



INCIDENTAL HARASSMENT AUTHORIZATION

Pacific Shops, Inc. (Pacific Shops) 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 the Alameda Marina Shoreline Improvement Project in Alameda, CA, when adhering to the following terms and conditions.

1. This Incidental Harassment Authorization (IHA) is valid from August 1, 2020 to July 31, 2021.
2. This IHA is valid only for construction associated with the Alameda Marina Shoreline Improvement Project in Alameda, CA.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of Pacific Shops, its designees, work crew personnel, and Protected Species Observers (PSOs) operating under the authority of this IHA.
 - (b) The species authorized for taking are bottlenose dolphin (*Tursiops truncatus*), harbor porpoise (*Phocoena phocoena*), 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 B harassment only, is limited to the species listed in condition 3(b). Table 1 provides the authorized number of takes per species and stock.
 - (d) The taking, by injury (Level A harassment), serious injury, or death of any of species listed in condition 3(b) of this IHA is prohibited.
 - (e) Any taking of marine mammal species not identified in condition 3(b) is prohibited.
 - (f) Pacific Shops is required to conduct briefings for construction supervisors and crews, the monitoring team, and Pacific Shops 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.



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, Pacific Shops must cease operations and reduce vessel speed to the minimum level required to maintain steerage and safe working conditions.
- (b) Pacific Shops must establish and implement shutdown zones as indicated in Table 3. NMFS may adjust the shutdown zones and revise the Level A and Level B harassment zones (Table 2) as appropriate pending review and approval of the results of acoustic monitoring (see Reporting condition 6c).
- (c) Pacific Shops is required to employ PSOs per the Marine Mammal Monitoring Plan, dated June 2020, 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 3), their behavior must be monitored and documented until they leave of their own volition, at which point the activity may begin.
- (e) If a marine mammal is entering or is observed within an established shutdown zone (Table 3), 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 or 15 minutes have passed without subsequent detections of marine mammals.
- (f) Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone would not be visible (e.g., fog, heavy rain), pile driving and removal must be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.
- (g) Pacific Shops 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.

- (h) Pacific Shops is required to employ a bubble curtain during impact pile driving of steel pipe piles and wide flange beams, and must operate it in a manner consistent with the following performance standards:
 - i. The bubble curtain must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.
 - ii. The lowest bubble ring must be in contact with the mudline for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent mudline contact. No parts of the ring or other objects shall prevent full mudline contact.
 - iii. 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 Level B harassment zone (Table 2), pile driving and removal activities must shut down immediately using delay and shutdown 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(e) above, has elapsed.

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 must be conducted in accordance with the Marine Mammal Monitoring Plan, dated June 2020.
- (b) Two PSOs must monitor for marine mammals during pile driving and removal activities. PSO locations should be as follows:
 - i. On top of an elevated platform at the pile driving site;
 - ii. On the barge at the end of Pier 5.
- (c) 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. Where a team of three or more PSOs are required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience working as a marine mammal observer during construction.
 - iii. Other PSOs may substitute education (degree in biological science or related field) or training for experience.
 - iv. Pacific Shops must submit PSO CVs for approval by NMFS prior to the onset of pile driving.
- (d) Acoustic monitoring, to be conducted for purposes of measuring sound source levels and sound propagation, must be conducted in accordance with accepted methodology as described in the Acoustic Monitoring Plan, dated June 2020. Pacific Shops must conduct acoustic monitoring for the number of each pile type and size indicated in the plan.

6. Reporting

The holder of this IHA is required to:

- (a) Submit a draft report on all marine mammal 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.
- (b) The marine mammal report must contain the informational elements described in the Marine Mammal Monitoring Plan, dated June 2020, 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 and estimated time spent within the Level A and Level B harassment zones while the source was active.
- 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 may be applied to 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.
- xii. An extrapolation of the estimated takes by Level B harassment based on the number of observed exposures within the Level B harassment zone and the percentage of the Level B harassment zone that was not visible.
- xiii. Submit all PSO datasheets and/or raw sighting data (in a separate file from the Final Report referenced immediately above).

(c) The acoustic monitoring report must, at minimum, include the following:

- i. Hydrophone equipment and methods: recording device, sampling rate, distance (m) from the pile where recordings were made; depth of recording device(s).
- ii. Type and size of pile being driven, substrate type, method of driving during recordings.
- iii. Whether a sound attenuation device is used, and if so, duration of its use per pile.
- iv. For impact pile driving: Pulse duration and mean, median, 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).
- v. For vibratory driving/removal: Mean, median, and maximum sound levels (dB re: 1 μ Pa): root mean square sound pressure level (SPL_{rms}),

cumulative sound exposure level (SELcum), and timeframe over which the sound is averaged.

- vi. Number of strikes (impact) or duration (vibratory) per pile measured, one-third octave band spectrum, power spectral density plot.
- vii. Estimated source levels referenced to 10m, transmission loss coefficients, and estimated Level A and Level B harassment zones.

(d) Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the IHA-holder shall report the incident to the Office of Protected Resources (OPR) (301-427-8401), NMFS and to the West Coast Region Stranding Hotline (866) 767-6114 as soon as feasible. If the death or injury was clearly caused by the specified activity, the IHA-holder must immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHA. The IHA-holder must not resume their activities until notified by NMFS.

The report must include the following information:

- i. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
 - ii. Species identification (if known) or description of the animal(s) involved;
 - iii. Condition of the animal(s) (including carcass condition if the animal is dead);
 - iv. Observed behaviors of the animal(s), if alive;
 - v. If available, photographs or video footage of the animal(s); and
 - vi. General circumstances under which the animal was discovered.
8. 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.
9. Renewals - On a case-by-case basis, NMFS may issue a one-time, one-year Renewal IHA following notice to the public providing an additional 15 days for public comments when (1) up to another year of identical or nearly 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 Renewal 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 the needed Renewal IHA effective date (recognizing that the Renewal IHA expiration date cannot extend beyond one year from expiration of the initial IHA).
- (b) The request for renewal must include the following:
 - i. An explanation that the activities to be conducted under the requested Renewal IHA 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).
 - 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 will remain the same and appropriate, and the findings in the initial IHA remain valid.

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

Date

Table 1. Authorized Amount of Taking, by Level B harassment, by species and stock.

| Common Name | Stock | Level B Harassment Take |
|------------------------|-----------------------------|-------------------------|
| Bottlenose Dolphin | California Coastal | 14 |
| Harbor Porpoise | San Francisco/Russian River | 14 |
| California Sea Lion | United States | 14 |
| Northern Fur Seal | California | 6 |
| | Eastern North Pacific | |
| Northern Elephant Seal | California Breeding | 6 |
| Harbor Seal | California | 68 |

Table 2. Level A and Level B Harassment Zones. These zones may be modified based on approved hydroacoustic monitoring data.

| Source | Level A- Radius to Isopleth (m) | | | | Level B- Radius to Isopleth (m) |
|---------------------------------|---------------------------------|--------------|---------|----------|---------------------------------|
| | MF Cetaceans | HF Cetaceans | Phocids | Otariids | |
| VIBRATORY | | | | | |
| 16-in Timber (removal) | <1 | 2 | <1 | <1 | 1,359 |
| 12-in Square Concrete (removal) | <1 | 4 | 2 | <1 | 2,154 |
| Steel sheet pile | 1 | 19 | 8 | <1 | 4,642 |
| 36-in Steel Pipe | 1 | 19 | 8 | <1 | 21,544 |
| IMPACT | | | | | |
| 16-in Square Concrete | <1 | 26 | 12 | <1 | 25 |
| 36-in Steel Pipe ^a | 12 | 406 | 183 | 13 | 541 |

^a Zones assume use of bubble curtain.

Table 3. Shutdown Zones by Marine Mammal Hearing Group, Pile Size, and Pile Driving Method. These zones may be modified based on approved hydroacoustic monitoring data and resulting adjustments to the Level A harassment zones.

| Source | Shutdown Zone (m) | | | |
|---------------------------------|-------------------|--------------|---------|----------|
| | MF Cetaceans | HF Cetaceans | Phocids | Otariids |
| VIBRATORY | | | | |
| 16-in Timber (removal) | 10 | 10 | 10 | 10 |
| 12-in Square Concrete (removal) | | | | |
| Steel sheet pile | | | | |
| 36-in Steel Pipe | | 25 | | |
| IMPACT | | | | |
| 16-in Square Concrete | 25 | 30 | 25 | 25 |
| 36-in Steel Pipe | | 400 | 190 | |