



AUG 20 2019

INCIDENTAL HARASSMENT AUTHORIZATION

The City of Alameda (City), is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to harass marine mammals incidental to incidental pile driving and removal activities during construction of the Seaplane Lagoon Ferry Terminal, in Alameda, California when adhering to the following terms and conditions.

1. This Incidental Harassment Authorization (IHA) is valid from August 20, 2019 to August 19, 2020.
2. This IHA is valid only for incidental pile driving and removal activities (vibratory and impact) conducted between August 20 and November 30 and associated with the construction of the Seaplane Lagoon Ferry Terminal, in Alameda, California.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of the City, its designees, work crew personnel, and Protected Species Observers (PSOs) operating under the authority of this IHA.
 - (b) The species authorized for taking are gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), Bottlenose dolphin (*Tursiops truncatus*), California sea lion (*Zalophus californianus*), Northern fur seal (*Callorhinus ursinus*), Northern elephant seal (*Mirounga angustirostris*) and harbor seal (*Phoca vitulina*).
 - (c) The taking, by Level A and B harassment, is limited to the species listed in condition 3(b). Table 1 (attached) provides the authorized number of takes per species and stock.
 - (d) The taking, by serious injury, or death of any of species listed in condition 3(b) of this IHA is prohibited.
 - (e) The taking, by Level A harassment, Level B harassment, serious injury, or death, of marine mammal species not identified in condition 3(b) is prohibited.



(f) The City will conduct a maximum of 24 working days associated with vibratory and impact pile driving and removal.

4. Mitigation Measures

The holder of this IHA is required to implement the following mitigation measures:

- (a) For in-water construction, heavy machinery activities other than pile driving, if a marine mammal comes within 10 m, the City must cease operations and reduce vessel speed to the minimum level required to maintain steerage and safe working conditions.
- (b) The City is required to conduct briefings for construction supervisors and crews, the monitoring team, and the City staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures.
- (c) The City is required to employ PSOs per Marine Mammal Monitoring described in section 13.2 of the application, and Monitoring Measures described in section 5 of this IHA.
- (d) Marine mammal monitoring must take place from 30 minutes prior to initiation of pile driving activity through 30 minutes post-completion of pile driving activity. Pile driving may commence when observers have declared the shutdown zone clear of marine mammals. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone (Table 2 attached), animals must be allowed to remain in the shutdown zone (*i.e.*, must leave of their own volition) and their behavior must be monitored and documented.
- (e) If a marine mammal is entering or is observed within an established shutdown zone (Table 2), pile driving must be halted or delayed. Pile driving may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone; 15 minutes have passed without subsequent detections of small cetaceans and pinnipeds; or 30 minutes have passed without subsequent detections of large cetaceans.
- (f) The City must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. A soft start must be implemented at the start of each day's impact pile driving and

at any time following cessation of impact pile driving for a period of thirty minutes or longer.

- (g) The City is required to use pile cushions during impact pile driving.
- (h) The City is required to use a bubble curtain during impact pile driving. The bubble curtain must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column. The lowest bubble ring must in contact with the mudline for the full circumference of the ring, and the weights attached to the bottom ring must ensure 100 percent mudline contact. No parts of the ring or other objects will prevent full mudline contact. Air flow to the bubblers must be balanced around the circumference of the pile.
- (i) If a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized takes are met, is observed approaching or within the monitoring zone (Table 3 attached), pile driving and removal activities must shut down immediately using delay and shut-down procedures. Activities must not resume until the animal has been confirmed to have left the area or the observation time period, as indicated in condition 4(b) above, has elapsed.
- (j) All work must be conducted during daylight hours. If poor environmental conditions restrict visibility full visibility of the shutdown zone, pile installation must be delayed.

5. Monitoring Measures

The holder of this IHA is required to abide by the following marine mammal and acoustic monitoring measures:

- (a) Marine mammal monitoring and acoustic monitoring must be conducted in accordance with Marine Mammal Monitoring, section 13.2 of the application and Acoustic Monitoring Plan, dated July 2019.
- (b) Marine mammal monitoring during pile driving and removal must be conducted by NMFS-approved PSOs in a manner consistent with the following:
 - i. Independent PSOs (*i.e.*, not construction personnel) who have no other assigned tasks during monitoring periods must be used.
 - ii. Other PSOs may substitute education (degree in biological science or related field) or training for experience.

- iii. A lead PSO or monitoring coordinator must be designated. The lead observer must have prior experience working as a marine mammal observer during construction.
 - iv. The City must submit PSO curriculum vitae for approval by NMFS prior to the onset of pile driving.
- (c) PSOs must have the following additional qualifications:
- i. Ability to conduct field observations and collect data according to assigned protocols.
 - ii. Experience or training in the field identification of marine mammals, including the identification of behaviors.
 - iii. Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations.
 - iv. Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior.
 - v. Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.
- (d) Acoustic monitoring must be conducted in accordance with the Acoustic Monitoring Plan, dated August 2019. The following data, at minimum, shall be collected during acoustic monitoring and reported:
- i. Hydrophone equipment and methods: recording device, sampling rate, distance from the pile where recordings were made; depth of recording device(s). The far-field hydrophone will be located at least 1 km from the 36-in piles during vibratory installation to better assess the extent of the Level B harassment zone. The City will conduct recordings from 10 Hz to 20 kHz. The City will collect background sound measurements continuously for 10 minutes prior to pile driving.
 - ii. Type of pile being driven and method of driving during recordings. Two piles from each pile type will be monitored. For impact installation, two

24-in concrete piles, for vibratory installation, 36-in steel piles, and for vibratory installation and extraction, two H-piles will be monitored.

- iii. Mean, medium, and maximum sound levels (dB re: 1 μ Pa): cumulative sound exposure level (SEL_{cum}), peak sound pressure level (SPL_{peak}), root mean square sound pressure level (SPL_{rms}), and single-strike sound exposure level (SEL_{s-s}).

6. Reporting

The holder of this IHA is required to:

(a) Submit a draft report on all monitoring conducted under the IHA within ninety calendar days of the completion of marine mammal and acoustic monitoring or sixty days prior to the issuance of any subsequent IHA for this project, whichever comes first. A final report shall be prepared and submitted within thirty days following resolution of comments on the draft report from NMFS. This report must contain the informational elements described in Monitoring, section 5 of this IHA, including, but not limited to:

- i. Dates and times (begin and end) of all marine mammal monitoring.
- ii. Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.*, impact or vibratory).
- iii. Weather parameters and water conditions during each monitoring period (*e.g.*, wind speed, percent cover, visibility, sea state).
- iv. The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting.
- v. Age and sex class, if possible, of all marine mammals observed.
- vi. PSO locations during marine mammal monitoring.
- vii. Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting).
- viii. Description of any marine mammal behavior patterns during observation, including direction of travel.
- ix. Number of individuals of each species (differentiated by month as appropriate) detected within the monitoring zone, and estimates of number of marine mammals taken, by species (a correction factor should be used to estimate the total take numbers, as appropriate).

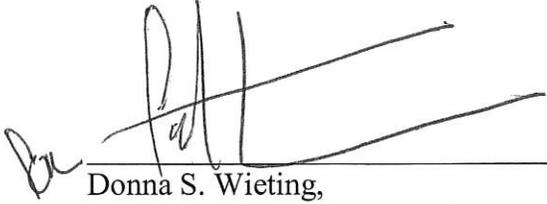
- x. Detailed information about any implementation of any mitigation triggered (e.g., shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any.
 - xi. Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals.
- (b) Reporting injured or dead marine mammals:
- i. In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as serious injury, or mortality, the must immediately cease the specified activities and report the incident to the NMFS Office of Protected Resources (301) 427-8401 and the West Coast Region Stranding Coordinator (562) 980-3230. The report must include the following information:
 1. Time and date of the incident;
 2. Description of the incident;
 3. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
 4. Description of all marine mammal observations and active sound source use in the 24 hours preceding the incident;
 5. Species identification or description of the animal(s) involved;
 6. Fate of the animal(s); and
 7. Photographs or video footage of the animal(s).

Activities must not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with the City to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The City may not resume their activities until notified by NMFS.'
 - ii. In the event the City discovers an injured or dead marine mammal, and the lead observer determines that the cause of the injury or death is unknown and the death is relatively recent (e.g., in less than a moderate state of decomposition), the City must immediately report the incident to the Office of Protected Resources, NMFS, and the West Coast Region Stranding Coordinator, NMFS. The report must include the same information identified in section 6(b)(i) of this IHA. Activities may

continue while NMFS reviews the circumstances of the incident. NMFS will work with the City to determine whether additional mitigation measures or modifications to the activities are appropriate.

- iii. In the event that the City discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the specified activities (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), the City must report the incident to the Office of Protected Resources, NMFS, and the West Coast Region Stranding Coordinator, NMFS, within 24 hours of the discovery.
7. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.
 8. Renewals - On a case-by-case basis, NMFS may issue a one-year IHA renewal with an additional 15 days for public comments when (1) another year of identical or nearly identical activities as described in the Specified Activities section of this notice is planned or (2) the activities as described in the Specified Activities section of this notice would not be completed by the time the IHA expires and a second IHA would allow for completion of the activities beyond that described in the Dates and Duration section of this notice, provided all of the following conditions are met:
 - (a) A request for renewal is received no later than 60 days prior to expiration of the current IHA.
 - (b) The request for renewal must include the following:
 - i. An explanation that the activities to be conducted under the requested Renewal are identical to the activities analyzed under the initial IHA, are a subset of the activities, or include changes so minor (*e.g.*, reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates (with the exception of reducing the type or amount of take because only a subset of the initially analyzed activities remain to be completed under the Renewal).
 - ii. A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.
 - (c) Upon review of the request for renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no

more than minor changes in the activities, the mitigation and monitoring measures remain the same and appropriate, and the findings in the initial IHA remain valid.



Donna S. Wieting,
Director, Office of Protected Resources
National Marine Fisheries Service

8/20/19

Date

Attachments

Table 1. Proposed Takes by Level A and Level B Harassment.

Species	Stock (NEST)	Level A Harassment	Level B Harassment	Percent of Stock
Gray Whale	Eastern North Pacific (26,960)	0	7	Less than 1 percent
Bottlenose Dolphin	California Coastal (453)	0	48	10.596 percent
Harbor Porpoise	San Francisco-Russian River (9,886)	0	27	Less than one percent
Harbor Seal	California (30,968)	6	615	Less than 2 percent
Northern Elephant Seal	California Breeding (179,000)	0	5	Less than one percent
California Sea Lion	U.S. (257,606)	0	25	Less than one percent
Northern fur seal	Eastern DPS, California (20,000)	0	3	Less than one percent

Table 2. Shutdown Zones during Project Activities.

Activity	Shutdown Zones (radial distance in meters, area in km²)				
	Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid	Otariid
In-Water Construction Activities					
Heavy machinery work (other than pile driving)	10 (0.00015 km ²)	10 (0.00015 km ²)	10 (0.00015 km ²)	10 (0.00015 km ²)	10 (0.00015 km ²)
Vibratory Pile Driving/Removal					

14-in H pile steel installation /removal	10 (0.00015 km ²)				
36-in steel permanent installation	15 (0.00035 km ²)	10 (0.00015 km ²)	20 (0.00063 km ²)	10 (0.00015 km ²)	10 (0.00015 km ²)
Impact Pile Driving					
24-in concrete permanent installation	55 (0.00475 km ²)	10 (0.00015 km ²)	65 (0.00663 km ²)	30 (0.00141 km ²)	10 (0.00015 km ²)

Table 3. Level B Harassment Monitoring Zones.

Activity	Received Level at 10 m	Level B Harassment Zone (m)*	Level B Harassment Zone (km ²)
Vibratory Pile Driving/Removal			
14-inch H piles installation/removal	155 dB SPL	2,154	2.190
36-inch steel permanent installation	170 dB SPL	21,544	21.49
Impact Pile Driving			
24-inch concrete permanent installation	166 dB SEL/176 dB SPL (169 dB SPL attenuated)	39.8	0.004