



MARINE MAMMAL COMMISSION

26 September 2012

Mr. P. Michael Payne, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by the California Department of Transportation seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act to take small numbers of marine mammals by harassment. The taking would be incidental to construction activities associated with replacement of the east span of the San Francisco-Oakland Bay Bridge in California. The incidental harassment authorization would be valid for a one-year period. The Commission also has reviewed the National Marine Fisheries Service's 21 August 2012 notice (77 Fed. Reg. 32573) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions. The Service also is requesting comments and suggestions regarding the possibility of promulgating regulations for a five-year period. Since 2002 the Commission has commented on multiple incidental harassment authorization requests related to replacement of this bridge.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service—

- promulgate regulations and condition them to require further public review if the Department or contractor proposes any substantial changes to the project plan; and
- require the Department to implement full-time monitoring of Level A and B harassment zones during all in-water sound-producing activities (i.e., pile-driving and -removal and bridge dismantlement activities).

RATIONALE

The planned project would require some initial construction activities in the next twelve months, followed by dismantling activities scheduled to begin in the fall of 2013. Construction would include the installation of up to 635 temporary falsework piles to support various superstructures and trestles. Those piles would include 18- to 36-in steel pipe piles and 10- to 14-in H-piles. The Department also could install up to 1,925 steel sheet piles as part of up to 22 cofferdams that would be used to dismantle the bridge's foundation. The Department would drive pipe sheet piles with a vibratory hammer and H-piles with an impact hammer. Both vibratory and impact hammers could be used to drive pipe piles depending on the substrate. All temporary piles

would be removed using a vibratory hammer. The Department does not expect to use more than one hammer at any given time and would conduct all activities during daylight hours only.

The Department would remove various bridge superstructures including, trusses, road deck, and steel and concrete support towers. The Department does not expect those removal activities to harass marine mammals. However, several other activities have the potential to harass marine mammals, including dredging the shallow waters near the bridge to allow barge access and removing the concrete foundation of the bridge using various mechanical means including saw cutting, flame cutting, mechanical splitting, drilling, pulverizing, and/or hydrocutting. The Department would dismantle the concrete foundations after it has removed the superstructure and towers. It may not dismantle the concrete foundations within the one-year period of the proposed incidental harassment authorization. If that is the case, then those activities could be reviewed again, depending on the Service's approach to authorizing the activities.

The Service preliminarily has determined that, at most, the proposed activities temporarily would modify the behavior of small numbers of harbor seals, California sea lions, harbor porpoises, and gray whales. The Service anticipates that any impact on the affected species and stocks would be negligible. The Service 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 and monitoring measures. Those measures include—

- limiting the size of temporary piles to 36 in or less and the duration of impact driving to the extent feasible;
- using a vibratory hammer as the primary tool for installing all pipe piles and only proofing the piles with an impact hammer (however, depending on the substrate, some piles may be installed using an impact hammer);
- using sound attenuation devices for driving all pipe piles and proofing 90 percent of them
- 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 piles per day—each pile would be driven with no more than 20 blows during a one-minute period;
- restricting impact driving of H-piles from 1 June to 30 November to protect migrating salmonids and spawning green sturgeon;
- conducting in-situ sound propagation to verify or adjust the respective Level A harassment zones, as necessary;
- establishing and monitoring a 500-m exclusion zone around each foundation to be dismantled until in-situ sound measurements have been conducted to determine the extent of the Level A harassment zones—monitoring those zones 30 minutes before, during, and 30 minutes after dismantling activities;
- using delay and shut-down procedures while dismantling marine foundations;
- using a Service-approved protected species observer to monitor the Level B harassment zone during at least 20 percent of dismantling activities;
- using ramp-up (i.e., soft-start) procedures before vibratory and impact pile driving of each pile;

- using a Service-approved protected species observer to (1) monitor the Level A and B harassment zone 30 minutes prior to, during, and 30 minutes after pile-driving activities during at least (a) 20 percent of vibratory pile driving, (b) 20 percent of attenuated impact driving of pipe piles, and (c) 100 percent of unattenuated impact driving of H-piles and (2) implement delay procedures (keeping in mind that, because of the nature of the sediments, pile driving cannot be stopped until the pile being driven has reached its predetermined depth);
- reporting injured and dead marine mammals to the Service and local stranding network using the Service's phased approach and suspending activities, if appropriate; and
- submitting weekly monitoring reports and a final report.

Promulgation of regulations

The Department anticipates that dismantling the bridge may take up to five years. Activities likely would differ from year to year and the Department does not believe it can predict those activities to the degree needed to promulgate regulations for a five-year period. Therefore, it plans to request annual incidental harassment authorizations as it has done in the past. However, the Service solicited comments regarding promulgation of five-year regulations versus issuance of multiple incidental harassment authorizations. The Commission generally supports the promulgation of regulations for activities that are predictable and occur over an extended timeframe. However, in this case, the Department has not secured the project contractors and, although the Department has described the activities generally, the contractor may wish to introduce substantial changes to the project plan. For example, the contractor may prefer to use explosives to remove portions of the bridge. The Commission still does not consider this an impediment to promulgating regulations, as long as the Department and Service seek additional public comment on any substantial changes to the proposed activities. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service promulgate regulations and condition them to require further public review if the Department or contractor proposes any substantial changes to the project plan. Among other things, the Commission would consider any proposed changes that might render the mitigation and monitoring measures less effective to be substantial and therefore warranting further review.

Mitigation and monitoring measures

The Service would require the Department to implement ramp-up procedures prior to driving each pile using either vibratory or impact hammers. The Commission also understands that the Service would require observers to collect data pertaining to animal responses when ramp-up occurs. The Commission supports this requirement because the information collected from multiple pile-driving projects should be useful in evaluating the overall effectiveness of ramp-up procedures. In the Commission's view, the collection and analysis of such data is a useful way to improve mitigation and monitor measures, most of which are of limited effectiveness as presently implemented.

The proposed authorization would require monitoring by protected species observers to implement delay procedures for all in-water sound-producing activities and shut-down procedures

for dismantling activities, validate take estimates, and document marine mammal responses to a portion of the activities. The authorization also would require monitoring of the Level A harassment zone, if applicable, during 100 percent of dismantling activities and the Level B harassment zone during 20 percent of dismantling activities. In addition, it would require monitoring of the Level A and B harassment zones for (1) at least 20 percent of vibratory pile driving, (2) at least 20 percent of attenuated impact driving of pipe piles, and (3) 100 percent of unattenuated impact driving of H-piles. However, the authorization would not require monitoring during pile removal. Previous incidental harassment authorizations for this bridge project required the Department to monitor the Level A harassment zone for all in-water pile-driving activities (76 Fed. Reg. 7156) and to estimate the number of marine mammals harassed during pile-driving activities. Whether previous authorizations required the Department to monitor the entire extent of the Level B harassment zone is not clear.

The Service did not provide a rationale for not including continuous monitoring in the proposed authorization, although it indicated that the Department's ability to monitor would be constrained by funding. In the past, the Service has indicated that it would not require continuous observations during vibratory pile driving because it believes that the sound levels from those activities would not cause Level A harassment or mortality, the operators would be able to determine adequately the number of animals taken, and they should be able to determine actual impacts by correcting for observer effort (77 Fed. Reg. 32573). However, it did require continuous monitoring of the Level A harassment zones during all impact pile-driving activities. Failure to use observers during all impact pile-driving activities could result in a failure to implement delay procedures if a marine mammal is within the respective Level A harassment zone.

For a number of reasons, the Commission believes that protected species observers should be monitoring the construction during all in-water sound-producing activities (i.e., vibratory and impact pile driving and dismantling activities). Marine mammal responses to dismantling activities have yet to be studied and responses to vibratory pile driving and removal are not well studied. Therefore, continuous monitoring is the only way to ensure that unexpected responses of marine mammals (primarily within the Level B harassment zones) are detected, documented, and evaluated. Intermittent or infrequent observations may be sufficient for characterizing what might be called "normal" or "common" responses, but the Service also should want to know if, on occasion, the activities cause stronger and more significant responses. In addition, monitoring the Level A harassment zones on an intermittent basis essentially reduces the effectiveness of the mitigation measures to a corresponding degree. The Department would be required to delay pile-driving activities if a marine mammal enters a Level A harassment zone. However, that measure is likely to be used effectively when observers are actively monitoring the harassment zones. Finally, monitoring during all in-water sound-producing activities is the only way for the Department and the Service to be confident that they are causing the least practicable impact. For all of these reasons, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Department to implement full-time monitoring of Level A and B harassment zones during all in-water sound-producing activities (i.e., pile-driving and -removal and bridge dismantlement activities). The Commission has made similar recommendations for other activities that involve pile driving or removal. However, the Service has yet to implement those recommendations. If the Service does

Mr. P. Michael Payne
26 September 2012
Page 5

not require continuous monitoring here again, then the Commission would welcome a meeting with the Service to discuss the importance of this recommendation.

Please contact me if you have questions regarding the Commission's recommendations and rationale.

Sincerely,

A handwritten signature in blue ink that reads "Timothy J. Ragen". The signature is fluid and cursive, with the first name "Timothy" and last name "Ragen" being clearly legible, and "J." as a small initial in between.

Timothy J. Ragen, Ph.D.
Executive Director