



MARINE MAMMAL COMMISSION

16 April 2018

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 U.S. Army Corps of Engineers (USACE) 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 confined blasting in Tampa Harbor in Florida during a one-year period. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 19 March 2018 notice (82 Fed. Reg. 11968) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

Background

USACE would use confined blasting to deepen the East Channel of Big Bend Channel in Tampa Harbor. Each blast event could include up to 40 individual delays of charges weighing up to 40 lbs each—all of which would detonate within 4 seconds. No more than two blast events could occur on a given day with a total of 42 blast events during the one-year period.

NMFS preliminarily has determined that, at most, the proposed activities temporarily would cause Level B harassment¹ of a small number of common bottlenose dolphins. 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—

- restricting blast events to 1 April through 31 October to minimize disturbance of manatees;
- restricting blast events to two hours after sunrise to one hour before sunset and only to good weather conditions (e.g., no fog, rain, or otherwise poor sighting conditions);
- using stemming procedures (i.e., capping each blast hole with crushed rock) to reduce the pressure wave emitted from each detonation;

¹ NMFS did not distinguish between takes associated with temporary threshold shift (TTS) and behavior in the *Federal Register* notice. It plans to include that information in the final authorization.

- conducting in-situ hydroacoustic monitoring during all blast events, including collecting ambient sound measurements;
- using delay and shut-down procedures;
- using six NMFS-approved protected species observers² to monitor³ the mortality and Level A and B harassment zones⁴ 1 hour prior to, during, and 1 hour⁵ after each blast event;
- using delay and shut-down procedures, if a species for which authorization has not been granted (including but not limited to manatees) or if a species for which authorization has been granted but the authorized takes are met⁶, approaches or is observed within the Level B harassment zone;
- using a fish scare charge (e.g., 0.5 kg) to minimize blast impacts on fish;
- providing the blasting plan to NMFS, the Florida Fish and Wildlife Conservation Commission (FFWCC)⁷, and the U.S. Fish and Wildlife Service for their review 30 days prior to initiation of blasting operations;
- notifying NMFS and FFWCC 24 hours before blasting is planned to occur⁸;
- immediately reporting to FFWCC any marine mammal injured or killed due to blast activities and following any instructions that FFWCC provides⁸;
- reporting other injured and dead marine mammals to NMFS and the Southeast Regional Stranding Coordinator using NMFS's phased approach and suspending activities, if appropriate; and
- submitting draft and final marine mammal and hydroacoustic monitoring reports.

The Commission concurs with NMFS's preliminary finding and recommends that NMFS issue the incidental harassment authorization, subject to the inclusion of the proposed mitigation, monitoring, and reporting measures.

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 has indicated in numerous previous letters regarding this matter⁹, the issue at hand involves policy rather than mathematical accuracy. NMFS indicated in the *Federal Register* notice that the maximum calculated take by Level A

² At least one aerial observer, two vessel-based observers, two drill barge-based observers, and one observer stationed in the most optimal observation location for that blast event.

³ Although not stipulated in the *Federal Register* notice, NMFS would require USACE to report the numbers of takes for both TTS and behavior rather than Level B harassment as a whole. That requirement would be included in the final authorization.

⁴ The Commission noted that NMFS did not provide the range to effects for the various types of impacts in the *Federal Register* notice. NMFS indicated it would include those in the final authorization.

⁵ At the Commission's request and based on measures required for other confined blasting activities, NMFS increased the post-activity monitoring period from 30 minutes to 1 hour.

⁶ NMFS informed the Commission that it omitted from the *Federal Register* notice this mitigation measure, which would be included in the final authorization.

⁷ Which also is the local stranding network responder in Tampa Bay.

⁸ At the Commission's request and based on measures required for other confined blasting activities, NMFS plans to include these measures in the final authorization.

⁹ See the Commission's [29 November 2016 letter](#) detailing this issue.

harassment was 0.02 dolphins, which is an error. The maximum number of calculated Level A harassment takes is 3.88 dolphins over the 42 days of activities. NMFS has since indicated that 0.09 dolphins could be taken by Level A harassment per blast event and even if two events were to occur on a given day, the 0.18 Level A harassment takes would not round to one. Thus, due to both the low likelihood that take would occur and the implementation of mitigation measures, NMFS does not plan to authorize Level A harassment takes. The Commission agrees that fractions of takes should not be summed across days, a view it has expressed for many years. However, this current approach is not consistent with other activities involving underwater detonations (83 Fed. Reg. 61398).

NMFS developed criteria associated with rounding quite some time ago that should address these concerns. However, the criteria need further revision before NMFS can share them with the Commission. Therefore, the Commission again recommends that NMFS promptly revise its draft rounding criteria to be shared with the Commission expeditiously.

Hydroacoustic monitoring plan

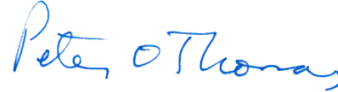
The Commission previously recommended¹⁰ that USACE conduct hydroacoustic monitoring to refine the extents of the mortality and Level A and B harassment zones. NMFS did not include the hydroacoustic monitoring requirement at that time but did include it for the proposed authorization. The Commission appreciates that NMFS is requiring USACE to conduct hydroacoustic monitoring but notes that USACE's proposed monitoring plan is insufficient. The Commission understands that NMFS's technical expert had numerous substantive concerns as well. The deficiencies of the proposed hydroacoustic monitoring plan are provided in the Addendum. USACE indicated that it could not provide a more detailed monitoring plan until it retained a contractor. Although a more-refined plan was not able to be provided, basic requirements of such a plan should have been stipulated in the proposed authorization for review by the Commission and the public. Those basic requirements also are necessary for USACE to obtain an appropriate contractor.

Given that collecting measurements of, and analyzing data associated with, underwater detonations is more complex than for pile-driving activities, it is imperative that the measurements are collected appropriately. This is especially important since those measurements inform the various mitigation and monitoring measures. To ensure that USACE is effecting the least practicable impact on the species or stock and fulfilling the requirements pertaining to monitoring and reporting taking by harassment as prescribed in the authorization under 101(a)(5) of the MMPA, the Commission recommends that NMFS ensure that all issues summarized in the Addendum are addressed and incorporated into either the final hydroacoustic monitoring plan or the incidental harassment authorization itself—all items likely would need to be stipulated by USACE in its hydroacoustic monitoring contract as well.

¹⁰ Per its [19 December 2011 letter](#).

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

Sincerely,



Peter O. Thomas, Ph.D.,
Executive Director

Addendum

Deficiencies associated with the proposed hydroacoustic monitoring plan include—

- hydroacoustic measurement methods were not described—the sampling rate of the recording devices (i.e., hydrophone and/or pressure transducer) must be specified to ensure the necessary frequencies (i.e., 10 Hz–40 kHz) and pressure signals (at least 1 MHz) are recorded (e.g., see Chapter 7 in California Department of Transportation (Caltrans; 2016)) and the appropriate filter (band-pass) is used, data must be collected appropriately for each blast event down to the relevant frequency (i.e., 10 Hz), the type of hydrophone proposed for use should be appropriate for collecting measurements of underwater detonations as well as ambient measurements in the far field (i.e., low vs. high sensitivity), recording devices should be placed in the near field (i.e., at 10 m) and sufficiently in the far field (and away from shipping lanes) to collect the relevant data, ambient data should be collected at three *continuous* 10-minute intervals, as specified in the NMFS (2012) guidance;
- analytical methods were not described—pressure signals must be analyzed using appropriate signal processing methods and applicable equations (e.g., see Chapter 7 in Caltrans (2016)), the various impulse metrics should be calculated using time series data, cumulative sound exposure levels (SEL_{cum}) should be calculated using a linear summation of acoustic intensity, *weighted* cumulative sound exposure thresholds must be used to estimate the various ranges; and
- data to be reported as part of the hydroacoustic monitoring plan were scant—the appropriate metrics (i.e., impulse in Pa-sec or psi-msec, peak sound pressure levels, SEL_{cum} for entire blast event), appropriate statistics (i.e., median, mean, minimum, and maximum), and relevant information (i.e., number of delays per blast event, total net explosive weight of each blast event, sediment characteristics/types, hydrophone depths and distances to the closest and farthest delay, water depth, power spectral data) that are to be reported must be specified.

References

- Caltrans. 2016. San Francisco–Oakland Bay Bridge east span seismic safety project: Marine foundation removal project final biological monitoring programs. Oakland, California. 90 pages.
- NMFS. 2012. Guidance document: Data collection methods to characterize underwater background sound relevant to marine mammals in coastal nearshore waters and rivers of Washington and Oregon. NMFS Northwest Region and Northwest Fisheries Science Center, Seattle, Washington. 5 pages.