



MARINE MAMMAL COMMISSION

8 August 2016

Ms. Jolie Harrison, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by the California Department of Transportation (CALTRANS) seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA) to take small numbers of marine mammals by harassment. The taking would be incidental to dismantling¹ and demolition activities associated with replacement of the east span of the San Francisco-Oakland Bay Bridge in California during a one-year period. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 26 July 2016 notice (81 Fed. Reg. 48745) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions. Since 2002 the Commission has commented on numerous incidental harassment authorization requests related to replacement of the Bridge.

Background

Dismantling activities began in 2014 and will continue for approximately two more years. The requested incidental harassment authorization would be valid for one year only, with CALTRANS seeking renewal for subsequent years. Activities would include the installation of up to 200 temporary falsework piles to support various superstructures and trestles. Those piles would include sheet piles, 14-in H-piles, and 18- to 36-in steel pipe piles. CALTRANS would install sheet piles using a vibratory hammer and H-piles using an impact hammer. Both vibratory and impact hammers could be used to install pipe piles depending on the substrate. Piles would be removed using a vibratory hammer or would be cut off below the mudline.

Demolition of Piers E4 and E5 would be conducted via controlled implosions. Each controlled implosion could include 400 individual delays of charges weighing between 20 and 35 lbs each—all of which would detonate in 4 seconds. Prior to the first implosion event, the blast attenuation system (BAS) would be tested using a charge of 0.0025 lbs or less. CALTRANS would conduct dismantling activities on approximately 132 days and demolition activities on 2 days during daylight hours² only.

¹ Which refer to pile-driving and -removal activities herein.

² Allowing for enough time for pre- and post-implosion monitoring and good visibility to monitor visually the largest Level A harassment zone.

NMFS preliminarily has determined that, at most, the proposed activities temporarily would modify the behavior of small numbers of seven marine mammal species. NMFS anticipates that any impact on the affected species and stocks would be negligible. NMFS also does not anticipate any take of marine mammals by death or serious injury and believes that the potential for disturbance will be at the least practicable level because of the proposed mitigation measures. The mitigation, monitoring, and reporting measures include—

- using sound attenuation devices for impact pile driving of pipe piles, but not during pile proofing or impact driving of H-piles;
- limiting impact driving of pipe piles to a maximum of 20 piles per day and limiting proofing of the pipe piles to a maximum of 2 piles³ per day;
- conducting in-situ source level and sound propagation measurements to verify and adjust the respective Level A and B harassment zones for impact pile-driving activities, as necessary;
- using standard soft-start, delay, and shut-down procedures;
- ceasing pile-driving and -removal activities if any marine mammal comes within 10 m of the equipment;
- implementing a BAS to reduce the shockwave from the implosion;
- conducting in-situ hydroacoustic monitoring of BAS prior to the implosion and making adjustments as necessary;
- for dismantling activities, using three NMFS-approved protected species observers (PSOs) to monitor the (1) Level A harassment zones 30 minutes prior to, during, and 30 minutes after activities during at least (a) 100 percent of unattenuated impact driving of H-piles and (b) 100 percent of attenuated impact driving of pipe piles and (2) Level B harassment zones 30 minutes prior to, during, and 30 minutes after activities during at least (a) 100 percent of unattenuated impact driving of H-piles, (b) 100 percent of attenuated impact driving of pipe piles, and (c) 20 percent of vibratory pile driving and removal;
- for demolition activities, using 8–10 NMFS-approved PSOs to monitor the mortality and Level A and B harassment zones 30 minutes prior to, during, and 60 minutes after the implosion;
- using delay and shut-down procedures, if a species for which authorization has not been granted (including but not limited to Guadalupe fur seals) or if a species for which authorization has been granted but the authorized takes are met, approaches or is observed within the Level B harassment zone;
- conducting 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;
- requiring the (1) NMFS-designated stranding facility be prepared to evaluate, assess, and treat marine mammals injured from the implosion and (2) stranding crew and a veterinarian to be on call near the Pier E4 and E5 site to recover and respond to any injured marine mammals;
- reporting injured and dead marine mammals to NMFS and the local stranding network using NMFS's phased approach and suspending activities, if appropriate; and

³ Each pile would be driven with no more than 20 blows during a 1-minute period

- submitting a final report.

Estimation of takes

The method used to estimate the numbers of takes during dismantling activities, which sums fractions of takes for each species across days, does not account for NMFS's 24-hour reset policy. It also negates the intent of a 24-hour reset. Instead of summing fractions of takes across days and then rounding to estimate total takes, NMFS should have calculated a daily take estimate (determined by multiplying the estimated density of marine mammals in the area by the daily ensonified area) and then rounded that to a whole number *before* multiplying it by the number of days that activities would occur. For species in which estimated daily takes would round down to zero, NMFS should use the average group size as a proxy for the estimated number of takes, as has been done for other incidental harassment authorizations (80 Fed. Reg. 75380, 81 Fed. Reg. 23144). If NMFS believes any of those species could be taken on multiple days, NMFS should multiply the average group size by the number of days of activities. NMFS appears to have incorporated both of those methods when estimating the numbers of takes for CALTRANS' demolition activities. The Commission has commented on NMFS's inconsistent use of its 24-hour reset and standard rounding rules numerous times, yet those issues remain unresolved. Therefore, the Commission recommends that NMFS (1) follow its policy of a 24-hour reset for enumerating the number of each species that could be taken during dismantling activities, (2) apply standard rounding rules before summing the numbers of estimated takes across days, and (3) for species that have the potential to be taken but model-estimated or calculated takes round to zero, use group size to inform the take estimates—these methods should be used consistently for all future incidental take authorizations.

Mitigation and monitoring measures

The proposed authorization would require PSOs to implement mitigation measures, validate take estimates, and document marine mammal responses to a portion of the dismantling activities. Specifically, the authorization would require monitoring of the Level A harassment zones for 100 percent of all pile driving and Level B harassment zones for 100 percent of all impact pile driving and 20 percent of vibratory pile driving and removal. The Commission has commented on this issue for previous CALTRANS authorizations.

NMFS indicated in the issuance of previous incidental harassment authorizations (78 Fed. Reg. 2371, 79 Fed. Reg. 2422) that the extent of proposed work made it infeasible and costly for CALTRANS to implement marine mammal monitoring for Level A and B harassment zones at all times, particularly since the Level B harassment zone for vibratory pile driving or removal extends to a radius of 2 km—a radius that the Commission notes is far smaller than other similar pile-driving authorizations. However, monitoring and reporting requirements adopted under section 101(a)(5) of the MMPA need to be sufficient to provide a reasonably accurate assessment of the manner of taking and the numbers of animals taken incidental to the specified activity.

The numbers and species of marine mammals taken during the proposed activities may not be determined accurately if monitoring occurs only for a portion of the activities. For example, monitoring during a previous authorization occurred on 42 days, which accounted for 95 percent of the in-water activities at one site and 30 percent at the other site (CALTRANS 2015). Although one California sea lion and one harbor porpoise were observed within the Level B harassment zone prior

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to pile driving, neither California sea lions nor harbor porpoises were reported to be taken during the activities. Furthermore, the numbers of marine mammals taken would be underestimated for species that rarely occur in the project area (e.g., northern elephant seals, bottlenose dolphins, northern fur seals, and gray whales) if those animals were present on any of the days in which monitoring would not occur—which could be up to 80 percent of the time for vibratory pile driving and removal. Any behavioral responses of those species also would not be documented. Therefore, monitoring during all pile-driving and -removal activities is the only way for CALTRANS and NMFS to be confident that the numbers of marine mammals taken are within the limits authorized and the least practicable impact occurs. Thus, the Commission again recommends that NMFS require CALTRANS to implement full-time monitoring of Level A and B harassment zones during all pile-driving and -removal activities.

The Commission hopes you find its letter useful. Please contact me if you have questions regarding the Commission's recommendations and rationale.

Sincerely,

A handwritten signature in blue ink that reads "Rebecca J. Lent". The signature is written in a cursive style.

Rebecca J. Lent, Ph.D.
Executive Director

Reference

CALTRANS. 2015. San Francisco–Oakland Bay Bridge East Span Seismic Safety Project: Marine mammal monitoring annual report for pile driving and mechanical demolition January 8, 2014–January 7, 2015. State of California Department of Transportation. 22 pages.