



INCIDENTAL HARASSMENT AUTHORIZATION

Carnival Corporation & PLC (Carnival) 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 Port of Long Beach Cruise Terminal Improvement Project in Port of Long Beach, California, when adhering to the following terms and conditions.

1. This Incidental Harassment Authorization (IHA) is valid from date of issuance through December 9, 2023.
2. This IHA is valid only for in-water construction activities, as specified in their November 30, 2022 renewal application, associated with the Port of Long Beach Cruise Terminal Improvement Project in Port of Long Beach, California.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of Carnival, its designees, work crew personnel, and Protected Species Observers (PSOs) operating under the authority of this IHA.
 - (b) The species authorized for taking are short-beaked common dolphins (*Delphinus delphis*), long-beaked common dolphins (*Delphinus capensis*), common bottlenose dolphin (*Tursiops truncatus*), California sea lions (*Zalophus californianus*), and harbor seals (*Phoca vitulina*).
 - (c) The taking, by Level A harassment and Level B harassment, 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 serious injury or death of any of the species listed in condition 3(b) or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA. Any taking exceeding the authorized amounts listed in Table 1 is prohibited and may result in the modification, suspension, or revocation of this IHA.
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 (*e.g.*, use of barge-mounted excavators, or dredging), if a marine mammal comes within



10 m, Carnival must cease operations and reduce vessel speed to the minimum level required to maintain steerage and safe working conditions.

- (b) Carnival is required to conduct briefings for construction supervisors and crews, the monitoring team, and Carnival 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) Carnival is required to employ PSOs per the Marine Mammal Monitoring Plan, dated September, 2019, and Monitoring Measures described in section 5 of this IHA. At least 4 PSOs are required during impact pile driving and at least 7 PSOs are required during vibratory pile driving as shown in Figure 1.
- (d) Carnival is required to establish and implement shutdown zones. See Table 2 for minimum distances required for shutdown zones.
- (e) Carnival is required to establish and implement monitoring zones (as shown in Table 2). Carnival is required to establish and implement a Level A harassment monitoring zone during impact pile driving for harbor seals extending to 120 m.
- (f) Carnival may only conduct pile driving activities during daylight hours. Pile driving activities may not be conducted in conditions with limited visibility (heavy fog, heavy rain, and Beaufort sea states above 4).
- (g) 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.
- (h) 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), their behavior must be monitored and documented until they leave of their own volition, at which point the activity may begin.
- (i) If a marine mammal enters 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 or 15 minutes have passed without subsequent detections of the animal.
- (j) Carnival 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.

- (k) Carnival is required to employ a marine pile-driving energy attenuator (*i.e.*, air bubble curtain system) during impact and vibratory pile driving of all steel pipe piles. Bubble curtains must meet the following requirements:
 - 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 shall 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. The bubble curtain shall be operated such that there is proper (equal) balancing of air flow to all bubblers.
- (l) 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 entering or within the monitoring zone (Table 2), pile driving 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 15 minute observation time period has elapsed.

5. Monitoring Measures

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

- (a) Marine mammal monitoring must be conducted in accordance with the Marine Mammal Monitoring Plan, dated September, 2019. At least 4 PSOs are required during impact pile driving and at least 7 PSOs are required during vibratory pile driving as shown in Figure 1.
- (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. 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.
- iv. Carnival must submit PSO CVs for approval by NMFS prior to the onset of pile driving.

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 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 the Marine Mammal Monitoring Plan, dated September, 2019, 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 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.
- (b) Submit all PSO datasheets and/or raw sighting data (in a separate file from the Final Report referenced immediately above).
- (c) Report 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, Carnival must immediately cease the specified activities and report the incident to the NMFS Office of Protected Resources (301-427-8401) and 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 Carnival to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Carnival may not resume their activities until notified by NMFS.

- ii. In the event Carnival 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), Carnival 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 6(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with Carnival to determine whether additional mitigation measures or modifications to the activities are appropriate.
 - iii. In the event that Carnival 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), Carnival 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 revoked if the holder fails to abide by the conditions prescribed herein (including, but not limited to, failure to comply with monitoring or reporting requirements), or if NMFS determines: (1) the authorized taking is likely to have or is having more than a negligible impact on the species or stocks of affected marine mammals, or (2) the prescribed measures are likely not or are not effecting the least practicable adverse impact on the affected species or stocks and their habitat.

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Kimberly Damon-Randall,
Director, Office of Protected Resources
National Marine Fisheries Service

Table 1. Authorized take numbers by species/stocks.

Common Name	Stock	Level A	Level B
Short-beaked common dolphin	CA/OR/ WA	0	942
Long-beaked common dolphin	California	0	942
Common bottlenose dolphin	Coastal California	0	122
California sea lion	U.S.	0	2,232
Harbor seal	California	5	979

Table 2. Monitoring and shutdown zones for each project activity.

Source	Monitoring Zone (m)	Shutdown Zone (m)
Impact Pile Driving	300 ¹	Low-frequency cetaceans: 300 Phocid pinnipeds: 50 Mid-frequency cetaceans and otariid pinnipeds: 10
Vibratory Pile Driving	8,100	Low-frequency cetaceans: 8,100 Phocid pinnipeds: 50 Mid-frequency cetaceans and otariid pinnipeds: 10

¹ Carnival is also required to establish and implement a Level A harassment monitoring zone during impact pile driving for harbor seals extending to 120 m.

Figure 1. Location of PSOs during project activities. All PSO Locations (triangles) are required during vibratory pile driving. PSOs must be located at the 4 PSO locations closest to the project site (triangles next to red circles) during impact pile driving. (Figure 3 from the Marine Mammal Monitoring Plan, dated September, 2019).

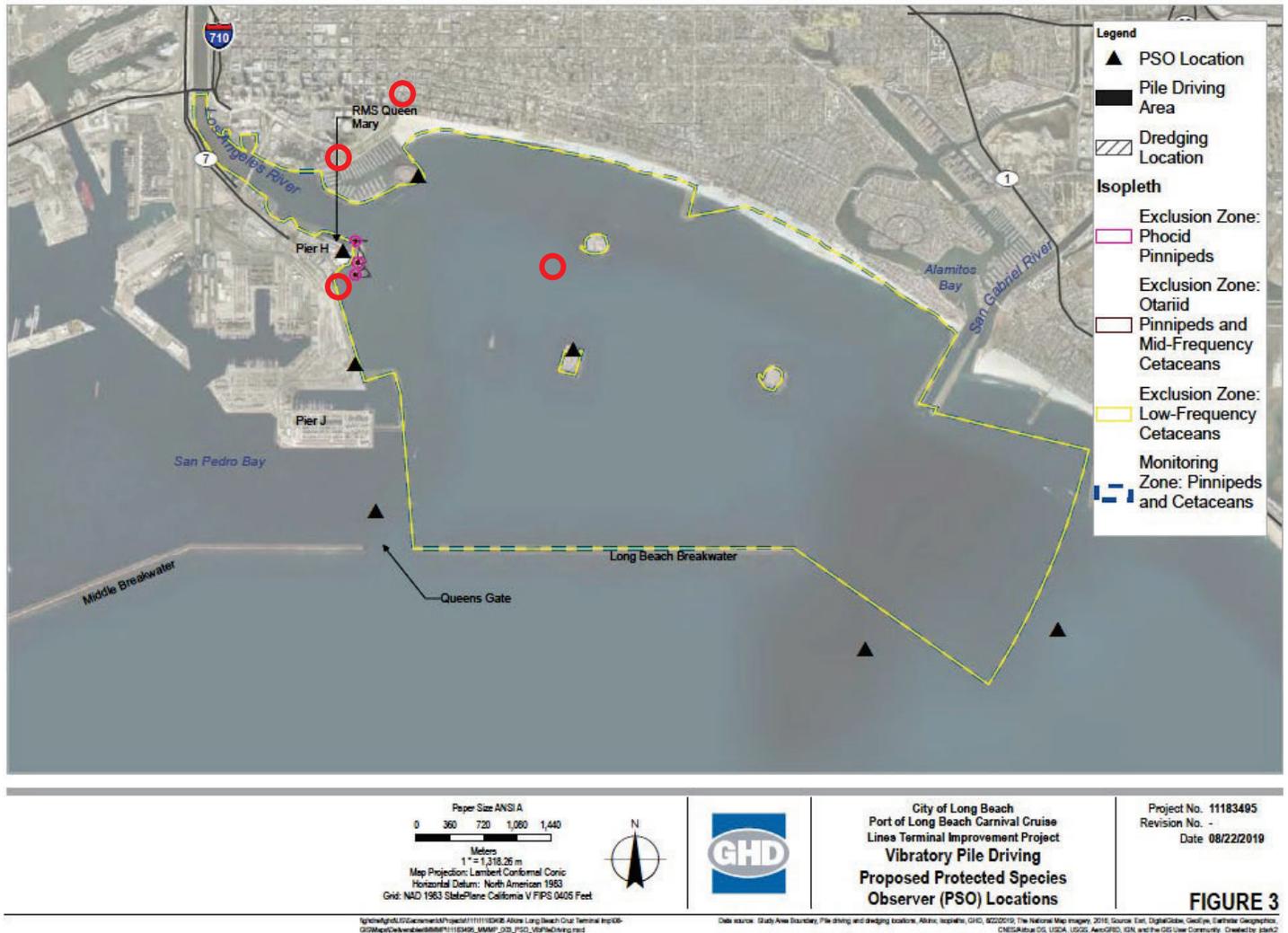


FIGURE 3

g:\projects\GIS\Documents\Projects\111183495\Alamos Long Beach Cruise Terminal Imp\06-GISMap\Calweb\11183495_MMMP_03D_PSD_VPD\Map\03web.rast Data source: City Area Boundary, Pile driving and dredging locations, Alamos, Isopleths, GHD, 8/22/2019. The National Map Imagery, 2016. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by jsak2