



Incidental Harassment Authorization

The California Department of Transportation (CALTRANS), 111 Grand Avenue, P.O.Box 23660, Oakland, California 94623-0660, 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 demolish the original East Span Pier E3 of the San Francisco-Oakland Bay Bridge (SF-OBB), California:

1. This Authorization is valid from October 1 through December 30, 2015.
2. This Authorization is valid only for activities associated the original San Francisco-Oakland Bay Bridge Pier E3 demolition via controlled implosion and a pre-demolition test implosion in San Francisco Bay.
3. (a) The species authorized for incidental harassment takings, Level B harassment only, are: Pacific harbor seal (*Phoca vitulina richardsi*), California sea lion (*Zalophus californianus*), northern elephant seals (*Mirounga angustirostris*), and harbor porpoise (*Phocoena phocoena*).

(b) The authorization for taking by harassment is limited to the following acoustic sources and from the following activities:
 - (i) Pre-demolition test implosion; and
 - (ii) Pier E3 demolition via controlled implosion.
(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. 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 protected species observers (PSOs), required by condition 7(a), are not present in conformance with condition 7(a) of this Authorization.

6. Mitigation

(a) Time Restriction

Implosion of Pier E3 shall only be conducted during daylight hours and with enough time for pre and post implosion monitoring, and with good visibility when the largest exclusion zone can be visually monitored.

(b) Installation of Blast Attenuation System (BAS)

Prior to the Pier E3 demolition, CALTRANS should install a Blast Attenuation System (BAS) to reduce the shockwave from the implosion.

(c) Establishment of Exclusion Zones and Zones of Influence

Before CALTRANS begins Pier E3 demolition via controlled implosion and the pre-demolition test implosion, exclusion zones and zones of influence (ZOIs) that are appropriate to specific marine mammal functional hearing group shall be established. The modeled isopleth of these zones are provided in Tables 2 and 3.

(d) Monitoring for Mitigation Measures.

- (i) The exclusion zone shall be monitored by protected species observers (PSOs) for at least 30 minutes before the implosion.
- (ii) If any marine mammal is observed inside the exclusion zone of controlled implosion, the implosion will be delayed until the animal leaves the area or at least 30 minutes have passed since the last observation of the marine mammal.
- (iii) If any marine mammal is observed inside the Level B ZOIs during the test implosion, the test implosion will be delayed until the animal leaves the area or at least 30 minutes have passed since the last observation of the marine mammal.
- (iv) If a harbor porpoise clicks are detected during passive acoustic monitoring, the implosion will be delayed for 30 minutes after the clicks are ceased.

(e) Communication

The Lead PSO 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) Protected Species Observers

- (i) CALTRANS shall employ NMFS-approved PSOs to conduct marine mammal monitoring for its Pier E3 demolition via controlled implosion.
- (ii) A minimum of 10 PSOs shall be required during the Pier E3 controlled implosion so that the exclusion zone, Level B Harassment TTS and Behavioral ZOIs, and surrounding area can be monitored.

(b) Monitoring Protocol:

- (i) PSOs shall be positioned near the edge of each of the threshold criteria zones and shall utilize boats, barges, bridge piers and roadway, and sites on Yerba Buena Island and Treasure Island, as described in Figure 3 of the CALTRANS Marine Mammal Monitoring Plan.
- (ii) The Lead PSO shall be located with the Department Engineer and the Blasting Supervisor (or person that will be in charge of detonating the charges) during the implosion.
- (iii) The Lead PSO will be in contact with other PSOs and the acoustic monitors. As the time for the implosion approaches, any marine mammal sightings would be discussed between the Lead PSO, the Resident Engineer, and the Blasting Supervisor.
- (iv) If any marine mammals enter the exclusion zone within 30 minutes of blasting, the Lead PSO shall notify the Resident Engineer and Blasting Supervisor that the implosion may need to be delayed. The Lead PSO shall keep them informed of the disposition of the animal.
- (v) Once the implosion has occurred, the PSOs will continue to monitor the area for at least 60 minutes.

(c) Post-implosion Survey:

- (i) Boat or shore surveys shall be conducted for the three days following the event to determine if there are any injured or stranded marine mammals in the area.

- (ii) If an injured or dead animal is discovered during these surveys or by other means, the NMFS-designated stranding team shall be contacted to pick up the animal. Veterinarians will treat the animal or conduct a necropsy to attempt to determine if it stranded was a result of the Pier E3 implosion.

(d) Monitoring Data Collection:

- (i) Each PSO shall record their observation position, start and end times of observations, and weather conditions (sunny/cloudy, wind speed, fog, visibility).
- (ii) 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 E3 (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

(e) Real Time Acoustic Monitoring for Harbor Porpoises:

- (i) Real time acoustic monitoring (PAM) system shall be used to detect the presence or absence of harbor porpoises as a supplement to visual monitoring.
- (ii) Real time PAM shall involve two bio-acousticians monitoring the site near the north end of Treasure Island.
- (iii) Real time PAM shall use a hydrophone or towed array suspended from a boat and/or several sonobuoys, or a hydrophone moored offshore with a cable leading to a shore based acoustic station outside of the monitoring area of Pier E3.
- (iv) All equipment used for real time PAM shall be calibrated and tested prior to the implosion to ensure functionality.
- (v) The bio-acousticians shall be in communication with the Lead PSO and shall alert the crew to the presence of any cetacean approaching the monitoring area. The bio-acousticians shall also provide further

confirmation that there are no cetaceans around Pier E3 in addition to the visual observations documenting no observations.

(f) Hydroacoustic Monitoring for Underwater Implosion:

- (i) Hydroacoustic monitoring of sound field from the controlled implosion shall be conducted in near field and far field regions around Pier E3.
 - (A) Near field measurements shall be taken within 500 ft of the Pier.
 - (B) Far field measurements shall be taken at 500 feet and all greater distances from the Pier.
- (ii) Near field and far field measurements protocols
 - (A) Measurements inside the BAS shall be made with near and far field systems using PCB 138A01 transducers. At the 100-ft distance, the near field system will use another PCB 138A01 transducer.
 - (B) Far field measurements shall be conducted using both a PCB 138A01 transducer and a Reson TC4013 hydrophone.
- (iii) Ambient and background noise measurements
 - (A) Prior to activating the BAS, ambient noise levels shall be measured.
 - (B) While the BAS is operating and before the test implosion, background noise measurements shall also be made.
 - (C) After the test implosion, the results shall be evaluated to determine if any final adjustments are needed in the measurement systems prior to the Pier E3 controlled implosion.
 - (D) Pressure signals shall be analyzed for peak pressure and SEL values prior to the scheduled time of the Pier E3 controlled implosion.

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.

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 threshold shifts (TTS or PTS) have occurred.

(b) A stranding crew and a veterinarian shall be on call near the Pier E3 site 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 pre-demolition test implosion and Pier E3 controlled implosion work.

Donna S. Wieting

SEP 09 2015

for

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

Date

Table 1. Species/stocks and numbers of marine mammals allowed under this IHA.

Species	Level B take	
	Behavioral	TTS
Pacific harbor seal	12	6
California sea lion	2	0
Northern elephant seal	2	0
Harbor porpoise	2	0

Table 2. Estimated distances to NMFS marine mammal explosion criteria for Level B harassment, Level A harassment, and mortality from the proposed Pier E3 controlled implosion.

Species	Level B Criteria		Level A Criteria			Mortality
	Behavioral Response	TTS Dual Criteria	PTS Dual Criteria	GI Track	Lung Injury	
Pacific Harbor Seal	9,700 ft (2,957 m)	5,700 ft (1,737 m) 440 ft (134 m)	1,160 ft (354 m) 70 ft (21 m)	35 ft (11 m)	450 ft (137 m)	205 ft (63 m)
California Sea Lion	800 ft (244 m)	470 ft (143 m) 440 ft (134 m)	245 ft (75 m) 97 ft (30 m)	35 ft (11 m)	450 ft (137 m)	205 ft (63 m)
Northern Elephant Seal	9,700 ft (2,957 m)	5,700 ft (1,737 m) 440 ft (134 m)	1,160 ft (354 m) 70 ft (21 m)	35 ft (11 m)	450 ft (137 m)	205 ft (63 m)
Harbor Porpoise	44,500 ft (13,564 m)	26,500 ft (8,077 m) 2,600 ft (792 m)	5,800 ft (1,768 m) 1,400 ft (427 m)	35 ft (11 m)	450 ft (137 m)	205 ft (63 m)

Table 3. Estimated distances to NMFS marine mammal explosion criteria for Level B harassment from the proposed test implosion.

Species	Level B TTS
Pacific harbor seal	45 feet
California sea lion	45 feet
Northern elephant seal	45 feet
Harbor porpoise	270 feet