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Subject: Request for Incidental Take Regulation Modification for U.S. Coast Guard Fast Response Cutter Homeporting and In-Water Construction Project at Moorings Sitka, Alaska

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SUMMARY

The National Marine Fisheries Service (NMFS) issued Incidental Harassment Authorizations (IHAs) under the Marine Mammal Protection Act (MMPA) to the U.S. Coast Guard (USCG) for construction activities associated with pile driving and marine construction activities in Sitka, Alaska on December 17, 2024 (89 FR 104090). The IHA authorizes takes of minke whale (*Balaenoptera acutorostrata*), gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera novaeangliae*), Dall's porpoise (*Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), killer whale (*Orcinus orca*), harbor seal (*Phoca vitulina*), northern fur sea (*Callorhinus ursinus*), and Steller sea lion (*Eumetopias jubatus*) incidental to the USCG Fast Response Cutter (FRC) Homeporting and In-Water Construction Project at Moorings Sitka, in Sitka, Alaska. The IHA is valid from September 1, 2026 through August 31, 2027.

Since issuance of the IHAs, the Sitka project design has changed, including the size, material, and quantity of piles. As such, the USCG is requesting modification to the IHA to for the following project design and to modify the allowable take of marine mammals according to the new zones of impact.

CHANGES TO PROJECT DESIGN

Descriptions of USCG Moorings Sitka project components that generate underwater noise that may result in injury or harassment of marine mammals has changed from what was previously authorized is detailed below.

The USCG still proposes to remove an existing mooring dolphin at west end of existing pier; however, instead of removing up to four (4) concrete piles with vibratory extraction, three (3) 24-inch dolphin piles, which are held in place with rock anchors, would be removed by cutting the anchor using an underwater chain saw and then vibratory extraction. One nearby 24-inch steel camel pile would be removed by vibratory extraction.

Instead of installing a new mooring dolphin with three (3) 30-inch concrete piles, the USCG would install a new mooring dolphin with four (4) 24-inch steel piles by vibratory, impact, and DTH drilling methods.

The USCG would still remove the existing City-owned float including six (6) 14-inch timber guide piles via vibratory extraction. Subsequent reinstallation of the would be completed by others at another time and are not included in this project or request.

Construction of the new WLB pier would no longer include installation of one hundred five (105) 30-inch concrete structure piles and fifty-four (54) 13-inch plastic piles. Instead, the new WLB pier, including the approach, would include installation of ninety-five (95) 24-inch steel piles using vibratory and impact driving. Up to 25 piles would be further installed using DTH drilling methods. Installation of the approach and new WLB pier would require temporary installation and removal of twelve (12) 24-inch template piles using a vibratory hammer. In addition, the WLB would now include sixty (60) 16-inch steel fender piles which would be installed via vibratory driving.

The USCG still proposes to install a new FRC floating dock; however, the dock would not be supported by ten (10) 30-inch concrete piles. It would be supported by eight (8) 24-inch steel piles which would be installed using vibratory, impact, and DTH drilling methods.

While the previously permitted project was expected to take 114 days of in-water work, the currently proposed project is expected to take 113 days of not necessarily concurrent in-water work. Table 1 summarizes pile numbers, sizes, installation methods, and timing associated with the project.

Table 1. FRC Moorings Sitka Pile Installation and Removal Summary

	Existing Pile Removal		Template Pile Installation and Removal		Permanent Pile Installation			
Pile Description	--	--	Temp Pile Installation	Temp Pile Removal	WLB Pier Support Pile	Dolphin Pile	Floating Dock Guide Pile	Fender Pile
Pile Diameter	24-inch	14-in	24-in	24-in	24-in	24-in	24-in	16-in
Pile Material	Steel	Timber	Steel	Steel	Steel	Steel	Steel	Steel
Pile Quantity	4	6	12	12	95	4	8	60
Vibratory Pile Driving								
Total Quantity	4	6	12	12	95	4	8	60
Max # of Piles Vibrated per Day	4	5	4	4	6	3	4	8
Estimated # of Piles Vibrated per Day	4	5	4	4	3	1	2	5
Vibratory Time per Pile (mins)	30	30	15	15	75	75	75	30
Max Vibratory Time per Day (mins)	120	150	60	60	450	225	300	240
Estimated Number of Days [1]	1	2	3	3	32	4	4	12
Vibratory Time Total (mins)	120	180	180	180	7,125	225	600	1,440
Impact Pile Driving								
Total Quantity	--	--	--	--	95	4	8	--
Max # of Piles Impacted per Day	--	--	--	--	8	3	6	--
Estimated # of Piles Impacted per Day	--	--	--	--	4	1	3	--
Number of Strikes per Pile	--	--	--	--	500	500	500	--
Impact Time per Pile (mins)	--	--	--	--	10	10	10	--
Max Impact Time per Day (mins)	--	--	--	--	80	30	60	--
Estimated Number of Days [1]	--	--	--	--	24	4	3	--
Impact Time Total (mins)	--	--	--	--	950	30	80	--
DTH Drilling								
Total Quantity	--	--	--	--	25	4	8	--
Max # of Piles Drilled per Day	--	--	--	--	4	3	4	--
Estimated # of Piles Drilled per Day	--	--	--	--	2	1	2	--
DTH Time per Pile (mins)	--	--	--	--	120	120	120	--
Max DTH Time per Day (hours)	--	--	--	--	8	6	8	--
Estimated Number of Days [1]	--	--	--	--	13	4	4	--
DTH Time Total (hours)	--	--	--	--	50	6	16	--

[1] The numbers of piles that could be removed/installed each day would be determined by the contractor, weather, and other factors. USCG does not anticipate that they will install/remove the maximum number of piles every day, so the estimated number of piles per day was used to conservatively calculate the total number of project days. The maximum number of piles per day was used to calculate the most conservative Level A isopleths.

CHANGES TO TAKE ESTIMATES

Calculated Distances to Level A and Level B Thresholds

For Level A harassment, calculations accounted for the maximum duration of that activity per day using the practical spreading model in the National Marine Fisheries Service (NMFS) *Multi-Species Pile Driving Calculator* (Version 2.0). Since the contractor, weather, and other conditions will determine the numbers of piles that would be removed or installed each day, the maximum number of piles that could be installed/removed with the vibratory hammer was used to calculate Level A isopleths. Using this quantity yields the most conservative Level A zones for the project and accounts for what could occur on some days. Proxy sound source levels [1] for each activity used to approximate the distances to Level A and Level B thresholds are shown in Table 2.

Table 2. Estimated Sound Source Levels

Activity	Proxy Sound Source Level at 10 m[a]			Reference
Vibratory Pile Driving	**dB rms**			
In-air; all pile sizes	103.2			Laughlin 2010
14-in timber piles	162			CALTRANS 2020
16- and 24-in steel piles	163			PR1 2023 Calculations (as cited in NMFS 2023)
Impact Pile Driving	**dB Peak**	**dB rms**	**dB SEL**	
In-air; all pile sizes	--	109	--	NAVFAC SW 2020
24-in steel piles	203	190	177	CALTRANS 2015
DTH Drilling	**dB Peak**	**dB rms**	**dB SEL**	
24-in steel piles	184	167	159	Heyvaert & Reyff 2021

[a] In-air proxy sound levels were measured at 15 m from the noise source.

Action Area

The action areas for this project include all waters that would be ensonified above the applicable acoustic thresholds on a given day, with the extent varying based on the specific in-water activity taking place (NMFS 2024). For this updated project, the largest action area is associated with DTH installation of the 24-in steel piles, because this activity is expected to produce the farthest-reaching sound levels. Noise from this activity is expected to decline to 120 dB at a distance of 13.6 km from the source (Figure 1). This action area is truncated where land masses obstruct underwater sound transmission. The updated action area is 3 times smaller than the largest action area represented in the issued IHA (39.8 km). The calculated action areas for each activity are shown in Table 3.

[1] Proxy sound source levels and references consulted to develop the action area were reviewed and approved through personal communication with Cara Hotchkin, biologist with the NMFS Office of Protected Resources.

Figure 1. FRC Moorings Sitka Updated Action Area

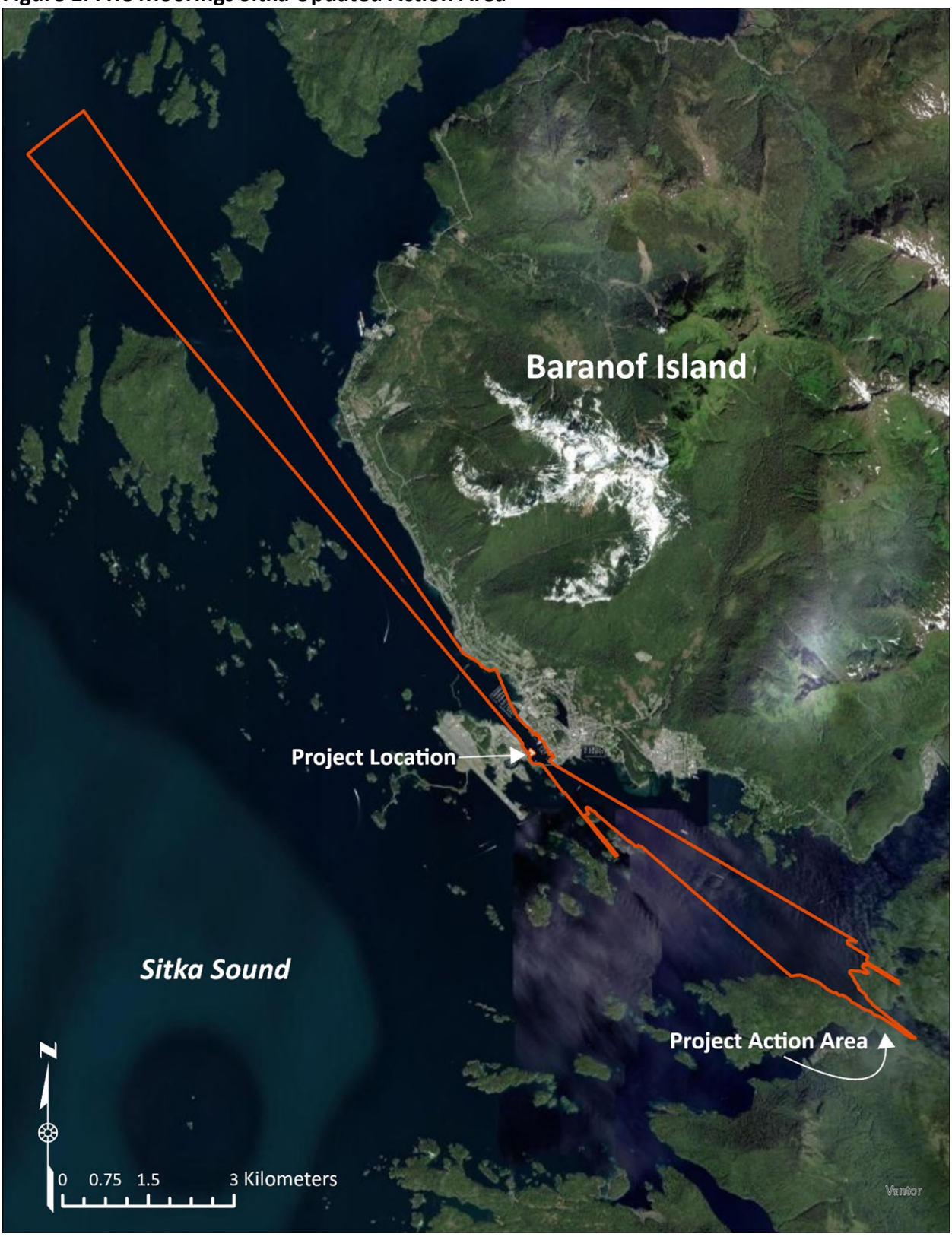

Table 3. FRC Moorings Sitka Updated Calculated Distances to Level A and Level B Acoustic Thresholds

Pile Size and Material	Activity	Calculated Distances for Acoustic Thresholds in Meters [a] (Ensonified Area in Square Kilometers)					
		Level A					Level B (all species)
		LF Cetaceans	HF Cetaceans	VHF Cetaceans	Phocids	Otariids	
Vibratory							
In-air; all piles	--	--	--	--	--	--	70
24-in steel	Existing pile removal	19.9 (0.007)	7.6 (0.002)	16.3 (0.006)	25.6 (0.009)	8.6 (0.003)	7,356.4 (7.674)
14-in timber	Existing pile removal	19.8 (0.007)	7.6 (0.002)	16.2 (0.006)	25.5 (0.009)	8.6 (0.003)	6,309.6 (6.409)
24-in steel	Template pile installation	12.5 (0.004)	4.8 (0.002)	10.2 (0.003)	16.1 (0.006)	5.4 (0.002)	7,356.4 (7.674)
	Template pile removal	12.5 (0.004)	4.8 (0.002)	10.2 (0.003)	16.1 (0.006)	5.4 (0.002)	7,356.4 (7.674)
	WLB pier support pile installation	48.0 (0.019)	18.5 (0.006)	39.2 (0.015)	61.8 (0.027)	20.8 (0.007)	7,356.4 (7.674)
	Dolphin pile installation	30.3 (0.011)	11.6 (0.004)	24.7 (0.009)	39.0 (0.015)	13.1 (0.004)	7,356.4 (7.674)
	Floating dock guide pile installation	36.7 (0.014)	14.1 (0.005)	29.9 (0.011)	47.2 (0.019)	15.9 (0.005)	7,356.4 (7.674)
16-in steel	Fender pile installation	31.6 (0.012)	12.1 (0.004)	25.8 (0.009)	40.7 (0.016)	13.7 (0.005)	7,356.4 (7.674)
Impact							
In-air; all piles	--	--	--	--	--	--	134
24-in steel	WLB pier support pile installation	998.2 (0.561)	127.4 (0.068)	1,544.6 (1.013)	886.7 (0.488)	330.5 (0.209)	1,000.0 (0.562)
	Dolphin pile installation	519.1 (0.291)	66.2 (0.029)	803.2 (0.436)	461.1 (0.265)	171.9 (0.102)	1,000.0 (0.562)
	Floating dock guide pile installation	824.0 (0.449)	105.1 (0.052)	1,275.1 (0.780)	732.0 (0.396)	272.8 (0.179)	1,000.0 (0.562)
DTH							
24-in steel	WLB pier support pile installation	1,428.3 (0.915)	182.2 (0.110)	2,210.3 (1.511)	1,268.8 (0.775)	473.0 (0.270)	13,593.6 (13.716)
	Dolphin pile installation	1,179.0 (0.698)	150.4 (0.085)	1,824.5 (1.227)	1,047.4 (0.596)	390.4 (0.235)	13,593.6 (13.716)
	Floating dock guide pile installation	1,428.3 (0.915)	182.2 (0.110)	2,210.3 (1.511)	1,268.8 (0.775)	473.0 (0.270)	13,593.6 (13.716)

[a] Distances refer to the maximum radius of the zone. The actual zone may be truncated by landforms. The values provided for Level A calculated distances represent the distance at which an animal may incur PTS if that animal remained at that distance for the entire duration of the activity within a 24-hour period

Estimated Take

Previous Take Estimates

Both density data from local sources, the U.S. Navy's Marine Mammal Species Density Database (Navy 2019, Navy 2020) for the Northwest or Gulf of Alaska Testing and Training areas or nearby proxies and occurrence data from previous monitoring reports, local researchers, and marine professionals was used to calculate take estimates. To determine Level A take for species with density data, the species density was multiplied by the daily ensonified Level A harassment area and the number of days of work.

Level A take (density) = species density x Level A ensonified area x number of days

For species with occurrence data, only cryptic species (harbor porpoise, harbor seal, and Steller sea lion) were assumed to be able to enter the Level A harassment zone undetected, potentially accumulating sound exposure that rises to the level of Level A harassment. For these species, NMFS assumed that up to 25 percent of the animals that enter the Level B harassment zone could enter the Level A harassment zone undetected.

Level A take (occurrence) = (daily occurrence x number of days) x 25 percent.

To calculate Level B take estimates for species with density data, the species density was multiplied by the Level B ensonified area and the number of days of work. The Level A take estimated was then subtracted from the resultant value.

Level B take (density) = (species density x Level B ensonifed area x number of days) – Level A take

Similarly, for species with occurrence data the daily occurrence was multiplied by the number of days of work and then the Level A takes were subtracted from the result.

Level B take (occurrence) = (daily occurrence x number of days) x Level A take

The number of Level A and Level B takes NMFS authorized are shown in Table 4.

Table 4. Previously Authorized Takes for the FCR Moorings Sitka Project

Species	Stock (population estimate)	Occurrence or Density	Authorized Level A Takes	Authorized Level B Takes	Total Takes	Percent of Population
Minke whale	Alaska stock (2,020)	1 group of 3.5 individuals / 2 weeks	0	22	22	1.09
Fin whale	Alaska NE Pacific stock (uk)	0.0001 individuals / km^2	0	0	0	n/a
Gray whale	Eastern North Pacific stock (26,960)	1 group of 3.5 individuals / 2 weeks	0	22	22	0.08
Humpback whale	Hawaii stock (11,278)	1 group of 3.4 individuals / week of either stock	0	44	44	0.39
	Mexico-North Pacific stock (918)					4.79
Sperm whale	North Pacific (uk)	0.002 individuals / km^2	0	0	0	n/a
Dall's porpoise	Alaska stock (13,110)	0.121 individuals / km^2	24	42	66	0.50
Harbor porpoise	Yakutat/SE Alaska Offshore waters stock (2,509)	1 group of 5 individuals / week	15	20	35	1.39
Killer whale	Alaska Resident (1,920)	1 group of 6.6 individuals / week of any stock	0	90	90	4.69
	Gulf of Alaska, Aleutian Islands, and Bering Sea Transient (587)					15.33
	Northern Resident (302)					29.80
	West Coast Transient (349)					25.79
Harbor seal	Sitka/Chatham Strait stock (13,289)	2 groups of 2.1 individuals / day	88	272	360	2.71
Northern fur seal	Eastern Pacific stock (626,618)	1 individual / month	0	3	3	<0.05
Steller sea lion	Eastern stock (36,308)	2 groups of 2 individuals / day of either stock	84	276	360	0.72
	Western stock (49,837)					0.78

Updated Take Estimates

The updated incidental take is estimated for marine mammals considers the following:

1) Acoustic thresholds above which NMFS believes marine mammals would be behaviorally harassed or incur some degree of permanent hearing impairment;
2) the size of the new action area (the area of water that would be ensonified above acoustic thresholds in a day) and shutdown zones;
3) the updated occurrence of marine mammals in the action area; and
4) the change in the number of days of pile driving and removal activity.

The change in the pile size and material resulted in a change to the Level A and Level B isopleths for marine mammals. The changes in the Level A zone size are also due, in part, to the issued IHA using the 2018 *NMFS Technical Guidance for Assessing the Effects of Anthropogenic Sounds on Marine Mammal Hearing* (NMFS 2018). The updated take calculations use the 2024 update to the Technical Guidance (Version 3.0, NMFS 2024).

For vibratory pile driving, the Level B zones have not changed from the issued IHA, with the largest Level B zone being 7,356.4 meters (m). The largest Level A zone increased for all marine mammal hearing groups. For low frequency cetaceans, the largest Level A zone increased from 14.7 m to 48.0 m, 1.3 m to 18.5 m for high frequency cetaceans (mid-frequency cetaceans in the 2018 guidance), 21.7 m to 39.2 m for very high frequency cetaceans (high frequency cetaceans in 2018), 6.9 m to 61.8 m for phocids, and 0.6 to 20.8 m for otariids.

For impact pile driving, the largest Level B zone nearly doubled from 541.2 m to 1,000.0 m and the largest Level A zone increased considerably for all marine mammal hearing groups. For low frequency cetaceans, the largest Level A zone increased from 13.7 m to 998.2 m, 0.5 m to 127.4 m for high frequency cetaceans, 16.3 m to 1,544.6 m for very high frequency cetaceans, 7.3 m to 886.7 m for phocids, and 0.5 to 330.5 m for otariids.

Finally, for DTH drilling the largest Level B zone decreased substantially from 39,810.7 m to 13,593.6 m, and the largest Level A zone increased for all hearing groups except low frequency and very high frequency cetaceans. For low frequency cetaceans, the largest Level A zone decreased from 1,945.5 m to 1,428.3 m and from 2,317.4 m to 2,210.3 m for very high frequency cetaceans. For high frequency cetaceans, the largest Level A zone increased from 69.2 m to 182.2 m, 1,041.2 m to 1,824.5 for phocids and from 75.8 m to 473.0 m for otariids.

Additionally, in the existing IHA USCG planned to implement a minimum 30 m shutdown zone, rather than the NMFS requirement of a 10 m shutdown zone. The 30 m shutdown zone exceeds the original Level A harassment isopleths for all vibratory and impact pile driving. The shutdown zone was expanded beyond the Level A zone for each hearing group for DTH drilling to reduce the potential for Level A harassment. The shutdown zone was set at 1,955 m for low frequency cetaceans, 85 m for high frequency cetaceans and otariids, 2,325 m for very high frequency cetaceans, and 1,050 m for phocids. In order to effectively monitor the large shutdown zones during DTH activities, at least two additional PSOs would be assigned to a vessel or one or more monitoring locations.

The shutdown zones outlined in the IHA are not feasible for the updated project. There is a large presence of marine mammal species, such as harbor seals and Steller sea lions, in the project area year-round, and a minimum shutdown zone of 30 m could cause a large number of delays due to marine mammal mitigation, therefore increasing the number of project days and the amount of time the area is ensonifed. The USCG now requests to use the NMFS requirement of a minimum 10 m shutdown zone for all activities to avoid physical interaction between marine mammals and the construction equipment. Due to safety and logistic concerns, the USCG can no longer have PSOs observe the expanded shutdown zone set for DTH activity from a vessel. Additionally, pile driving and DTH activity would not be able to start after the 30-minute pre-start clearance until the entire shutdown zone is clear of marine mammals, and this pre-start clearance would need to be conducted again if in-water work ceases for more than 30 minutes. Requiring a shutdown zone that can exceed 2 km to be free of marine mammals before activity can start or resume is likely to cause large delays in work, and considerably extend the number of days that marine mammals may be exposed to sound. Sitka Channel is roughly 340 m wide at the project location. On the opposite side of the channel there are two seafood processing plants, Sitka Sound Seafoods and Seafood Producers Cooperative, that are roughly 210 and 450 m from the project location, respectively. These facilities, which can attract pinnipeds, are within the Level A zones for both pinniped hearing groups, and marine mammals near these facilities are likely to lead to delays to the start of construction as well as an increased number of shutdowns. Construction could also be delayed due to environmental conditions, such as rain or fog, preventing the entire shutdown zone from being visible. Even light fog or rain could impact the ability of observers to cover the large shutdown zones during DTH activities, again, potentially increasing the overall impact of this project on marine mammals.

For the cryptic species that a small amount of Level A take had been authorized, the USCG is now requesting a maximum shutdown zone of 100 m and is requesting Level A take on the days that the Level A zone exceeds this distance. Table 5 shows the new shutdown and monitoring zones that the USCG is proposing.

Table 5. FRC Moorings Sitka Level A Shutdown Zones and Level B Monitoring Zones

Pile Size and Material	Activity	Distance in Meters [a] to Level A Shutdown Zones and Level B Monitoring Zones					
		Shutdown Zone					Monitoring Zone
		LF Cetaceans	HF Cetaceans	VHF Cetaceans	Phocids	Otariids	
Barge movements, pile positioning, etc.		10	10	10	10	10	10
Vibratory							
In-air; all piles	--	--	--	--	--	--	70
24-in steel	Existing pile removal	20	10	20	30	10	7,360
14-in timber	Existing pile removal	20	10	20	30	10	6,310
24-in steel	Template pile installation	15	10	15	20	10	7,360
	Template pile removal	15	10	15	20	10	7,360
	WLB pier support pile installation	50	20	40	65	25	7,360
	Dolphin pile installation	35	15	25	40	15	7,360
	Floating dock guide pile installation	40	15	30	50	20	7,360
16-in steel	Fender pile installation	35	15	30	45	15	7,360
Impact							
In-air; all piles	--	--	--	--	--	--	134
24-in steel	WLB pier support pile installation	1,000	130	100	100	100	1,000 (VHF: 1,545 [b])
	Dolphin pile installation	520	70	100	100	100	1,000
	Floating dock guide pile installation	830	110	100	100	100	1,000 (VHF: 1,280 [b])
DTH							
24-in steel	WLB pier support pile installation	1,430	185	100	100	100	13,600
	Dolphin pile installation	1,180	155	100	100	100	13,600
	Floating dock guide pile installation	1,430	185	100	100	100	13,600

[a] Distances, in meters, refers to the maximum radius of the zone and is rounded. The actual zone may be truncated by landforms. The values provided for Level A calculated distances represent the distance at which an animal may incur AUD INJ if that animal remained at that distance for the entire duration of the activity within a 24-hour period.

[b] For very high frequency cetaceans, the Level A zone is larger than the Level B zone. For these species use the Level A distance for the monitoring zone.

Different from the IHA, density estimates were not used to calculate the current take request. To more accurately determine localized species occurrence estimates and group sizes, the following information was reviewed and analyzed:

- iNaturalist records of marine mammal species in Sitka Sound (iNaturalist 2025)
- Ocean Biodiversity Information System (OBIS) records of marine mammal species in Sitka Sound (OBIS 2025)
- Currently or previously NMFS permitted projects in Sitka Sound and their monitoring reports (if available)
- SolsticeAK unpublished monitoring reports from projects without NMFS IHAs
- Available scientific literature

Analysis of the above sources were used to estimate the occurrence of marine mammals in the action area. Incidental take is now requested for marine mammals whose occurrence in the action area is described as 'common,' 'frequent,' and 'infrequent' (**Table 6**). Take of species whose occurrence in the action area is described as 'rare,' or 'very rare' is not requested. While three Level B takes were authorized for northern fur seals, they have not been observed in the region since 2023, and are considered to be 'rare' in the area (iNaturalist 2025). Therefore, take is no longer requested for northern fur seals. Additionally, fin whales and sperm whales have very low densities in the region according to the IHA, and new take calculations resulted in zero take for each species. Therefore, take is not requested for either species with the updated take calculations.

Table 6. Estimated Species Occurrence and Group Sizes Used in Take Estimates

Species	Occurrence [a]	Take Frequency (groups/time period)	Group Size	Group Size Reference
Minke whale	Infrequent	2/month	4	Rounded from original IHA
Fin whale	Very Rare	n/a	n/a	n/a
Gray whale	Infrequent	2/month	4	OBIS 2025
Humpback whale	Frequent	4/month	4	Rounded from original IHA
Sperm whale	Very Rare	n/a	n/a	n/a
Dall's porpoise	Infrequent	2/month	6	Dahlheim et al. 2009
Harbor porpoise	Frequent	4/month	5	Rounded from original IHA
Killer whale	Frequent	4/month	7	Rounded from original IHA
Harbor seal	Common	1/day Level A 2/day Level B	2	Published and un-published monitoring reports [b]
Northern fur seal	Rare	n/a	n/a	n/a
Steller sea lion	Common	1/day Level A 2/day Level B	2	Published and un-published monitoring reports [b]

[a] Occurrence estimates based on monitoring conducted for other nearby projects, data from online repositories, and a review of scientific literature. Common=multiple sightings every month, could occur each day; Frequent=multiple sightings every year, could occur each month; Infrequent=few sightings each year, could occur each month; Rare=no sightings in recent years; Very rare=no local knowledge of sightings in the project vicinity.
[b] All available monitoring report data has been compiled and is included in the take calculation spreadsheet submitted with this modification request.

For species with occurrence estimates in the original IHA, the take frequencies did not change but were translated to the number of groups per day or per month (i.e. species whose occurrence was one group per week is now four groups per month.) A month is assumed to last 30 days or four weeks. When the group size estimated in the original IHA was used in the updated take calculations, the group size was rounded up to the next full individual. For example, in the original IHA, minke whales had an occurrence estimate of one group of 3.5 individuals every two weeks. In the updated take estimates this becomes two groups of four individuals every month.

To calculate Level A take, the expected occurrence (group size and estimated frequency of appearance) was multiplied by the number of days that the Level A zone exceeded the shutdown zone. Level A take is now requested for very high frequency cetaceans, phocids, and otariids for all 52 days of impact pile driving and DTH drilling, when the Level A zones exceed the requested 100 m shutdown zone for those species.

The following equations were used to estimate Level A take:

Estimated take (monthly) = expected monthly frequency x group size x (days of pile driving activity / 30 days per month)

Estimated take (daily) = expected daily frequency x group size x days of pile driving activity

To calculate Level B take, the expected occurrence (group size and estimated frequency of appearance) was multiplied by the total number of days of pile driving. For species that Level A take is requested, the Level A take was subtracted from the total Level B exposures.

The following equations were used to estimate Level B take:

Estimated take (monthly) = expected monthly frequency x group size x (days of pile driving activity / 30 days per month) – Level A take

Estimated take (daily) = expected daily frequency x group size x days of pile driving activity – Level A take

Table 7. FCR Moorings Sitka Take Calculations by Species

Minke whale	• Infrequent in Sitka Sound/Sitka Channel, could occur twice per month • Estimated group size of four • Level A zone does not exceed the shutdown zone, no Level A take requested • Level B estimates 2 groups of 4 whales per month during the 113 days of pile driving • **Level B = 2 groups per month x 4 whales per group x (113 days / 30 days per month) = 31 minke whales**
Gray whale	• Infrequent in Sitka Sound/Sitka Channel, could occur twice per month • Group size ranges from one to four, estimate four animals per group • Level A zone does not exceed the shutdown zone, no Level A take requested • Level B estimates 2 groups of 4 whales per month during the 113 days of pile driving

	• **Level B = 2 groups per month x 4 whales per group x (113 days / 30 days per month) = 31 gray whales**
Humpback whale	• Frequent in Sitka Sound/Sitka Channel, could occur four times per month • Estimated group size of four • Level A zone does not exceed the shutdown zone, no Level A take requested • Level B estimates 4 groups of 4 whales per month during the 113 days of pile driving • **Level B = 4 groups per month x 4 whales per group x (113 days / 30 days per month) = 61 humpback whales**
Dall's porpoise	• Infrequent in Sitka Sound/Sitka Channel, could occur twice per month • Average group size of six in Southeast Alaska • Level A zone exceeds the shutdown zone during impact pile driving and DTH drilling • Level A estimates 2 groups of 6 porpoises per month during the 52 days of impact pile driving and DTH drilling • **Level A = 2 groups per month x 6 porpoises per group x (52 days / 30 days per month) = 21 Dall's porpoises** • Level B estimates 2 groups of 6 porpoises per month during the 113 days of pile driving • **Level B = (2 groups per month x 6 porpoises per group x [113 days / 30 days per month]) – 21 Level A takes = 25 Dall's porpoises**
Harbor porpoise	• Frequent in Sitka Sound/Sitka Channel, could occur four times per month • Estimated group size of five • Level A zone exceeds the shutdown zone during impact pile driving and DTH drilling • Level A estimates 4 groups of 5 porpoises per month during the 52 days of impact pile driving and DTH drilling • **Level A = 4 groups per month x 5 porpoises per group x (52 days / 30 days per month) = 35 harbor porpoises** • Level B estimates 4 groups of 5 porpoises per month during the 113 days of pile driving • **Level B = (4 groups per month x 5 porpoises per group x [113 days / 30 days per month]) – 35 Level A takes = 41 harbor porpoises**
Killer whale	• Frequent in Sitka Sound/Sitka Channel, could occur four times per month • Estimated group size of seven • Level A zone does not exceed the shutdown zone, no Level A take requested • **Level B = 4 groups per month x 7 whales per group x (113 days / 30 days per month) = 106 killer whales**
Harbor seal	• Common in Sitka Sound/Sitka Channel, could occur daily • Group size ranges from one to six, average two animals per group • Level A zone exceeds the shutdown zone during impact pile driving and DTH drilling • Level A estimates 1 group of 2 seals per day during the 52 days of impact pile driving and DTH drilling • **Level A = 1 group per day x 2 seals per group x 52 days = 104 harbor seals** • Level B estimates 2 groups of 2 seals per day during the 113 days of pile driving • **Level B = (2 groups per day x 2 seals per group x 113 days) – 104 Level A takes = 348 harbor seals**

Steller sea lion	• Common in Sitka Sound/Sitka Channel, could occur daily • Group size ranges from one to thirty, average two animals per group • Level A zone exceeds the shutdown zone during impact pile driving and DTH drilling • Level A estimates 1 group of 2 sea lions per day during the 52 days of impact pile driving and DTH drilling • **Level A = 1 group per day x 2 sea lions per group x 52 days = 104 Steller sea lions** • Level B estimates 2 groups of 2 sea lions per day during the 113 days of pile driving • **Level B = (2 groups per day x 2 sea lions per group x 113 days) – 104 Level A takes = 348 Steller sea lions**

The updated analysis for the FRC Moorings Sitka project predicts take of eight marine mammal species under NMFS jurisdiction that may occur in the action area during construction. Table 8 shows the total take estimated and the percentage of stock for each species. For species with multiple stocks, the percentage of stock was calculated as if all takes for that species went to a single stock. Shutdowns will be implemented if any species not listed below appears likely to approach the Level B harassment zone during pile driving and DTH activities.

Table 8. FCR Moorings Sitka Take Requests and Percent of Stock

Species	Stock (population estimate)	Level A Takes	Level B Takes	Total Takes	Percent of Population
Minke whale	Alaska stock (2,020)	0	31	31	1.53
Gray whale	Eastern North Pacific stock (26,960)	0	31	31	0.11
Humpback whale	Hawaii stock (11,278)	0	61	61	0.54
	Mexico-North Pacific stock (918)				6.64
Dall's porpoise	Alaska stock (13,110)	21	25	46	0.35
Harbor porpoise	Yakutat/SE Alaska Offshore waters stock (2,509)	35	41	76	3.03
Killer whale	Alaska Resident (1,920)	0	106	106	5.52
	Gulf of Alaska, Aleutian Islands, and Bering Sea Transient (587)				18.06
	Northern Resident (302)				35.10
	West Coast Transient (349)				30.37
Harbor seal	Sitka/Chatham Strait stock (13,289)	104	348	452	3.40
Steller sea lion	Eastern stock (36,308)	104	348	452	1.24
	Western stock (49,837)				0.91

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Ocean Biodiversity Information System (OBIS). 2025. Intergovernmental Oceanographic Commission of UNESCO. https://obis.org. Accessed on November 26, 2025.

Attachment A: NMFS Sound Spreadsheets

VIBRATORY PILE DRIVING REPORT

PRINT IN **LANDSCAPE** TO CAPTURE ENTIRE SCREEN

VERSION 2.0-Multi-Species: 2024

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

USCG Sitka Proposal

PROJECT INFORMATION	RMS
Sound pressure level (dB)	163
Distance associated with sound pressure level (meters)	10
Transmission loss constant	15
Number of piles per day	4
Duration to drive pile (minutes)	30
Duration of sound production in day	7200
Cumulative SEL at measured distance	202

OTHER INFO 24-in steel pile removal

NOTES extra information

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

NO FISHES	BEHAVIOR
	RMS Isopleth
ISOPLETHS (meters)	73.6
ISOPLETHS (feet)	241.4

SEA TURTLES

NO SEA TURTLES	PTS ONSET	BEHAVIOR
	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.6	1.6
ISOPLETHS (feet)	1.9	5.2

MARINE MAMMALS

	LF Cetacean	MF Cetaceans	HF Cetaceans	PW Pinniped	OW Pinnipeds
UD INJ ONSET (SELcum isopleth, meters)	19.9	7.6	16.3	25.6	8.6
AUD INJ ONSET (SELcum isopleth, feet)	65.3	25.1	53.3	84.0	28.3
	ALL MM	HF CET. present	VHF Cet. present	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	7,356.4	LF Cet. present			
Behavior (RMS isopleth, feet)	24,135.2				

VIBRATORY PILE DRIVING REPORT

PRINT IN **LANDSCAPE** TO CAPTURE ENTIRE SCREEN

VERSION 2.0-Multi-Species: 2024

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

USCG Sitka Proposal

PROJECT INFORMATION	RMS
Sound pressure level (dB)	162
Distance associated with sound pressure level (meters)	10
Transmission loss constant	15
Number of piles per day	5
Duration to drive pile (minutes)	30
Duration of sound production in day	9000
Cumulative SEL at measured distance	202

OTHER INFO 12-in timber pile removal

NOTES extra information

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	BEHAVIOR
NO FISHES	RMS Isopleth
ISOPLETHS (meters)	63.1
ISOPLETHS (feet)	207.0

SEA TURTLES

	PTS ONSET	BEHAVIOR
NO SEA TURTLES	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.6	1.4
ISOPLETHS (feet)	1.9	4.5

MARINE MAMMALS

	LF Cetacean	MF Cetaceans	HF Cetaceans	PW Pinniped	OW Pinnipeds
UD INJ ONSET (SELcum isopleth, meters)	19.8	7.6	16.2	25.5	8.6
AUD INJ ONSET (SELcum isopleth, feet)	65.0	25.0	53.1	83.6	28.2
	ALL MM	HF CET. present	VHF Cet. present	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	6,309.6	LF Cet. present			
Behavior (RMS isopleth, feet)	20,700.7				

VIBRATORY PILE DRIVING REPORT

PRINT IN **LANDSCAPE** TO CAPTURE ENTIRE SCREEN

VERSION 2.0-Multi-Species: 2024

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

USCG Sitka Proposal

PROJECT INFORMATION	RMS
Sound pressure level (dB)	163
Distance associated with sound pressure level (meters)	10
Transmission loss constant	15
Number of piles per day	4
Duration to drive pile (minutes)	15
Duration of sound production in day	3600
Cumulative SEL at measured distance	199

OTHER INFO 24-in steel template pile installation/removal

NOTES extra information

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	BEHAVIOR
NO FISHES	RMS Isopleth
ISOPLETHS (meters)	73.6
ISOPLETHS (feet)	241.4

SEA TURTLES

	PTS ONSET	BEHAVIOR
NO SEA TURTLES	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.4	1.6
ISOPLETHS (feet)	1.2	5.2

MARINE MAMMALS

	LF Cetacean	MF Cetaceans	HF Cetaceans	PW Pinniped	OW Pinnipeds
UD INJ ONSET (SELcum isopleth, meters)	12.5	4.8	10.2	16.1	5.4
AUD INJ ONSET (SELcum isopleth, feet)	41.1	15.8	33.6	52.9	17.8
	ALL MM	HF CET. present	VHF Cet. present	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	7,356.4	LF Cet. present			
Behavior (RMS isopleth, feet)	24,135.2				

VIBRATORY PILE DRIVING REPORT

PRINT IN **LANDSCAPE** TO CAPTURE ENTIRE SCREEN

VERSION 2.0-Multi-Species: 2024

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

USCG Sitka Proposal

PROJECT INFORMATION	RMS
Sound pressure level (dB)	163
Distance associated with sound pressure level (meters)	10
Transmission loss constant	15
Number of piles per day	6
Duration to drive pile (minutes)	75
Duration of sound production in day	27000
Cumulative SEL at measured distance	207

OTHER INFO 24-in steel WLB pier support pile installation

NOTES extra information

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	BEHAVIOR
NO FISHES	RMS Isopleth
ISOPLETHS (meters)	73.6
ISOPLETHS (feet)	241.4

SEA TURTLES

	PTS ONSET	BEHAVIOR
NO SEA TURTLES	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	1.4	1.6
ISOPLETHS (feet)	4.7	5.2

MARINE MAMMALS

	LF Cetacean	MF Cetaceans	HF Cetaceans	PW Pinniped	OW Pinnipeds
UD INJ ONSET (SELcum isopleth, meters)	48.0	18.5	39.2	61.8	20.8
AUD INJ ONSET (SELcum isopleth, feet)	157.6	60.5	128.7	202.9	68.3
	ALL MM	HF CET. present	VHF Cet. present	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	7,356.4	LF Cet. present			
Behavior (RMS isopleth, feet)	24,135.2				

VIBRATORY PILE DRIVING REPORT

PRINT IN **LANDSCAPE** TO CAPTURE ENTIRE SCREEN

VERSION 2.0-Multi-Species: 2024

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

USCG Sitka Proposal

PROJECT INFORMATION	RMS
Sound pressure level (dB)	163
Distance associated with sound pressure level (meters)	10
Transmission loss constant	15
Number of piles per day	3
Duration to drive pile (minutes)	75
Duration of sound production in day	13500
Cumulative SEL at measured distance	204

OTHER INFO 24-in steel dolphin pile installation

NOTES extra information

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	BEHAVIOR
NO FISHES	RMS Isopleth
ISOPLETHS (meters)	73.6
ISOPLETHS (feet)	241.4

SEA TURTLES

	PTS ONSET	BEHAVIOR
NO SEA TURTLES	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.9	1.6
ISOPLETHS (feet)	3.0	5.2

MARINE MAMMALS

	LF Cetacean	MF Cetaceans	HF Cetaceans	PW Pinniped	OW Pinnipeds
UD INJ ONSET (SELcum isopleth, meters)	30.3	11.6	24.7	39.0	13.1
AUD INJ ONSET (SELcum isopleth, feet)	99.3	38.1	81.1	127.8	43.0
	ALL MM	HF CET. present	VHF Cet. present	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	7,356.4	LF Cet. present			
Behavior (RMS isopleth, feet)	24,135.2				

VIBRATORY PILE DRIVING REPORT

PRINT IN **LANDSCAPE** TO CAPTURE ENTIRE SCREEN

VERSION 2.0-Multi-Species: 2024

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

USCG Sitka Proposal

PROJECT INFORMATION	RMS
Sound pressure level (dB)	163
Distance associated with sound pressure level (meters)	10
Transmission loss constant	15
Number of piles per day	4
Duration to drive pile (minutes)	75
Duration of sound production in day	18000
Cumulative SEL at measured distance	206

OTHER INFO 24-in steel floating dock guide pile installation

NOTES extra information

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

NO FISHES	BEHAVIOR
	RMS Isopleth
ISOPLETHS (meters)	73.6
ISOPLETHS (feet)	241.4

SEA TURTLES

NO SEA TURTLES	PTS ONSET	BEHAVIOR
	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	1.1	1.6
ISOPLETHS (feet)	3.6	5.2

MARINE MAMMALS

	LF Cetacean	MF Cetaceans	HF Cetaceans	PW Pinniped	OW Pinnipeds
UD INJ ONSET (SELcum isopleth, meters)	36.7	14.1	29.9	47.2	15.9
AUD INJ ONSET (SELcum isopleth, feet)	120.3	46.2	98.2	154.8	52.1
	ALL MM	HF CET. present	VHF Cet. present	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	7,356.4	LF Cet. present			
Behavior (RMS isopleth, feet)	24,135.2				

VIBRATORY PILE DRIVING REPORT

PRINT IN **LANDSCAPE** TO CAPTURE ENTIRE SCREEN

VERSION 2.0-Multi-Species: 2024

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

USCG Sitka Proposal

PROJECT INFORMATION	RMS
Sound pressure level (dB)	163
Distance associated with sound pressure level (meters)	10
Transmission loss constant	15
Number of piles per day	8
Duration to drive pile (minutes)	30
Duration of sound production in day	14400
Cumulative SEL at measured distance	205

OTHER INFO 16-in steel fender pile installation

NOTES extra information

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	BEHAVIOR
NO FISHES	RMS Isopleth
ISOPLETHS (meters)	73.6
ISOPLETHS (feet)	241.4

SEA TURTLES

	PTS ONSET	BEHAVIOR
NO SEA TURTLES	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.9	1.6
ISOPLETHS (feet)	3.1	5.2

MARINE MAMMALS

	LF Cetacean	MF Cetaceans	HF Cetaceans	PW Pinniped	OW Pinnipeds
UD INJ ONSET (SELcum isopleth, meters)	31.6	12.1	25.8	40.7	13.7
AUD INJ ONSET (SELcum isopleth, feet)	103.6	39.8	84.7	133.4	44.9
	ALL MM	HF CET. present	VHF Cet. present	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	7,356.4	LF Cet. present			
Behavior (RMS isopleth, feet)	24,135.2				

IMPACT PILE DRIVING REPORT

VERSION 2.0-Multi-Species: 2024

USCG Sitka Proposed

PRINT IN LANDSCAPE TO CAPTURE ENTIRE SCREEN

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

PROJECT INFORMATION	PEAK	SELss	RMS
Single strike level (dB)	203	177	190
Distance associated with single strike level (meters)	10	10	10
Transmission loss constant	15		
Number of piles per day	8		
Number of strikes per pile	500		
Number of strikes per day	4000		
Cumulative SEL at measured distance	213		

OTHER INFO 24-in steel WLB pier support pile installation

NOTES 0

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	ONSET OF PHYSICAL INJURY			BEHAVIOR
	Peak Isopleth	SEL_{cum} Isopleth		RMS Isopleth
		Fish ≥ 2 g	Fish < 2 g	
ISOPLETHS (meters)	6.3	542.9	631.0	4,641.6
Isopleth (feet)	20.7	1,781.1	2,070.1	15,228.3

NO FISHES

SEA TURTLES

	PTS ONSET		BEHAVIOR
	Peak Isopleth	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.1	40.0	100.0
Isopleth (feet)	0.4	131.1	328.1

NO SEA TURTLES

MARINE MAMMALS

	LF Cetacean	HF Cetaceans	VHF Cetaceans	PW Pinniped	OW Pinnipeds
AUD INJ ONSET (Peak isopleth, meters)	0.5	0.2	11.7	0.5	0.2
AUD INJ ONSET (Peak isopleth, feet)	1.8	0.5	38.3	1.5	0.5
AUD INJ ONSET (SEL_{cum} isopleth, meters)	998.2	127.4	1,544.6	886.7	330.5
AUD INJ ONSET (SEL_{cum} isopleth, feet)	3,274.8	417.8	5,067.7	2,909.2	1,084.4
	ALL MM	HF Cet. present	√HF Cet. presen	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	1,000.0	LF Cet. present			
Behavior (RMS isopleth, feet)	3,280.8				

IMPACT PILE DRIVING REPORT

VERSION 2.0-Multi-Species: 2024

USCG Sitka Proposed

PRINT IN LANDSCAPE TO CAPTURE ENTIRE SCREEN

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

PROJECT INFORMATION	PEAK	SELss	RMS
Single strike level (dB)	203	177	190
Distance associated with single strike level (meters)	10	10	10
Transmission loss constant	15		
Number of piles per day	3		
Number of strikes per pile	500		
Number of strikes per day	1500		
Cumulative SEL at measured distance	209		

OTHER INFO 24-in steel dolphin pile installation

NOTES 0

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	ONSET OF PHYSICAL INJURY			BEHAVIOR
	Peak Isopleth	SEL_{cum} Isopleth		RMS Isopleth
		Fish ≥ 2 g	Fish < 2 g	
ISOPLETHS (meters)	6.3	282.3	521.7	4,641.6
Isopleth (feet)	20.7	926.2	1,711.5	15,228.3

NO FISHES

SEA TURTLES

	PTS ONSET		BEHAVIOR
	Peak Isopleth	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.1	20.8	100.0
Isopleth (feet)	0.4	68.2	328.1

NO SEA TURTLES

MARINE MAMMALS

	LF Cetacean	HF Cetaceans	VHF Cetaceans	PW Pinniped	OW Pinnipeds
AUD INJ ONSET (Peak isopleth, meters)	0.5	0.2	11.7	0.5	0.2
AUD INJ ONSET (Peak isopleth, feet)	1.8	0.5	38.3	1.5	0.5
AUD INJ ONSET (SEL_{cum} isopleth, meters)	519.1	66.2	803.2	461.1	171.9
AUD INJ ONSET (SEL_{cum} isopleth, feet)	1,703.0	217.3	2,635.3	1,512.8	563.9
	ALL MM	HF Cet. present	√HF Cet. presen	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	1,000.0	LF Cet. present			
Behavior (RMS isopleth, feet)	3,280.8				

IMPACT PILE DRIVING REPORT

VERSION 2.0-Multi-Species: 2024

USCG Sitka Proposed

PRINT IN LANDSCAPE TO CAPTURE ENTIRE SCREEN

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

PROJECT INFORMATION	PEAK	SELss	RMS
Single strike level (dB)	203	177	190
Distance associated with single strike level (meters)	10	10	10
Transmission loss constant	15		
Number of piles per day	6		
Number of strikes per pile	500		
Number of strikes per day	3000		
Cumulative SEL at measured distance	212		

OTHER INFO 24-in steel floating dock guide pile installation

NOTES 0

Attenuation 0

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	ONSET OF PHYSICAL INJURY			BEHAVIOR
	Peak Isopleth	SEL_{cum} Isopleth		RMS Isopleth
		Fish ≥ 2 g	Fish < 2 g	
ISOPLETHS (meters)	6.3	448.1	631.0	4,641.6
Isopleth (feet)	20.7	1,470.3	2,070.1	15,228.3

NO FISHES

SEA TURTLES

	PTS ONSET		BEHAVIOR
	Peak Isopleth	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.1	33.0	100.0
Isopleth (feet)	0.4	108.2	328.1

NO SEA TURTLES

MARINE MAMMALS

	LF Cetacean	HF Cetaceans	VHF Cetaceans	PW Pinniped	OW Pinnipeds
AUD INJ ONSET (Peak isopleth, meters)	0.5	0.2	11.7	0.5	0.2
AUD INJ ONSET (Peak isopleth, feet)	1.8	0.5	38.3	1.5	0.5
AUD INJ ONSET (SEL_{cum} isopleth, meters)	824.0	105.1	1,275.1	732.0	272.8
AUD INJ ONSET (SEL_{cum} isopleth, feet)	2,703.3	344.9	4,183.3	2,401.5	895.2
	ALL MM	HF Cet. present	√HF Cet. presen	Phocids present	Otariids present
Behavior (RMS isopleth, meters)	1,000.0	LF Cet. present			
Behavior (RMS isopleth, feet)	3,280.8				

E.2: DTH SYSTEMS (STATIONARY SOURCE: Impulsive, Intermittent)

VERSION 3.1: 2024

KEY

	Action Proponent Provided Information
	NMFS Provided Information (Technical Guidance)
	Resultant Isopleth

STEP 1: GENERAL PROJECT INFORMATION

PROJECT TITLE	USGS Sikta Proposed
PROJECT/SOURCE INFORMATION	24-in steel WLB support pile installation

Please include any assumptions

PROJECT CONTACT	

STEP 2: WEIGHTING FACTOR ADJUSTMENT

Specify if relying on source-specific WFA, alternative weighting/dB adjustment, or if using default value

Weighting Factor Adjustment (kHz)¥	2	

¥ Broadband: 95% frequency contour percentile (kHz); For appropriate default WFA: See INTRODUCTION tab

† If a user relies on alternative weighting/dB adjustment rather than relying upon the WFA (source-specific or default), they may override the Adjustment (dB) (row 50), and enter the new value directly. However, they must provide additional support and documentation supporting this modification.

STEP 3: SOURCE-SPECIFIC INFORMATION

Unweighted $SEL_{cum\ (at\ measured\ distance)}$ = SEL_{ss} + 10 Log (# strikes)	**215.4**

SEL_{cum}

Single Strike SEL_{ss} ($L_{E,p,\ single\ strike}$) specified at "x" meters (Cell B30)	159
Strike rate (average strikes per second)	15
Duration to drive pile/drill hole (minutes)	120
Number of piles/holes per day	4
Transmission loss coefficient	15
Distance of single strike SEL_{ss} ($L_{E,p,\ single\ strike}$) measurement (meters)	10
Total number of strikes in a 24-h period	432000

PK

$L_{p,0\text{-}pk}$ specified at "x" meters (Cell G26)	184
Distance of $L_{p,0\text{-}pk}$ measurement (meters)*	10
$L_{p,0\text{-}pk}$ Source level	199.0

RESULTANT ISOPLETHS*

*Impulsive sounds have dual metric thresholds (SELcum & PK). Metric producing largest isopleth should be used.

Hearing Group	Low-Frequency Cetaceans	High-Frequency Cetaceans	Very High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
SEL_{cum} Threshold	183	193	159	183	185
AUD INJ Isopleth to threshold (meters)	**1,428.3**	**182.2**	**2,210.3**	**1,268.8**	**473.0**
PK Threshold	222	230	202	223	230
AUD INJ PK Isopleth to threshold (meters)	**NA**	**NA**	**NA**	**NA**	**NA**

"NA": PK source level is ≤ to the threshold for that marine mammal hearing group.

WEIGHTING FUNCTION CALCULATIONS

Weighting Function Parameters	Low-Frequency Cetaceans	High-Frequency Cetaceans	Very High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
a	0.99	1.55	2.23	1.63	1.58
b	5	5	5	5	5
f_1	0.168	1.73	5.93	0.81	2.53
f_2	26.6	129	186	68.3	43.8
C	0.12	0.32	0.91	0.29	1.37
Adjustment (-dB)†	**-0.03**	**-3.45**	**-21.19**	**-0.80**	**-5.23**

NOTE: If user decided to override these Adjustment values, they need to make sure to download another copy to ensure the built-in calculations function properly.

$$W(f) = C + 10\log_{10}\left\{\frac{(f/f_1)^{2a}}{[1+(f/f_1)^2]^a[1+(f/f_2)^2]^b}\right\}$$

E.2: DTH SYSTEMS (STATIONARY SOURCE: Impulsive, Intermittent)

VERSION 3.1: 2024

KEY

	Action Proponent Provided Information
	NMFS Provided Information (Technical Guidance)
	Resultant Isopleth

STEP 1: GENERAL PROJECT INFORMATION

PROJECT TITLE	USGS Sikta Proposed
PROJECT/SOURCE INFORMATION	24-in steel dolphin pile installation

Please include any assumptions

PROJECT CONTACT	

STEP 2: WEIGHTING FACTOR ADJUSTMENT

Specify if relying on source-specific WFA, alternative weighting/dB adjustment, or if using default value

Weighting Factor Adjustment (kHz)¥	2	

¥ Broadband: 95% frequency contour percentile (kHz); For appropriate default WFA: See INTRODUCTION tab

† If a user relies on alternative weighting/dB adjustment rather than relying upon the WFA (source-specific or default), they may override the Adjustment (dB) (row 50), and enter the new value directly. However, they must provide additional support and documentation supporting this modification.

STEP 3: SOURCE-SPECIFIC INFORMATION

Unweighted $SEL_{cum\ (at\ measured\ distance)}$ = SEL_{ss} + 10 Log (# strikes)	**214.1**

SEL_{cum}

Single Strike SEL_{ss} ($L_{E,p,\ single\ strike}$) specified at "x" meters (Cell B30)	159
Strike rate (average strikes per second)	15
Duration to drive pile/drill hole (minutes)	120
Number of piles/holes per day	3
Transmission loss coefficient	15
Distance of single strike SEL_{ss} ($L_{E,p,\ single\ strike}$) measurement (meters)	10
Total number of strikes in a 24-h period	324000

PK

$L_{p,0\text{-}pk}$ specified at "x" meters (Cell G26)	184
Distance of $L_{p,0\text{-}pk}$ measurement (meters)*	10
$L_{p,0\text{-}pk}$ Source level	199.0

RESULTANT ISOPLETHS*

*Impulsive sounds have dual metric thresholds (SELcum & PK). Metric producing largest isopleth should be used.

Hearing Group	Low-Frequency Cetaceans	High-Frequency Cetaceans	Very High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
SEL_{cum} Threshold	183	193	159	183	185
AUD INJ Isopleth to threshold (meters)	**1,179.0**	**150.4**	**1,824.5**	**1,047.4**	**390.4**
PK Threshold	222	230	202	223	230
AUD INJ PK Isopleth to threshold (meters)	**NA**	**NA**	**NA**	**NA**	**NA**

"NA": PK source level is ≤ to the threshold for that marine mammal hearing group.

WEIGHTING FUNCTION CALCULATIONS

Weighting Function Parameters	Low-Frequency Cetaceans	High-Frequency Cetaceans	Very High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
a	0.99	1.55	2.23	1.63	1.58
b	5	5	5	5	5
f_1	0.168	1.73	5.93	0.81	2.53
f_2	26.6	129	186	68.3	43.8
C	0.12	0.32	0.91	0.29	1.37
Adjustment (-dB)†	**-0.03**	**-3.45**	**-21.19**	**-0.80**	**-5.23**

NOTE: If user decided to override these Adjustment values, they need to make sure to download another copy to ensure the built-in calculations function properly.

$$W(f) = C + 10\log_{10}\left\{\frac{(f/f_1)^{2a}}{[1+(f/f_1)^2]^a[1+(f/f_2)^2]^b}\right\}$$

E.2: DTH SYSTEMS (STATIONARY SOURCE: Impulsive, Intermittent)

VERSION 3.1: 2024

KEY

	Action Proponent Provided Information
	NMFS Provided Information (Technical Guidance)
	Resultant Isopleth

STEP 1: GENERAL PROJECT INFORMATION

PROJECT TITLE	USGS Sikta Proposed
PROJECT/SOURCE INFORMATION	24-in steel floating dock support pile installation

Please include any assumptions

PROJECT CONTACT	

STEP 2: WEIGHTING FACTOR ADJUSTMENT

Specify if relying on source-specific WFA, alternative weighting/dB adjustment, or if using default value

Weighting Factor Adjustment (kHz)¥	2	

¥ Broadband: 95% frequency contour percentile (kHz); For appropriate default WFA: See INTRODUCTION tab

† If a user relies on alternative weighting/dB adjustment rather than relying upon the WFA (source-specific or default), they may override the Adjustment (dB) (row 50), and enter the new value directly. However, they must provide additional support and documentation supporting this modification.

STEP 3: SOURCE-SPECIFIC INFORMATION

Unweighted $SEL_{cum\ (at\ measured\ distance)}$ = SEL_{ss} + 10 Log (# strikes)	**215.4**

SEL_{cum}

Single Strike SEL_{ss} ($L_{E,p,\ single\ strike}$) specified at "x" meters (Cell B30)	159
Strike rate (average strikes per second)	15
Duration to drive pile/drill hole (minutes)	120
Number of piles/holes per day	4
Transmission loss coefficient	15
Distance of single strike SEL_{ss} ($L_{E,p,\ single\ strike}$) measurement (meters)	10
Total number of strikes in a 24-h period	432000

PK

$L_{p,0\text{-}pk}$ specified at "x" meters (Cell G26)	184
Distance of $L_{p,0\text{-}pk}$ measurement (meters)*	10
$L_{p,0\text{-}pk}$ Source level	199.0

RESULTANT ISOPLETHS*

*Impulsive sounds have dual metric thresholds (SELcum & PK). Metric producing largest isopleth should be used.

Hearing Group	Low-Frequency Cetaceans	High-Frequency Cetaceans	Very High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
SEL_{cum} Threshold	183	193	159	183	185
AUD INJ Isopleth to threshold (meters)	**1,428.3**	**182.2**	**2,210.3**	**1,268.8**	**473.0**
PK Threshold	222	230	202	223	230
AUD INJ PK Isopleth to threshold (meters)	**NA**	**NA**	**NA**	**NA**	**NA**

"NA": PK source level is ≤ to the threshold for that marine mammal hearing group.

WEIGHTING FUNCTION CALCULATIONS

Weighting Function Parameters	Low-Frequency Cetaceans	High-Frequency Cetaceans	Very High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
a	0.99	1.55	2.23	1.63	1.58
b	5	5	5	5	5
f_1	0.168	1.73	5.93	0.81	2.53
f_2	26.6	129	186	68.3	43.8
C	0.12	0.32	0.91	0.29	1.37
Adjustment (-dB)†	**-0.03**	**-3.45**	**-21.19**	**-0.80**	**-5.23**

NOTE: If user decided to override these Adjustment values, they need to make sure to download another copy to ensure the built-in calculations function properly.

$$W(f) = C + 10\log_{10}\left\{\frac{(f/f_1)^{2a}}{[1+(f/f_1)^2]^a[1+(f/f_2)^2]^b}\right\}$$

PROJECT TITLE	USGS Sitka Proposed
PROJECT/SOURCE INFORMATIONPlease include any assumptions	24-in steel pile
PROJECT CONTACT	

Fill in SPL and distances for peak and rms pressures, and read distance to threshold for appropriate model

Measured pressure	Peak	RMS
SPL =	184	167
Distance =	10	10

	Fish Meters to Threshold		Spreading Model	MarMam Meters to Threshold		
Spreading Model	Peak(180 dB)	RMS (150 dB)		RMS 180 dB	RMS 160 dB	RMS 120 dB
Spherical spreading	16	71	dB = 20*log(R1/R2)	2	22	2239
Cylindrical spreading	25	501	dB = 10*log(R1/R2)	1	50	501187
Practical spreading	18	136	dB = 15*log(R1/R2)	1	29.3	13593.6

Attachment B: Sitka Tribe of Alaska Letter of Support

SHEET'KÁ KWÁAN
SITKA TRIBE OF ALASKA

204 SIGINAKA WAY, SUITE 300
SITKA, ALASKA 99835
MAIN: 907-747-3207
FAX: 907-747-4915
SITKATRIBE.ORG

August 17, 2023

Captain Neal Armstrong, P.E.
Facilities Design & Construction Center
5505 Robin Hood Rd., Suite K
Norfolk, VA 23513

Re: U.S. Coast Guard Consultation for the construction of shoreside facilities and associated infrastructure

Dear Captain Armstrong:

Thank you for your presentation to the Tribal Council on August 16, 2023 and inviting Sitka Tribe of Alaska (STA) to engage in formal consultation for the construction of shoreside facilities and associated infrastructure necessary to homeport a new Sentinel Fast Response Cutter (FRC) at its facility in Sitka, Alaska (Sitka Moorings).

We are writing to let you know that the STA Tribal Council supports your efforts to acquire additional property, construct a dock to accommodate another Coast Guard ship in Sitka and station additional Coast Guard personnel/families in Sitka. We do not want our request for consultation to be viewed as opposition to the project.

Thank you for listening as Council members shared comments and provided you with some historical information about Japonski Island. We request the input be taken into consideration as the project moves forward.

Also, in particular, we hope to work with the Coast Guard to re-establish access to John Brown's Beach. Not necessarily relevant to the project you brought to us but very important to us, so we wanted to capture that in this letter.

Moving forward, we indicated further consultation with the Tribal Council would not be required since we support the project. Rather, we requested that the appropriate Coast Guard representatives coordinate with our staff as you work through NEPA and other environmental reviews that will be necessary. You can reach out to Jeff Feldpausch, Resource Protection

Director and provide a courtesy copy to Lisa Gassman, STA General Manager. They can be reach at Jeff.Feldpausch@sitkatribe-nsn.gov and Lisa.Gassman@sitkatribe-nsn.gov.

Please contact STA General Manager Lisa Gassman if you have any questions or concerns.

Sincerely,

Lawrence Widmark
Tribal Chairman