



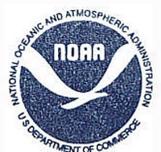
INCIDENTAL HARASSMENT AUTHORIZATION

The City of Astoria (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 bridge removal and construction activities in Astoria, Oregon, when adhering to the following terms and conditions.

1. This Incidental Harassment Authorization (IHA) is valid for a period of one year from the date of issuance.
2. This IHA is valid only for construction activities associated with Astoria Waterfront Bridge Replacement Project, Phase 2 in Astoria, Oregon.
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 California sea lion (*Zalophus californianus*), Eastern DPS Steller sea lion (*Eumetopias jubatus*), and Pacific harbor seal (*Phoca vitulina richardii*).
 - (c) The taking, by Level A and 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 injury (Level A harassment) of Steller sea lion is prohibited.
 - (e) The taking, by serious injury or death of any of species listed in condition 3(b) of this IHA is prohibited.
 - (f) 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.

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, and above-water work, if a marine mammal comes within 10 m, the City must cease operations.
- (b) The City is required to conduct briefings for construction supervisors and crews, the monitoring team, and 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 the monitoring proposal included in the latest application revision, 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 4), 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 4), 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. If down-the-hole drilling is necessary, the City shall implement the 24-inch impact pile driving shutdown zone for that activity.
- (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. Work may proceed if only the Level A and Level B harassment zones beyond the shutdown zones are obscured.
- (g) The City must use soft start techniques when impact pile driving. An initial set of three strikes would be made by the hammer at 40 percent energy, followed by a 1-minute wait period, then two subsequent 3-strike sets at 40 percent energy, with 1-minute waiting periods, before initiating continuous driving. 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) The City is required to employ a bubble curtain during all impact pile driving and operate it in a manner consistent with the performance standards outlined in the applicant's FAHP permit.
- (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 2), 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(e) above, 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 monitoring proposal included in the latest application revision, dated October 2019. Three PSOs are required on-site the first day and every third day thereafter during vibratory hammer installation/removal and site preparation activities (H-pile digging and down-the-hole drilling) at each bridge. Two PSOs are required on-site the first day of impact pile driving at each bridge, and every third day thereafter. When PSOs are not on site, the Oregon Department of Transportation (ODOT) inspector will be responsible for ensuring that activities shut down if a marine mammal enters that species' respective shutdown zone.
- (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. The City must submit PSO CVs 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.

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 the *Monitoring and Reporting* section of the IHA request, dated October 2019, including, but not limited to:
 - i. Dates and times (beginning 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, the percentage of the Level B harassment zone that was not visible, and the days when monitoring did not occur.
- (b) Submit all PSO datasheets and/or raw sighting data.
- (c) 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 City 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 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 6(c)(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:
 - 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 will 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

DEC 09 2019

Date

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

Common Name	Stock	Level A harassment take	Level B harassment take
Harbor seal	Oregon/Washington Coast	28	6,400 individuals ^a
Steller sea lion	Eastern U.S.	0	5,712
California sea lion	U.S.	224	26,067

^a A portion of those individuals will likely be taken on multiple days, but none to exceed 21 days. The City shall track and report instances of take.

Table 2. Monitoring Zones

Construction Activity	Monitoring Zone (m)
Above-water Construction	28 (harbor seal only)
14-inch Timber Vibratory	1,360
14-inch Steel H-Pile	1,000
24-inch Steel Vibratory	6,310
36-inch Steel Vibratory (and down-the-hole drilling, as necessary)	21,545
24-inch Steel Impact	635

Table 3. Distances to Level A and Level B harassment isopleths.

Pile Size and Installation Method	Level A Harassment Isopleth (m)		Level B Harassment Isopleth (m)
	Phocids	Otariids	
14-inch Timber Vibratory	6.8	0.5	1,359.4
14-inch Steel H-Pile	4.7	0.3	1,000.0
24-inch Steel Vibratory	16	1.1	6,309.6
36-inch Steel Vibratory	47	3.3	21,544.4 ^a
24-inch Steel Impact	431.5 ^a	31.4 ^a	631.0

^a Also applies to down-the-hole drilling, as necessary.

Table 4. Shutdown Zones by Marine Mammal Hearing Group and Construction Method.

Construction Activity	Shutdown Zone (m)		
	Harbor seal	Steller sea lion	California sea lion
All Vibratory Pile Driving/Removal and Site Preparation	50	10	10
24-inch Steel Impact Pile Driving <i>(and down-the-hole drilling, as necessary)</i>		32	
Above-water Construction	10	10	