) Upon review of the request for renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures remain the same and appropriate, and the original findings remain valid.



Donna S. Wieting,
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National Marine Fisheries Service.

MAY 24 2018

Date

Attachments

Table 1. Authorized Take Numbers

Species	Pier Implosion Level B Harassment Take		Pile Driving Level B Harassment Take	Pile Driving Level A Take
	Behavioral Response	Temporary Threshold Shift		
Pacific Harbor Seal	20	10	2,161	120
California Sea Lion	4	3	88	0
Northern Elephant Seal	2	1	12	2
Northern Fur Seal	2	1	6	0
Harbor Porpoise	10	8	91	0
Bottlenose Dolphin	4	2	30	0
Gray Whale	0	0	4	0

Table 2. Shutdown and monitoring zones for pier implosions.

Species / Group	Level B Behavioral Response Monitoring Zone	Level B TTS Monitoring Zone	Level A Injury and Mortality Shutdown Zone
Pinniped and Dolphin	290 meters (951 feet)	200 meters (656 feet)	70 meters (230 feet)
Harbor Porpoise	1,220 meters (4,003 feet)	830 meters (2,723 feet)	290 meters (951 feet)

Table 3. Shutdown and monitoring zones for pile driving.

Pile Type	Installation Method	Attenuation System	Level A Pinniped and Dolphin Shutdown Zone	Level A Porpoise and Whale Shutdown Zone	Level B Monitoring Zone All Species
H-Pile	Vibratory	None	10 meters* (33 feet)	10 meters* (33 feet)	1,000 meters (3,281 feet)
24-inch Steel Pipe Pile	Vibratory	None	10 meters* (33 feet)	19 meters (62 feet)	2,000 meters (6,562 feet)
36-inch Steel Pipe Pile	Vibratory	None	20 meters (66 feet)	49 meters (161 feet)	2,000 meters (6,562 feet)
H-Pile	Impact	None	18 meters	39 meters	100 meters

			(59 feet)	(128 feet)	(328 feet)
24-inch Steel Pipe Pile	Impact	Bubble Curtain	25 meters (82 feet)	239 meters (784 feet)	341 meters (1,119 feet)
36-inch Steel Pipe Pile	Impact	Bubble Curtain	25 meters (82 feet)	459 meters (1,506 feet)	858 meters (2,815 feet)