



DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

Incidental Harassment Authorization

The California Department of Transportation (CALTRANS) is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1371(a)(5)(D)) and 50 CFR 216.106, to take, incidentally by Level B harassment, small numbers of marine mammals incidental to the dismantling of the piers for the original East Span of the San Francisco-Oakland Bay Bridge (SFOBB), California:

1. This IHA is valid from September 1, 2017 until September 31, 2018.
2. This Authorization is valid only for activities involving the construction and dismantling of the East Span of SFOBB, California.
3.
 - (a) The species authorized for incidental taking, by Level B harassment only, are: Pacific harbor seal (*Phoca vitulina richardii*), California sea lion (*Zalophus californianus*), northern elephant seal (*Mirounga angustirostris*), northern fur seal (*Callorhinus ursinus*), harbor porpoise (*Phocoena phocoena*), and bottlenose dolphin (*Tursiops truncatus*). A list of authorized take is provided in Table 1.
 - (b) The authorization for taking by harassment is limited to the dismantling of Piers E6 through E18 via controlled implosion and associated test blasting.
 - (c) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the West Coast Administrator (206-526-6150), National Marine Fisheries Service (NMFS) and the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at (301) 427-8401, or her designee (301-427-8418).
4. The holder of this Authorization must notify the Chief of the Permits and Conservation Division, Office of Protected Resources, at least 48 hours prior to the start of activities identified in 3(b) (unless constrained by the date of issuance of this Authorization in which case notification shall be made as soon as possible).
5. Prohibitions



- (a) The taking, by incidental harassment only, is limited to the species listed under condition 3(a) above and by the numbers listed in Table 1 of this IHA. The taking by Level A harassment, injury or death of these species or the taking by harassment, injury or death of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this Authorization.
- (b) The taking of any marine mammal is prohibited whenever the required marine mammal observers (MMOs), required by condition 7(a), are not present in conformance with condition 7(a) of this Authorization.

6. Mitigation

- (a) **Time Restriction**
In-water pile driving and pile removal activities and the controlled implosion of Piers E6 through E18 shall only be conducted during daylight hours and with enough time for pre and post activity monitoring, and with good visibility when the largest exclusion zone can be visually monitored.

- (b) **Installation of Sound Attenuation Systems**
For controlled implosion of Piers E6 through E18, CALTRANS shall install a Blast Attenuation System (BAS) prior to demolition to reduce the shockwave from the implosion.

- (c) **Establishment of Marine Mammal Exclusion Zones (MMEZ) and Zones of Influence (ZOI)**

For controlled implosion of Piers E6 through E18 and associated test blasting, CALTRANS shall establish MMEZs that are 20 percent larger than the furthest calculated threshold distances (ZOI) appropriate to specific marine mammal functional hearing groups for each implosion scenario (See Table 2, Attachment 1; see Tables 9-18 of the application).

- (d) **Exclusion Zone Monitoring for Mitigation Measures**

- (i) NMFS-approved MMOs shall conduct initial survey of the exclusion for 30 minutes to ensure that no marine mammals are seen within the zones before impact pile driving and controlled implosion.
- (ii) If marine mammals are found within the exclusion zones, impact pile driving and/or controlled implosion of the piers shall be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the contractor shall wait 15 minutes for pinnipeds and small cetacean (harbor porpoise and bottlenose dolphin) and 30 minutes for gray

whale. If no marine mammals are seen by the observer in that time, it may be assumed that the animal has moved beyond the exclusion zone.

(e) Communication

For controlled implosion, the Lead MMO shall be in constant contact with the Resident Engineer on site and the blasting crew to ensure that no marine mammal is within the exclusion zone before the controlled implosion.

7. Monitoring

(a) Marine Mammal Observers

- (i) CALTRANS shall employ NMFS-approved MMOs to conduct marine mammal monitoring for its SFOBB controlled pier implosions.
- (ii) Marine mammal monitoring shall begin at least 30 minutes prior to the start of the activities, shall occur through the entire activities, and continue to 30 minutes after the construction activities and 60 minutes after the implosion events.
- (iii) Observations shall be made using high-quality binoculars (e.g., Zeiss, 10 x 42 power). MMOs shall be equipped with radios or cell phones for maintaining contact with other observers and CALTRANS engineers, and range finders to determine distance to marine mammals, boats, buoys, and construction equipment.
- (iv) For controlled implosion of Piers E6 through E18:
 - (A) A minimum of 10 MMOs shall be required during controlled implosion so that the exclusion zone, Level B Harassment Temporary Threshold Shift and Behavioral ZOIs, and surrounding area can be monitored. Up to 15 MMOs will be required for implosion events involving multiple piers.
 - (B) MMOs shall be positioned near the edge of each of the threshold criteria zones and shall utilize boats, barges, and bridge piers and roadway.
 - (C) The Lead MMO shall be in constant communication with the Environmental Compliance Manager that will be located with the CALTRANS Engineer and the Blasting Supervisor (or person that will be in charge of detonating the charges) during the implosion.
 - (D) Boat or shore surveys shall be conducted immediately after the event and for the three days following the event to determine if there are any injured or stranded marine mammals in the area.

(E) Monitoring Data Collection:

For each marine mammal sighting, the following shall be recorded, if possible:

- Species.
- Number of animals (with or without pup/calf).
- Age class (pup/calf, juvenile, adult).
- Identifying marks or color (scars, red pelage, damaged dorsal fin, etc.).
- Position relative to Pier E4 or E5 (distance and direction).
- Movement (direction and relative speed).
- Behavior (logging [resting at the surface], swimming, spyhopping [raising above the water surface to view the area], foraging, etc.)
- Duration of sighting or times of multiple sightings of the same individual

8. Reporting

- (a) CALTRANS shall submit a draft monitoring report within 90 days after completion of the construction work or the expiration of the IHA, whichever comes earlier. This report would detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed.
- (b) NMFS will have an opportunity to provide comments within 30 days after receiving the draft report, and if NMFS has comments, CALTRANS shall address the comments and submit a final report to NMFS within 30 days.
- (c) If NMFS does not provide comments within 30 days after receiving the report, the draft report is considered to be final.
- (d) In the unanticipated event that the construction activities clearly cause the take of a marine mammal in a manner prohibited by this Authorization (if issued), such as an injury, serious injury, or mortality, CALTRANS shall immediately cease all operations and immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the following information:
 - (i) Time, date, and location (latitude/longitude) of the incident;
 - (ii) Description of the incident;
 - (iii) Status of all sound source use in the 24 hours preceding the incident;
 - (iv) Environmental conditions (e.g., wind speed and direction, sea state, cloud cover, visibility, and water depth);

- (v) Description of marine mammal observations in the 24 hours preceding the incident;
- (vi) Species identification or description of the animal(s) involved;
- (vii) The fate of the animal(s); and
- (viii) Photographs or video footage of the animal (if equipment is available).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with CALTRANS to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. CALTRANS may not resume their activities until notified by NMFS via letter, email, or telephone.

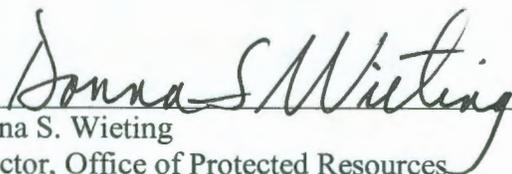
- (e) In the event that CALTRANS discovers an injured or dead marine mammal, and the lead MMO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), CALTRANS will immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the same information identified above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with CALTRANS to determine whether modifications in the activities are appropriate.
- (f) In the event that CALTRANS discovers an injured or dead marine mammal, and the lead MMO 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, or scavenger damage), CALTRANS shall report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators, within 24 hours of the discovery. CALTRANS shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. CALTRANS can continue its operations under such a case.

9. Marine Mammal Stranding Plan

A marine mammal stranding plan shall be prepared in cooperation with the local NMFS-designated marine mammal stranding, rescue, and rehabilitation center. Elements of that plan would include the following:

- (a) The stranding crew shall prepare treatment areas at the NMFS-designated facility for cetaceans or pinnipeds that may be injured from the implosion. Preparation shall include equipment to treat lung injuries, auditory testing equipment, dry and wet caged areas to hold animals, and operating rooms if surgical procedures are necessary. Equipment to conduct auditory brainstem response hearing testing would be available to determine if any inner ear permanent or temporary threshold shifts (PTS and TTS, respectively) have occurred.

- (b) A stranding crew and a veterinarian shall be on call near the Piers E6 through E18 sites at the time of the implosion to quickly recover any injured marine mammals, provide emergency veterinary care, stabilize the animal's condition, and transport individuals to the NMFS-designated facility. If an injured or dead animal is found, NMFS (both the regional office and headquarters) shall be notified immediately even if the animal appears to be sick or injured from other than blasting.
- (c) Post-implosion surveys shall be conducted immediately after the event and over the following three days to determine if there are any injured or dead marine mammals in the area.
- (d) Any veterinarian procedures, euthanasia, rehabilitation decisions and time of release or disposition of the animal shall be at the discretion of the NMFS-designated facility staff and the veterinarians treating the animals. Any necropsies to determine if the injuries or death of an animal was the result of the blast or other anthropogenic or natural causes will be conducted at the NMFS-designated facility by the stranding crew and veterinarians. The results shall be communicated to both CALTRANS and to NMFS as soon as possible with a written report within a month.
10. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein or if the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals, or if there is an unmitigable adverse impact on the availability of such species or stocks for subsistence uses.
11. A copy of this Authorization must be in the possession of each contractor who performs the dismantling and controlled implosion work for Piers E6 through E18.


Donna S. Wieting
Director, Office of Protected Resources
National Marine Fisheries Service

JUL 13 2017

Date

ATTACHMENT 1

Table 1. Species/stocks and numbers of marine mammals allowed to be taken by Level B harassment incidental to under this IHA.

Species	Level B Behavioral	Level B TTS
Pacific harbor seal	66	48
California sea lion	18	12
Northern elephant seal	6	3
Northern fur seal	6	3
Harbor porpoise	18	9
Bottlenose dolphin	6	3

Table 2. Threshold Distances (feet (meters)) Calculated for Each Implosion Scenario.

Group	Species	Level B harassment		Level A harassment	Serious Injury		Mortality (ft (m))
		Behavioral (ft (m))	TTS (pk/SEL _{cum}) (ft (m))	PTS (pk/SEL _{cum}) (ft (m))	GI Tract (ft (m))	Slight Lung (ft (m))	
Implosion of Pier E6							
Mid-freq cetacean	Bottlenose dolphin	1,330 ft (405m)	180ft/881ft (55m/57m)	98ft/256ft (30m/78m)	48ft (15m)	48ft (15 m)	<40ft (<12m)
High-freq cetacean	Harbor porpoise	12,567ft (3,830m)	3,127ft/8,358ft (953m/2,548m)	1,697ft/2,459ft (517m/750m)	48ft (15m)	48ft (15 m)	<40ft (<12m)
Phocidae	Harbor seal & northern elephant seal	2,220ft (677m)	613ft/1,484ft (187m/452m)	332ft/443ft (101m/135m)	48ft (15m)	48ft (15 m)	<40ft (<12m)
Otariidae	California sea lion & northern fur seal	554ft (169m)	147ft/367ft (45m/112m)	80ft/106ft (24m/48m)	48ft (15m)	48ft (15 m)	<40ft (<12m)
Implosion of Two 504-ft Span Piers							
Mid-freq cetacean	Bottlenose dolphin	1,055ft (322m)	166ft/685ft (51m/208m)	90ft/190ft (27m/58m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
High-freq cetacean	Harbor porpoise	10,300ft (3,139m)	2,882ft/6,800ft (878m/2,073m)	1,564ft/1,966ft (477m/599m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Phocidae	Harbor seal & northern elephant seal	1,790ft (546m)	565ft/1,186ft (172m/361m)	306ft/333ft (93m/101m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Otariidae	California sea lion & northern fur seal	421ft (128m)	136ft/274ft (41m/84m)	74ft/78ft (23m/24m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Implosion of Two 288-ft Span Piers							
Mid-freq cetacean	Bottlenose dolphin	798ft (243m)	166ft/517ft (51m/158m)	90ft/126ft (27m/38m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
High-freq cetacean	Harbor porpoise	7,700ft (2,347m)	2,882ft/5,140ft (878m/1,567m)	1,564ft/1,493ft (477m/455m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Phocidae	Harbor seal & northern elephant seal	1,359ft (414m)	565ft/900ft (172m/274m)	306ft/232ft (93m/71m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Otariidae	California sea lion & northern fur seal	304ft (93m)	136ft/185ft (41m/56m)	74ft/52ft (23m/16m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Implosion of Three 288-ft Span Piers							
Mid-freq cetacean	Bottlenose dolphin	1,000ft (305m)	166ft/629ft (51m/192m)	90ft/132ft (27m/40m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
High-freq cetacean	Harbor porpoise	9,403ft (2,866m)	2,882ft/5,900ft (878m/1,798m)	1,564ft/1,722ft (477m/525m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Phocidae	Harbor seal & northern elephant seal	1,580ft (482m)	565ft/1,045ft (172m/319m)	306ft/258ft (93m/79m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Otariidae	California sea lion & northern fur seal	339ft (103m)	136ft/201ft (41m/61m)	74ft/52ft (23m/16m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Implosion of Four 288-ft Span Piers							
Mid-freq cetacean	Bottlenose dolphin	1,000ft (305m)	166ft/629ft (51m/192m)	90ft/132ft (27m/40m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
High-freq cetacean	Harbor porpoise	9,935ft (3,028m)	2,882ft/6,590ft (878m/2,009m)	1,564ft/1,917ft (477m/584m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Phocidae	Harbor seal & northern elephant seal	1,730ft (527m)	565ft/1,135ft (172m/346m)	306ft/264ft (93m/80m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)
Otariidae	California sea lion & northern fur seal	349ft (106m)	136ft/204ft (41m/62m)	74ft/52ft (23m/16m)	48ft (15m)	<40ft (<12m)	<40ft (<12m)