



INCIDENTAL HARASSMENT AUTHORIZATION

The Alaska Department of Transportation and Public Facilities (ADOT) and their designees are hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to incidentally harass marine mammals, under the following conditions:

1. This incidental harassment authorization (IHA) is effective through March 4, 2024.
2. This IHA authorizes take incidental to in-water construction activities, as specified in the ADOT's January 25, 2023 renewal IHA application, associated with the Tongass Narrows Project in Ketchikan, Alaska. Hereafter (unless otherwise specified) the term "pile driving" is used to refer to both pile installation and pile removal by impact, vibratory, or down-the-hole (DTH) methods.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of the Holder of the Authorization (Holder), supervisory construction personnel, lead protected species observers (PSOs), and any other relevant designees of the Holder operating under the authority of this IHA at all times that activities subject to this IHA are being conducted.
 - (b) The species and/or stocks authorized for taking are listed in Table 1. Authorized take, by Level A and Level B harassment only, is limited to the species and numbers listed in Table 1.
 - (c) The taking by serious injury or death of any of the species listed in Table 1 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.
 - (d) The Holder must ensure that construction supervisors and crews, the monitoring team, and relevant ADOT staff are trained prior to the start of activities subject to this IHA, so that responsibilities, communication procedures, monitoring



protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.

- (e) The Holder also must abide by the reasonable and prudent measures and terms and conditions (attached) of the December 19, 2019 Biological Opinion and Incidental Take Statement issued by NMFS pursuant to section 7 of the Endangered Species Act.

4. Mitigation Requirements

- (a) The Holder must employ PSOs and establish monitoring locations as described in section 5 of this IHA and the Marine Mammal Monitoring Plan (Monitoring Plan; attached). The Holder must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions.
- (b) Monitoring must take place from 30 minutes prior to initiation of pile driving activity (i.e., pre-start clearance monitoring) through 30 minutes post-completion of pile driving activity. If in-water work ceases for more than 30 minutes, ADOT will conduct pre-clearance monitoring of both the Level B harassment zone and shutdown zone.
- (c) If a marine mammal is observed entering or within the shutdown zones indicated in Table 2 or Table 3, pile driving activity must be delayed or halted. Pile driving must be commenced or resumed as described in condition 4(e) of this IHA.
- (d) Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones indicated in Table 2 or Table 3 are clear of marine mammals. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals.
- (e) If pile driving is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone indicated in Table 2 or 15 minutes have passed without re-detection of the animal (30 minutes for humpback whales).
- (f) The Holder must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes at reduced energy,

followed by a 30-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 30 minutes or longer.

- (g) Pile driving activity must be halted (as described in condition 4(c) of this IHA) upon observation of either a species, for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the harassment zone (as shown in Table 2 or Table 4).
- (h) The Holder, construction supervisors and crews, PSOs, and relevant ADOT staff must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 meters of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction.
- (i) For humpback whales, if the boundaries of the harassment zone have not been monitored continuously during a work stoppage, the entire harassment zone will be surveyed again to ensure that no humpback whales have entered the harassment zone that were not previously accounted for.
- (j) In-water activities will take place only: between civil dawn and civil dusk when PSOs can effectively monitor for the presence of marine mammals; during conditions with a Beaufort Sea State of 4 or less; when the entire shutdown zone and adjacent waters are visible (e.g., monitoring effectiveness is not reduced due to rain, fog, snow, etc.). Pile driving activities may continue for up to 30 minutes after sunset during evening civil twilight, as necessary to secure a pile for safety prior to demobilization for the evening. PSO(s) will continue to observe shutdown and monitoring zones during the time. The length of the post-activity monitoring period may be reduced if darkness precludes visibility of the shutdown and monitoring zones.
- (k) On days when simultaneous use of two hammers producing continuous noise (two DTH hammers, one DTH and one vibratory hammer, or two vibratory hammers) is expected.
 - (i) One or more PSOs will be present at each construction site during in-water pile installation and removal that Level A harassment zones and shutdown zones are monitored by a dedicated PSO at all times.

- (ii) The ADOT environmental coordinator for the project will implement coordination between or among the PSO contractors. ADOT will include in the contracts that PSOs must coordinate, collaborate, and otherwise work together to ensure compliance with project permits and authorizations.
- (iii) When combinations of the DTH hammer with a vibratory hammer or two DTH hammers are used simultaneously, each of the two contractors will have three PSOs working and the PSO teams will work together to monitor the entire area.
- (l) At the start of any work day involving DTH, ADOT must first determine whether DTH may occur at two sites concurrently or just at one site. If DTH may occur at two sites concurrently, then ADOT must implement the Level A harassment zones and shutdown zones associated with simultaneous DTH use of the relevant pile sizes (Table 3).
- (m) If the holder utilizes a tiered system to identify and monitor the appropriate Level A harassment zones and shutdown zones, based on the maximum expected pile driving or DTH duration, it must be implemented as described herein. ADOT must determine the maximum duration of pile driving or DTH possible that day (according to defined duration intervals), which will determine the appropriate Level A harassment isopleth for that day. This Level A harassment zone and associated shutdown zone must be observed by PSO(s) for the entire work day or until it is determined that, given the duration of activity for the day, the Level A harassment isopleth cannot exceed the next lower Level A harassment isopleth size, at which point the smaller Level A harassment zone and associated shutdown zone may be utilized instead.

5. Monitoring Requirements

- (a) Marine mammal monitoring must be conducted in accordance with the conditions in this section and the Monitoring Plan (attached) and this IHA.
- (b) Monitoring must be conducted by qualified, NMFS-approved PSOs, in accordance with the following conditions:
 - (i) PSOs must be independent (i.e. not construction personnel) and have no other assigned tasks during monitoring periods.
 - (ii) At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.

- (iii) Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
 - (iv) Where a team of three or more PSOs is required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
 - (v) PSOs must be approved by NMFS prior to beginning any activity subject to this IHA.
- (c) The Holder must establish monitoring locations as described in the Monitoring Plan (attached). For all pile driving and removal and DTH, at least three PSOs must be used. For all pile driving and DTH activities, a minimum of one PSO must be assigned to each active pile driving or DTH location to monitor the shutdown zones and as much of the Level B harassment zone as possible. For all pile driving and DTH activities, two additional PSOs are required, though the observation points may vary depending on the construction activity and location of the piles. To select the best observation locations, prior to start of construction, the lead PSO will stand at the construction site to monitor the Level A harassment zones while two or more PSOs travel in opposite directions from the project site along Tongass Narrows until they have reached the edge of the appropriate Level B harassment zone, where they will identify suitable observation points from which to observe. When needed, an additional PSO will be stationed on the north end of Revillagigedo Island observing to the northwest. If visibility deteriorates so that the entire width of Tongass Narrows at the harassment zone boundary is not visible, additional PSOs may be positioned so that the entire width is visible, or work will be halted until the entire width is visible to ensure that any humpback whales entering or within the harassment zone are detected by PSOs. When DTH use occurs, or simultaneous use of one DTH with a vibratory hammer or two DTH systems occurs, one additional PSO will be stationed at the northernmost land-based location at the entrance to Tongass Narrows (at least two PSOs total at that location, four PSOs on duty across all PSO locations). One of these PSO will focus on Tongass Narrows, specifically watching for marine mammals that could approach or enter Tongass Narrows and the project area. The second PSO will look out into Clarence Strait, watching for marine mammals that could swim

through the ensonified area. No additional PSOs will be required at the southern-most monitoring location.

- (d) PSOs must record all observations of marine mammals, regardless of distance from the pile being driven, as well as the additional data indicated in section 6 of this IHA.
- (e) If visibility degrades to where the PSO(s) cannot view the entire impact or vibratory harassment zones, humpback whale take will be extrapolated based on the estimated percentage of the monitoring zone that remains visible and the number of marine mammals observed.

6. Reporting

- (a) The Holder must submit its draft report(s) on all monitoring conducted under this IHA within 90 calendar days of the completion of monitoring or 60 calendar days prior to the requested issuance of any subsequent IHA for construction activity at the same location, whichever comes first. A final report must be prepared and submitted within 30 calendar days following receipt of any NMFS comments on the draft report. If no comments are received from NMFS within 30 calendar days of receipt of the draft report, the report shall be considered final.
- (b) All draft and final monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *ITP.fleming@noaa.gov*.
- (c) The marine mammal report must contain the informational elements described in the Monitoring Plan and, at minimum, must include:
 - (i) Dates and times (begin and end) of all marine mammal monitoring;
 - (ii) Construction activities occurring during each daily observation period, including:
 - A. The number and type of piles that were driven and the method (e.g., impact, vibratory, DTH);
 - B. Total equipment duration of use for vibratory installation/removal or DTH for each pile and total number of strikes for each pile for impact driving; and

- C. For down-the-hole drilling, duration of operation for both impulsive and non-pulse components.
- (iii) PSO locations during marine mammal monitoring;
 - (iv) Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;
 - (v) Upon observation of a marine mammal, the following information:
 - A. Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting;
 - B. Time of sighting;
 - C. Identification of the animal(s) (e.g., genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
 - D. Distance and location of each observed marine mammal relative to the pile being driven for each sighting;
 - E. Estimated number of animals (min/max/best estimate);
 - F. Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.);
 - G. Animal's closest point of approach and estimated time spent within the harassment zone;
 - H. Description of any marine mammal behavioral observations (e.g., observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (e.g., no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);

- (vi) Number of marine mammals detected within the harassment zones, by species; and
 - (vii) Table summarizing any incidents resulting in take of ESA-listed species;
 - (viii) Detailed information about implementation of any mitigation (e.g., shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any.
 - (ix) Description of other human activity within each monitoring period;
 - (x) Description of any deviation from initial proposal in pile numbers, pile types, average driving times, etc.;
 - (xi) Brief description of any impediments to obtaining reliable observations during construction period;
 - (xii) Description of any impediments to complying with these mitigation measures; and
- (d) The Holder must submit all PSO datasheets and/or raw sighting data with the draft report, as specified in condition 6(b) of this IHA. PSO data will be submitted electronically in a format that can be queried such as a spreadsheet or database (i.e. digital images of data sheets are not sufficient).
- (e) Reporting injured or dead marine mammals:

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Holder must report the incident to the Office of Protected Resources (OPR), NMFS (*PR.ITP.MonitoringReports@noaa.gov* and *ITP.Fleming@noaa.gov*) and to the Alaska regional stranding network (877-925-7773) as soon as feasible. If the death or injury was clearly caused by the specified activity, the Holder must immediately cease the activities until NMFS OPR 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 this IHA. The 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.

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, (2) the authorized taking is likely to have or is having an unmitigable adverse impact on the availability of the affected species or stocks for subsistence uses, or (3) the prescribed measures are likely not or are not effecting the least practicable adverse impact on the affected species or stocks and their habitat.

Kimberly Damon-Randall,
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National Marine Fisheries Service

Table 1. Authorized Incidental Take.

Species	DPS/Stock	Authorized Take		
		Level A Harassment	Level B Harassment	Total
Steller sea lion	Eastern U.S.	30	716	746
Harbor seal	Clarence Strait	38	335	373
Harbor porpoise	Southeast Alaska	5	9	14
Dall's porpoise	Alaska	12	68	80
Pacific white-sided dolphin	North Pacific	0	92	92
Killer whale	Alaska Resident	0	24	24
	West Coast Transient			
	Northern Resident			
Humpback whale	Central North Pacific	0	75	75
Minke whale	Alaska	1	2	3
Northern Elephant Seal	California Breeding Stock	0	12	12

Table 2. Tiered Shutdown Zones and Level B Harassment Zones, based on activity and duration for vibratory pile driving and removal, impact pile driving, and single-source DTH.

Activity	Pile Size (in)	Minutes per Pile or Strikes per Pile	Minimum Shutdown Zone (m)							Elephant Seal Dashes indicate that shutdown zones have not been explicitly calculated. ADOT may implement a tiered approach to shutdown zones, depending on the daily duration of activities, following the method described in the Mitigation Measures section of the initial Final IHA Notice.	Level B Harassment Isopleth (m)
			LF (humpback whales)	LF (minke whales)	MF	HF	PW	OW			
Vibratory Installation	30	60 min	50	20							6,310
	24	60 min									5,412
	20	60 min									
Vibratory Removal	24	60 min									
DTH of Temporary Piles	24	180 min	1,200	1,200	50	1,450	650	50	650	13,594	
DTH of Rock Sockets	30	60 min	780	1,500	30	500	200	40	450	13,594	
		120 min	1,300		50			50	-		
		180 min	1,700		60			70	-		
		240 min	2,000		70			80	-		
		300 min	2,300		90			90	1,250		
		360 min	2,600		100			100	-		
		420 min	2,900						-		
		480 min	3,100						-		
		540 min	3,400						-		
		600 min	3,600		130			100	1,950		
	24	60 min	360	1,500	20	500	200	20	200		
		120 min	570		30			30	-		
		180 min	750		30			30	-		
		240 min	910		40			40	-		

		300 min	1,100		40			50	600	
		360 min	1,200		50			50	-	
		420 min	1,400		50			60	-	
		480 min	1,500		60			60	-	
		540 min	1,600		60			70	-	
		600 min	1,700		60			70	900	
DTH of Tension Anchor	8	120 min	90	90	20	100	50	20	600	
		240 min	130	130		160	70		900	
Impact Installation	30	50 strikes	100	100	20	120	60	20	60	2,154
	24	50 strikes	60	60		70	30		30	1,000
	20	50 strikes				30				

Table 1. Shutdown Zones, by Hearing Group for Simultaneous Use of Two DTH Hammers

Activity Combination	Duration (minutes)	Level A Harassment Isopleth (m)							
		LF	MF	HF	PW	OW	Elephant Seal		
8-in pile, 8-in pile	60	90	20	100	50	20	50		
	120	130		160	70		70		
	180	170		200	100		100		
	240	210		250	110		150		
8-in pile, 24-in pile	60	520	20	500	200	20	300		
	120	820	30			40	450		
	180	1,080	40			50	600		
	240	1,300	50			60	700		
8-in pile, 30-in pile	60	1,110	40					50	600
	120	1,770	70					70	950
	180	2,310	90					90	1,250
	240	2,800	100					110	1,500
24-in pile, 24-in pile	60	570	20					30	350
	120	910	32					40	500
	180	1,190	42					50	650
	240	1,440	60					60	800
24-in pile, 30-in	60	900	40			40	500		
	120	1,430	60			60	800		

	180	1,880	70			80	1,050
	240	2,270	90			90	1,250
30-in pile, 30-in pile	60	1,230	50			50	700
	120	1,950	70			80	1,050
	180	2,550	100			100	1,400
	240	3,090	110			120	1,650

Table 2. Level B Harassment Isopleths for Two Vibratory Hammer Additions

Combined SSL (dB)	Level B Harassment Isopleth (m)
164	8,577
165	10,000
166	11,659
167	13,594
168	15,849
169	18,478
170	21,544