



MARINE MAMMAL COMMISSION

15 August 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 City and Borough of Sitka (CBS) 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 construction of a new docking area in Sawmill Cove, Alaska. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 26 July 2017 notice (82 Fed. Reg. 34632) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

CBS plans to remove and install piles during construction of a new multi-purpose docking area. Operators would install up to 4 30-in and 2 48-in permanent steel pipe piles and 12 30-in temporary steel pipe piles using a vibratory and/or impact hammer. They would remove the temporary piles using a vibratory hammer and up to 60 12- or 14-in timber piles via direct pull or with a vibratory hammer. CBS's activities could occur on up to 16 days, weather permitting. It would limit pile-driving and -removal activities to daylight hours and expect the activities to occur from 1 October to 31 December 2017.

NMFS preliminarily has determined that, at most, the proposed activities could cause Level A and/or B harassment of small numbers of five 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 direct pull as the primary removal method for timber piles and, if ineffective, then using a vibratory hammer;
- operating the vibratory hammer at a reduced energy setting (30 to 50 percent of its rated energy) and the impact hammer at the minimum energy needed to safely install the piles;
- using a sound attenuation device (i.e., softening material¹) during impact driving of piles;

¹ e.g., high-density polyethylene or ultra-high-molecular-weight polyethylene.

- ceasing pile-driving and -removal activities if any marine mammal comes within 10 m of the equipment;
- using one or two² qualified protected species observers to monitor the Level A and B harassment zones for 30 minutes before, during, and for 30 minutes after the proposed activities;
- using soft-start, delay, and shut-down procedures;
- using delay and shut-down procedures, if a species for which authorization has not been granted or if a species for which authorization has been granted but the authorized takes are met, approaches or is observed within the Level A and/or B harassment zone³;
- reporting injured and dead marine mammals to the Office of Protected Resources and the Alaska Regional Stranding Coordinator using NMFS's phased approach and suspending activities, if appropriate; and
- submitting a final report.

General mitigation measure issues

The Commission highlighted some general typos, errors, and instances of missing information in the *Federal Register* notice, which NMFS indicated it would revise and include in the final authorization. However, the Commission had some additional questions regarding a few of the proposed mitigation measures. The Commission inquired whether the proposed 'softening material' would serve in a similar manner as a pile cap or cushion. NMFS indicated it could not comment on the material's similarities with a pile cap or cushion. The Commission questions why NMFS would require such a measure without knowing whether the material and method to be used is similar to other standard sound attenuation devices and whether it has been effective during previous use.

The Commission also inquired why NMFS would require soft-start measures to be implemented for vibratory pile driving. That measure has not been required by NMFS for quite some time and seems unnecessary given that NMFS indicated in its *Federal Register* notice that there is no potential for Level A harassment because a marine mammal is not expected to remain at such close distances (0.3 to 48.4 m) for long periods of time. Thus, NMFS stated that CBS would not be required to shut down during any activities involving a vibratory hammer unless an animal comes within 10 m⁴ (82 Fed. Reg. 34641). The Commission understands NMFS's position that Level A harassment is unlikely since an animal would have to remain stationary from 1 to 5 hours per day within the respective Level A harassment zone to potentially incur a permanent threshold shift. However, the Commission does not understand why NMFS then proposed to require soft-start procedures during vibratory pile driving, when soft-start procedures primarily are intended to minimize the likelihood of Level A harassment. In addition, NMFS stipulated that the shut-down zone for impact driving of 48-in piles would be 50 m for otariids (OW), while the shut-down zone for mid-frequency cetaceans (MF) would be 100 m (Table 7 in the *Federal Register* notice). Those zones are questionable since the estimated Level A harassment zone for OW is greater than for MF

² Two observers would be on duty during all activities except timber pile removal. The Commission understands NMFS will clarify this in the final authorization.

³ The Commission understands NMFS omitted this standard measure that would be included in the final authorization.

⁴ Which is intended to prevent non-auditory, physical injury.

(49.9 vs 45.5 m, respectively; 82 Fed. Reg. 34640). The Commission asked NMFS about both of these issues, to which NMFS replied that the measures were based on what CBS had proposed.

It is incumbent on NMFS, as the regulatory agency, to evaluate the appropriateness and necessity of the various mitigation measures. Specifically, NMFS has indicated that it must balance the effectiveness of the mitigation measures with the practicability of implementation (82 Fed. Reg. 34642). With this in mind, the Commission recommends that NMFS (1) specify whether the softening material and soft-start procedures would be effective at minimizing Level A harassment and include in the authorization only those measures that would fulfill that purpose, which may include the use of more appropriate sound attenuation devices and (2) explain why it believes that a smaller shut-down zone is more adequate for OW than MF, even though the estimated Level A harassment zones for OW are larger than those for MF. Further, as the Commission has discussed with NMFS in recent years, NMFS should include consistent mitigation, monitoring, and reporting measures for all authorizations involving pile driving and removal.

Impact pile-driving source levels

The Commission previously has recommended that NMFS use consistent approaches for authorizations that involve pile driving⁵, including for proxy source levels. In this instance, NMFS used source levels based on sound pressure level root-mean-square (SPL) for 30-in piles from Denes et al. (2016) and for 48-in piles from CH2M Engineers, Inc (CH2M; 2016) and an unspecified pulse duration, which appears to have been 100 msec. The Commission is unsure why NMFS did not use source levels based on single-strike sound exposure levels (SEL_{s-s}) that were provided in both Denes et al. (2016) and CH2M (2016; Tables 72 and 15, respectively). SEL_{s-s} are more accurate, as they incorporate the pulse duration explicitly rather than assuming a proxy pulse duration and they provide a more refined estimation of impacts. Many, if not all, recent incidental harassment authorizations have used source levels based on SEL_{s-s} when such data are available. The Commission, however, continues to support the use of proxy pulse durations when either SEL_{s-s} source levels or in-situ pulse durations are unavailable. The Commission recommends that NMFS re-estimate the extent of the Level A harassment zones based on SEL_{s-s} source levels for 30-in piles from Denes et al. (2016) and for 48-in piles from CH2M (2016). The resulting Level A harassment zones should decrease substantially from those estimated in Table 4⁶ of the *Federal Register* notice. Thus, the Commission recommends that NMFS reassess the numbers of estimated Level A harassment takes⁷ accordingly.

⁵ See the Commission's [3 January 2017](#) letter as an example.

⁶ For example, the Level A harassment zone for high-frequency cetaceans would decrease from 1,023.5 to 609.3 m assuming a single-strike source level of 182 dB re 1 μPa^2 -sec at 10 m (from Denes et al. 2016), 400 strikes per pile, 1 pile driven per day, and propagation loss of 15logR.

⁷ Which appear to be qualitatively based on the size of the Level A harassment zone, even though an area * density method was not used to estimate the numbers of marine mammal takes.

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

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'.

Rebecca J. Lent, Ph.D.,
Executive Director

References

- CH2M. 2016. Final report: Anchorage Port Modernization Program—Test pile program report of findings. Anchorage, Alaska. 68 pages.
- Denes, S.L., G.J. Warner, M.E. Austin, and A.O. MacGillivray. 2016. Hydroacoustic pile driving noise study—Comprehensive report. Document 001285, version 2.0. JASCO Applied Sciences, Anchorage, Alaska. 238 pages.