



MARINE MAMMAL COMMISSION

11 May 2017

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 San Francisco Bay Area Water Emergency Transportation Authority (SF WETA) 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 ferry terminal expansion and renovations in San Francisco, California. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 13 April 2017 notice (82 Fed. Reg. 17799) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

SF WETA plans to expand and renovate the ferry terminal in San Francisco during a two-year timeframe. In the first year, operators would install up to 220 24- to 36-in steel piles and 38 14-in polyurethane-coated wood piles using a vibratory and impact hammer. They also would remove up to 350 wood or concrete piles and 4 steel piles via vibratory extraction, direct pull, or cutting the piles at the mudline. SF WETA expects activities to take 106 days, weather permitting. It would limit pile-driving and -removal activities to daylight hours from 1 July to 30 November 2017.

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—

- conducting in-situ sound source measurements during 10 percent of impact pile-driving activities¹ and adjusting the Level A and B harassment zones, if necessary;
- using a sound attenuation device (e.g., bubble curtain and pile cushion) during impact driving of steel piles;
- ceasing pile-driving and -removal activities if any marine mammal comes within 10 m of the equipment;

¹ In addition, measurements would be taken during the vibratory installation of the first two 24-in and 36-in piles.

- using two² qualified land-based protected species observers to monitor the Level A and B harassment zones for 30 minutes³ before, during, and for 30 minutes after the proposed activities;
- using standard soft-start, delay, and shut-down procedures;
- using delay and shut-down procedures, if a species for which authorization has not been granted (including but not limited to humpback whales or 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 marine mammal baseline observations on two separate days within one week of initiation of activities;
- reporting injured and dead marine mammals to the Office of Protected Resources and the Southwest Regional Stranding Coordinator using NMFS's phased approach and suspending activities, if appropriate; and
- submitting a final report.

The Commission understands based on discussions with NMFS that there are some issues⁴ associated with the extent of the Level A and B harassment zones and the associated numbers of marine mammal takes as described in the *Federal Register* notice. In its review of the notice, the Commission questioned the appropriateness of some of the source levels used and noted analytical errors in the estimation of Level A and B harassment zones. NMFS has since indicated that it plans to increase the size of the associated Level A and B harassment zones accordingly. Due to those increases, NMFS further indicated that it would increase the numbers of Level B harassment takes from 4,798 to 6,414 for harbor seals and from 5,200 to 6,950 for California sea lions. The Commission agrees that NMFS should include all the aforementioned revisions in the final incidental harassment authorization.

Appropriateness of the Level A harassment zones

The Commission has concerns regarding the appropriateness of the manner in which NMFS has estimated Level A harassment zones. For impact driving of 36-in piles, the Level A harassment zones for both low- and high-frequency cetaceans were estimated to be much greater (505 and 602 m, respectively) than the Level B harassment zone (341 m). Based on those zones, an animal would experience permanent hearing damage via a permanent threshold shift (PTS) at ranges that far exceed the ranges at which an animal would exhibit a behavioral response. That notion is inaccurate and runs counter to both what the National Research Council (NRC) described nearly 15 years ago (Figure 4-1; NRC 2005) and what has been included in the numerous Navy environmental impact statements⁵. None of those documents describe physiological effects occurring at ranges that far

² The Commission was concerned that NMFS originally proposed to reduce the number of observers from two to one based on in-situ measurements. Given the size of the Level A harassment zones, it would be very unlikely that those zones would be reduced appreciably to be monitored by a single observer. NMFS has since indicated it would require SF WETA to employ two observers at all times in the final authorization.

³ NMFS informed the Commission that it incorrectly included in the *Federal Register* notice a pre-activity monitoring timeframe of 15 rather than 30 minutes, which would be amended in the final authorization.

⁴ The Commission also highlighted some other typos and instances of missing information in the *Federal Register* notice, which NMFS indicated it would revise and include in the final authorization.

⁵ With which NMFS has been a cooperating agency.

exceed behavioral effects. Rather, physiological effects occur closest to the sound source.

NMFS did not address this issue in the current *Federal Register* notice, which the Commission assumes was an oversight. However, NMFS did address it in another recent *Federal Register* notice. Specifically, it stated that animals would not likely remain in the area with intense sound that could cause severe levels of hearing damage and that, in reality, animals avoid those areas (82 Fed. Reg. 15511). NMFS further stated that marine mammals taken by Level B harassment would most likely exhibit overt brief disturbance and avoidance of the area (82 Fed. Reg. 15511). However, those conclusions do not comport with NMFS's proposed Level A and B harassment zones—specifically, an animal would experience PTS before behaviorally responding and avoiding the area.

The Level A and B harassment zones do not make sense biologically or acoustically due to NMFS's unrealistic assumption that the animals remain stationary throughout the entire day of pile driving⁶. The Commission understands that some action proponents either are unable, or choose not, to conduct more sophisticated sound propagation and animal modeling. However, when an action proponent uses a simple area x density method, that 'area' should be based on reasonable harassment zones. By assuming a stationary receiver, all of the energy emitted during a 24-hour period is accumulated for the PTS sound exposure level-based (SEL_{cum}) thresholds. In this instance, that assumption leads to the determination that the animals would be subjected to 3,600 hammer strikes per day.

The Commission believes that it would be prudent for NMFS to consult with scientists and acousticians to determine the appropriate accumulation time that action proponents should use to determine the extent of the Level A harassment zones based on the associated PTS SEL_{cum} thresholds in such situations. Those zones should incorporate more than a few hammer strikes but less than an entire work day's worth of strikes. This is similar to a recommendation made in the Commission's [31 August 2015 letter](#) on NMFS's proposed acoustic guidance. The Commission does not question the Level A harassment thresholds themselves, but rather the manner in which the PTS SEL_{cum} thresholds are currently implemented. As such, the Commission recommends that NMFS consult with both internal⁷ and external scientists and acousticians to determine the appropriate accumulation time that action proponents should use to determine the extent of the Level A harassment zones based on the associated PTS SEL_{cum} thresholds for stationary sound sources.

Rounding of take estimates

The method NMFS used to estimate the numbers of takes during the proposed activities, which summed fractions of takes for each species across project days, does not account for and negates the intent of NMFS's 24-hour reset policy. As the Commission indicated in previous letters regarding this matter⁸, the issue at hand involves policy rather than mathematical accuracy. The Commission understands NMFS has developed criteria associated with rounding that it had recently planned to share with the Commission. The Commission looks forward to reviewing those criteria

⁶ Which is considered a stationary sound source.

⁷ Including staff in the Marine Mammal and Sea Turtle Conservation Division of the Office of Protected Resources and staff in the Office of Science and Technology.

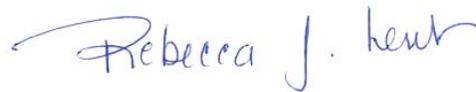
⁸ See the Commission's [29 November 2016 letter](#) detailing this issue.

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and resolving this matter in the near future.

Please contact me if you have questions regarding the Commission's comments or recommendation.

Sincerely,

A handwritten signature in blue ink that reads "Rebecca J. Lent". The signature is written in a cursive style with a large initial "R" and a long horizontal stroke extending to the left.

Rebecca J. Lent, Ph.D.
Executive Director