



Incidental Harassment Authorization

The Washington State Department of Transportation (WSDOT) is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1371(a)(5)(D)) to harass marine mammals incidental to conducting in-water construction work for Seattle Multimodal project at Colman Dock in Seattle, Washington, when adhering to the following terms and conditions:

1. This Authorization is valid from August 1, 2019, through September 30, 2020.
2. This Authorization is valid only for activities associated with in-water construction work for the Seattle Multimodal project at Colman Dock in Seattle, Washington.
3. General Conditions.
 - (a) A copy of this IHA must be in the possession of the WSDOT, its designees, work crew personnel, and Protected Species Observers (PSOs) operating under the authority of this IHA.
 - (b) The species authorized for taking are listed in Table 1.
 - (c) The taking by serious injury or death 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 Authorization. Any taking exceeding the authorized amounts listed in Table 1 is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (d) The WSDOT shall conduct briefings for construction supervisors and crews, marine mammal monitoring team, and WSDOT staff prior to the start of all in-water construction activities, and when new personnel join the work, in order to explain responsibilities, communication procedures, 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 (e.g., use of barge-mounted excavators, or dredging), if a marine mammal comes within 10 m, the WSDOT must cease operations and reduce vessel speed to the minimum level required to maintain steerage and safe working conditions.



- (b) WSDOT is required to employ air bubble curtain system for all in-water impact pile driving.
- (c) The WSDOT is required to employ PSOs per the measures in the IHA application, dated May 2019, 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), 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 or 15 minutes have passed without subsequent detections.
- (f) The WSDOT 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) 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), 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(d) above, has elapsed.
- (h) Specific measures for Southern Resident killer whale (SRKW):
 - (A) WSDOT must implement shutdown measures if SRKWs are sighted within the vicinity of the project area and are approaching the Level B harassment zone listed in Table 3 during in-water construction activities.
 - (B) If a killer whale approaches the Level B harassment zone during pile driving or removal, and it is unknown whether it is a SRKW or a transient killer whale, it must be assumed to be a SRKW and WSDOT must implement the shutdown measure identified in 4(g)(A).

- (C) If a SRKW enters the Level B harassment zone undetected, in-water pile driving or pile removal must be suspended until the SRKW whale exits the Level B harassment zone.
- (i) Coordination with Local Marine Mammal Research Network and obtaining marine mammal sightings and acoustic detection data. Prior to the start of pile driving, WSDOT must contact the Orca Network and/or Center for Whale Research to get real-time information on the presence or absence of whales.

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 measures in the IHA application, dated May 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. WSDOT must employ a minimum number of PSOs to observe and collect data on marine mammals in and around the pile driving vicinity as described below.
 - (A) For Level B harassment zones with radii less than 1,000 m, 3 PSOs shall monitor from land.
 - (B) For Level B harassment zones with radii larger than 1,000 m but smaller than 2,500 m, 4 PSOs shall monitor from land.
 - (C) For Level B harassment zones with radii larger than 2,500 m, 4 PSOs shall monitor from land with an additional 1 PSO monitoring from a ferry.
 - iii. At least one observer must have prior experience working as an observer;
 - iv. Other PSOs may substitute education (degree in biological science or related field) or training for experience.
 - v. 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.

- vi. The WSDOT must submit PSO CVs for approval by NMFS prior to the onset of pile driving.
- vii. PSOs will work shifts of a maximum of four consecutive hours and will work no more than 12 hours in any 24-hour period.

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 the project 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 IHA application, dated October 2018, 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.

(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 WSDOT 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 (206-526-4747). The report must include the following information:

- A. Time and date of the incident;
- B. Description of the incident;
- C. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- D. Description of all marine mammal observations and active sound source use in the 24 hours preceding the incident;
- E. Species identification or description of the animal(s) involved;
- F. Fate of the animal(s); and
- G. 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 WSDOT to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The WSDOT may not resume their activities until notified by NMFS.'

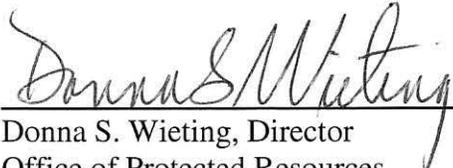
- ii. In the event the WSDOT discovers an injured or dead marine mammal, and the lead observer determines that the cause of the injury or death is unknown and the death is relatively recent (e.g., in less than a moderate state of decomposition), the WSDOT must immediately report the incident

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 WSDOT to determine whether additional mitigation measures or modifications to the activities are appropriate.

- iii. In the event that the WSDOT 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 WSDOT 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.



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Office of Protected Resources
National Marine Fisheries Service

JUL 18 2019
Date

Table 1. Species/stocks and numbers of marine mammals authorized to be taken under this IHA.

Species	Level A harassment	Level B harassment
Pacific harbor seal	114	1492
Northern elephant seal	0	15
California sea lion	0	2628
Steller sea lion	0	175
Killer whale, transient	0	30
Gray whale	0	30
Humpback whale	0	30
Minke whale	0	10
Harbor porpoise	103	335
Dall's porpoise	64	208
Long-beaked common dolphin	0	49
Bottlenose dolphin	0	49

Table 2. Shutdown distances for various pile driving activities

Pile type, size & pile driving method	Shutdown zone (m)				
	Low-frequency cetacean	Mid-frequency cetacean	High-frequency cetacean	Phocid	Otariid
Vibratory drive / removal, 24" steel piles, 8 piles/day	100	10	150	60	10
Vibratory drive 24" steel pile, 2 piles/day; or vibratory removal 36" steel pile, 1 pile/day	40	10	60	25	10
Vibratory drive 36" steel pile, 8 piles/day	160	15	230	60	10
Impact drive (proof) 36" steel pile, 8 piles/day	350	15	410	60	15
Vibratory remove 14" timber pile, 20 piles/day; or vibratory removal 12" steel pile, 11 piles/day; or vibratory removal 14" steel pile, 10 piles/day	10	10	15	10	10
Vibratory removal 18" steel pile, 10 piles/day, 20 min/pile	120	10	170	60	10

Table 3. Marine mammal Level A and Level B harassment distances for monitoring

Pile type, size & pile driving method	Level A harassment distance (m)					Level B harassment (m)
	Low-frequency cetacean	Mid-frequency cetacean	High-frequency cetacean	Phocid	Otariid	
Vibratory drive / removal, 24" steel piles, 8 piles/day, 20 min/pile	96.7	8.6	143.0	58.8	4.1	8,690

Vibratory drive 24" steel pile, 2 piles/day, 20 min/pile	38.3	3.4	56.7	23.3	1.6	8,690
Vibratory drive 36" steel pile, 8 piles/day, 20 min/pile	153.3	13.6	226.6	93.2	6.5	8,690
Impact drive (proof) 36" steel pile, 8 piles/day, 200 strikes/pile	343.2	12.2	408.7	183.6	13.4	736
Vibratory remove 14" timber pile, 20 piles/day, 15 min/pile	8.0	0.7	11.8	4.8	0.3	2,154
Vibratory remove 12" steel pile, 11 piles/day, 20 min/pile	6.5	0.6	9.6	3.9	0.3	2,154
Vibratory remove 14" steel H pile, 10 piles/day, 20 min/pile	6.1	0.5	9.0	3.7	0.3	2,154
Vibratory removal 18" steel pile, 10 piles/day, 20 min/pile	112.1	9.9	165.8	68.1	4.8	8,690
Vibratory removal 36" steel pile, 1 pile/day, 20 min/pile	38.3	3.4	56.6	23.3	1.6	8,690