



# MARINE MAMMAL COMMISSION

1 August 2019

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 of Alameda (the City) 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 of a ferry terminal in Alameda, California. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 18 July 2019 notice (84 Fed. Reg. 34347) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

The City plans to construct a ferry terminal in Seaplane Lagoon at Alameda Point. Operators would install up to six 24-in concrete and six 36-in steel pipe piles using a vibratory or impact hammer. They also would install and remove up to 18 14-in Hpiles using a vibratory hammer. The City expects activities to occur on up to 24 days, weather permitting. It would limit pile-driving and -removal activities to daylight hours only.

NMFS preliminarily has determined that, at most, the proposed activities could cause Level B harassment<sup>1</sup> 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 proposed mitigation, monitoring, and reporting measures include—

- conducting in-situ measurements during pile driving and removal and adjusting the Level A and B harassment zones, as necessary;

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<sup>1</sup> The Commission informally noted that it would be prudent for NMFS to include a small number of Level A harassment takes of harbor seals to account for those animals that could surface within the Level A harassment zone before impact pile driving can cease. The size of the Level A harassment zone also may not be as small as predicted based on NMFS's presumed 7-dB reduction, as discussed further herein. NMFS agreed to include six Level A harassment takes of harbor seals in the final authorization.

- using a sound attenuation device (e.g., pile block and bubble curtain) during impact driving of 24-in concrete piles and implementing measures to ensure performance standards are met for the bubble curtain;
- ceasing heavy machinery activities if any marine mammal comes within 10 m of the equipment;
- using standard soft-start, delay, and shut-down procedures;
- using one or two qualified land-based protected species observers (PSOs)<sup>2</sup> to monitor the Level A and B harassment zones for 30 minutes before, during, and for 30 minutes after the proposed activities;
- 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 number of takes has been met, approaches or is observed within the Level B harassment zone;
- reporting injured and dead marine mammals to NMFS's Office of Protected Resources and the West Coast Regional Stranding Coordinator using NMFS's phased approach and suspending activities, if appropriate; and
- submitting draft and final marine mammal<sup>3</sup> and hydroacoustic monitoring reports.

Regarding the proposed hydroacoustic monitoring plan, the Commission informally noted that the numbers and types of piles and methods to be monitored were not specified in the preamble, draft incidental harassment authorization, or proposed hydroacoustic monitoring plan. NMFS indicated that impact installation of two 24-in concrete piles, vibratory installation of two 36-in steel piles, and vibratory installation and extraction of two Hpiles would be monitored. The Commission also noted that the far-field hydrophone should be located at least 1 km rather than 100 m from the 36-in piles during vibratory installation to better assess the extent of the Level B harassment zone. The Commission additionally noted that the hydroacoustic monitoring plan inconsistently specified the lower frequency range of the hydrophone and incorrectly specified the upper frequency range of the hydrophone. NMFS confirmed that the City would conduct recordings from 10 Hz to 20 kHz. Further, the City proposed to collect background sound measurements for only 1 minute prior to pile driving, which is insufficient for collecting such measurements, and not based on the standard 10-minute continuous monitoring period. NMFS has confirmed that the various additions and revisions would be included in the final authorization and/or hydroacoustic monitoring plan accordingly.

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<sup>2</sup> The Commission informally noted that these requirements were not included in the draft incidental harassment authorization. NMFS indicated that the numbers of PSOs required to monitor during the various activities would be specified in the final authorization.

<sup>3</sup> Similar to other recent authorizations, the Commission informally noted that estimating the total numbers of animals taken based on extrapolation has not been incorporated in all monitoring reports and that the draft authorization language needed to be revised to explicitly require the City to extrapolate the numbers of animals taken to those portions of the harassment zones that are not able to be monitored fully. The Commission also informally noted that some action proponents were not including the marine mammal observational datasheets or raw data as required in authorizations issued in 2017 and 2018 and that specific language requiring those data to be provided had been inadvertently removed from recent authorizations. NMFS indicated that it will include both requirements in the final authorization.

### **Appropriateness of the Level A harassment zones**

As the Commission has indicated in previous letters, there are some shortcomings that need to be addressed regarding the method for determining the extent of the Level A harassment zones based on the associated permanent threshold shift (PTS) cumulative SEL ( $SEL_{cum}$ ) thresholds for the various types of sound sources, including stationary sound sources<sup>4</sup>. For determining the range to the  $SEL_{cum}$  thresholds, NMFS uses a baseline accumulation period of 24 hours unless an activity would occur for less time (e.g., 8 hours). The Commission supports that approach *if* an action proponent is able to conduct more sophisticated sound propagation and animat modeling. However, that approach is not ideal for action proponents that either are unable, or choose not, to conduct more sophisticated modeling. In those instances, it is assumed that the receiver is stationary and all of the energy emitted during a 24-hour period is accumulated for the  $SEL_{cum}$  thresholds.

As an example, the Level A harassment zone for high-frequency cetaceans was estimated to be greater than the Level B harassment zone during impact driving of 24-in concrete piles (63.5 vs. 39.8m, respectively)<sup>5</sup>. Based on the extent of those zones, it is assumed that an animal would experience PTS before responding behaviorally and leaving or avoiding the area. That notion runs counter to the logic that permanent and temporary physiological effects are expected to occur closest to the sound source, with behavioral responses triggered at lower received levels, and thus at farther distances.

The Commission understands that NMFS has formed an internal committee to address this issue and is consulting with external acousticians and modelers as well. The Commission continues to believe that animat modeling, that considers various operational and animal scenarios, is the best way to determine the appropriate accumulation time. More importantly, animat modeling could directly inform or be incorporated into NMFS's user spreadsheet that currently estimates the Level A harassment zones. The Commission recommends that NMFS continue to make this issue a *priority* to resolve in the near future and consider incorporating animat modeling into its user spreadsheet.

### **Bubble curtain efficacy**

The Commission previously commented on the assumptions used by NMFS regarding the efficacy of bubble curtains<sup>6</sup>. Although NMFS had been applying presumed source level reductions inconsistently when bubble curtains were to be used during impact pile driving, it has adopted a standard 7-dB reduction in the last year. Variability in attenuation levels results from differences in device design, site and environmental conditions, and difficulties in properly installing and operating sound attenuation devices—the last of which could be alleviated with NMFS's proposed requirement for the City to implement various bubble curtain performance standards. However, the main reason bubble curtains do not achieve consistent reductions in sound levels is because they cannot attenuate ground-borne sound, which is sound that resonates through the ground into the far field.

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<sup>4</sup> However, this also could be an issue for moving sound sources that have short distances between transect lines.

<sup>5</sup> The Level A harassment zone also is greater than the Level B harassment zone for low-frequency cetaceans.

<sup>6</sup> Please review the Commission's [14 May 2019 letter](#) and [21 May 2018 letter](#) in conjunction with this letter.

In 2018, Chevron conducted hydroacoustic measurements during impact installation of 24-in concrete piles when a bubble curtain was employed in waters shallower than 5 m. The *attenuated* source levels were 191 dB re 1  $\mu\text{Pa}_{\text{peak}}$ , 173 dB re 1  $\mu\text{Pa}_{\text{rms}}$ , and 161 dB re 1  $\mu\text{Pa}^2\text{-sec}$  at 10 m (84 Fed. Reg. 17794). Those source levels are greater than the presumed *attenuated* source levels<sup>7</sup> proposed for use by the City<sup>8</sup> (Table 2 in the application), which are 187 dB re 1  $\mu\text{Pa}_{\text{peak}}$ , 169 dB re 1  $\mu\text{Pa}_{\text{rms}}$  at 10 m, 159 dB re 1  $\mu\text{Pa}^2\text{-sec}$  at 10 m. Caltrans (2015) also has indicated that sound attenuation is greater in deeper waters for concrete piles. For measurements taken at the Port of Oakland, only 1 or 2 dB in sound reduction was achieved with the use of a bubble curtain during impact driving of 24-in concrete piles in waters less than 5 m in depth, similar to the City's project, and only up to 6 dB in waters up to 15 m in depth (Table I.5-4 in Caltrans 2015). None of which have achieved a reduction of 7 dB. Therefore, the Commission recommends that, for all relevant incidental take authorizations, NMFS refrain from using a source level reduction factor for sound attenuation device implementation during impact pile driving, including the 24-in concrete piles proposed for use by the City.

### Proposed one-year authorization renewals

NMFS has indicated that it may issue a second one-year<sup>9</sup> incidental harassment authorization renewal for this and other future authorizations if various criteria are met and after an expedited public comment period of 15 days. The Commission agrees that NMFS should take appropriate steps to streamline the authorization process under section 101(a)(5)(D) of the MMPA to the extent possible. However, the Commission is concerned that the renewal process proposed in the *Federal Register* notice is inconsistent with the statutory requirements—section 101(a)(5)(D)(iii) clearly states that proposed authorizations are subject to a 30-day comment period<sup>10</sup>.

Another potentially significant issue with the proposed 15-day comment period is the burden that it places on reviewers, who will need to review the original authorization and supporting

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<sup>7</sup> The *unattenuated* source levels specified in Table 2 of the application were 193 dB re 1  $\mu\text{Pa}_{\text{peak}}$ , 176 dB re 1  $\mu\text{Pa}_{\text{rms}}$ , and 166 dB re 1  $\mu\text{Pa}^2\text{-sec}$  at 10 m. However, the data from Caltrans (2015; Table I.2-1. and I.5-6) denote a peak source level of 188 dB re 1  $\mu\text{Pa}_{\text{peak}}$ . Chevron also used the same data from Caltrans (2015) to inform its authorization for the 2018 activities. Specifically, the *attenuated* SPL<sub>peak</sub> source level measured by Chevron in the field was higher than the *unattenuated* source level noted in Caltrans (2015; 83 Fed. Reg. 18815). It is unclear how *unattenuated* source levels can be that much less than *attenuated* source levels, particularly for SPL<sub>peak</sub>. Bubble curtains originally were used to minimize both lethal and sub-lethal effects on fish in the near field caused by SPL<sub>peak</sub>. In this instance, they clearly had no impact on reducing SPL<sub>peak</sub> sound levels or substantially reducing far-field sound levels that are more problematic for marine mammals. Furthermore, bubble curtains that are placed immediately around the pile, as proposed for the City's activities, are intended to minimize those near-field, lethal effects. To minimize far-field effects and specifically effects on marine mammals, additional bubble curtains are placed a few hundred meters around the pile, as routinely used by wind energy developers in Europe.

<sup>8</sup> Pile driving also would occur in waters less than 5 m in depth.

<sup>9</sup> NMFS informed the Commission that the renewal would be issued as a one-time opportunity, after which time a new authorization application would be required. NMFS has yet to specify this in any *Federal Register* notice detailing the new proposed renewal process but should do so.

<sup>10</sup> See also the legislative history of section 101(a)(5)(D), which states "...in some instances, a request will be made for an authorization identical to one issued the previous year. In such circumstances, the Committee expects the Secretary to act expeditiously in complying with the notice and comment requirements." (H.R. Rep. No. 439, 103d Cong., 2d Sess. 29 (1994)). The referenced "notice and comment requirements" specify a 30-day comment period.

documentation<sup>11</sup>, the draft monitoring report(s), the renewal application or request<sup>12</sup>, and the proposed authorization and then formulate comments very quickly. Depending on how frequently NMFS invokes the renewal option, how much the proposed renewal or the information on which it is based deviates from the original authorization, and how complicated the activities and the taking authorization is, those who try to comment on all proposed authorizations and renewals, such as the Commission, would be hard pressed to do so within the proposed 15-day comment period. Therefore, the Commission recommends that NMFS refrain from using the proposed renewal process for the City's authorization. The renewal process should be used sparingly and selectively, by limiting its use only to those proposed incidental harassment authorizations that are expected to have the lowest levels of impacts on marine mammals and that require the least complex analyses. Notices for other types of activities should not even include the possibility that a renewal might be issued using the proposed foreshortened 15-day comment period. If NMFS intends to use the renewal process frequently *or* for authorizations that require a more complex review (such as the City's authorization) or for which much new information has been generated (e.g., multiple or extensive monitoring reports), the Commission recommends that NMFS provide the Commission and other reviewers the full 30-day comment period as set forth in section 101(a)(5)(D)(iii) of the MMPA.

### **Adequate opportunity to consider public comments**

The Commission has repeatedly expressed concern over NMFS's failure to provide an adequate opportunity for public comment. The opportunity for public comment provided under section 101(a)(5)(D)(iii) of the MMPA should be a meaningful one that allows NMFS sufficient time to not only solicit public comments, but also to analyze, assess, and respond to those comments and revise, as appropriate, its proposed authorization and rationale in light of those comments. Thus, submittal of the necessary documentation by applicants and processing of applications by NMFS must be timelier, avoiding abbreviated timeframes in which NMFS is able to consider the comments received. In this instance, the public comment period closes on 19 August 2019, weeks after the City's activities are scheduled to begin. The City did not submit its application until 22 February 2019, which reduced the time NMFS had available to review and comment on it, draft the proposed authorization, and ultimately consider public comments before issuing the final authorization.

NMFS guidance states that applicants must submit their applications 6 to 9 months in advance of the intended project start date and that some incidental harassment authorizations may take longer to process<sup>13</sup>. Since the City's activities are set to begin before the public comment period closes, the Commission is not convinced that NMFS has sufficient time to review the Commission's or the public's comments or to revise the proposed authorization accordingly. That is, NMFS likely will issue the authorization immediately after the close of the comment period. For these reasons, the Commission recommends that, NMFS (1) request the City to submit any future authorizations at least 6 months prior to the planned start date for incidental harassment authorizations and 9 months prior for rulemakings and (2) take all steps necessary to ensure that it publishes and finalizes

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<sup>11</sup> Including the original application, hydroacoustic and marine mammal monitoring plans, take estimation spreadsheets, etc.

<sup>12</sup> Including any proposed changes or any new information.

<sup>13</sup> <https://www.fisheries.noaa.gov/node/23111>

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proposed incidental harassment authorizations far enough in advance of the planned start date of the proposed activities to ensure full consideration is given to any and all comments received.

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

Sincerely,

A handwritten signature in blue ink that reads "Peter O. Thomas". The signature is written in a cursive style with a large initial "P" and "T".

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

## Reference

Caltrans. 2015. Technical guidance for assessment and mitigation of the hydroacoustic effects of pile driving on fish. State of California Department of Transportation, Sacramento, California. 532 pages.