



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

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 construction of a replacement bridge for the East Span of the San Francisco-Oakland Bay Bridge (SF-OBB), California:

1. This Authorization is valid from July 17, 2015 until July 16, 2016.
2. This Authorization is valid only for activities involving the construction and dismantling of the East Span of SF-OBB, California.
3. Species Impacted and Level of Takes
 - (a) The species authorized for takings by incidental harassment are the California sea lion (*Zalophus californianus*), Pacific harbor seal (*Phoca vitulina richardsi*), harbor porpoise (*Phocoena phocoena*), and gray whale (*Eschrichtius robustus*).
 - (b) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the Director, West Coast Regional Office, National Marine Fisheries Service, Telephone (562) 980-4000 and the Director, Office of Protected Resources, National Marine Fisheries Service, Telephone (301) 427-8400.
4. The holder of this Authorization is required to cooperate with the National Marine Fisheries Service and any other Federal, state or local agencies monitoring the impacts of the activity on marine mammals. The holder must notify Monica DeAngelis of the West Coast Regional Office (562-980-3232) at least 24 hours prior to starting activities.
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 2 (attached). The taking by Level A harassment, injury, serious injury, or death of these species or the taking by



harassment, injury, serious injury, or death of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this Authorization.

6. Mitigation Requirements

(a) Use of Noise Attenuation Devices

Pile driving energy attenuator (such as air bubble curtain system or dewatered cofferdam) shall be used for all impact pile driving of pipe piles, with the exception of pile proofing and H-piles.

(b) Establishment and Monitoring of Exclusion and Level B Harassment Zones

(i) For all in-water pile driving and mechanical dismantling activities, CALTRANS shall establish exclusion zones where received underwater sound pressure levels (SPLs) are higher than 180 dB (rms) and 190 dB (rms) re 1 μ Pa for cetaceans and pinnipeds, respectively, and Level B harassment zones where received underwater sound pressure levels (SPLs) are higher than 160 dB (rms) and 120 dB (rms) re 1 μ Pa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile driving and mechanic dismantling), respectively.

(ii) The sizes of the exclusion and Level B harassment zones for different types of activities are provided in Table 1 below. If additional hydroacoustic measurements of construction activities have been conducted, CALTRANS shall revised the sizes of the zones based on updated measurements.

(iii) NMFS-approved marine mammal observers (MMOs) shall conduct initial survey of the safety zone to ensure that no marine mammals are seen within the zones before impact pile driving and mechanical dismantling of bridge foundation. If marine mammals are found within the exclusion zones, impact pile driving and/or mechanical dismantling activity of the segment shall be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the contractor would wait 15 minutes for pinnipeds and harbor porpoise and 30 minutes for gray whale. If no marine mammals are seen by the observer in that time it would be assumed that the animal has moved beyond the exclusion zone.

(iv) If the time between pile-segment driving is less than 30 minutes, a new 30-minute survey is unnecessary provided marine mammal monitors continue observations during the interruption. If pile driving ceases for 30 minutes or more and a marine mammal is sighted within the designated safety zone(s) prior to the commencement of pile-driving, the observer(s) must notify the Resident Engineer (or other authorized individual) immediately.

Table 1. Temporary exclusion and Level B harassment zones for various pile driving and dismantling activities

Pile Driving / Dismantling Activities	Pile Size (m)	Distance to 120 dB re 1 μ Pa (rms) (m)	Distance to 160 dB re 1 μ Pa (rms) (m)	Distance to 180 dB re 1 μ Pa (rms) (m)	Distance to 190 dB re 1 μ Pa (rms) (m)
Vibratory Driving	24	2,000	NA	NA	NA
	36	2,000	NA	NA	NA
	Sheet pile	2,000	NA	NA	NA
Attenuated Impact Driving	24	NA	1,000	235	95
	36	NA	1,000	235	95
Unattenuated Proofing	24	NA	1,000	235	95
	36	NA	1,000	235	95
Unattenuated Impact Driving	H-pile	NA	1,000	235	95
Dismantling		2,000	NA	100	100

(c) Soft Start

CALTRANS and its contractor shall implement soft start, i.e., starting the pile driving hammer at the lowest power setting and gradually ramp up to full power, prior to operating pile driving hammers at full capacity for both impact and vibratory pile driving.

(d) Power Down and Shut-down

- (i) For mechanical dismantling of bridge foundation, construction activities that generate underwater noise must be powered down or shutdown if a marine mammal is observed within the established 180 dB or 190 dB re 1 μ Pa exclusion zones for cetaceans or pinnipeds, respectively.
- (ii) For pile driving activities, if a marine mammal is sighted within the exclusion zone after pile-driving has begun, CALTRANS must have a qualified marine mammal observer record the species, numbers and behaviors of the animal(s) and report to Monica DeAngelis at the West Coast Regional Office, National Marine Fisheries Service, (phone: 562-980-3232) within 24 hours of the incident.

7. Monitoring Requirements

(a) General.

- (1) The holder of this Authorization must designate a minimum of three biologically-trained, on-site MMOs, approved in advance by the National Marine Fisheries Service's West Coast Regional Office, to monitor the

area for marine mammals before, during, and after pile driving activities; and before, during, and after mechanical dismantling of marine foundations.

- (2) The National Marine Fisheries Service must be informed immediately of any changes or deletions to any portions of the monitoring plan in accordance with condition 7(a) of this Authorization.

(b) Visual Monitoring

- (1) CALTRANS will implement onsite marine mammal monitoring for 100% of all unattenuated impact pile driving of H-piles for 180- and 190-dB re 1 μ Pa exclusion zones (235 meter radius) and 160-dB re 1 μ Pa Level B harassment zone, attenuated impact pile driving (except pile proofing) and mechanical dismantling for 180- and 190-dB re 1 μ Pa exclusion zones.
- (2) CALTRANS will also monitor 20% of the attenuated impact pile driving for the 160-dB re 1 μ Pa Level B harassment zone (1,000 meter radius), and 20% of vibratory pile driving and mechanic dismantling for the 120-dB re 1 μ Pa Level B harassment zone (2,000 meter radius).
- (3) Three MMOs meeting the minimum qualification previously identified will monitor the Level A and B harassment zones during impact pile driving and the Level B harassment zone during vibratory pile driving and dismantling. Monitors may be stationed on boats, Yerba Buena Island and/or Treasure Island, the new bridge or construction barges.
- (4) Marine mammal monitoring shall begin at least 30 minutes prior to the start of the activities, through the entire construction activities, and continue to 30 minutes after the construction activities.
- (5) 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
- (6) During impact pile driving, the area within 235 meters of pile driving activity will be monitored and maintained as marine mammal buffer area in which pile installation will not commence if any marine mammals are observed within or approaching the area of potential disturbance. If a marine mammal approaches or appears within the zone, pile driving of a segment will continue until that segment has reached its predetermined depth due to the nature of the sediments underlying the Bay.

- (7) The area within the Level B harassment threshold for impact driving will be monitored by three field monitors stationed in a position permitting visual access to the 1,000 meter limit of the Level B harassment zone. Marine mammal presence within this Level B harassment zone, if any, will be monitored, but impact pile driving activity will not be stopped if marine mammals are found to be present. Any marine mammal documented within the Level B harassment zone during impact driving would constitute a Level B take (harassment), and will be recorded and reported as such.
- (8) During vibratory pile driving, the area within 10 meters of pile driving activity will be monitored and maintained as a marine mammal buffer area in which pile installation will not commence or will be suspended temporarily if any marine mammals are observed within or approaching the area of potential disturbance. The Level B harassment area with a 2,000 meter radius will be monitored by three MMOs stationed at strategic locations that provide adequate visual coverage of the disturbance zone. Pile driving activity, once started, will not be stopped if marine mammals are found to be present. Any marine mammal documented within the Level B harassment zone will constitute a Level B take, and will be recorded and used to document the number of take incidents.
- (9) The monitoring staff will record any presence of marine mammals by species, will document any behavioral responses noted, and record Level B takes when sightings overlap with pile installation activities
- (10) During mechanical dismantling activities a 100 meters radius will be monitored and maintained as a marine mammal buffer area in which pile installation will not commence or will be suspended temporarily if any marine mammals are observed within or approaching the area.
- (11) If waters exceed a sea-state which restricts the observers' ability to make observations within the marine mammal buffer zone (the 235 meter radius) (e.g. excessive wind or fog), impact pile installation will cease until conditions allow the resumption of monitoring.
- (12) Data on all observations would be recorded and shall include the following information:
 - a) location of sighting;
 - b) species;
 - c) number of individuals;
 - d) number of calves present;
 - e) duration of sighting;
 - f) behavior of marine animals sighted;
 - g) direction of travel;

- h) when in relation to construction activities did the sighting occur (e.g., before, "soft-start", during, or after the pile driving or removal); and
- i) other human activities in the area.

(c) **Hydroacoustic Measurements**

At the beginning of pile driving and mechanical dismantling of bridge foundation, CALTRANS shall conduct hydroacoustic measurements to verify the exclusion and Level B harassment zones.

7. **Reporting Requirements**

(a) CALTRANS shall notify NMFS of the initial sound pressure level measurements for both pile driving and foundation dismantling activities, including the final exclusion zone and Level B harassment zone radii established for impact and vibratory pile driving and marine foundation dismantling activities, within 72 hours after completion of the measurements.

(b) Monitoring reports shall be posted on the SFOBB Project's biological mitigation website (www.biomitigation.org) on a weekly basis if in-water construction activities are conducted. Marine mammal monitoring reports shall include species and numbers of marine mammals observed, time and location of observation and behavior of the animal. In addition, the reports shall include an estimate of the number and species of marine mammals that may have been harassed as a result of activities.

(c) CALTRANS shall provide NMFS with a draft final report within 90 days after the expiration of the IHA. This report shall detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed due to pile driving and mechanical dismantling of bridge foundations. If no comments are received from NMFS within 30 days, the draft final report would be considered the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.

(d) **Reporting injured or dead marine mammals:**

(1) In the unanticipated event that CALTRANS' construction activities clearly cause the take of a marine mammal in a manner prohibited by this Authorization, such as an injury (Level A harassment), serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), CALTRANS shall immediately cease construction operations and immediately report the incident to the Supervisor of Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov,

rob.pauline@noaa.gov and NMFS West Coast Regional Stranding Coordinator Justin Viezbicke at Justin.Viezbicke@noaa.gov or 562-980-3230. The report must include the following information:

- a) time, date, and location (latitude/longitude) of the incident;
- b) type of activity involved;
- c) description of the incident;
- d) status of all sound source use in the 24 hours preceding the incident;
- e) water depth;
- f) environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- g) description of marine mammal observations in the 24 hours preceding the incident;
- h) species identification or description of the animal(s) involved;
- i) the fate of the animal(s); and
- j) 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.

- (2) 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 Supervisor of the Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401, and/or by email to Jolie.Harrison@noaa.gov, rob.pauline@noaa.gov and NMFS West Coast Regional Stranding Coordinator Justin Viezbicke at Justin.Viezbicke@noaa.gov or 562-980-3230. The report must include the same information identified in Condition 8(a) 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.
- (3) 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 Condition 3 of this Authorization (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), CALTRANS shall report the incident to the Supervisor of the Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401, and/or by email Jolie.Harrison@noaa.gov, rob.pauline@noaa.gov and NMFS West Coast Regional Stranding Coordinator Justin Viezbicke at

Justin.Viezbicke@noaa.gov or 562-980-3230 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. CALTRANS can continue its operations under such a case.

9. A copy of this Authorization must be in the possession of all contractors and marine mammal monitors operating under the authority of this Incidental Harassment Authorization.
10. 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.

For
Donna S. Wieting

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

JUL 17 2015

Date

Table 2. Species/stocks and numbers of marine mammals allowed to be taken by Level B harassment incidental to under this IHA.

Species / Stocks	Authorized takes
Pacific harbor seal / California	460
California sea lion / U.S.	50
Harbor porpoise / San Francisco-Russian Bay	10
Gray whale / Eastern North Pacific	5