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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 217

[Docket No. 251205-0179]

RIN 0648-BN50

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Alaska LNG Project in Cook Inlet

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule; notification of issuance of Letter of Authorization.

SUMMARY: NMFS, upon request from 8 Star Alaska, LLC (8 Star Alaska), which is jointly owned by Glenfarne and Alaska Gasline Development Corporation (AGDC), is promulgating regulations to govern the taking of marine mammals incidental to the Alaska Liquefied Natural Gas (LNG) project in Cook Inlet, Alaska, over the course of 5 years. These regulations, which allow for the issuance of a Letter of Authorization (LOA) for the incidental take of marine mammals during the specified activities in the specified geographical region during the effective dates of the regulations, prescribe the permissible methods of taking and other means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat, as well as requirements pertaining to the monitoring and reporting of such taking.

DATES: Effective from January 1, 2026, through December 31, 2030.

ADDRESSES: Electronic copies of the application and supporting documents, the proposed rule and associated public comments, as well as a list of the references cited in this document, may be obtained online at:

https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-

authorizations-oil-and-gas. In case of problems accessing these documents, please call the contact listed below.

FOR FURTHER INFORMATION CONTACT: Kristy Jacobus, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Purpose of Regulatory Action

These regulations, promulgated under the authority of the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361 *et seq*.), establish a framework for NMFS to authorize the take of marine mammals incidental to activities associated with the Alaska LNG Project in Cook Inlet, Alaska.

Legal Authority for the Action

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1371(a)(5)(A)) directs the Secretary of Commerce, as delegated to NMFS, to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region for up to 5 years if, after notice and public comment, the agency makes certain findings and promulgates regulations that set forth permissible methods of taking pursuant to that activity and other means of effecting the "least practicable adverse impact" on the affected species or stocks and their habitat (see **Mitigation** section), as well as monitoring and reporting requirements.

Summary of Major Provisions Within the Rule

Following is a summary of the major provisions of this rule regarding 8 Star Alaska's activities:

- NMFS may authorize, through a LOA, the take of small numbers of marine mammals, by harassment only;

- Mitigation measures are required during certain activities should a marine mammal be detected within identified zones; and
- Restrictions related to beluga whales are required during summer months in the western portion of Cook Inlet.

Through adaptive management, the regulations will allow NMFS to modify (*e.g.*, remove, revise, or add to) the existing mitigation, monitoring, or reporting measures summarized above and required by the LOA, as appropriate.

Background

The MMPA prohibits the "take" of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are promulgated or an incidental harassment authorization is issued.

The MMPA provides that authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance and on the availability of the species or stocks for taking for certain subsistence uses (collectively referred to as "mitigation"); and requirements pertaining to the monitoring and reporting of the takings. The definitions of all applicable MMPA statutory terms used above are included in the

relevant sections below and can be found in section 3 of the MMPA (16 U.S.C. 1362) and NMFS regulations at 50 CFR 216.103.

Fixing America's Surface Transportation Act

This project is covered under Title 41 of the Fixing America's Surface Transportation Act, or "FAST-41." FAST-41 includes a suite of provisions designed to expedite the environmental review for covered infrastructure projects, including enhanced interagency coordination as well as milestone tracking on the public-facing Permitting Dashboard.

8 Star Alaska's project is listed on the Permitting Dashboard. Milestones and schedules related to the environmental review and permitting for the Alaska LNG Project can be found at *https://www.permits.performance.gov/permitting-project/fast-41-covered-projects/alaska-lng-project.*

Summary of Request

On December 5, 2024, NMFS received a request from 8 Star Alaska for regulations and a LOA to take marine mammals incidental to construction of LNG facilities in Cook Inlet, Alaska. Following NMFS' review of the application, 8 Star Alaska submitted a revised version on April 3, 2025, which was deemed adequate and complete. On April 8, 2025, NMFS published a notice of receipt (NOR) of application in the **Federal Register** (90 FR 15137), requesting comments and information during a 30-day public comment period related to 8 Star Alaska's request. NMFS received one letter from the Center for Biological Diversity and Cook Inletkeeper providing substantive comments and approximately 14,000 comments from members of the public expressing general opposition to 8 Star Alaska's proposed project but providing no specific concerns relevant to the information contained within 8 Star Alaska's application or to NMFS' determination that the application was adequate and complete. The comment letters from members of the public followed a generic template format in which respondents provided

comments that were identical or substantively the same. NMFS has reviewed the submitted material and considered it for promulgation of these regulations. NMFS published a proposed rulemaking and request for public comments in the **Federal Register** for 8 Star Alaska's project on July 29, 2025 (90 FR 35762, July 29, 2025). All comments were considered in development of this final rule (see **Comments and Responses** section).

Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment). NMFS is authorizing take of 12 species of marine mammals by Level B harassment and Level A harassment for a subset of 3 of these species. Neither 8 Star Alaska nor NMFS expect serious injury or mortality to result from the specified activities and neither may be authorized. However, since 8 Star Alaska's LNG facility construction activities are expected to last for 5 years, authorization under section 101(a)(5)(A) is appropriate.

NMFS previously promulgated regulations and issued an LOA to AGDC for the same work on September 15, 2020 (85 FR 59291, September 21, 2020), effective from January 1, 2021, through December 31, 2025. However, no work has been conducted during the effective period of that LOA, and none is planned prior to its expiration.

Description of the Specified Activity

8 Star Alaska will construct facilities to transport and offload LNG in Cook Inlet, Alaska, for export. Project activities include the construction of a Marine Terminal comprised of a temporary Marine Terminal Material Offloading Facility (MOF) and a permanent Product Loading Facility (PLF) on the east side of Cook Inlet, near Nikiski;

construction of a pipeline (referred to as the Mainline) across Cook Inlet; and construction of a Mainline MOF on the west side of Cook Inlet, north of Tyonek. The components of the construction activities that have the potential to expose marine mammals to sound levels that could result in take include vibratory and impact pile driving of steel sheet piles and 24-, 48-, 60-, and 66-inch (61-, 122-, 152.4-, and 167.6-centimer [cm]) steel pipe piles, as well as the use of anchor handling tugs (AHTs). The in-water work will occur over 5 years between January 1, 2026, and December 31, 2030. The construction window is based on the ice-free working window, which is from approximately April 1 through October 31 of each year. Pile driving will occur during daylight hours and is estimated to occur 6 days per week. Work for pipelaying will occur 24 hours per day, 7 days per week, and could occur during periods of low visibility. In-water pile-driving is expected to occur over an estimated 323 nonconsecutive days over the 5-year period, and use of AHTs used for pipelaying in construction of the Mainline is expected to occur over an estimated 55 nonconsecutive days during Years 3 and 4 of the project, for a total of 378 construction days over the 5 year period.

A detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed rule (90 FR 35762, July 29, 2025). Since that time, no changes have been made to the planned activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

Comments and Responses

NMFS published the proposed rule in the **Federal Register** on July 28, 2025 (90 FR 35762), beginning a 30-day comment period. It described, in detail, 8 Star Alaska's specified activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. In that document, we requested public input on the request for authorization described therein as well as our analyses, preliminary

determinations, and the proposed regulations, and requested that interested persons submit relevant information, suggestions, and comments.

During the 30-day public comment period, NMFS received letters from the Marine Mammal Commission (the Commission), Alaska Department of Fish & Game (ADF&G), Chickaloon Village Traditional Council (Chicakaloon Village), and Defenders of Wildlife; a joint comment letter from the Center for Biological Diversity, Alaska Wildlife Alliance, Cook Inletkeeper, Fairbanks Climate Action Coalition, Pacific Environment, the Alaska Center, and 350 Juneau (herein referred to as CBD *et al.*); and multiple comments from private citizens. CBD *et al*. gathered comments from their supporters and submitted a spreadsheet with over 11,000 comments from the general public expressing general opposition to the rule. All relevant substantive comments and NMFS' responses are summarized below. We organize our comment responses by major categories. The comments and recommendations are available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-oil-and-gas*. Please see the comment submissions for full details regarding the recommendations and supporting rationale.

The Commission submitted comments on the 2020 Proposed Rule for the Taking of Marine Mammals Incidental to Alaska LNG Project in Cook Inlet and referenced this letter in their submittal for this rule. A summary of their comments and NMFS' responses can be found in the notice of the 2020 final rule (85 FR 50720, August 17, 2020).

Impact Analysis

Comment 1: The Commission reviewed the datasets that NMFS used to determine its proposed source levels of 213 decibels (dB) peak sound pressure level (SPLpeak), 192 dB root-mean-square sound pressure level (SPLrms,) and 179 dB single strike sound exposure level (SELs-s) (see **Estimated Take of Marine Mammals** section in the proposed rule; 90 FR 35762, July 29, 2025) for impact installation of 48-inch (122 cm)

steel pipe piles and recommended instead that NMFS use the median source levels of 209 dB SPLpeak, 195 dB SPLrms, and 181 dB SELs-s from Caltrans (2020; Alameda, Vallejo, and Kitsap) and Austin *et al*. (2016), while omitting certain datasets that the Commission stated are inappropriate for use in informing appropriate proxy source levels. The Commission also recommended that these source levels be used to re-estimate Level A and Level B harassment zones for impact driving of 48-inch steel pipe piles and associated take numbers and that these source levels should be used for all future projects until NMFS finalizes recommendations related to proxy source levels.

Response: NMFS has reviewed the aforementioned data sets and partially concurs with the Commission's recommendation. NMFS agrees with the Commission that data from Antioch, Avon Wharf, and Navy Kitsap (Caltrans, 2020) should be excluded from consideration and that data from Austin *et al*. (2016) should be included. NMFS also agrees that certain incorrect source levels from Illingworth and Rodkin (2017) should not be used. However, NMFS disagrees that the source levels from Illingworth and Rodkin (2017) should be entirely disregarded. Therefore, for this final rule, NMFS has determined it appropriate to use median values of 208 dB SPLpeak, 195 dB SPLrms, and 180 dB SELs-s (Caltrans, 2020; Illingworth and Rodkin, 2017; Austin *et al.*, 2016) as source levels for impact installation of 48-inch steel pipe piles. Level A and Level B harassment zones, take numbers, and relevant shutdown zones were re-estimated for this final rule. See **Estimated Take of Marine Mammals** and **Mitigation** sections below for these changes. In general, NMFS plans to use these source levels as interim proxy values for impact installation of 48-inch steel pipe piles for future projects that do not have sound source level verification data available until recommendations regarding proxy source levels are finalized. However, final determinations regarding appropriate proxy source levels will be made by NMFS, in coordination with applicants, on a case-by-case basis for each project.

Comment 2: CBD *et al.* asserted that NMFS failed to consider whether Cook Inlet beluga whales (CIBWs) or other marine mammals would be taken incidental to geophysical surveys to be conducted using echosounders or side-scan sonar before pipe-laying activities.

Response: NMFS considered these possible impacts to CIBWs and other marine mammals. As described in the notice of the proposed rule (90 FR 35762, July 29, 2025), the planned acoustic survey equipment includes a single-beam echosounder, a multi-beam echosounder, and a side-scan sonar system, all of which operate at or above 200 kilohertz (kHz), which is outside the general hearing range of marine mammals. Therefore, take of marine mammals is not expected to result from the use of these sources.

Comment 3: CBD *et al.* questioned the efficacy of a soft start as mitigation, asserting that there is little information as to whether animals move away from the source and that "more harmful" take may occur despite the soft start requirement. CBD *et al.* stated both that the "efficacy of such measures is questionable," as well as that "such measures may prevent injury or other more harmful impacts." CBD *et al.* also stated that "the efficacy of [soft starts] as mitigation is questionable" and therefore additional mitigation is needed. CBD *et al.* further stated that NMFS failed to analyze potential take by Level B harassment from the use of soft starts for impact pile driving.

Response: As pointed out by CBD *et al*., animal response to soft starts is not completely understood. However, soft-start procedures are reasonably expected to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. Soft starts are required, among other reasons, to minimize the instances of Level A harassment during exposure to impulsive sounds. NMFS agrees with the comment that

soft starts may prevent injury or other more harmful impacts and is including soft start requirements for this project.

With regard to the commenters' assertion that additional mitigation beyond soft start is needed, soft start is not the only mitigation measure required for impact pile driving. The rule also includes a requirement for 8 Star Alaska to implement shutdown zones as well as a seasonal pile driving restriction for CIBW. If an animal were to elect not to move away from the pile driving site during a soft start, protected species observers (PSOs) would record the observation, and if the animal were to enter the shutdown zone, the pile driving activity would be shut down.

NMFS disagrees with the commenter that the agency did not analyze potential take of marine mammals incidental to noise produced during soft starts. Potential take is evaluated per 24-hour pile driving period based on the most impactful activity occurring during that 24-hour period. Therefore, because full-power pile driving necessarily follows soft start, the likelihood of take is appropriately evaluated based on the more impactful full-power pile driving period that began with and includes the period of soft start, and take estimates are not discounted based on the relatively lesser impact that occurs during soft start.

Comment 4: CBD *et al*. asserted that NMFS failed to consider whether dredging activities would result in take of CIBW or other marine mammals and failed to account for the potential effects of dredging on marine mammal habitat. They stated that dredging degrades water quality which can harm prey and can stir up contaminants from the sea floor, exposing CIBWs and their prey to toxins.

Response: As stated in the proposed rule, dredging activity would occur during the construction of the Marine Terminal MOF using either a hydraulic (cutter head) dredger or a mechanical dredger, and pipeline trenching would occur during pipeline laying operations. These activities typically have low noise levels (120-dB isopleths are

typically within 150 meters (m)). For example, URS (2007) measured underwater sound level of 141 dB referenced to 1 micropascal (re 1 μPa) root-mean squared (rms) (at 12 m) associated with U.S. Army Corps of Engineers (USACE) dredging activities at the Port of Alaska, resulting in an estimated 120-dB RMS isopleth of 135 m. In addition, these activities are typically associated with slow, predictable vessel movements. As a result, regardless of source level, it is unlikely that these activities would result in harassment of marine mammals, as defined by the MMPA, and CBD *et al.* provide no evidence to the contrary. While marine mammals may behaviorally respond in some small degree to the noise generated by dredging operations, given the slow, predictable movements of these vessels, and low source levels, NMFS does not expect 8 Star Alaska's dredging to result in the take of marine mammals.

Regarding potential impacts to water quality, approximately 42 hectares (103 acres) would be disturbed directly by dredging of the Marine Terminal MOF and trenching for the Mainline crossing, and another 486 hectares (1,200 acres) would be disturbed by the disposal of dredged material. Approximately 26 hectares (64 acres) of seafloor would be disturbed by installation of the Marine Terminal MOF, Mainline MOF, and Mainline Crossing. Additional area would be indirectly affected by the re-deposition of sediments suspended in the water column by the dredging/trenching and dredge disposal. Existing benthic communities would be temporarily lost during dredging in Cook Inlet, but this temporary loss is not expected to be significant due to the availability of additional benthic habitat in Cook Inlet. The physical effects on the benthic habitat from dredging would likely be of short duration due to the high energy and dynamic nature of the Cook Inlet seafloor and water column in these open water areas. Dredging would also temporarily increase turbidity in a localized area in Cook Inlet, but turbidity modeling suggests that the turbidity would return to baseline levels within 100 minutes

(Federal Energy Regulatory Commission, 2020). Therefore, disturbance from dredging is expected to be temporary and mild.

Regarding contaminants, while the Recovery Plan for the Cook Inlet Beluga Whale cited by CBD *et al*. identifies pollution as a threat, the Recovery Plan also notes that available information indicates that the magnitude of the pollution threat to CIBW appears low, though not all pollutants to which CIBW are exposed have been studied in that environment. For example, chemical analyses of water and dredging sediments from Cook Inlet found that contaminants analyzed were below management levels, and some were below detection limits (Frenzel, 2002 and U.S. Army Corp of Engineers, 2003 as cited in NMFS 2016). In addition, for the contaminants that have been studied, CIBWs generally had lower contaminant loads than did beluga whales from other populations (Becker *et al*., 2000, Lebeuf *et al*., 2004, NMFS 2008b, Becker 2009, DFO 2012, Reiner *et al*., 2011, Wetzel *et al*., 2010, Hoguet *et al*., 2013 as cited in NMFS 2016).

Comment 5: Defenders of Wildlife and CBD *et al*. asserted that NMFS failed to account for take of marine mammals due to vessel noise, aside from tugs engaged in anchor handling. CBD *et al.* described what it characterizes as "behavioral responses to vessel noises" and described vessel noise as a stressor relevant to CIBW.

Response: NMFS disagrees that exposure to vessel noise would generally be expected to result in responses that qualify as take as defined under the MMPA. Vessel noise is generally transient, and NMFS considers it to be part of the baseline soundscape. There are also multiple contextual factors (including the signal characteristics (*i.e.*, impulsivity, intensity, frequency, and duration) and the spatio-temporal (*i.e.*, space and time) acoustic footprint of vessels as well as bearing and distance, predictability of source movement, and likelihood of habituation to routine vessel traffic) that minimize the likelihood of behavioral disturbance even if a marine mammal is exposed to elevated sound levels relative to background sound levels. As such, take from vessel noise, with

the exception of AHTs under load, is not expected and was neither proposed nor will be authorized.

As explained in the proposed rule, given the slow, predictable, and generally straight path (or stationary nature) of vessels associated with the specified activity, the likelihood of these activities causing responses that would qualify as harassment under the MMPA is considered relatively low. Nevertheless, we have quantified the potential exposures from tugs engaged in anchor handling activities, assumed that these exposures would equate to take, and analyzed the impacts of the assumed takes, which we authorize here. While CBD *et al.*'s comment described behavior responses to vessel noise, allegedly a stressor, the comment did not adequately support its contention that these effects reasonably likely to result in take as defined under the MMPA.

Comment 6: CBD *et al.* recommended that NMFS consider using a dose-response function to calculate take by Level B harassment, rather than the single-threshold approach.

Response: NMFS acknowledges that the dose-dependent approach to calculating estimated take by Level B harassment may be more reflective of the complexity of real-world behavioral disturbance (Ellison *et al*., 2012). As described in the proposed rule, based on the available science and the practical need to use a threshold based on a metric that is predictable, measurable, and simple to implement for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment via a single received level (*i.e.*, a step function), rather than employing a more complicated dose-response function. Indeed, CBD *et al*. made no specific recommendations regarding the details of any dose-response function, and there is no scientific consensus regarding what criteria might be more appropriate. Defining sound levels that disrupt behavioral patterns is difficult because responses depend on the context in which the animal receives the sound, including an animal's behavioral mode

when it hears sounds (*e.g.*, feeding, resting, or migrating), prior experience, and biological factors (*e.g.*, age and sex). Other contextual factors, such as signal characteristics, distance from the source, and signal to noise ratio, may also help determine response to a given received level of sound. Therefore, levels at which responses occur are not necessarily consistent and can be difficult to predict. The relatively simple step function criteria adequately account for the potential for Level B harassment to occur.

NMFS recognizes the potential for Level B harassment at exposures to received levels below 160 dB rms, in addition to the potential that animals exposed to received levels above 160 dB rms will not respond in ways constituting behavioral harassment. While in practice this threshold works as a step-function, *i.e.*, animals exposed to received levels above the threshold are considered to be "taken" and those exposed to levels below the threshold are not, it in fact represents a mid-point of likely behavioral responses (which are extremely complex depending on many factors including species, noise source, individual experience, and behavioral context). The function recognizes that some animals exposed to levels below the threshold will react in ways that are appropriately considered take, while others that are exposed to levels above the threshold will not. Use of the 160-dB threshold allows for a workable quantitative estimate of take, while we qualitatively address the variation in responses across different received levels in our discussion and analysis.

Overall, while there may be methods of assessing likely behavioral response to acoustic stimuli that better capture the variation and context-dependency of those responses than the step-function used here, there is no scientific consensus on what that method should be. For future marine mammal behavioral criteria, NMFS will be exploring various factors including the use of a dose-response function in helping better

predict behavioral disturbance and, as recommended by CBD *et al.*, will consider using a dose-response function in the future, as available information allows.

Comment 7: Chickaloon Village and several members of the public asserted that NMFS should not issue the incidental take regulations without a scientific understanding of risks to the CIBW.

Response: NMFS shares the commenters' concern regarding the impacts of human activities on CIBWs and is committed to supporting the conservation and recovery of the species to the extent appropriate under the MMPA. Under section 101(a)(5)(A) of the MMPA, NMFS considers the at-risk status of CIBWs (and other species) in both the negligible impact analysis and through consideration of impact minimization measures that result in the least practicable adverse impact on those species. For example, the mitigation measures include time-area restrictions on pile driving and AHT activity to protect CIBWs, vessel transit restrictions in the Susitna Delta area, and shutdown zones equivalent to the Level B harassment zones for CIBWs. Section 101(a)(5)(A) also mandates that NMFS "shall issue" an Incidental Take Authorization (ITA), provided the necessary findings are made for the specified activity for which incidental take is requested.

In accordance with our implementing regulations at 50 CFR 216.104(c), we use the best available scientific evidence to determine whether the taking by the specified activity within the specified geographic region will have a negligible impact on the species or stock and will not have an unmitigable adverse impact on the availability of such species or stock for subsistence uses. Based on the scientific evidence available, NMFS determined that the impacts of the 8 Star Alaska facility construction activities would meet these standards, and 8 Star Alaska has developed a suite of rigorous monitoring and mitigation measures to reduce impacts to CIBWs and other marine mammals to the lowest level practicable.

Our analysis indicates that issuance of these regulations will not adversely affect annual rates of recruitment or survival of the CIBW. Additionally, the Endangered Species Act (ESA) Biological Opinion determined that the issuance of regulations is not likely to jeopardize the continued existence of the CIBW or destroy or adversely modify CIBW critical habitat. The Biological Opinion also outlined Terms and Conditions and Reasonable and Prudent Measures to reduce impacts, which have been incorporated into the rule. Therefore, based on the analysis of potential effects, the parameters of the activity, and the rigorous mitigation and monitoring program, NMFS determined that the activity would have a negligible impact on CIBW.

As described in this notice, NMFS has made the necessary findings, as required by Section 101(a)(5)(A) of the MMPA and NMFS' implementing regulations, and therefore, the MMPA requires issuance of incidental take regulations.

Monitoring and Reporting

Comment 8: The Commission recommended that NMFS specify in the regulatory text that for all pile-driving activities, a minimum of two PSOs must be on duty (1) at each specified pile-driving location at all times when a single hammer is used and (2) to monitor the area around each active hammer, totaling four PSOs at all times during concurrent pile driving.

Response: NMFS partially concurs with the Commission's recommendations. NMFS agrees that the location should be specified and has edited the regulatory text to include location of pile driving activities (*i.e.*, on either the east or west side of Cook Inlet). Although NMFS agrees with the Commission that the number of PSOs should be increased for concurrent pile driving, NMFS has determined that a minimum of three PSOs should be required for concurrent pile driving. One PSO should be present for the near field for each active hammer. Concurrent pile driving will occur at the same site, and the far field will be virtually the same for both hammers. Therefore, NMFS has

determined that a minimum of one PSO should be sufficient to monitor the far field. NMFS has therefore revised in the regulatory text of this final rule that a minimum of three PSOs must be present for all concurrent pile driving (See § 217.45(6)(i)).

Comment 9: The Commission recommended that NMFS clarify in the regulatory text that 8 Star Alaska conduct sound source verification (SSV) measurements at the beginning of pile driving activities and clarify that SSV measurements must be conducted at each location, given that pile driving will occur on both the west side and east side of Cook Inlet. The Commission also suggested that, in the regulatory text, NMFS require 8 Star Alaska to monitor a minimum of two piles of each size, type, and installation method with and without the sound attenuation device at each location.

Response: NMFS concurs with the Commission that SSV should be conducted at the beginning of pile driving activities at each location and has made these corrections to the regulatory text in §§ 217.44(n) and 217.45(b)(1) of this final rule.

NMFS agrees that in addition to the requirement to measure a minimum of two piles of each type and size, installation method should also be added to the regulatory text in § 217.45(b)(1)(ii) of this final rule. Pursuant to this change, 8 Star Alaska must monitor a minimum of two piles of each size, type, and installation method with and without the sound attenuation device at each location. 8 Star Alaska will coordinate with NMFS to determine the appropriate methods, such as conducting SSV on two piles with and two piles without the sound attenuation device, or two piles total with the sound attenuation device turned on and off and, as such, NMFS has not specified a method in the regulatory text. NMFS will work with 8 Star Alaska during development of the SSV plan to ensure that it will employ appropriate methods to assess the effectiveness of the sound attenuation device.

Comment 10: The Commission recommended that SSV measurements must be made on an appropriate number of each concurrent pile driving scenario in consultation with NMFS and as specified in the final SSV plan.

Response: NMFS has determined that SSV specific to concurrent pile driving scenarios is not necessary, as Level A and Level B harassment isopleths for concurrent pile driving may be estimated on the basis of the SSV results for the single hammer pile driving scenarios and methods as described in the **Estimated Take of Marine Mammals** in this notice to estimate isopleths. Therefore, NMFS has not required SSV for concurrent pile driving in the regulatory text.

If 8 Star Alaska decides to conduct SSV for concurrent pile driving, NMFS will work with 8 Star Alaska during development of the detailed SSV plan regarding the details of that effort.

Comment 11: The Commission recommended that NMFS provide the detailed SSV plan to the Commission for review.

Response: NMFS declines to provide the Commission with the detailed SSV plan for review. The objectives of the proposed acoustic monitoring were explained in the proposed rule, the basic methodological details will follow widely accepted practices, and NMFS believes that the appropriate details regarding the SSV plans were noticed and believes appropriate details of the SSV were provided during the rulemaking process.

Comment 12: The Commission recommended that NMFS include in the regulatory text the requirement that 8 Star Alaska report the extent of the Level A and Level B harassment zones and transmission loss values for attenuated and unattenuated impact and vibratory installation of each pile size and type, including the concurrent pile driving scenarios.

Response: NMFS agrees that 8 Star Alaska must report the results of the SSV and has added a requirement to report transmission loss values in § 217.45(b)(1)(iv)(F).

However, NMFS disagrees that a requirement to report the exact numeric extent of the Level A and Level B harassment zones for attenuated and unattenuated impact and vibratory installation of each pile size/type needs to be reflected in the regulatory text because the required data, including sound source levels and transmission loss values, will allow for calculation of these zones. As described in the preamble of the proposed rule, 8 Star Alaska may propose revised estimated Level A and Level B harassment zones (for the purpose of monitoring and reporting) and adjusted shutdown zones for NMFS review and approval following the analysis of SSV results. It is up to 8 Star Alaska if they would like to request adjustments of Level A and Level B harassment zones, and, therefore, it is not necessary to require that they report these zone sizes in the regulatory text. When reviewing the detailed SSV plan, NMFS will ensure that 8 Star Alaska provides the correct reporting elements in order to request adjustment of the Level A and Level B harassment zones if they so choose.

Mitigation and Least Practicable Adverse Impact

Comment 13: CBD *et al.* stated that NMFS previously stated that the use of bubble curtains during vibratory pile driving is an effective and important mitigation measure for CIBW (89 FR 85686, October 29, 2024) but failed to require bubble curtains as well as other noise reduction technologies such as pile caps, dewatered cofferdams, and other physical barrier mitigations.

Response: NMFS fully considered whether requiring the use of bubble curtains or other sound attenuation methods was appropriate for this rulemaking and included a requirement to use such methods if proven effective in the project environment in both the proposed rule and this final rule.

Where conditions are appropriate, bubble curtains and cofferdams are generally the most common noise attenuation methods used in construction projects. Pile caps are generally used, regardless of regulatory requirements, to protect piles and equipment

during impact pile driving. While NMFS expects that pile caps will likely be used during this project due to their common usage for the aforementioned purposes, we do not typically consider pile caps to be an effective noise mitigation method. They are typically made of wood or plastic and are designed to compress and fracture during use, limiting their consistency with respect to noise mitigation and potentially leading to safety issues if replaced during hammer operations (Caltrans, 2020).

As described in the proposed rule and finalized here, 8 Star Alaska will use a noise attenuation device, such as a bubble curtain, and test it for effectiveness through SSV at the beginning of pile driving. If the results show the device to be effective, *i.e.*, at least a 2 dB source reduction is achieved, the LOA will require 8 Star Alaska to use the device throughout construction. If the device is not found to be effective, 8 Star Alaska will not be required to use it. The use of bubble curtains and other sound attenuation devices can be time consuming and costly and, therefore, if not effective, the incidental take regulations do not require their use.

NMFS acknowledges describing bubble curtains as effective and important mitigation measures for CIBW, but that assertion was made in regards to construction at the Port of Alaska in Anchorage. For the Port of Alaska project, bubble curtains during vibratory pile driving were expected to minimize the potential for impacts to CIBWs transiting through the relatively narrow Knik Arm to critical foraging areas. Further, outside this context, NMFS does not typically agree that use of a sound attenuation device is warranted for vibratory pile driving due to the lower potential for more harmful impact from vibratory pile driving. Finally, a bubble curtain may not be effective at mitigating impacts in the construction area at the Alaska LNG project sites given the locations and the strong currents in Cook Inlet. Bubble curtains create a “wall” of bubbles around the pile, allowing for attenuation of sound. Strong currents, such as those in Cook Inlet, can disrupt the barrier of bubbles, reducing or negating the expected sound

attenuation from the bubble curtain. 8 Star Alaska is required to test the effectiveness of a bubble curtain or other sound attenuation device, and the device will be used if it provides at least 2 dB reduction in sound.

As described in the response to comment 17, when considering the least practicable adverse impact, NMFS takes into consideration the degree to which the implementation of the measure is expected to reduce impacts and considers the practicability of the measures for applicant implementation. 8 Star Alaska must complete construction during the ice-free period. While certain additional sound attenuation devices, such as dewatered cofferdams, are typically considered effective, use of these devices would likely result in delays and extension of the project, due to the time needed to construct them, rendering them impracticable.

Comment 14: The Commission recommended that NMFS include in the regulatory text the requirements that, if an unconfined or confined bubble curtain is used, specific standard performance measures must be met.

Response: NMFS agrees that any sound attenuation device must meet minimum requirements to ensure that the sound attenuation device is being used properly. Therefore NMFS has included a measure in § 217.44(n)(1) of this final rule requiring that any sound attenuation device used by 8 Star Alaska must meet minimum requirements as determined by NMFS in the SSV plan.

Comment 15: The Commission noted that NMFS did not specify whether the 2-dB attenuation from the sound attenuation device must be verified in the near-field (at the 10 m distance), the far-field (1 kilometer [km] or near the extent of the Level B harassment zone), or in both. The Commission recommended that in the regulatory text NMFS require 8 Star Alaska to use the sound attenuation device if a reduction of at least 2 dB is achieved in both the near and the far field.

Response: NMFS agrees that sound measurements should be conducted in both the near field and the far field. When 8 Star Alaska is developing its detailed SSV plan, NMFS will work with them to ensure that these measurements adhere to available best practices and are properly designed to evaluate the efficacy of the sound attenuation device. However, NMFS disagrees that 8 Star Alaska should only be required to use the sound attenuation device if at least 2 dB of sound reduction is achieved in both the near-field and far-field. Effectiveness of noise attenuation systems is traditionally measured in the near field (*e.g.*, 10 m) due to the complexity of sound propagation, and in this case prevents noise contamination from other sources at distance. NMFS additionally notes that the conservation value of a bubble curtain is not quantified simply by the broadband sound reduction, but by reduction of sound at specific frequencies to which marine mammals are more sensitive. Therefore, NMFS finds that if at least a 2-dB reduction of sound is measured in either the near- or far-field, the selected bubble curtain or other sound attenuation device would provide sufficient conservation benefit to warrant inclusion in the suite of measures necessary to effect the least practicable adverse impact on marine mammal species or stocks and should be employed for the duration of impact pile driving.

Comment 16: CBD *et al*. stated that NMFS must include in the regulatory text a prohibition on pile driving associated with the Mainline MOF from June 1 to September 7 and a requirement that in-water pile driving must only occur during daylight hours. CBD *et al.* also recommended that NMFS prohibit all activities at night, in bad weather, or other conditions when visibility is low.

Response: NMFS agrees with the commenter that it is appropriate to include the requirement that 8 Star Alaska must not conduct pile driving associated with the Mainline MOF from June 1 to September 7 in the regulatory text, and has made that addition under § 217.44(f) of this final rule.

NMFS disagrees with the recommendation to prohibit all activities at night, in bad weather, or other conditions when visibility is low, and has not adopted it. Some activities, such as dredging, are not expected to result in take of marine mammals, and therefore prohibitions related to these actions are not relevant. For other activities for which take is expected, 8 Star Alaska needs to complete work during the ice free season and therefore plans to conduct some work at night, including dredging and pipelaying, as necessary to meet that objective. 8 Star Alaska plans to conduct pile driving during daylight hours, though it is unnecessary to preclude activity outside of daylight hours should the need arise (*e.g.*, on an emergency basis or to complete driving of a pile begun during daylight hours, should the construction operator deem it necessary to do so). If visibility degrades such that the entirety of a corresponding shutdown zone is not visible during impact pile driving, or at least 2 km during vibratory pile driving, pile driving may continue only until the current segment of the pile is driven, and no further sections or additional piles may be driven until conditions improve such that the zones can be effectively monitored. We note that NMFS' Biological Opinion, issued pursuant to section 7 of the ESA, requires that pile driving only be conducted during daylight hours, and 8 Star Alaska must abide by the reasonable and prudent measures and terms and conditions of the Biological Opinion and Incidental Take Statement issued by NMFS pursuant to section 7 of the ESA.

Comment 17: CBD *et al.*, citing *Natural Resources Defense Council (NRDC)* v. *Pritzker,* 828 F.3d 1125, 1134 (9th Cir. 2016), and members of the public asserted that NMFS failed to require mitigation measures sufficient to ensure the least practicable adverse impact on marine mammals including the CIBW. CBD *et al.* asserted that NMFS has conflated the negligible impact determination and the separate least practicable adverse impact requirement. CBD *et al.* also contended that the required mitigation measures fail to ensure the least practicable adverse impact as required by the MMPA. As

part of its rationale, CBD *et al.* stated that NMFS "failed to include several mitigation measures required" in the 2020 rule. In a related comment, Defenders of Wildlife stated that it generally supports the recommendations made by the Commission in its comment letter on the proposed rule and that absent the recommended changes to regulatory language regarding the use of sound attenuation devices; the performance, reporting and use of SSV; and the number and placement of PSOs, NMFS will have failed to include measures to ensure the least practicable adverse impact as required by the MMPA.

Response: NMFS disagrees with CBD *et al*.'s unexplained assertion that we have inappropriately conflated the negligible impact determination with the separate least practicable adverse impact requirement. NMFS concurs with CBD regarding the holding in *NRDC* v. *Pritzker* that "[c]ompliance with the 'negligible impact' requirement does not mean there [is] compliance with the 'least practicable adverse impact' standard." 828 F.3d at 1134. The "negligible impact" and "least practicable adverse impact" requirements are distinct, even though both statutory standards refer to species and stocks.

The MMPA focuses on reducing impacts from human activities at the species or stock (*i.e.*, population) level. See 16 U.S.C. 1361 (finding that species and population stocks are or may be in danger of extinction or depletion; that species and population stocks should not diminish beyond being significant functioning elements of their ecosystems; and that species and population stocks should not be permitted to diminish below their optimum sustainable population level). Annual rates of recruitment (*i.e.*, reproduction) and survival are the key biological metrics used in the evaluation of population-level impacts, and in practice these same metrics are also used in the evaluation of population-level impacts for the least practicable adverse impact standard. Recognizing this common focus of the least practicable adverse impact and negligible impact provisions on the "species or stock" does not mean that NMFS conflates the two

standards; despite some common statutory language, we recognize the two provisions are different and have different functions.

In *NRDC* v. *Pritzker,* the Ninth Circuit stated, "[t]he statute is properly read to mean that even if population levels are not threatened *significantly,* still the agency must adopt mitigation measures aimed at protecting *marine mammals* to the greatest extent practicable in light of military readiness needs." *Pritzker,* 828 F.3d at 1134 (emphases added). This statement is consistent with our understanding that even when the effects of an action satisfy the negligible impact standard (*i.e.*, in the court's words, "population levels are not threatened significantly"), the agency must still prescribe mitigation under the least practicable adverse impact standard. However, as the statute indicates, the focus of both standards is ultimately the impact on the affected "species or stock"; the standards are not solely focused on or directed at the impact on individual marine mammals.

While the Ninth Circuit's reference to "marine mammals" rather than "marine mammal species or stocks" in the italicized language above might be construed as a holding that the least practicable adverse impact standard applies at the individual "marine mammal" level, *i.e.*, that NMFS must require mitigation to minimize impacts to each individual marine mammal unless impracticable, such an interpretation does not accurately reflect the court's decision, which turned on the court's determination that the agency had not given separate and independent meaning to the least practicable adverse impact standard apart from the negligible impact standard and its conclusion that the agency had failed to meet the latter standard. Moreover, the court's use of the term "marine mammals" was not addressing the question of whether the standard applies to individual animals as opposed to the species or stock as a whole.

We recognize that while consideration of mitigation can play a role in a negligible impact determination, consideration of mitigation measures extends beyond that analysis. In evaluating what mitigation measures are appropriate, as required by the statute and

implementing case law NMFS considers the potential impacts of the specified activity, the availability of measures to minimize those potential impacts, and the practicability of implementing those measures.

Although some mitigation measures from the 2020 rule are not included in the final rule, the final rule's mitigation measures ensure the least practicable adverse impact on marine mammals as required by the MMPA. As described in response to comment 18, shutdown zones have been modified from that of the 2020 rule to reflect updated source levels and changes to Level A and Level B harassment isopleths. Additionally, NMFS did not carry forward a requirement that in-water pile driving must occur only during daylight hours. As described in response to comment 16, NMFS determined that it was not necessary to preclude 8 Star Alaska from pile driving outside of daylight hours. If visibility degrades such that the entirety of a corresponding shutdown zone is not visible during impact pile driving, or at least 2 km during vibratory pile driving, pile driving may continue only until the current segment of the pile is driven, and no further sections or additional piles may be driven until conditions improve such that the zones can be effectively monitored. Finally, NMFS did not carry forward a mitigation measure that stated that, "Other than in-water sheet pile driving and pile removal, anchor handling, trenching, pipe laying, and vessel transits related to these activities [8 Star Alaska] may not engage in in-water sound producing activities within 10 miles (16 km) of the mean higher high water (MHHW) line of the Susitna Delta (Beluga River to the Little Susitna River) between April 15 and October 15 which produce sound levels in excess of 120 dB rms re 1μPa @ 1 m." This mitigation measure was replaced with a measure that prohibits pile driving or AHT activities with Level B harassment isopleths that would extend shoreward of the mean lower low water (MLLW) line in the Susitna River Delta. The intent of this change was to enhance clarity and protective value.

NMFS worked with 8 Star Alaska to develop a suite of rigorous mitigation measures that NMFS has determined provide the means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat (see **Mitigation** section for a full description of all mitigation measures).

As described in this notice and the proposed rule, NMFS considers two primary factors when evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable. These factors are:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat, as well as subsistence uses. This evaluation considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned); and

(2) The practicability of the measures for applicant implementation, which may consider such things as cost and impact on operations.

Taking these factors into consideration, NMFS has determined that the mitigation measures provide the means of effecting the least practicable adverse impact on the affected species and stocks, including the CIBW. Please see NMFS responses to comments 13-15 regarding use of sound attenuation devices, comments 9-12 regarding SSV, and comment 8 regarding number and placement of PSOs. Responses to additional mitigation recommendations are included in responses to comments 18-23.

Comment 18: CBD *et al.* stated that NMFS does not ensure the least practicable adverse impact because it is requiring smaller shutdown zones for this rule than that of the final rule for the Taking of Marine Mammals Incidental to Alaska Liquefied Natural

Gas Project in Cook Inlet published on August 17, 2020 (85 FR 50720) (herein referred to as the 2020 rule).

Response: Although the shutdown zones in this final rule differ from those adopted in the 2020 rule, they meet the statutory standard of ensuring the least practicable adverse impact. In this final rule, for all species aside from CIBW, shutdown zones were prescribed to avoid or minimize Level A harassment through consideration of the estimated Level A harassment zone sizes in context of the expected distance at which species are expected to be observable by PSOs. For example, the record reflects that low frequency cetaceans could be visible to PSOs up to 2,000 m away and high and very high frequency cetaceans, phocids, and otariids could be visible up to 400 m away. Therefore, when the Level A harassment zone was smaller than these visible zones, the shutdown zone was set at approximately the estimated Level A harassment zone distance. If the Level A harassment zone was larger than the distance within which we expect these species to be detectable under typical conditions, the shutdown zone was reduced to that expected detection distance. There is thus no functional distinction between these shutdown zone sizes. This approach is consistent with CBD *et al.*'s statement that use of zones larger than what can be observed is "meaningless."

For CIBW, shutdown zones were prescribed to avoid or minimize take by Level A and Level B harassment, and therefore, shutdown zones were aligned with the Level B harassment zones. Recognizing that some CIBW shutdown zones are larger than what PSOs can reliably observe, these zones are functionally equivalent to a requirement to shut down upon detection at any distance (within the estimated harassment zones), which is warranted based on the status of this stock (note that take by Level B harassment of CIBW is authorized).

Some of the CIBW shutdown zones are smaller in this final rule than in the 2020 rule as a result of our incorporation of updated scientific information to our analysis. For

example, for impact installation of 24-inch and 48-inch steel pipe piles, NMFS updated the sound source levels used for pile driving in this rule from those used in the 2020 rule.

Furthermore, the 2020 final rule prescribed shutdown zones by grouping piles based on location and installation method. For example, in the 2020 final rule the Level B harassment zones for impact installation of 48-inch and 60-inch pipe piles at the PLF were determined to be 3,593 m and 2,254 m, respectively. The shutdown zones were prescribed inclusive of both of these pile types, requiring a 3,600 m shutdown for CIBWs for impact installation of both 48- and 60-inch steel pipe piles at the PLF, even though the Level B harassment zone for impact installation of the 60-inch pipe pile is over 1,000 m smaller than the shutdown zone. This larger shutdown zone does not provide any further protective value for the CIBW, but was a simpler way of prescribing a shutdown zone. Therefore, the Level B harassment isopleths vary between the 2020 rule and this final rule. Nonetheless, in both the 2020 final rule (85 FR 50720, August 17, 2020) and this final rule, the CIBW shutdown zones were prescribed to avoid Level A harassment and minimize Level B harassment for CIBW.

Comment 19: CBD *et al*. asserted that NMFS should restrict construction and/or vessel traffic in areas of Cook Inlet other than the Susitna River Delta, such as near the mouth of the Kenai River, Trading Bay, or Tyonek. Further, NMFS included a mitigation measure that prohibits pile driving or AHT activities with Level B harassment isopleths that would extend shoreward of the MLLW line in the Susitna Delta (Beluga River to the Little Susitna River) from April 15 through October 15, and CBD *et al.* asserted that NMFS failed to ensure the least practicable adverse impact because it did not prohibit these activities throughout the project area Cook Inlet from April 15 through October 15. Defenders of Wildlife recommended that NMFS consider mitigation measures in other locations such as the Kenai River.

Response: Additional measures to restrict construction and/or vessel traffic in other areas of Cook Inlet, as recommended by CBD *et al.*, do not provide sufficient mitigation benefit to warrant the additional operational costs associated with implementation of the measures, and so do not meet the least practicable adverse impact requirement under the MMPA. The Susitna River Delta is a known hotspot for CIBWs, particularly in the summer and fall months. Groups of 200 to 300 individuals, including adults, juveniles, and neonates, have been observed in the Susitna River Delta area in recent years (McGuire *et al*., 2014; McGuire *et al*., 2020). Acoustic recorders at the Little Susitna River detected a peak concentration of CIBWs from late May to early June, and a large peak from July through August (Castellote *et al*., 2015). At the Beluga River, acoustic recorders detected three peaks of occurrence: mid-February to early April, June to mid-July (the strongest peak), and mid-November and December (Castellote *et al*., 2016). The peaks in May and June appear to coincide with eulachon runs (Vincent-Lang and Queral 1984), and the peaks from June and July coincide with salmon runs (particularly silver and chinook salmon; Brenner, *et al*., 2019). Given the high numbers of beluga whales and the critical foraging in this area as well as the proximity of 8 Star Alaska's project to the Susitna River Delta, NMFS deemed it appropriate to require time/area restrictions and vessel speed restrictions for the Susitna River Delta.

CIBWs were historically seen in and around the Kenai River during June aerial surveys conducted by ADF&G in the late 1970s and early 1980s and by NMFS starting in 1993 (Shelden *et al*., 2015b). Despite the historic sightings (1970s-1990s) of CIBWs throughout the summer (June-August) in the area, recent visual and acoustic detections suggest the presence of CIBWs in the fall and winter (late August through March) (Kumar *et al*., 2024). Evaluation of photo-identification studies from 2005 to 2017 suggest that the presence of beluga whales in the Kenai River Delta is much more sporadic than other areas (McGuire *et al*., 2020), with beluga whales present one day and

absent the next, and the numbers present on any given day are not expected to rise to that of other areas of Cook Inlet, such as thee Susitna River Delta. NMFS further notes that although Level B harassment isopleths from vibratory pile driving could reach Kenai River Delta, no construction is planned in this area. Because of the expected low numbers of CIBWs and the distance of construction to the Kenai River Delta (approximately 15 km [9.3 mi]) additional mitigation measures in this area are not warranted. In the 1970s and 1980s, CIBWs were seen in Trading Bay during June aerial surveys, but from the early 1990s on, CIBWs were not seen in this region during the June aerial surveys (Shelden *et al.*, 2015a). Acoustic monitoring conducted by Castellote *et al.* (2020) detected the presence of CIBWs in the Trading Bay area in the winter with a few detections in August-October. 8 Star Alaska's construction is not expected to occur in Trading Bay, although it is possible that some Level B harassment isopleths from vibratory pile driving at the Marine Terminal near Nikiski may extend into parts of Trading Bay. Furthermore, the numbers of CIBWs are not expected to be near that of the Susitna River Delta and construction is expected to occur from April to October, times in which CIBWs are not known to frequent Trading Bay.

NMFS is aware that CIBWs may be seen near Tyonek. From December 2015 through January 2016, Tyonek Platform personnel observed 200 to 300 CIBWs regularly, in the open water areas between ice sheets, although this was not previously a known area of occurrence (NMFS, 2019b). However, NMFS is not aware of such an occurrence near Tyonek platform since 2016, and notes these observations of large numbers of CIBWs occurred during a time of the year (winter) when 8 Star Alaska does not plan to conduct construction. Movement data from 14 CIBWs between May 1999 and March 2003 showed that CIBWs concentrated in areas near Tyonek during the fall (NMFS, 2016). However, the CIBW concentrations observed near Tyonek did not approach the levels that have been observed in other areas of Cook Inlet, such as Susitna River Delta, and

subsequent studies have not shown substantial densities of CIBWs at Tyonek. In their comment letter, CBD *et al.* asserted that CIBWs are regularly seen feeding in the Tyonek area from June to September. NMFS, however, is not aware of any data to support this assertion, and citations provided by CBD ostensibly in support of this assertion do not provide any such information. Further, given the proximity of Tyonek to construction of the Mainline MOF and AHT activity, the mitigation measures prohibiting pile driving associated with the Mainline MOF from June 1 to September 7 and restricting pile driving and AHT activities near the Susitna River Delta from April 15 to October 15 should also be protective of the Tyonek area.

NMFS acknowledges that CIBWs occur in areas of Cook Inlet aside from the Susitna River Delta, including 8 Star Alaska's project area. However, their occurrence is expected to be much more sporadic, and there are no known areas in the project area with densities suggesting that the importance of other areas is similar to that of the Susitna River Delta. Restricting activities in other areas would thus provide little benefit to marine mammals and the commenters do not provide persuasive evidence to the contrary.

Furthermore, 8 Star Alaska's construction activities are based on the ice-free working window, which extends approximately from April 1 through October 31. Imposing the limitations sought by the commenters would restrict construction throughout 8 Star Alaska's project area and would therefore not allow for the completion of 8 Star Alaska's project. In context of the limited benefit of such a requirement, NMFS has determined that these operational costs render such a requirement impracticable.

Comment 20: CBD *et al.* asserted that NMFS failed to ensure the least practicable adverse impact because it did not include measures that would require vessels to travel at reduced speeds at all times and in all areas of Cook Inlet. In a related comment, Chickaloon Village recommended that stricter vessel speed limits be required, although the comment did not provide specific recommendations as to what those requirements

should be. Similar to their comment described in Comment 15, Defenders of Wildlife suggested that NMFS include a speed limit for vessels operating near the mouth of the Kenai River.

Response: NMFS disagrees. As described in response to comment 13 and in the **Mitigation** section, NMFS takes into account 1) the manner and degree to which the implementation is expected to reduce impacts to marine mammals and 2) the practicability of the measures for applicant implementation. The expected transiting speeds of the vessels used for 8 Star Alaska's planned construction range from less than 10 knots (for vessels such as barges) to 26 knots, depending on the vessel (Federal Energy Regulatory Commission, 2020). Reduction to a speed over ground below 4 knots in the Susitna River Delta was determined to be an important mitigation measure as this area is known to have high densities of beluga whales. Speed reduction in other areas to 10 knots or less during low visibility and to less than 5 knots when in proximity to whales were required as these would be considered high risk scenarios. Requiring speed reductions for the entirety of the project area and at all times would not be expected to significantly reduce the risk to marine mammals and would not be a practicable measure.

8 Star Alaska will not have any vessels in or around the mouth of the Kenai River, and therefore speed restrictions in this area are not necessary.

Comment 21: CBD *et al.* asserted that NMFS failed to consider the use of drones to detect the presence of marine mammals.

Response: NMFS agrees that drones can be an effective tool for monitoring for marine mammals during certain projects. As CBD *et al.* pointed out in their letter, NMFS uses drones in some marine mammal surveys, and this technology could "significantly reduce cost, risk, and disturbance in marine mammal surveys" (Alaska Fisheries Science Center, 2019). However, the use of drones discussed in the above-referenced article refers specifically to abundance and population monitoring, rather than real time

monitoring for purposes of mitigation during construction. Visual monitoring and the related protocols required by this final rule will effectively monitor the presence or absence of marine mammals in the project area. The use of drones would not substantially increase the effectiveness of the mitigation measures or affect the least practicable adverse impact determination. The use of drones is also not practicable for 8 Star Alaska to implement due to operational constraints including line-of-sight limits for operating drones, battery range/duration, the need for FAA licensed and trained staff, and the distance limitations of some drones would render them unusable for observing for long periods. Thus visual monitoring and related protocols satisfy the MMPA's least practicable adverse impact standard.

Comment 22: CBD *et al.* asserted that NMFS failed to consider the use of passive acoustic monitoring (PAM) as a mitigation strategy, and Chickaloon Village suggested that PAM should be required.

Response: PAM for real-time mitigation purposes has been used in Cook Inlet for some studies. These efforts have generally not resulted in successful deployment of PAM or useful detections of marine mammals to inform mitigation and monitoring during the activities due to the environmental conditions of the region (Austin and Zeddies, 2012; Kendall *et al.*, 2015). For example, background acoustic conditions, including flow noise from strong currents, large tidal changes, and weather along with additional noise from the project (*e.g.*, vessel noise, noise from project equipment) made it difficult to detect marine mammals from a real-time PAM system implemented as part of the 2012 Apache 3D seismic survey program in lower- and mid-Cook Inlet (Austin and Zeddies, 2012; Lomac-MacNair *et al.*, 2013) and during the 2015 SAExploration Cook Inlet 3D seismic survey program (Kendall *et al.*, 2015). Further, environmental conditions restricted the type of PAM systems that could be deployed during these programs to a single omni-directional hydrophone lowered from the side of a vessel, which restricted the possible

range of detections. These factors suggest that effective PAM monitoring in Cook Inlet can be challenging (Austin and Zeddies, 2012).

As CBD *et al.* noted, academic researchers have begun to implement more effective passive acoustic monitors for research purposes at several places in Cook Inlet (*e.g.*, Lammers *et al.*, 2013; Castellote *et al.*, 2020; Castellote *et al.*, 2024). However, the framework used by those researchers is not practicable for 8 Star Alaska's planned activity. An article on NOAA's website (*https://www.fisheries.noaa.gov/science-blog/beluga-whale-acoustic-monitoring-survey-post-3*) illustrates the level of customization, expertise, and difficulty required to assemble a passive acoustic mooring to then deploy in the Inlet. Additionally, these instruments are stationary, which means to effectively use these monitors as a means of avoiding harassment of marine mammals during 8 Star Alaska's activities, 8 Star Alaska would need to build and successfully deploy dozens (or more) stationary monitors along a route of travel that is subject to change depending upon weather or other environmental and shipping restrictions. Additionally, the data stored on these types of moorings is not accessible until they are retrieved by the researcher who deployed them. In the future, if an established network of passive acoustic monitors with shared access to the data is available, PAM could be a useful tool for implementing mitigation measures, but it is currently not practicable due to the feasibility issues described above as well as the significant cost associated with the development of such a system.

Comment 23: CBD *et al.* asserted that NMFS failed to separately consider mitigation aimed at reducing impacts to the habitat of marine mammals in Cook Inlet, citing particular concern for CIBW habitat.

Response: In order to promulgate a rulemaking under section 101(a)(5)(A) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity and other means of effecting the least practicable adverse impact on the species or stock

and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance. Marine mammal habitat value is informed by marine mammal presence and use and, in some cases, there may be overlap in mitigation measures for the species or stock directly and for use of habitat. As described in the proposed rule, with the exception of CIBW habitat, there are no known habitats of particular importance to marine mammals in the project area. Further, as described in the Marine Mammal Habitat Effects section of the proposed rule, impacts to marine mammal habitat would be localized and temporary. As such, for species other than CIBW, additional mitigation aimed at reducing habitat impacts is not warranted.

In this rule, NMFS has identified time/area restrictions and vessel speed restrictions in the Susitna River Delta based on a combination of factors that include higher densities and observations of specific important behaviors of marine mammals themselves, but also that clearly reflect preferred habitat. In addition to being delineated based on physical features that drive habitat function (*e.g.*, bathymetric features, among others for some Biologically Important Areas (BIAs)), the high densities and concentration of certain important behaviors (*e.g.*, feeding) in these particular areas indicate the presence of preferred habitat. As described in response to Comment 15, the Susitna River Delta is an area of high importance for the CIBW, particularly in the summer to fall months. Therefore, as discussed in the **Mitigation** section in the proposed rule and in this final rule, 8 Star Alaska must implement time/area restrictions and vessel transit restrictions in the area of the Susitna River Delta. Please see the **Mitigation** section of this final rule for additional detail. The MMPA does not specify that effects to habitat must be mitigated using separate measures, and NMFS has identified measures that provide significant reduction of impacts to both marine mammal species and stocks and their habitat, as required by the statute.

Small Numbers and Negligible Impact

Comment 24: CBD *et al.* asserted that NMFS' interpretation of small numbers is unlawful, that a number may be considered small only if it is "little or close to zero" or "limited in degree," and that NMFS' small numbers determinations are arbitrary. Multiple members of the public similarly asserted that NMFS' small numbers determinations are improper and that NMFS is relying on an arbitrary threshold. Separately, CBD *et al.* suggested that NMFS must consider the "highly imperiled status of the species" in making a small numbers determination specifically for CIBW.

Response: The proposed rule referenced an earlier rulemaking in which we provided a full explanation of the agency's interpretation of "small numbers" (86 FR 5322, January 19, 2021). NMFS makes its small numbers findings based on an analysis of whether the number of individuals authorized to be taken annually from a specified activity is small relative to the stock or population size. This relative approach is consistent with the statement from the legislative history that "[small numbers] is not capable of being expressed in absolute numerical limits" (H.R. Rep. No. 97-228, at 19 (September 16, 1981)), and relevant case law (*Center for Biological Diversity* v. *Salazar,* 695 F.3d 893, 907 (9th Cir. 2012) (holding that the U.S. Fish and Wildlife Service reasonably interpreted "small numbers" by analyzing take in relative or proportional terms)). Using a simple approach that establishes equal bins corresponding to small, medium, and large proportions of the population abundance, when the predicted number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers (86 FR at 5438).

Federal courts have upheld this proportional approach, which is used by both NMFS and U.S. Fish and Wildlife Service for all ITAs issued under the MMPA. See, *e.g.*, *Center for Biological Diversity*, 695 F.3d at 906-907. NMFS has defended the approach successfully in court where the issue has been raised in litigation for various authorizations. See *Melone v. Coit*, 100 F.4th 21, 30-32 (1st Cir. 2024) (upholding NMFS

application of the proportional approach); *Save Long Beach Island v. U.S. Department of Commerce*, 2025 WL 1829543, at *26 (D.N.J. 2025) (same); see also *Native Village of Chickaloon v. NMFS*, 947 F. Supp. 2d 1031, 1052-1053 (D. Alaska 2013) (upholding NMFS finding that the non-lethal take of 30 beluga whales during seismic surveys in Cook Inlet, Alaska, which amounted to 10 percent of the total whale population, constitutes a small number).

Contrary to the commenters' definition-based argument, NMFS' small numbers determination approach comports with dictionary definitions. For example, the definition of "small" in Webster's New Collegiate Dictionary (1981) included "having little size, especially as compared with other similar things." See also *https://www.merriam-webster.com/dictionary/small* (defining "small" as "having comparatively little size"). These definitions are consistent with the small numbers interpretation developed by NMFS, which utilizes a proportionality approach.

Regarding CIBW, establishing a small numbers threshold on the basis of stock-specific context is unnecessarily duplicative of the required negligible impact finding, in which relevant biological and contextual factors are considered in conjunction with the amount of take. See *Center for Biological Diversity,* 695 F.3d at 907 (cautioning the U.S. Fish and Wildlife Service to "keep [] the standards distinct"). This suggestion is not founded in any relevant requirement of statute or regulation, discussed in relevant legislative history, or supported by relevant case law.

Comment 25: ADF&G suggested that NMFS consider the likelihood of repeat takes of harbor seals. ADF&G suggested that the large number of estimated Level B harassment takes of harbor seals is misleading given that only a few hundred harbor seals occur in middle and upper Cook Inlet where activities will take place, and during the breeding season, late spring and summer (when construction will occur) seals have strong site fidelity. ADF&G stated that incidental take was calculated based on daily impacts,

which assumes that new seals will be present in the affected areas each day, instead of taking into consideration site fidelity (and thus likely repeat exposure) of individual seals.

Response: NMFS acknowledges that the number of total takes that was estimated and authorized is significantly greater than the number of individual seals that are likely to be impacted. As ADF&G points out, harbor seals are generally non-migratory (Lowry *et al.*, 2001; Small *et al.*, 2003; Boveng *et al.*, 2012) and strong fidelity of individuals for haulout sites during the breeding season has been documented for harbor seals in Cook Inlet (Small *et al.*, 2005; Pitcher and McAllister, 1981; Boveng *et al.*, 2012; Womble, 2012; Womble and Gende, 2013). Therefore, some individual harbor seals will likely be taken by Level B harassment more than once. However, NMFS must authorize the total number of takes anticipated regardless of the number of anticipated individuals affected. If some harbor seals were to incur multiple instances of Level B harassment, we expect those instances to be of low intensity, consisting of, at worst, temporary modification in behavior, and we would not expect these instances to result in impacts on reproduction or survival. We account for the fact that relatively few individuals are expected to be impacted in comparison with the total number of estimated takes in the negligible impact analysis for this stock.

Comment 26: Members of the public asserted that NMFS has not considered cumulative effects to CIBWs and that NMFS should consider all threats to CIBWs. Similarly, CBD *et al.* asserted that NMFS' negligible impact determination is improper because it fails to take into account impacts from the other ITAs NMFS has recently issued in Cook Inlet (*e.g.*, 90 FR 31756, July 15, 2025; 89 FR 77836, September 24, 2024; 89 FR 79529, September 30, 2024) and the cumulative impacts of vessel noise already in Cook Inlet.

Response: Neither the MMPA nor NMFS' implementing regulations call for consideration of the take resulting from other activities in the negligible impact analysis.

The preamble for NMFS' implementing regulations (54 FR 40338, September 29, 1989) states, in response to comments, that the impacts from other past and ongoing anthropogenic activities are to be incorporated into the negligible impact analysis via their impacts on the baseline. Consistent with that direction, NMFS has factored into its negligible impact analysis the impacts of other past and ongoing anthropogenic activities via their impacts on the baseline, *e.g.*, as reflected in the density/distribution and status of the species, population size and growth rate, and other relevant stressors (such as incidental mortality in commercial fisheries, Unusual Mortality Events (UMEs), and subsistence hunting); see the **Negligible Impact Analyses and Determinations** section of this notice). The 1989 final rule for the MMPA implementing regulations also addressed public comments regarding cumulative effects from future, unrelated activities. There, NMFS stated that such effects are not considered in making findings under section 101(a)(5) concerning negligible impact. In this case, this rule as well as other ITAs currently in effect or proposed within the specified geographic region are appropriately considered as authorizing activities unrelated to the others in the sense that they are discrete actions under sections 101(a)(5)(A) or (D) issued to discrete applicants.

The Federal Energy Regulatory Commission (FERC) prepared an Environmental Impact Statement (EIS) for the Alaska LNG Project that considered cumulative effects of construction of the Alaska LNG Project in Cook Inlet on marine mammals and concluded that cumulative impacts would be unlikely or minor. Additionally, under the ESA, NMFS' Biological Opinion independently considered the reasonably foreseeable cumulative effects of activities on ESA-listed species and determined that 8 Star Alaska's proposed action is not likely to jeopardize the continued existence of ESA-listed species in the action area.

As described in the **Negligible Impact Analysis and Determination** section of this notice, our analysis indicates that issuance of these regulations will not adversely

affect marine mammals through effects on annual rates or recruitment or survival and will have a negligible impact on all marine mammal stocks, including CIBWs.

Comment 27: Members of the public asserted that NMFS is underestimating the effects of noise and chronic stress from 8 Star Alaska's activities over the course of 5 years and asserted that the pile driving, vessel traffic, and anchor handling will drive the CIBWs from prime habitat, disrupting feeding cycles, and threatening calf survival.

Response: As discussed in the **Negligible Impact Analysis and Determination** section of this notice, monitoring data from similar regional activities suggest that the presence of tugs under load and pile driving do not discourage CIBWs from transiting throughout Cook Inlet and between critical habitat areas and that the whales do not abandon critical habitat areas (*e.g.*, Horsley and Larson, 2023, 2024, 61N Environmental, 2021, 2022a, 2022b; Easley-Appleyard and Leonard, 2022). In addition, large numbers of CIBWs have continued to use Cook Inlet and pass through the area, likely traveling to critical foraging grounds in upper Cook Inlet, while noise-producing anthropogenic activities, including vessel use, have taken place during the past 2 decades (*e.g.*, Shelden *et al.*, 2013, 2015b, 2017, 2022; Shelden and Wade, 2019; Goetz *et al.*, 2023). Further, 8 Star Alaska will implement time/area restrictions around the Susitna River Delta during critical periods during the summer and fall for CIBWs (see the **Mitigation** section for a full description). For these reasons, and the reasons outlined in the **Negligible Impact Analysis and Determination** section, NMFS disagrees that CIBWs will be driven from prime habitat or that calf survival will be threatened.

Comment 28: CBD *et al*. asserted that NMFS' negligible impact determination is unreasonable. For CIBW, CBD *et al*. stated that NMFS overlooks that CIBWs are highly endangered, fails to properly recognize the unique threat that noise pollution poses to CIBWs, and has no rational basis for concluding that additional harassment by noise has a negligible impact on the species. CBD *et al.* further stated that NMFS ignores science

that indicates that the CIBW population is declining and that NMFS discounts the best available science for CIBWs. CBD *et al.* asserted that NMFS' negligible impact conclusion is particularly arbitrary because the project will occur within a year-round BIA for CIBWs and in CIBW critical habitat. CBD *et al.* asserted that NMFS incorrectly stated that that the project area is not known "to be of particular importance for feeding or reproduction."

Response: The **Description of Marine Mammals in the Area of Specified Activities** section of the proposed rule thoroughly described the baseline conditions for marine mammals in the project area including past (*e.g.*, whaling) and ongoing stressors (*e.g.*, noise, subsistence use for some species) for all marine mammal species and stocks, discussed where these stressors are most prevalent (*e.g.*, ports, where subsistence hunting occurs, *etc*.), and described the status of the species and stocks. The **Potential Effects of Specified Activities on Marine Mammals and Their Habitat** section of the proposed rule described, based on the best available science, the anticipated effects of the specified activities on marine mammals, including a discussion about habituation and sensitization of marine mammals to their environment and the importance of context when predicting impacts.

Between 1994 and 1998, the CIBW stock declined by approximately 50 percent due largely to unsustainable subsistence harvesting (NMFS, 2016). Since their listing as endangered under the ESA in October 2008, there have been 95 confirmed dead stranded Cook Inlet beluga whales (NMFS, 2022a). Live stranding effects were the leading cause of death (23 percent, n=9) among belugas necropsied between 1998 and 2013 (n=38), though 29 percent (n=11) had unknown cause of death (Burek-Huntington *et al.*, 2015). Burek-Huntington *et al*. (2015) also noted that disease may have contributed to cause of death in some events. Other causes of death included trauma, malnutrition, and perinatal mortality (fetus or neonatal calf mortality of unspecified cause). NMFS recognizes that

the CIBW population has not recovered from subsistence harvest and that noise, among many other stressors such as disease, contaminants, and natural live strandings, could be a contributing factor impeding recovery. However, in the **Negligible Impact Analysis and Determination** sections of the proposed rule and this final rule, NMFS describes the various factors considered in our determination that the specified activities, in combination with 8 Star Alaska's proposed mitigation measures, would not appreciably contribute to existing noise stressors such that they would affect the population through effects to recruitment or survival.

The **Negligible Impact Analysis and Determination** section of the proposed rule and this final rule describe the basis of NMFS' finding that the total marine mammal take from the specified activity will have a negligible impact on all affected marine mammal species or stocks. These sections discuss the basis for this determination is based upon, including the expected low intensity and duration of takes by Level B harassment for all stocks consisting, of, at worst, temporary modifications in behavior; that impacts are not expected to affect reproduction or survival; that the project area represents a very small portion of any stock's home range and available foraging area; and the likelihood that required mitigation measures further lessen the likelihood, magnitude, or severity of exposures. NMFS also considered the status of each stock in its analysis.

NMFS' negligible impact finding considers a number of parameters including, but not limited to, the nature of the activities (*e.g.*, duration, sound source), effects/intensity of the taking, the context of takes, and mitigation. For CIBWs, NMFS considered data from previous similar activities. Monitoring data from similar regional activities suggest that the presence of tugs under load does not discourage CIBWs from transiting throughout Cook Inlet and between critical habitat areas and that the whales do not abandon critical habitat areas (*e.g.*, Horsley and Larson, 2023, 2024). Any disturbance that may occur is anticipated to be limited to behavioral changes such as increased swim

speeds, changes in diving and surfacing behaviors, and alterations to communication signals, not the loss of foraging capabilities or the abandonment of critical habitat. Given these anticipated impacts, none of which would be expected to impact the fitness or reproduction of any individual marine mammal, much less adversely impact annual rates of recruitment or survival of CIBWs, NMFS' independent evaluation of the best scientific evidence in this case supports our negligible impact determination.

Modeling by Warlick *et al.* (2024) projects that the CIBW population will decline at an average rate of 1.6 percent per year in the coming decades and modeling from Jacobson *et al.* (2020) suggests that low survival may be impeding recovery of the CIBW. Results of recent studies provide evidence that the CIBW population increased between 2004 and 2010, declined after 2010, and increased again from 2016 to 2022 (Shelden and Wade, 2019; Goetz *et al.*, 2023). Further, as discussed in the proposed rule, findings from NMFS' aerial survey data from June 2021 and 2022, which NMFS considers the best scientific information available, indicate that the population may be increasing (Goetz *et al*., 2023). Contrary to the commenter's assertions, NMFS acknowledges the earlier studies described in its comment while also noting that more recent science offers a more hopeful note. Additional data in the coming years will help to inform whether the recent positive trend in the CIBW population will continue.

NMFS acknowledges observation of two potential but unconfirmed incidences of mating behavior in the Trading Bay area in 2014 (Lomac-Macnair *et al.*, 2015) and notes that no construction is planned to occur in Trading Bay. Such behaviors have not been reported since 2014. Surveys by NMFS or McGuire *et al.* (2020) have not yielded a comparable sighting. Other key behaviors, such as calving and feeding, are described in more detail below but are thought to occur primarily in areas outside of 8 Star Alaska's action area.

We are unaware of any information regarding areas where CIBWs are more likely to engage in mating behavior; however, what is known about calving suggests that it is most concentrated in the upper Inlet, north of 8 Star Alaska's project area. McGuire *et al.* (2020) characterized habitat use by age class in northern Cook Inlet and documented the majority of calves in the northernmost parts of Cook Inlet (*e.g.*, Susitna Delta, Knik Arm, and Susitna Delta).

While feeding behaviors may occur in 8 Star Alaska's project area, there are no known foraging hot spots in or near the project area. CIBWs are expected to be transiting through the project area, headed to or from the concentrated foraging areas farther north near the Beluga River, Susitna Delta, and Knik and Turnagain Arms. Therefore, any exposures are likely to be limited in duration and would take place in a small portion of available foraging habitat. Any impacts on feeding are expected to be minimal.

As described above, we have no reason to expect CIBWs to be concentrated in the area of 8 Star Alaska's pile driving activities or in the path of 8 Star Alaska's AHTs for the purposes of reproductive or feeding behaviors, but if an instance occurs in which noise from pile driving or AHTs briefly intersects with an individual CIBW engaged in these behaviors, the anticipated short duration and low level disturbance of any such encounter would not be likely to impact reproductive or foraging success of any individuals.

While exposure to elevated noise levels associated with 8 Star Alaska's activities may result in low-level behavioral changes in marine mammals, NMFS' review of the best available scientific evidence, as summarized and cited herein and including information included with public comments, demonstrates that these responses do not rise to the level of having adverse effects on the reproduction or survival of any marine mammals, much less on rates of recruitment or survival of any species or stock. 8 Star Alaska's project area is within the CIBW critical habitat Area 2 which is largely based on

dispersed fall and winter feeding and transit areas in waters where whales typically occur in smaller densities or deeper waters. Breeding and feeding were not primary considerations in designation of this critical habitat area. While 8 Star Alaska's project area does overlap ESA-designated critical habitat for CIBWs and the CIBW small and resident BIA (Wild *et al.*, 2023), the impacts from the project are not expected to occur in areas that are specifically important for feeding or reproduction for any species, including CIBWs, nor are they anticipated to result in a loss of prey or habitat.

NMFS has made, based on the best available science, the findings required to promulgate this final rule. Further, the Biological Opinion associated with this action concluded that 8 Star Alaska's activities would not jeopardize the continued existence of ESA-listed species, including CIBWs, or adversely modify critical habitat.

Comment 29: CBD *et al.* asserted that NMFS' negligible impact determination for all species is improper because it relies, in large part, on the presumed effectiveness of required mitigation measures. CBD *et al.* suggested that the mitigation measures rely nearly exclusively on the ability of PSOs to observe marine mammals and that NMFS fails to acknowledge the difficulty of actually observing marine mammals. Chickaloon Village similarly asserted that the mitigation plan's reliance on PSOs is inadequate.

Response: NMFS disagrees with the comment. As NMFS stated in its negligible impact analysis, consideration of the implementation of prescribed mitigation is one factor but is not determinative in any case. In certain circumstances, mitigation is more important in reaching the negligible impact determination, *e.g.*, when mitigation helps to alleviate the likely significance of taking by avoiding or reducing impacts in important areas. Our discussion in the **Negligible Impact Analysis and Determination** section below contains the factors NMFS considered in reaching its negligible impact determinations. Although NMFS' implementing regulations at 50 CFR 216.104(c) state that NMFS may incorporate successful implementation of mitigation measures to arrive

at a negligible impact determination, for promulgation of regulations for 8 Star Alaska's pile driving and tugging activities, NMFS did not rely upon an assumption of set level of effectiveness in mitigation to make our negligible impact determinations. While NMFS acknowledges that visual observations can be difficult in Cook Inlet due to the extreme tidal range, harsh weather, turbid waters, and seasonal ice presence (*e.g.*, Castellote *et al.*, 2020; Lammers *et al.*, 2013), prior monitoring efforts in Cook Inlet have shown that it is possible to detect and identify marine mammals, including CIBWs, to the species level several km away from the source, acknowledging that visibility depends on several factors such as visual acuity, sea state, glare, light, animal behavior/body type, speed of travel for vessel and animal, *etc.* (Horsley and Larson, 2023). NMFS does not assume total effectiveness of monitoring, but the demonstrated record of PSO sightings for activities in Cook Inlet illustrates that visual monitoring is appropriate for implementing mitigation in this case.

Other Comments

Comment 30: ADF&G provided comments indicating that it supports issuance of the rule, concurring with NMFS' analyses and determinations in the proposed rule. ADF&G identified that the proposed rule includes numerous mitigation measures to avoid incidental serious injury or mortality to marine mammals, which it stated helps ensure the conservation of marine mammal stocks. Lastly, ADF&G stated that it does not consider ongoing or proposed oil and gas activities, with appropriate mitigation measures, to threaten the conservation or sustainability of marine mammals in Cook Inlet.

Response: NMFS appreciates ADF&G's comments. All mitigation measures that were discussed by ADF&G and contained within the proposed rule have been carried over to this final rule.

Comment 31: CBD *et al*. asserted that NMFS' unmitigable adverse impact determination is arbitrary and that the specified activity may have an adverse impact on

the availability of beluga whales, harbor seals, Steller sea lions, and sea otters for subsistence harvest. They assert that (1) any take of beluga whales has an adverse impact on their availability for subsistence use; (2) the determination relies on the mitigation measures in the proposed ITRs, but those measures are inadequate; and (3) the determination relies on 8 Star Alaska's stakeholder engagement plan that improperly delegates to the applicant NMFS' statutory obligation to prescribe regulations setting forth means of effecting the least practicable adverse impact on the availability for subsistence uses. CBD *et al*. asserted that "the [stakeholder engagement] plan contains no information on how 8 Star Alaska will respond to issues regarding how its activity may be impeding subsistence activities."

Response: As described in the proposed rule and this final rule, in order to promulgate regulations, NMFS must find that the specified activity will not have an "unmitigable adverse impact" on the subsistence uses of the affected marine mammal species or stocks by Alaskan Natives. NMFS has defined "unmitigable adverse impact" in 50 CFR 216.103 as an impact resulting from the specified activity: (1) that is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) causing the marine mammals to abandon or avoid hunting areas; (ii) directly displacing subsistence users; or (iii) placing physical barriers between the marine mammals and the subsistence hunters; and (2) that cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

Subsistence hunting of whales is not known to currently occur in Cook Inlet. Specific to CIBW, in 2008, NMFS issued regulations (73 FR 60976; October 15, 2008) establishing long-term limits on the maximum number of CIBWs that may be taken for subsistence by Alaska Natives. These long-term harvest limits, developed for 5-year intervals, require that the abundance estimates reach a minimum 5-year average of 350

belugas before hunting can take place (50 CFR 216.23(f)(2)(v)). No hunt has been authorized since 2006. Therefore, given the current moratorium on subsistence hunting of CIBWs, 8 Star Alaska's activities will not reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) causing the marine mammals to abandon or avoid hunting areas; (ii) directly displacing subsistence users; or (iii) placing physical barriers between the marine mammals and the subsistence hunters.

Given the nature of the activity and the required mitigation measures, serious injury and mortality of marine mammals is not expected to occur. For most species, impacts to marine mammals will include limited, temporary behavioral disturbance. Small numbers of humpback whales, harbor porpoise, and harbor seals may incur slight auditory injury. As described above, the required mitigation measures, such as implementation of shutdown zones, are expected to reduce the frequency and severity of takes of marine mammals.

The commenters did not provide support for the assertion that the specified activity may have an adverse impact on the availability of harbor seals, Steller sea lions, and sea otters for subsistence harvest (of note, sea otters are managed by the U.S. Fish and Wildlife Service, rather than NMFS, and as such, are not discussed in this rulemaking). As noted in the **Unmitigable Adverse Impact Analysis and Determination** section of the proposed rule and this final rule, subsistence hunting in Cook Inlet consists mostly of opportunistic hunting of seals, which may overlap 8 Star Alaska's pile driving and anchor handling activities. Subsistence hunting occurs mostly nearshore and near river mouths. The majority of anchor handling activities are expected to occur offshore and are therefore expected to have little overlap with subsistence hunting. Any harassment to harbor seals due to pile driving is anticipated to be short-term, mild, and not result in any abandonment or behaviors that would make the animals unavailable for harvest, nor are the activities expected to directly displace subsistence

users or place physical barriers between the marine mammals and the subsistence hunters.

Regarding stakeholder engagement, as described in the **Unmitigable Adverse Impact Analysis and Determination** section of the proposed rule and this final rule, 8 Star Alaska must coordinate with local subsistence communities as described in their stakeholder engagement plan, notify the communities of any changes in operation, and work with communities to avoid or mitigate impacts to subsistence harvest through pre-construction planning, communication, or other actions. This measure ensures that impacts to subsistence harvest will be avoided or entirely mitigated, while providing flexibility in how those impacts, when identified, are avoided or mitigated.

As such, and as stated in the **Unmitigable Adverse Impact Analysis and Determination** section of this final rule, NMFS has determined that there would not be an unmitigable adverse impact on subsistence uses from 8 Star Alaska's planned activities.

Comment 32: The Commission recommended that NMFS require 8 Star Alaska to include in its stakeholder engagement plan which stakeholders have been or will be contacted, a summary of input received, a schedule for ongoing community engagement, and measures that would be implemented to mitigate any potential conflicts with subsistence hunting.

Response: NMFS generally concurs that the stakeholder engagement plan should include elements identified by the Commission, though as stated below, some specifics are not currently available given that 8 Star Alaska has not yet identified its construction schedule. 8 Star Alaska initially submitted a draft stakeholder engagement plan dated July 25, 2025. 8 Star Alaska expressed concerns about divulging information publicly for the Tribes and subsistence groups that it had contacted or engaged with and, therefore, did not include such information in the stakeholder engagement plan. Following input

from NMFS, 8 Star Alaska submitted a revised stakeholder engagement plan dated August 22, 2025. The revised stakeholder engagement plan includes reference to the assessment of potential impacts to subsistence communities in the 2020 Alaska LNG Final EIS (FEIS). This assessment includes a description of the subsistence communities in the project area, a list of stakeholders that have been contacted, including Tribes and members of the subsistence community, dates of interaction and input received. As stated in the stakeholder engagement plan, specific future meetings have not yet been scheduled, but 8 Star Alaska plans to continue engagement with stakeholders. Meetings will be scheduled once the dates of construction have been identified and will include meetings with communities prior to construction that will provide schedule and contact information. Consistent with the Commission's recommendations, and as described in the proposed and final regulations, 8 Star Alaska must work with communities to avoid or mitigate impacts to subsistence harvest through pre-construction planning, communication, or other actions. The stakeholder engagement plan describes such plans as well.

Comment 33: CBD *et al.* and a member of the public asserted that NMFS cannot rely on the 2020 Alaska LNG FEIS because it fails to consider a reasonable range of alternatives, including alternative mitigation measures, and because it fails to consider new information. CBD *et al*. therefore suggested that NMFS must conduct a supplemental analysis for the EIS.

Response: NMFS disagrees with the commenters that a supplemental EIS is warranted. Regarding the range of alternatives considered, NMFS worked with the FERC and required a suite of monitoring and mitigation measures that are the most protective to ensure the least practicable adverse impact. While a range of alternatives concerning the scope of the project was presented in the EIS, many of these project-related alternatives

were eliminated either because they provided no environmental advantage or were impracticable for the project.

Regarding new information, NMFS prepared a supplemental information report (SIR) which documents NMFS' decision regarding whether a supplemental FEIS for its action (*i.e.*, promulgation of regulations and issuance of a 5-year LOA) is needed. The SIR considered new scientific information since the publication of the 2020 Alaska LNG Project FEIS, including relevant literature cited in CBD *et al.*'s public comment letter, as well as minor changes to the project and analyses. As described in the SIR, the minor changes to the project and new scientific information do not amount to a substantial change relevant to environmental concerns, and the new information does not alter the significance of adverse effects that were identified in the 2020 Alaska LNG FEIS.

Comment 34: CBD *et al*. asserted that NMFS cannot promulgate regulations and issue an LOA to 8 Star Alaska for the taking of marine mammals incidental to construction of the Alaska LNG Project in Cook Inlet, AK until NMFS conducts a consultation under section 7 of the ESA.

Response: As stated in the proposed rule, Section 7(a)(2) of the ESA of 1973 (16 U.S.C. 1531 *et seq.*) requires that each Federal agency ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the promulgation of regulations, NMFS consults internally whenever we propose to authorize take for endangered or threatened species. In this case NMFS Office of Protected Resources (OPR) consulted with the Alaska Regional Office (AKRO).

NMFS issued a Biological Opinion on June 3, 2020, concluding that the issuance of an LOA for the same project activities in Cook Inlet was not likely to jeopardize the continued existence of the threatened and endangered species under NMFS' jurisdiction

and was not likely to destroy or adversely modify CIBW critical habitat. On July 14, 2025, NMFS OPR reinitiated consultation with NMFS AKRO pursuant to Section 7 of the ESA on the promulgation of regulations and issuance of a subsequent LOA to 8 Star Alaska. As described in this final rule, AKRO issued a Biological Opinion on October 31, 2025, which found that the Alaska LNG project is not likely to jeopardize the continued existence of fin whales, humpback whales (Mexico and Western North Pacific Distinct Population Segments (DPS)), beluga whales (Cook Inlet DPS), and Steller sea lions (Western DPS).

Comment 35: Defenders of Wildlife suggested that these regulations require significant revisions and therefore request that NMFS publish a revised proposed rule before publishing a final rule.

Response: NMFS has considered the revisions suggested by the commenter (as described in response to comments 5, 17, 19, and 20) and disagrees that they are necessary. NMFS has made the necessary revisions to the proposed rule, which are not significant enough to warrant publishing a revised proposed rule.

Comment 36: NMFS received multiple comments from the public expressing opposition to the killing of marine mammals.

Response: As described in this notice and the proposed rule, no serious injury or mortality to marine mammals is anticipated or authorized.

Changes from the Proposed Rule

Following a comment from the Commission, NMFS has determined it appropriate to change the source levels for the impact installation of 48-inch (122 cm) steel pipe piles from 213 SPLpeak, 192 SPLrms, and 181 dB SELs-s included in the proposed rule to 209 dB SPLpeak, 195 dB SPLrms, and 181 dB SELs-s (see comment 1 in **Comments and Responses** section). These source levels have been used to recalculate the estimated Level A and Level B harassment isopleths. Based on these changes, estimated take

numbers have changed for harbor seals only (See **Estimated Take of Marine Mammals** section). Shutdown zones for impact installation of 48-inch (122 cm) steel pipe piles have been changed as appropriate based on the updated Level A and Level B harassment isopleths (see **Mitigation** section).

The density for killer whale was inadvertently written as 0.0061 animals/km^2 in the proposed rule, and it has been corrected to accurately reflect the correct density used in the analysis of 0.00061 animals/km^2.

NMFS has updated the regulatory text in several places.

NMFS has updated § 217.44(f) to include a requirement that 8 Star Alaska must not pile drive in association with the Mainline MOF from June 1 to September 7. Although this mitigation measure had been discussed in the preamble to the proposed rule and proposed by 8 Star Alaska in its application, it was inadvertently omitted from the regulatory text in the proposed rule (See response to comment 16 in **Comments and Responses** section).

NMFS has clarified in § 217.44(n) that 8 Star Alaska must conduct sound source verification measurements at the beginning of pile driving, rather than prior to pile driving (see response to comment 9 in **Comments and Responses** section).

NMFS has added a requirement in § 217.44(n)(1) that any sound attenuation device used by 8 Star Alaska must meet minimum requirements as determined by NMFS in the SSV plan (see response to comment 14 **Comments and Responses** section).

NMFS has clarified in § 217.45(a)(6)(i) that for all single hammer pile driving activities a minimum of two PSOs must be on duty and has also specified locations of pile driving (see response to comment 8 in **Comments and Responses** section).

NMFS has added a requirement in § 217.45(a)(6)(ii) that for all concurrent pile driving activities at the Marine Terminal near Nikiski a minimum of three PSOs must be on duty at all times (see response to comment 8 in **Comments and Responses** section).

NMFS has clarified in § 217.45(b)(1) that SSV must be conducted at each location and in § 217.45(b)(1)(ii) that 8 Star Alaska must measure a minimum of each type, size, and installation method for single pile driving scenarios (see response to comment 9 in **Comments and Responses** section).

NMFS has added a requirement in § 217.45(b)(1)(iv)(F) that transmission loss values for attenuated and unattenuated impact and vibratory installation of each pile size and type must be included in the SSV report (see response to comment 12 in **Comments and Responses** section).

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. NMFS fully considered all of this information, and we refer the reader to these descriptions, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species)*.

Table 1 lists all species or stocks for which take is expected and authorized for this activity and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or authorized here,

PBR and annual serious injury and mortality (M/SI) from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Alaska and Pacific SARs. All values presented in table 1 are the most recent available at the time of publication (including from the draft 2024 SARs) and are available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*.

Table 1 -- Species[1] with Estimated Take From the Specified Activities

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[2]	Stock abundance (CV, Nmin, most recent abundance survey)[3]	PBR	Annual M/SI[4]
Order Artiodactyla – Cetacea – Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray Whale	*Eschrichtius robustus*	Eastern North Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	131
Family Balaenopteridae (rorquals)						
Fin Whale	*Balaenoptera physalus*	Northeast Pacific	E, D, Y	11,065 (0.405 7,970, 2013)[5]	UND	0.6

Humpback Whale	*Megaptera novaeangliae*	Hawai'i	-, -, N	11,278 (0.56, 7,265, 2020)	127	27.09
Humpback Whale	*Megaptera novaeangliae*	Mexico-North Pacific	T, D, Y	N/A[6] (N/A, N/A, 2006)	UND	0.57
Humpback Whale	*Megaptera novaeangliae*	Western North Pacific	E, D, Y	1,084 (0.088, 1,007, 2006)	3.4	5.82
Minke Whale	*Balaenoptera acutorostrata*	Alaska	-, -, N	N/A[7] (N/A, N/A, N/A)	UND	0
Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Killer Whale	*Orcinus orca*	Eastern North Pacific Alaska Resident	-, -, N	1,920 (N/A, 1,920, 2019)	19	1.3
Killer Whale	*Orcinus orca*	Eastern North Pacific Gulf of Alaska, Aleutian Islands and Bering Sea Transient	-, -, N	587 (N/A, 587, 2012)	5.9	0.8
Pacific White-Sided Dolphin	*Aethalodelphis obliquidens*	North Pacific	-, -, N	26,880 (N/A, N/A, 1990)	UND	0
Family Monodontidae (white whales)						

Beluga Whale	*Delphinapterus leucas*	Cook Inlet	E, D, Y	331 (0.076, 311, 2022)		0
Family Phocoenidae (porpoises)						
Dall's Porpoise	*Phocoenoides dalli*	Alaska	-, -, N	UND[8] (UND, UND, 2015)	UND	37
Harbor Porpoise	*Phocoena phocoena*	Gulf of Alaska	-, -, Y	31,046 (0.21, N/A, 1998)	UND	72
Order Carnivora – Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California Sea Lion	*Zalophus californianus*	U.S.	-, -, N	257,606 (N/A, 233,515, 2014)	14,011	>321
Steller Sea Lion	*Eumetopias jubatus*	Western	E, D, Y	49,837[9] (N/A, 49,837, 2022)	299	267
Family Phocidae (earless seals)						
Harbor Seal	*Phoca vitulina*	Cook Inlet/Shelikof Strait	-, -, N	28,411 (N/A, 26,907, 2018)	807	107

[1] Information on the classification of marine mammal species can be found on the web page for The Society for Marine Mammalogy's Committee on Taxonomy (*https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/*).

[2] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[3] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region*. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

[4] These values, found in NMFS' SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.*, commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range.

[5] The best available abundance estimate for this stock is not considered representative of the entire stock as surveys were limited to a small portion of the stock's range.
[6] NMFS's abundance estimate for this stock is greater than 8 years old and not considered current. PBR is therefore considered undetermined for this stock, as there is no current minimum abundance estimate for use in calculation. We nevertheless present the most recent abundance estimate as the best available information.
[7] Reliable population estimates are not available for this stock.
[8] The best available abundance estimate is likely an underestimate for the entire stock because it is based upon a survey that covered only a small portion of the stock's range.
[9] Nest is best estimate of counts, which have not been corrected for animals at sea during abundance surveys. Estimates provided are for the U.S. only. The overall Nmin is 73,211 and overall PBR is 439.

A detailed description of the species likely to be affected by the Alaska LNG project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the proposed rule. Since publication of the proposed rule, the Society for Marine Mammalogy Committee on Taxonomy (2025) updated the genus for the Pacific white-sided dolphin from *Lagenorhynchus to Aethalodelphis*, based on the work of Galatius *et al*. (2025) and Vollmer *et al.* (2019). Therefore, the scientific name for the Pacific white-sided dolphin will be referred to as *Aethalodelphis obliquidens* in this notice. Aside from this change in scientific name, we are not aware of any changes in the status of these species and stocks since publication of the proposed rule; therefore, detailed descriptions are not provided here. Please refer to the proposed rule for detailed descriptions. Please also refer to NMFS' website (*https://www.fisheries.noaa.gov/find-species*) for generalized species accounts.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral

or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Generalized hearing ranges were chosen based on the ~65 dB threshold from composite audiograms, previous analyses in NMFS (2018), and/or data from Southall *et al*. (2007) and Southall *et al.* (2019). We note that the names of two hearing groups and the generalized hearing ranges of all marine mammal hearing groups have been recently updated (NMFS 2024) as reflected below in table 2.

Table 2 -- Marine Mammal Hearing Groups (NMFS, 2024)

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 hertz (Hz) to 36 kHz
High-frequency (HF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
Very High-frequency (VHF) cetaceans (true porpoises, *Kogia*, river dolphins, Cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*)	200 Hz to 165 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	40 Hz to 90 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 68 kHz

***** Represents the generalized hearing range for the entire group as a composite (*i.e.*, all species within the group), where individual species' hearing ranges may not be as broad. Generalized hearing range chosen based on ~65 dB threshold from composite audiogram, previous analysis in NMFS 2018, and/or data from Southall *et al*. (2007) and Southall et *al*. (2019). Additionally, animals are able to detect very loud sounds above and below that "generalized" hearing range.

For more detail concerning these groups and associated frequency ranges, please see NMFS (2024) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

The effects of underwater noise from 8 Star Alaska's construction activities have the potential to result in harassment of marine mammals in the vicinity of the project area. The proposed rule included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from 8 Star Alaska's construction activities on marine mammals and their habitat. That information and analysis is not repeated here.

Estimated Take of Marine Mammals

This section provides an estimate of the number of incidental takes that may be authorized through issuance of a LOA, which will inform NMFS' consideration of "small numbers," the negligible impact determinations, and impacts on subsistence uses.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes will primarily be by Level B harassment, as exposure to sound resulting from use of the acoustic sources (*i.e.*, pile driving and AHT activities) has the potential to result in disruption of behavioral patterns for individual marine mammals. We note here that given the slow, predictable, and generally straight path of tugs towing and positioning, the likelihood of a resulting disruption of marine mammal behavioral patterns that would qualify as harassment is considered relatively low. However, in consideration of the relatively louder sound produced by these tugs and the sensitive context present in Cook Inlet, NMFS cannot consider the likelihood of take to be discountable and considers it to be sufficiently likely to justify an assumption that quantified exposures above the generalized harassment threshold equate to take. Therefore, we have quantified the potential exposures from this activity, assumed that these exposures would equate to take, and analyzed the impacts of the assumed takes. There is also some potential for auditory injury (AUD INJ) (Level A harassment) to result due to impact pile driving, primarily for mysticetes, very high frequency species, and phocids because predicted AUD INJ zones are larger than for high-frequency species

and otariids. AUD INJ is unlikely to occur for high-frequency species. The mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no serious injury or mortality is anticipated or authorized for this activity. Below we describe how the take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic criteria above which NMFS believes the best available science indicates marine mammals will likely be behaviorally harassed or incur some degree of AUD INJ; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the take estimates.

Acoustic Criteria

NMFS recommends the use of acoustic criteria that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur AUD INJ of some degree (equated to Level A harassment). We note that the criteria for AUD INJ, as well as the names of two hearing groups, have been recently updated (NMFS, 2024) as reflected below in the Level A harassment section.

Level B Harassment – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.*, frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the

source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.*, Southall *et al.*, 2007, 2021, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB re 1 μPa for continuous (*e.g.*, vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μPa for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources. Generally speaking, Level B harassment take estimates based on these behavioral harassment thresholds are expected to include any likely takes by temporary threshold shift (TTS) as, in most cases, the likelihood of TTS occurs at distances from the source less than those at which behavioral harassment is likely. TTS of a sufficient degree can manifest as behavioral harassment, as reduced hearing sensitivity and the potential reduced opportunities to detect important signals (conspecific communication, predators, prey) may result in changes in behavior patterns that would not otherwise occur.

8 Star Alaska's activity includes the use of continuous (vibratory pile driving and AHTs engaged in anchor handling) and impulsive (impact pile driving) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μPa are applicable.

Level A harassment – NMFS' Updated Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0) (Updated Technical Guidance, 2024) identifies dual criteria to assess AUD INJ (Level A harassment) to five different underwater marine mammal groups (based on hearing

sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). 8 Star Alaska's activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving and use of AHTs) sources.

The 2024 Updated Technical Guidance criteria include both updated thresholds and updated weighting functions for each hearing group. The thresholds are provided in the table below. The references, analysis, and methodology used in the development of the criteria are described in NMFS' 2024 Updated Technical Guidance, which may be accessed at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance-other-acoustic-tools*.

Table 3 -- Thresholds Identifying the Onset of Auditory Injury

	AUD INJ Onset Acoustic Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1* $L_{pk,flat}$: 222 dB $L_{E,LF,24h}$: 183 dB	*Cell 2* $L_{E,LF,24h}$: 197 dB
High-Frequency (HF) Cetaceans	*Cell 3* $L_{pk,flat}$: 230 dB $L_{E,HF,24h}$: 193 dB	*Cell 4* $L_{E,HF,24h}$: 201 dB
Very High-Frequency (VHF) Cetaceans	*Cell 5* $L_{pk,flat}$: 202 dB $L_{E,VHF,24h}$: 159 dB	*Cell 6* $L_{E,VHF,24h}$: 181 dB
Phocid Pinnipeds (PW) (Underwater)	*Cell 7* $L_{pk,flat}$: 223 dB $L_{E,PW,24h}$: 183 dB	*Cell 8* $L_{E,PW,24h}$: 195 dB
Otariid Pinnipeds (OW) (Underwater)	*Cell 9* $L_{pk,flat}$: 230 dB $L_{E,OW,24h}$: 185 dB	*Cell 10* $L_{E,OW,24h}$: 199 dB

*Dual metric criteria for impulsive sounds: Use whichever criteria results in the larger isopleth for calculating AUD INJ onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level criteria associated with impulsive sounds, the PK SPL criteria are recommended for consideration for non-impulsive sources.

Note: Peak sound pressure level ($L_{p,0\text{-}pk}$) has a reference value of 1 µPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1 µPa^{2}s. In this table, criteria are abbreviated to be more reflective of International Organization for Standardization standards (ISO 2017). The subscript "flat" is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals underwater (*i.e.*, 7 Hz to 165 kHz). The subscript associated with cumulative sound exposure level criteria indicates the designated marine mammal auditory weighting function (LF, HF, and VHF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level criteria could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these criteria will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that are used in estimating the area ensonified above the acoustic thresholds, including source levels and transmission loss coefficient.

The sound field in the project area is the existing background noise plus additional noise from pile driving and AHTs engaging in anchor handling from the project.

Pile Driving

8 Star Alaska will conduct vibratory pile installation and removal and impact pile installation. Source levels for these activities are based on reviews of measurements of sound source levels from the same or similar types and dimension of piles available in the literature. Source levels for each pile size and activity are presented in table 4. Source levels for vibratory installation and removal of piles of the same diameter are assumed to be the same.

8 Star Alaska will conduct concurrent pile driving during construction of the combi-wall and coffer cells in the Marine Terminal MOF. When two noise sources have overlapping sound fields, the sources are considered additive and combined using the rules of dB addition. For addition of two concurrent sources, the difference between the two sound source levels is calculated, and if that difference is between 0 and 1 dB, 3 dB are added to the higher sound source levels; if the difference is between 2 and 3 dB, 2 dB are added to the highest sound source levels; if the difference is between 4 and 9 dB, 1 dB is added to the highest sound source levels; and with differences of 10 or more dB, there is no addition. For two concurrent sources of different type (*i.e.*, impact and vibratory driving), there is no sound source addition. Combinations of concurrent pile driving and the predicted source values are shown in table 5. All concurrent pile driving will consist of two vibratory hammers.

Table 4 -- Sound Source Levels for Single Hammer Pile Driving

Pile Type	Source Level (at 10 m)			Proxy	Source
	Peak (dB re 1 µPa)	SEL (dB re 1 µPa2 sec)	RMS (dB re 1 µPa)		
Impact					
Sheet Pile	205	180	190	24-inch (61-cm) AZ Sheet Pile	Caltrans (2015)

24-inch Steel Pipe Pile	203	177	190	24-inch (61-cm) Steel Pipe Pile	Caltrans (2015)
48-inch Steel Pipe Pile*	208	180	195	48-inch (121.9-cm) Steel Pipe Pile	Caltrans (2020); Austin, *et al.* (2016); Illingworth & Rodkin (2017)
60-inch Steel Pipe Pile	210	185	195	60-inch (152.4 cm) Steel Pipe Pile	Caltrans (2020)
Vibratory					
Sheet Pile	N/A	N/A	160	24-inch (61-cm) AZ Sheet Pile	Caltrans (2015)
24-inch Steel Pipe Pile)	N/A	N/A	163	20- to 24-inch (50.8- to 61-cm) Steel Pipe Pile	U.S. Navy (2012, 2013), (Miner, 2020)
66-inch Steel Pipe Pile	N/A	N/A	170	49- to 72-inch (124.5-182.9-cm) to Steel Pipe Piles (average)	Caltrans (2020), Illingworth & Rodkin (2021)

*Source levels for impact installation of 48-inch steel pipe piles have change since publication of the proposed rule due to comments received from the Commission (see **Comments and Responses** section.)

Table 5 -- Concurrent Pile Driving Scenarios and Predicted Source Levels (All Vibratory Hammers)

Concurrent Pile Driving Scenarios	Predicted RMS (dB re 1 µPa) at 10 m
66-inch Steel Pipe Pile x 2	173
66-inch Steel Pipe Pile with Sheet Pile	170

Sheet Pile x 2	163
24-inch Steel Pipe Pile with Sheet Pile	165
24-inch Steel Pipe Pile x 2	166

Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition topography. The general formula for underwater TL is:

$TL = B * Log10 (R_1 /R_2)$,

where

TL = transmission loss in dB;

B = transmission loss coefficient;

R_1 = the distance of the modeled SPL from the driven pile; and

R_2 = the distance from the driven pile of the initial measurement.

Absent site-specific acoustical monitoring with differing measured transmission loss, a practical spreading value of 15 is used as the transmission loss coefficient in the above formula. Project and site-specific transmission loss data for 8 Star Alaska's project area in Cook Inlet are not available; therefore, the default coefficient of 15 is used to determine the distances to the Level A and Level B harassment thresholds for all pile driving. All Level B harassment isopleths are reported in table 7. However, as discussed in the **Monitoring and Reporting** section, 8 Star Alaska will conduct SSV for pile driving. Following the analysis of SSV results, 8 Star Alaska may propose revised estimated Level A and Level B harassment zones (for the purpose of monitoring and reporting) and adjusted shutdown zones accordingly for NMFS review and approval.

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the 2024 Updated Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources such as impact and vibratory pile driving and AHTs engaged in anchor handling, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur AUD INJ. Inputs used in the optional User Spreadsheet tool are provided in table 6, and the resulting estimated isopleths are reported in table 7.

Table 6 -- User Spreadsheet Input Parameters Used for Calculating Level A Harassment Isopleths (Source Levels Provided in Tables 4 and 5)

Pile	Piles Per Day	Strikes Per Pile	Duration to Drive Pile (min)	Weighting Factor Adjustment (WFA)
Impact				
Sheet Pile	30	1,000	N/A	2
24-inch Steel Pipe Pile	4	1,000	N/A	2
48-inch Steel Pipe Pile	3	1,000	N/A	2
60-inch Steel Pipe Pile	4	1,000	N/A	2

Vibratory				
Sheet Pile	30	N/A	15	2.5
24-inch Steel Pipe Pile	8	N/A	15	2.5
66-inch Steel Pipe Pile	7	N/A	15	2.5
Concurrent Pile Driving with Two Vibratory Hammers				
66-inch Steel Pipe Pile x 2	1	N/A	105*	2.5
66-inch Steel Pipe Pile with Sheet Pile	1	N/A	450*	2.5
Sheet pile x 2	1	N/A	450*	2.5
24-inch Steel Pipe Pile with Sheet Pile	1	N/A	450*	2.5
24-inch Steel Pipe Pile x 2	1	N/A	120*	2.5

*This value represents the maximum duration of concurrent activity.

Table 7 -- Calculated Distances to Level A and Level B Harassment Isopleths for Pile Driving

Pile	Level A Harassment Zone (m)					Level B Harassment Zone (m)
	LF Cetacean	HF Cetacean	VHF Cetacean	Phocids	Otariids	
Impact						
Sheet Pile	6,061	773	9,380	5,385	2,007	1,000
24-inch Steel Pipe Pile	998	127	1,545	887	331	1,000
48-inch Steel Pipe Pile*	1,306	167	2,021	1,160	432	2,154
60-inch Steel Pipe Pile	3,408	435	5,274	3,028	1,120	2,154
Vibratory						
Sheet Pile	30	12	25	39	13	4,642

24-inch Steel Pipe Pile	20	8	16	26	9	7,356
66-inch Steel Pipe Pile	53	21	44	69	23	21,544
Concurrent Pile Driving with Two Vibratory Hammers						
66-inch Steel Pipe Pile x 2	85	33	69	109	37	34,146
66-inch Steel Pipe Pile with Sheet Pile	141	54	115	181	61	21,544
Sheet Pile x 2	48	19	39	62	21	7,356
24-inch Steel Pipe Pile with Sheet Pile	32	12	26	41	14	11,659
24-inch Steel Pipe Pile x 2	65	25	53	84	28	10,000

*The Level A and Level B harassment isopleths for impact installation of 48-inch steel pipe piles have changed since the publication of the proposed rule due to changes in source levels since publication of the proposed rule (see table 4).

Except for Level B harassment areas of ensonification for the single hammer vibratory installation of 66-inch steel pipe pile, the concurrent vibratory installation of two 66-inch piles, and the concurrent vibratory installation of a 66-inch steel pipe pile with a sheet pile, estimated areas of ensonification were calculated for pile driving using the formula of $\frac{1}{2}\pi r^2$, where r is the respective isopleth. For the single hammer vibratory installation of 66-inch steel pipe pile, the concurrent vibratory installation of two 66-inch piles, and the concurrent vibratory installation of a 66-inch steel pipe pile with a sheet pile, the Level B harassment isopleths were truncated by land, and therefore $\frac{1}{2}\pi r^2$ was not representative of the area of ensonification. Therefore, mapping software was used to draw the estimated area of ensonification. Estimated Level A and Level B harassment areas of ensonification are in table 8.

NMFS used the following formula to estimate the area of ensonification for AHTs engaged in anchor handling, where distance traveled per day is the linear distance that the AHTs would be expected to travel over the course of a day, and r is the radial distance of the Level B harassment isopleth (3.85 km). 8 Star Alaska estimates the pipelay rate to be 2,500 feet/day (0.762 km/day), so 0.762 km was used as the distance traveled per day.

Area of ensonification = (Distance traveled per day x 2r) + πr^2

Table 8 -- Calculated Level A and B Harassment Areas of Ensonification

Pile	Level A Harassment Areas of Ensonification (km^2)					Level B Harassment Area of Ensonification (km^2)
	LF Cetacean	HF Cetacean	VHF Cetacean	Phocids	Otariids	
Impact						
Sheet Pile	57.7	0.94	138.21	45.47	6.33	1.57
24-inch Steel Pipe Pile	1.56	0.03	3.75	1.24	0.17	1.57
48-inch Steel Pipe Pile*	2.68	0.17	6.47	2.11	0.29	7.29
60-inch Steel Pipe Pile	18.24	0.3	43.69	14.4	2.0	7.29
Vibratory						
Sheet Pile	0.00	0.00	0.00	0.00	0.00	33.85
24-inch Steel Pipe Pile	0.00	0.00	0.00	0.00	0.00	24.89
66-inch Steel Pipe Pile	0.00	0.00	0.00	0.00	0.00	62.54
66-inch Steel Pipe Pile x 2	0.01	0.00	0.01	0.02	0.00	1,426.4

66-inch Steel Pipe Pile with Sheet Pile	0.03	0.00	0.02	0.05	0.01	722.5
Sheet Pile x 2	0.00	0.00	0.00	0.01	0.00	85
24-inch Steel Pipe Pile with Sheet Pile	0.01	0.00	0.00	0.01	0.00	157.08
24-inch Steel Pipe Pile x 2	0.00	0.00	0.00	0.00	0.00	213.5
AHTs						
Anchor Handling	0.00	0.00	0.00	0.01	0.00	52.4

*Areas of ensonification for impact installation of 48-inch steel pipe piles have changed since the publication of the proposed rule due to changes in the Level A and Level B harassment isopleths (see table 7).

Level A harassment zones are typically smaller than Level B harassment zones. However, in some cases, the calculated Level A harassment isopleth is greater than the calculated Level B harassment isopleth. Calculation of Level A harassment isopleths include a duration component, which in the case of impact pile driving, is estimated through the total number of daily strikes and the associated pulse duration. For a stationary sound source, we assume here that an animal is exposed to all of the strikes expected within a 24-hour period. Calculation of a Level B harassment zone does not include a duration component. Depending on the duration included in the calculation, the calculated Level A harassment isopleths can be larger than the calculated Level B harassment isopleth for the same activity.

Mainline Installation

8 Star Alaska intends to use AHTs to position a pipelaying barge in order to install the pipe on the seafloor for the Mainline across Cook Inlet. For the nearshore

pipelay, planned for year 3, an AHT will engage in anchor handling to moor a pull barge, and is expected to be used for two days of work, one day on the west coast near Beluga and one day on the east coast near Suneva Lake. For offshore pipelay, AHTs will be engaged in anchor handling to repeatedly position the barge during the duration of pipelay. Consistent with other tug activities, including those for tugs towing a jack-up rig (Furie Operating Alaska, LLC Natural Gas Activities, 89 FR 77836 (September 24, 2024); Hilcorp Alaska, LLC, 89 FR 79529 (September 30, 2024)), NMFS anticipates that the AHTs will operate at approximately 50 percent power during anchor handling activities.

Because of the similarities to tugging activities planned by Hilcorp in Cook Inlet (89 FR 79529, September 30, 2024), NMFS determined it appropriate to adopt analysis provided for those activities for 8 Star Alaska's planned tugging activities. In addition, we refer here to an existing literature review of available source level data for tugs under load in varying power output scenarios (87 FR 27597, May 9, 2022). Please see that notice for the detailed analysis. While that analysis is for tugs under load towing a jack-up rig, NMFS expects the AHT power output for the anchor handling is to be consistent with that assumed for tugs towing a jack-up rig (Furie Operating Alaska, LLC Natural Gas Activities, 89 FR 77836 (September 24, 2024); Hilcorp Alaska, LLC, 89 FR 79529 (September 30, 2024)), and, therefore, NMFS determined that this analysis represents the best scientific evidence available for considering the appropriate source level proxy for 8 Star Alaska's AHT use during anchor handling.

In addition to the literature review referenced above, which indicates that a source level of 180 dB for a single AHT would be appropriate, we also consider other relevant information to adequately consider 8 Star Alaska's planned use of three AHTs to handle anchors. If all three tugs were operating simultaneously at 180 dB RMS, the overall source emission levels would be expected to increase by approximately 5 dB when

logarithmically adding the sources (*i.e.*, to 185 dB RMS). To further support this level as an appropriate proxy, an SSV study performed by JASCO Applied Sciences (JASCO) in Cook Inlet in October 2021 (Lawrence *et al.*, 2022) measured the sound source level from three tugs pulling a jack-up rig in Cook Inlet at various power outputs. Lawrence *et al.* (2022) reported a source level of 167.3 dB RMS for the 20 percent-power scenario and a source level of 205.9 dB RMS for the 85 percent-power scenario. Assuming a linear scaling of tug power, a source level of 185 dB RMS was calculated as a single point source level for three tugs operating at 50 percent power output. Therefore, the analyses presented below use a mean tug sound source level scenario of 185 dB RMS to estimate distances to the 120 dB RMS isopleth for three tugs operating at 50 percent power output. In practice, the load condition of the three tugs is unlikely to be identical at all times, so sound emissions would be dominated by the single tug in the group that is working hardest at any point in time. NMFS, therefore, has determined it appropriate to use the source level of 185 dB RMS at 1 m to represent the use of three AHTs. Modeling using this source level resulted in an estimated distance to the 120-dB isopleth of 3,850 m. Please see 89 FR 79529 (September 30, 2024) for full detail.

As noted previously, NMFS determined that Level A harassment would not be a reasonably likely outcome of the use of AHTs. In order to characterize the extent of the Level A harassment isopleths to provide additional quantitative support for this determination, NMFS used the NMFS user spreadsheet to calculate Level A harassment zones for each hearing group for AHTs conducting anchor handling. NMFS used Tab A (Non-Impulse-Stat-Cont) in the spreadsheet and used a WFA of 2, a 6-hour duration of sound production within a 24-hour period, and a propagation loss coefficient of 18.129. Weston and SLR (2022) determined the average 120 dB isopleth was 3,850 m for a continuous noise source of 185 dB rms SPL across 25 locations in middle Cook Inlet. The coefficient is calculated as (185 dB - 120 dB)/Log10(3850/1) = 18.129 dB per

decade.)). Estimated Level A and Level B harassment isopleths for AHTs engaged in anchor handling are reported in table 9.

Table 9 -- Level A and Level B Harassment Isopleths from AHTs Engaged in Anchor Handling

Sound Source	Level A Harassment Isopleths (m)[1]					Level B Harassment Isopleth (m) [2]
	LF	HF	VHF	Phocid	Otariid	
3 AHTs	53	21	28	62	21	3,850

[1]Level A harassment isopleths calculated using NMFS User spreadsheet.
[2]Level B harassment isopleth determined using results from Hilcorp's modeling.

Marine Mammal Occurrence

In this section we provide information about the occurrence of marine mammals, including density or other relevant information which will inform the take calculations.

8 Star Alaska requested take of humpback whale, killer whale, beluga whale, harbor porpoise, and harbor seal. In addition to those species, NMFS determined that minke whale, gray whale, fin whale, Dall's porpoise, Pacific white-sided dolphin, Steller sea lion, and California sea lion are likely to occur in the project area during 8 Star Alaska's activities and, accordingly, is authorizing take for these species.

Densities for marine mammals in Cook Inlet were derived from NMFS AFSC's Marine Mammal Laboratory (MML) aerial surveys, typically flown in June, from 2000 to 2022 (Rugh *et al*., 2005; Shelden *et al*., 2013, 2015b, 2017, 2022; Shelden and Wade, 2019; Goetz *et al*., 2023) except for beluga whales, for which other density data exist, or for Steller sea lions, fin whale, Pacific white-sided dolphins, and California sea lions, which occur too rarely to support development of density estimates. Total survey area was not reported for the 2021 or 2022 survey years (Shelden *et al.*, 2022, Goetz *et al*., 2023) so total survey area for 2021 and 2022 was estimated as 8,377.2 km^2 for each year based on previous reports. While the surveys are concentrated for a few days in summer annually, which may skew densities for seasonally present species, they represent the best

available long-term dataset of marine mammal sightings available in Cook Inlet. To estimate the average density, the maximum number of individuals per species was divided by the area surveyed, and NMFS used the average across all survey years for each species.

CIBW densities estimated from the AFSC surveys across regions are low; however, there is a known effect of seasonality on their distribution. Thus, densities derived directly from these summer surveys might underestimate the density of CIBWs in lower Cook Inlet at other ice-free times of the year. Therefore, NMFS used the Goetz *et al*. (2012a) habitat-based model to determine CIBW density. This model is derived from sightings and incorporates depth soundings, coastal substrate type, environmental sensitivity index, anthropogenic disturbance, and anadromous fish streams to predict densities throughout Cook Inlet. The output of this model is a density map of Cook Inlet, which predicts spatially explicit density estimates for CIBW. Using the resulting grid densities, average densities were calculated for three regions applicable to 8 Star Alaska's operations (table 10). The densities applicable to the area of activity (*i.e.*, the Marine Terminal near Nikiski, the Mainline in middle Cook Inlet, and the Mainline MOF near Tyonek) are provided in table 10 and were carried forward to the exposure estimates as they were deemed to be the most representative estimates available.

Although data exists for Steller sea lions and fin whales in Cook Inlet from AFSC aerial surveys, this data is based on sightings of Steller sea lions and fin whales that were mostly observed in lower Cook Inlet and is not representative of middle Cook Inlet, where 8 Star Alaska plans to conduct construction. Therefore, in order to calculate take of these species, NMFS used marine mammal occurrence.

For Steller sea lions, NMFS used monitoring data from the Port of Alaska (POA) in Anchorage, as these animals would be expected to pass through middle Cook Inlet and therefore be observed in 8 Star Alaska's Project Area. In 2020-2022 and 2024 (61 North

Environmental, 2021, 2022a, 2022b, 2025; Easley-Appleyard and Leonard, 2022), the maximum number of Steller sea lions observed at POA was nine animals, eight during Petroleum and Cement Terminal (PCT) observations (61 North Environmental, 2022a) and one during NMFS 2021 monitoring effort (Easley-Appleyard and Leonard, 2022). Therefore, NMFS anticipates that up to nine Steller sea lions may occur in the project area per year during the course of 8 Star Alaska's project.

During seismic surveys conducted in 2019 by Hilcorp in the lower Cook Inlet, fin whales were recorded in groups ranging in size from one to 15 individuals (Fairweather, 2020). During the NMFS aerial surveys in Cook Inlet from 2000 to 2018, 10 sightings of 26 estimated individual fin whales in lower Cook Inlet were observed (Shelden *et al.*, 2013, 2015, 2016, 2019). Therefore, NMFS anticipates that one group of two fin whales (the lower end of the range of common group sizes) may occur in the project area per year during the course of 8 Star Alaska's project.

No density estimates are available for Pacific white-sided dolphins and California sea lions, as they are so infrequently sighted. Therefore, NMFS is authorizing take of these species based on group number (see table 11).

Due to the paucity of data of Pacific white-sided dolphins in this region, there is no available density for Pacific white-sided dolphins. They are considered rare in most of Cook Inlet, including in the lower entrance, but their presence was documented in Iniskin Bay and mid-inlet through passive acoustic recorders in 2019 (Castellote *et al*., 2020). In 2014, during Apache's seismic survey program, three Pacific white-sided dolphins were reported (Lomac-MacNair *et al.*, 2014).

While California sea lions are uncommon in Cook Inlet, two were seen during the 2012 Apache seismic survey in Cook Inlet (Lomac-MacNair *et al.*, 2013). California sea lions in Alaska are typically alone but may be seen in small groups usually associated with Steller sea lions at their haul outs and rookeries (Maniscalco *et al.*, *2004)*.

Table 10 -- Calculated Densities

Species	Density (Animals/km^2)
Gray whale	0.00070
Humpback whale	0.00185
Minke whale	0.00003
Killer whale	0.00061*
Beluga whale (Marine Terminal)	0.00016
Beluga whale (Mainline Crossing)	0.01070
Beluga whale (Mainline MOF)	0.03680
Dall's porpoise	0.00014
Harbor porpoise	0.00380
Harbor seal	0.26819

*The density for killer whales in this table has changed from the proposed rule to reflect the correct density (see **Changes from Proposed Rule** section).

Table 11 -- Marine Mammal Occurrence*

Species	Expected Occurrence (animals/year)
Fin whale	2
Pacific white-sided dolphin	3
California sea lion	2
Steller sea lion	9

*Marine mammal occurrence is used when density data is unavailable or not representative of the project area.

Take Estimation

Here we describe how the information provided above is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and is authorized.

To estimate take by Level B harassment for all species except for fin whale, Pacific white-sided dolphin, California sea lion, and Steller sea lion, 8 Star Alaska multiplied the area (km^2) estimated to be ensonified above the Level B harassment thresholds (table 8) for each activity by the duration (days) of that activity by the

calculated density for each species (number of animals/km^2). As described above, take of fin whale, Pacific white-sided dolphin, California sea lion, and Steller sea lion were calculated using group numbers and estimated frequency of occurrence (table 11).

For species where calculated take by Level B harassment was less than the average group size for that species, NMFS rounded up the take estimate to the anticipated group size as displayed in table 12 and described below.

Table 12 -- Estimated Take by Level B Harassment by Species, Pile Size and Type, and Installation/Removal Method

Structure	Activity	Days	Gray whale	Fin whale	Hump back whale	Minke whale	Killer whale	Pacific white-sided dolphin	Beluga whale	Dall's porpoise	Harbor porpoise	California sea lion	Steller sea lion	Harbor seal
Year 1														
Marine Terminal MOF Combi-Wall	66-inch Steel Pipe Pile x 2 Concurrent (Vibratory)	16	1.60	N/A	42.22	0.68	13.92	N/A	3.61	3.20	86.73	N/A	N/A	6120.74
	66-inch Steel Pipe Pile with Sheet Pile Concurrent (Vibratory)	6	0.30	N/A	8.02	0.13	2.64	N/A	0.68	0.61	16.47	N/A	N/A	1162.60
Marine Terminal MOF Coffer Cell	Sheet Pile x 2 Concurrent (Vibratory)	33	0.20	N/A	5.19	0.08	1.71	N/A	0.44	0.39	10.66	N/A	N/A	752.25
	24-inch Steel Pipe Pile With Sheet Pile Concurrent (Vibratory)	23	0.25	N/A	6.68	0.11	2.20	N/A	0.57	0.51	13.73	N/A	N/A	968.93
Total Calculated Year 1		78	2.35	N/A	62.11	1.01	20.48	N/A	5.3	4.7	127.59	N/A	N/A	9004.51
Total Estimated Take by Level B Harassment Year 1			3*	2*	62	3*	20	3*	11*	6*	128	2*	9*	9,005
Year 2														

Marine Terminal MOF Coffer Cell	Sheet Pile x 2 Concurrent (Vibratory)	32	0.19	N/A	5.03	0.08	1.66	N/A	0.43	0.38	10.34	N/A	N/A	729.45
	24-inch Steel Pipe Pile with Sheet Pile Concurrent (Vibratory)	22	0.24	N/A	6.39	0.10	2.11	N/A	0.55	0.48	13.13	N/A	N/A	926.80
Marine Terminal MOF RoRo Dolphin Quads	48-inch Steel Pipe Pile (Impact)	7	0.00	N/A	0.09	0.00	0.03	N/A	0.01	0.01	0.19	N/A	N/A	13.68
	24-inch Steel Pipe Pile (Impact)	7	0.00	N/A	0.02	0.00	0.01	N/A	0.00	0.00	0.04	N/A	N/A	2.95
Mainline MOF	Sheet Pile (Vibratory)	7	0.02	N/A	0.44	0.01	0.14	N/A	8.72	0.03	0.90	N/A	N/A	63.54
	Sheet Pile (Impact)	7	0.00	N/A	0.02	0.00	0.01	N/A	0.40	0.00	0.04	N/A	N/A	2.95
Total Calculated Year 2		83	0.45	N/A	12.00	0.19	3.96	N/A	10.1	0.90	24.65	N/A	N/A	1739.37
Total Estimated Take by Level B Harassment Year 2			3*	2*	12	3*	10*	3*	11*	6*	25	2*	9*	1739
Year 3														
PLF E-W Trestle	60-inch Steel Pipe Pile (Impact)	42	0.02	N/A	0.57	0.01	0.19	N/A	0.05	0.04	1.16	N/A	N/A	82.09

PLF Berths	48-inch Steel Pipe Pile (Impact)	16	0.01	N/A	0.22	0.00	0.07	N/A	0.02	0.02	0.44	N/A	N/A	31.27
PLF N-S Trestle	48-inch Steel Pipe Pile (Impact)	16	0.01	N/A	0.22	0.00	0.07	N/A	0.02	0.02	0.44	N/A	N/A	31.27
Mainline	Anchor handling	2	0.01	N/A	0.19	0.00	0.03	N/A	1.12	0.01	0.40	N/A	N/A	28.12
Total Calculated Year 3		76	0.05	N/A	1.19	0.01	0.39	N/A	1.21	0.09	2.45	N/A	N/A	172.76
Total Estimated Take by Level B Harassment Year 3			3*	2*	3*	3*	10*	3*	11*	6*	6*	2*	9*	173
Year 4														
PLF E-W Trestle	60-inch Steel Pipe Pile (Impact)	14	0.01	N/A	0.19	0.00	0.06	N/A	0.02	0.01	0.39	N/A	N/A	27.36
PLF Operations Platform	60-inch Steel Pipe Pile (Impact)	6	0.00	N/A	0.08	0.00	0.03	N/A	0.01	0.01	0.17	N/A	N/A	11.73
PLF Breasting dolphin berths	48-inch Steel Pipe Pile (Impact)	4	0.00	N/A	0.05	0.00	0.02	N/A	0.00	0.00	0.11	N/A	N/A	7.82
	60-inch Steel Pipe Pile (Impact)	12	0.01	N/A	0.16	0.00	0.05	N/A	0.01	0.01	0.33	N/A	N/A	23.45
	48-inch Steel Pipe	2	0.00	N/A	0.03	0.00	0.01	N/A	0.00	0.00	0.06	N/A	N/A	3.91

PLF Mooring dolphin	Pile (Impact)												
	60-inch Steel Pipe Pile (Impact)	2	0.00	N/A	0.03	0.00	0.01	N/A	0.00	0.00	0.06	N/A	N/A	3.91
PLF N-S Trestle	48-inch Steel Pipe Pile (Impact)	12	0.01	N/A	0.16	0.00	0.05	N/A	0.01	0.01	0.33	N/A	N/A	23.45
Mainline	Anchor handling	53	0.19	N/A	5.14	0.08	1.70	N/A	29.74	0.39	10.56	N/A	N/A	745.30
Total Calculated Year 4		105	0.22	N/A	5.84	0.09	1.93	N/A	29.78	0.44	12.0	N/A	N/A	846.93
Total Estimated Take by Level B Harassment Year 4			3*	2*	6	3*	10*	3*	30	6*	12	2*	9*	847
Year 5														
PLF Mooring dolphin	48-inch Steel Pipe Pile (Impact)	6	0.00	N/A	0.08	0.00	0.03	N/A	0.01	0.01	0.17	N/A	N/A	11.73
	60-inch Steel Pipe Pile (Impact)	14	0.01	N/A	0.19	0.00	0.06	N/A	0.02	0.01	0.39	N/A	N/A	27.36
PLF Catwalk	60-inch Steel Pipe Pile (Impact)	16	0.01	N/A	0.22	0.00	0.07	N/A	0.02	0.02	0.44	N/A	N/A	31.27
Total Calculated Year 5		36	0.02	N/A	0.44	0.01	0.14	N/A	0.05	0.04	1.0	N/A	N/A	70.36
Total Estimated Take by Level B Harassment Year 5			3*	2*	3*	3*	10*	3*	11*	6*	6*	2*	9*	70

*Take number adjusted for group size

During Apache's 2012 seismic program, nine sightings of a total of nine gray whales were observed in June and July (Lomac-MacNair *et al*., 2013). In 2014, one gray whale was observed during Apache's seismic program (Lomac-MacNair *et al*., 2014) and in 2015, no gray whales were observed during SAExploration's seismic survey (Kendall and Cornick, 2015). No gray whales were observed during the 2018 Cook Inlet Pipeline (CIPL) Extension Project (Sitkiewicz *et al*., 2018) or during the 2019 Hilcorp seismic survey in lower Cook Inlet (Fairweather Science, 2020). The greatest densities of gray whales in Cook Inlet occur from November through January and March through May; the former are southbound, the latter are northbound (Ferguson *et al*., 2015). Based on this information, NMFS is authorizing three takes by Level B harassment annually for gray whales. This is higher than the exposure estimate for each to allow for the potential occurrence of a group, or several individuals, per year.

During annual aerial surveys conducted in Cook Inlet from 2000 to 2016, humpback group sizes ranged from 1 to 12 individuals, with most groups comprised of 1 to 3 individuals (Shelden *et al.*, 2013). Three humpback whales were observed in Cook Inlet during SAExploration's seismic study in 2015: two near the Forelands and one in Kachemak Bay (Kendall and Cornick, 2015). In total, 14 sightings of 38 humpback whales (ranging in group size from 1 to 14) were recorded in the 2019 Hilcorp lower Cook Inlet seismic survey in the fall (Fairweather Science, 2020). Two sightings totaling three individual humpback whales were recorded near Ladd Landing north of the Forelands on the recent Harvest Alaska CIPL Extension Project (Sitkiewicz *et al.*, 2018). Based on documented observations from the CIPL Extension Project, which is the data closest to 8 Star Alaska’s project area, NMFS is authorizing three takes by Level B harassment for humpback whales for years 3 and 5. For years 1, 2, and 4, the calculated take exceeds the estimated group size.

Groups of up to three minke whales have been recorded in recent years, including one group of three southeast of Kalgin Island (Lomac-MacNair *et al.*, 2014). Other recent surveys in Cook Inlet typically have documented minke whales traveling alone (Shelden *et al.*, 2013, 2015, 2017; Fairweather Science, 2020). As the occurrence of minke whales is expected to be lower in middle Cook Inlet than lower Cook Inlet and considering the observed group sizes, NMFS is authorizing three takes of minke whale by Level B harassment for each year of 8 Star Alaska's project.

Killer whale pods typically consist of a few to 20 or more animals (NMFS, 2025b). During seismic surveys conducted in 2019 by Hilcorp in lower Cook Inlet, 21 killer whales were observed. Although also observed as single individuals, killer whales were recorded during this survey in groups ranging in size from two to five individuals (Fairweather Science, 2020). One killer whale group of two individuals was observed during the 2015 SAExploration seismic program near the North Foreland (Kendall and Cornick, 2015). Based on recent documented sightings, observed group sizes, and the established presence of killer whales in Cook Inlet, NMFS is authorizing 10 takes (2 groups of 5 animals, the upper end of recently recorded group size) by Level B harassment for killer whales for years 2-5.

The 2018 MML aerial survey (Shelden and Wade, 2019) estimated a median group size of approximately 11 beluga whales, although group sizes were highly variable (2 to 147 whales) as was the case in previous survey years (Boyd *et al*., 2019). Over 3 seasons of monitoring at the Port of Alaska, 61 North reported groups of up to 53 belugas, with a median group size of 3 and a mean group size of 4.4 (61 North Environmental, 2021, 2022a, 2022b, 2022c). Additionally, vessel-based surveys in 2019 observed beluga whale groups in the Susitna River Delta that ranged from 5 to 200 animals (McGuire *et al*., 2022). The very large groups seen in the Susitna River Delta are not expected in the areas of 8 Star Alaska's construction. However, smaller groups (*i.e.*,

around the median group size) could be traveling through to access the Susitna River Delta and other nearby coastal locations, particularly in the shoulder seasons when belugas are more likely to occur in middle Cook Inlet. Therefore, NMFS is authorizing 11 takes by Level B harassment of beluga whale in years 1-3, and 5, in which calculated exposures were below the median group size. Calculated takes of beluga whales was greater than the median group size in year 4 and therefore were not adjusted for group size.

Dall's porpoises are usually found in groups averaging between 2 and 12 individuals (NMFS, 2025a). During seismic surveys conducted in 2019 by Hilcorp in lower Cook Inlet, Dall's porpoises were recorded in groups ranging from two to seven individuals (Fairweather Science, 2020). The 2012 Apache survey recorded two groups of three individual Dall's porpoises (Lomac-MacNair *et al.*, 2014). NMFS is authorizing six takes by Level B harassment per year for Dall's porpoises. This is greater than the exposure estimate for each year, but allows for at least one group at the higher end of documented group size or a combination of small groups.

8 Star Alaska will shut down at the Level A harassment isopleth for all vibratory pile driving activities if a marine mammal is detected approaching the Level A harassment zone. The largest Level A harassment isopleth during vibratory pile driving is 181 m, and NMFS anticipates that 8 Star Alaska will be able to adequately monitor these zones and shutdown appropriately. NMFS, therefore, does not expect and does authorize Level A harassment due to vibratory pile driving for any species. As discussed in the *Acoustic Impacts* section, due to the characteristics of noise produced by AHTs (*e.g.*, low-intensity source levels relative to impact pile driving, and transitory nature of occurrence of marine mammal species in this area), auditory injury is not a likely outcome of this activity. Therefore, NMFS does not expect, and does not authorize, take by Level A harassment due to AHTs engaging in anchor handling.

To estimate take by Level A harassment from impact pile driving, 8 Star Alaska multiplied the area (km^2) estimated to be ensonified above the Level A harassment thresholds (table 8) for each impact pile driving activity by the duration (days) of that activity by the calculated density for each species (number of animals/km^2). Due to the infrequency of occurrence of fin whales, Pacific white-sided dolphins, California sea lions, and Steller sea lions in middle Cook Inlet, NMFS does not expect these species to enter Level A harassment zones for sufficient duration to incur injury, and is not authorizing take by Level A harassment of these species.

When attributing take to respective humpback whale stocks for each year, NMFS assumed that 89 percent of calculated take would be from the Hawai'i stock, 10.7 percent would be from the Mexico-North Pacific stock, and 0.3 percent would be from the Western North Pacific stock, as described in Wade (2021) (see table 14). Although the number calculated for the Western North Pacific stock is less than 0.5 animals, NMFS is conservatively attributing one take by Level B harassment to the Western North Pacific stock of the humpback whale.

For species for which take by Level A harassment is anticipated, those estimated takes by Level A harassment were subtracted from the estimated takes by Level B harassment to avoid double-counting the same exposures as both Level A and Level B harassment. Adjustments are reflected in table 14.

Table 13 -- Estimated Take by Level A Harassment by Species, Pile Size and Type, and Installation/Removal Method*

Structure	Activity	Days	Gray whale	Fin whale	Hump back whale	Minke whale	Killer whale	Pacific white-sided dolphin	Beluga whale	Dall's porpoise	Harbor porpoise	California sea lion	Steller sea lion	Harbor seal
Year 2														
Marine Terminal MOF RoRo Dolphin Quads	48-inch Steel Pipe Pile (Impact)	7	0	N/A	0.03	0	0	N/A	0	0.01	0.17	N/A	N/A	3.97
	24-inch Steel Pipe Pile (Impact)	7	0	N/A	0.02	0	0	N/A	0	0	0.1	N/A	N/A	2.32
Mainline MOF	Sheet Pile (Impact)	7	0	N/A	0.75	0	0	N/A	0.02	0.14	3.68	N/A	N/A	85.35
Total Calculated Year 2		83	0	N/A	0.79	0.01	0	N/A	0	0.15	3.95	N/A	N/A	91.64
Total Estimated Take by Level A Harassment Year 2			0	0	1	0	0	0	0	0	4	0	0	92
Year 3														
PLF E-W Trestle	60-inch Steel Pipe Pile (Impact)	42	0.05	N/A	1.42	0.02	0.01	N/A	0	0.26	6.97	N/A	N/A	162.23
PLF Berths	48-inch Steel Pipe Pile (Impact)	16	0.00	N/A	0.08	0.00	0.00	N/A	0	0.01	0.39	N/A	N/A	9.07
PLF N-S Trestle	48-inch Steel	16	0.00	N/A	0.08	0.00	0.00	N/A	0.2	0.01	0.39	N/A	N/A	9.07

	Pipe Pile (Impact)													
Total Calculated Year 3		75	0.06	N/A	1.58	0.02	0.01	N/A	0	0.28	7.75	N/A	N/A	180.37
Total Estimated Take by Level A Harassment Year 3			0	0	2	0	0	0	0	0	8	0	0	180
Year 4														
PLF E-W Trestle	60-inch Steel Pipe Pile (Impact)	14	0.02	N/A	0.47	0.01	0.00	N/A	0	0.09	2.32	N/A	N/A	54.08
PLF Operations Platform	60-inch Steel Pipe Pile (Impact)	6	0.01	N/A	0.20	0.00	0.00	N/A	0	0.04	1.00	N/A	N/A	23.18
PLF Breasting dolphin berths	48-inch Steel Pipe Pile (Impact)	4	0.00	N/A	0.02	0.00	0.00	N/A	0	0.00	0.10	N/A	N/A	2.27
	60-inch Steel Pipe Pile (Impact)	12	0.02	N/A	0.41	0.01	0.00	N/A	0	0.07	1.99	N/A	N/A	46.35
PLF Mooring dolphin	48-inch Steel Pipe Pile (Impact)	2	0.00	N/A	0.01	0.00	0.00	N/A	0	0.00	0.05	N/A	N/A	1.13
	60-inch Steel Pipe Pile (Impact)	2	0.00	N/A	0.07	0.00	0.00	N/A	0	0.01	0.33	N/A	N/A	7.73

PLF N-S Trestle	48-inch Steel Pipe Pile (Impact)	12	0.00	N/A	0.06	0.00	0.00	N/A	0	0.01	0.29	N/A	N/A	6.8
Total Calculated Year 4		105	0.05	N/A	1.24	0.02	0.01	N/A	0	0.22	6.08	N/A	N/A	141.53
Total Estimated Take by Level A Harassment Year 4			0	0	1	0	0	0	0	0	6	0	0	141
Year 5														
PLF Mooring dolphin	48-inch Steel Pipe Pile (Impact)	6	0.00	N/A	0.03	0	0	N/A	0	0	0.15	N/A	N/A	3.4
	60-inch Steel Pipe Pile (Impact)	14	0.02	N/A	0.47	0.01	0	N/A	0	0	2.32	N/A	N/A	54.08
PLF Catwalk	60-inch Steel Pipe Pile (Impact)	16	0.02	N/A	0.54	0.01	0	N/A	0	0	2.66	N/A	N/A	61.8
Total Calculated Year 5		36	0.04	N/A	1.04	0.02	0	N/A	0	0	5.13	N/A	N/A	119.28
Total Estimated Takes by Level A Harassment Year 5			0	0	1	0	0	0	0	0	5	0	0	119
Total Estimated Takes by Level A Harassment Over 5 Years			0	0	5	0	0	0	0	0	23	0	0	533

*Vibratory pile driving not included in Level A harassment take calculations because no Level A harassment is expected from vibratory pile driving due to small sizes of zones and implementation of shutdown zones to prevent Level A harassment from vibratory pile driving.

Table 14 -- Authorized Level A Harassment and Level B Harassment Takes of Marine Mammals Incidental to All Activities Over the Course of 8 Star Alaska's 5-Year Project

Marine Mammal species	Stock	Year 1		Year 2		Year 3		Year 4		Year 5		Five Year Total	
		Level A	Level B	Level A	Level B	Level A	Level B	Level A	Level B	Level A	Level B	Level A	Level B
Gray whale	Eastern North Pacific	0	3	0	3	0	3	0	3	0	3	0	15
Fin whale	Northeast Pacific	0	2	0	2	0	2	0	2	0	2	0	10
Humpback whale	Hawai'i	0	56	1	11	2	1	1	4	1	2	5	74
	Mexico-North Pacific	0	6	0	1	0	0	0	1	0	0	0	8
	Western North Pacific	0	1	0	0	0	0	0	0	0	0	0	1
Minke whale	Alaska	0	3	0	3	0	3	0	3	0	3	0	15
Killer whale	Eastern North Pacific Alaska Resident	0	21	0	10	0	10	0	10	0	10	0	61
	Eastern North Pacific Gulf of Alaska, Aleutian Islands, and Bering Sea Transient												
Pacific white-sided dolphin	North Pacific	0	3	0	3	0	3	0	3	0	3	0	15
Beluga whale	Cook Inlet	0	11	0	11	0	11	0	30	0	11	0	74
Dall's porpoise	Alaska	0	6	0	6	0	6	0	6	0	6	0	30
Harbor porpoise	Gulf of Alaska	0	128	4	21	8	0	6	6	5	1	23	156
California sea	U.S.	0	2	0	2	0	2	0	2	0	2	0	10

lion													
Steller sea lion	Western	0	9	0	9	0	9	0	9	0	9	0	45
Harbor seal	Cook Inlet/Shelikof Strait	0	9,005	92	1,647	180	0	142	705	119	0	533	11,357

To inform both the negligible impact analysis and the small numbers determination, NMFS assesses the maximum number of takes of marine mammals that could occur within any given year. In this calculation, the maximum number of Level A harassment takes in any one year is summed with the maximum number of Level B harassment takes in any one year for each species to yield the highest number of estimated take that could occur in any year (table 15) for each stock. Table 15 also depicts the number of authorized takes relative to the abundance of each stock. We note here that, as a result of the source level changes for impact installation of 48-inch steel pipe piles (see **Changes From the Proposed Rule** section) and resultant changes to harassment isopleths, the maximum annual Level A takes of harbor seals changed from 176 in the proposed rule to 180 in this final rule. This resulted in an increase of the total maximum annual take of harbor seals from 9,181 in the proposed rule to 9,185 in this final rule (see table 15).

Table 15 -- Maximum Annual Take Authorized and as a Percentage of Stock Abundance

Species	Stock	NMFS stock abundance	Maximum annual Level A harassment	Maximum annual Level B harassment	Maximum annual take	Maximum annual take as a percentage of stock abundance
Gray whale	Eastern North Pacific	26,960	0	3	3	0.01
Fin whale	Northeast Pacific	UND	0	2	2	N/A*
Humpback whale	Hawai'i	11,278	2	56	58	0.58
	Mexico-North Pacific	N/A	0	6	6	N/A*
	Western North Pacific	1,084	0	1	1	0.09

Minke whale	Alaska	N/A	0	3	3	N/A*
Killer whale	Eastern North Pacific Alaska Resident	1,920	0	21	21	1.09
	Eastern North Pacific Gulf of Alaska, Aleutian Islands, and Bering Sea Transient	587				3.58
Pacific white-sided dolphin	North Pacific	26,880	0	3	3	0.01
Beluga whale	Cook Inlet	331	0	30	30	9.06
Dall's porpoise	Alaska	UND	0	6	6	N/A*
Harbor porpoise	Gulf of Alaska	31,046	8	128	136	0.44
California sea lion	U.S.	257,606	0	2	2	<0.01
Steller sea lion	Western	49,837	0	9	9	0.02
Harbor seal	Cook Inlet/Shelikof Strait	28,411	180	9005	9185	32.32

*See small numbers discussion below for additional information.

Mitigation

In order to promulgate a rulemaking under section 101(a)(5)(A) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity and other means of effecting the least practicable adverse impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain

subsistence uses. NMFS regulations require applicants for ITAs to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, NMFS considers two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat, as well as subsistence uses. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), and the likelihood of effective implementation (probability implemented as planned); and

(2) The practicability of the measures for applicant implementation, which may consider such things as cost and impact on operations.

The mitigation requirements described below were proposed by 8 Star Alaska in its adequate and complete application or are the result of subsequent coordination between NMFS and 8 Star Alaska. 8 Star Alaska has agreed that all of the mitigation measures are practicable. NMFS has fully reviewed the specified activities and the mitigation measures to determine if the mitigation measures will result in the least practicable adverse impact on marine mammals and their habitat, as required by the MMPA, and has determined the measures are appropriate. NMFS describes these mitigation requirements below and has included them in the regulations.

Shutdown and Clearance Zones

8 Star Alaska will establish shutdown zones for all pile driving and removal activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity will occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones vary based on the activity type and marine mammal hearing group (see table 16). A minimum shutdown zone of 10 m will be required for all in-water construction activities to avoid physical interaction with marine mammals. Activity-specific shutdown zones are based upon the estimated Level A harassment zones and distances at which 8 Star Alaska expects PSOs will be able to observe the relevant species, with the exception of CIBW.

For CIBWs, 8 Star Alaska will shut down at the estimated Level B harassment isopleth, except when that isopleth is farther than the PSOs can observe. 8 Star Alaska expects that PSOs could observe beluga whales up to 2-3 km under typical conditions. When shutdown zones are larger than the distance that PSOs will be able to observe, 8 Star Alaska is expected to shut down if a beluga whale was observed at any distance.

Table 16 -- Shutdown Zones for Pile Driving (m)

Activity	LF	Non-Beluga HF	Beluga Whales[1]	VHF	Phocid	Otariids
Impact Pile Driving						
Sheet Pile at Mainline MOF	2,000	400	1,000	400	400	400
24-inch Pipe Pile at Marine Terminal MOF	1,000	130	1,000	400	400	350
48-inch Pipe Pile at PLF and Marine Terminal MOF[2]	1,300	170	2,160	400	400	400
60-inch Steel Pipe Pile at PLF	2,000	400	2,160	400	400	400
Vibratory Pile Driving						
Sheet Pile at Mainline MOF and Marine Terminal MOF	30	20	4,642	30	40	20

24-inch Steel Pipe Pile at Marine Terminal MOF	20	10	7,356	20	30	10
66-inch Steel Pipe Pile at Marine Terminal MOF	60	30	21,544	50	70	30
66-inch Steel Pipe Pile x 2 at Marine Terminal MOF	90	40	34,146	70	110	40
66-inch Steel Pipe Pile with Sheet Pile at Marine Terminal MOF	150	60	21,544	120	190	70
Sheet Pile x 2 at Marine Terminal MOF	50	20	7,356	40	60	20
24-inch Steel Pipe Pile with Sheet Pile at Marine Terminal MOF	40	20	11,659	30	50	20
24-inch Steel Pipe Pile x 2 at Marine Terminal MOF	70	30	10,000	60	90	30

[1]When the shutdown zones for beluga whales are larger than what PSOs can observe, pile driving must be shut down when beluga whales are visible within any distance.
[2]Shutdown zones for LF, non-beluga HF, and beluga whales have changed for impact installation of the 48-inch pipe pile from the proposed rule to this final rule due to changes in Level A and Level B harassment zones (see table 7).

Pile driving will be halted upon observation of a marine mammal entering or within the shutdown zone. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily left and has been visually confirmed beyond the shutdown zone for 30 minutes (large whales and beluga whales) or 15 minutes (pinnipeds and other cetaceans) without re-detection of the animal within the shutdown zone. If work ceases for more than 30 minutes, the shutdown zones must be cleared again for 30 minutes prior to reinitiating pile driving. A determination that the pile driving shutdown zone is clear must be made during a period of good visibility.

If a PSO(s) can no longer effectively monitor the entirety of the corresponding shutdown zone during impact pile driving, or at least 2 km during vibratory pile driving, due to environmental conditions (*e.g.*, fog, rain, wind), pile driving could continue only until the current segment of the pile is driven; no additional sections of pile or additional

piles could be driven until conditions improve such that zone could be effectively monitored. If the shutdown zone cannot be monitored for more than 15 minutes, the entire zone will be cleared again for 30 minutes prior to reinitiating pile driving.

If a species for which authorization has not been granted or a species for which authorization has been granted but the authorized takes have been reached is observed approaching, entering, or within the corresponding zone, in-water work will be delayed (if during pre-clearance) or shut down (except for AHTs engaged in anchor handling). Activities will not resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown or clearance zone indicated in tables 16 and 17 for 30 minutes (for large whales and beluga whales) or 15 minutes (for pinnipeds and other cetaceans) without re-detection of the animal within the shutdown zone.

If a shutdown procedure should be initiated but human safety is at risk, as determined by the best professional judgment of the vessel operator or project engineer, the in-water activity, including pile driving, will be allowed to continue until the risk to human safety has dissipated. In this scenario, pile driving could continue only until the current segment of the pile is driven; no additional sections of pile or additional piles could be driven until the Lead PSO has determined that the shutdown zones are clear of marine mammals and for CIBW, any observed whale(s) is at least 100 m past the shutdown zone and on a path away from the zone.

AHTs cannot shut down once they have begun positioning anchors. Prior to anchor handling, 8 Star Alaska will implement a clearance zone of 1,500 m around AHTs for all marine mammals other than CIBWs. The clearance zone for beluga whales is equal to the Level B harassment isopleth (3,850 m). This distance is likely farther than what PSOs could reliably monitor. If visibility is less than the Level B harassment isopleth, PSOs are expected to clear the zone around AHTs at the distance visible to PSOs.

Table 17 -- Clearance Zones for AHTs (m)

Activity	Non-Beluga Species	Beluga Whales*
Anchor handling	1,500	3,850

*When the clearance zone is larger than what PSOs can observe, PSOs will clear the observable zone.

Pre- and Post-Activity Monitoring

Monitoring will take place from 30 minutes prior to initiation of pile driving and anchor handling activities (*i.e.*, pre-clearance monitoring) through 30 minutes post-completion of pile driving and anchor handling. Prior to the start of daily in-water construction activity, or whenever a break in pile driving or anchor handling of 30 minutes or longer occurs, PSOs will observe the clearance zones (anchor handling) or shutdown zones (pile driving) for a period of 30 minutes. If a marine mammal is observed within the shutdown zone or clearance zone, pile driving, including a soft-start (described below), and anchor handling will not proceed until the animal has left the zone or has not been observed for 30 minutes (large whales and beluga whales) or 15 minutes (pinnipeds and other cetaceans). Pre-start clearance monitoring will be conducted during periods of visibility sufficient for the PSO(s) to observe the entirety of the shutdown zone for impact pile driving and at least 2 km for vibratory pile driving and anchor handling, except in cases where tugging operations occur during nighttime hours. In these circumstances, 8 Star Alaska will clear the clearance zones to the maximum extent possible.

Monitoring for Level A and Level B Harassment

8 Star Alaska will monitor for marine mammals in the Level B harassment and Level A harassment zones to the extent practicable and throughout the area as far as visual monitoring can occur. Monitoring enables observers to be aware of and communicate the presence of marine mammals in the project area outside the shutdown zone. Due to some of the large Level A and Level B harassment zones (table 7 and table 9), PSOs will not be able to effectively observe the entire zones during all activities for

all species. All marine mammals observed within the visible portion of the harassment zones will be recorded. 8 Star Alaska will also conduct acoustic monitoring as described in the **Monitoring and Reporting** section below.

Soft Start

Soft start procedures provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors will be required to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period, then two subsequent three-strike sets before initiating continuous driving. Soft start will 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.

Vessel Transit

Operators of vessels will avoid approaching marine mammals within 100 yards (92 m). The vessel operator will avoid placing the vessel in the path of a whale and will not cut in front of the whale in a way or at a distance that causes the whale to change direction of travel or behavior (including breathing/surface pattern). If a whale’s course and speed are such that it will likely cross in front of a vessel that is underway, or approach within 100 yards (92 m) of the vessel, and if maritime conditions safely allow, the engine will be put in neutral and the whale will be allowed to pass beyond the vessel. Vessel operators will reduce speed to 10 knots (18.5 km/hour) or less when weather conditions reduce visibility to 1.6 km (1 mile) or less. When within 300 yards (274 m) of a whale, vessels will travel at less than 5 knots (9.3 km/hour), and vessel operators should avoid changes in direction and speed within 300 yards (274 m) of a whale, unless doing so is necessary for maritime safety.

For vessels operating in the Susitna Delta Exclusion Zone (see figure 1), the following will be implemented:

- All project vessels operating within the designated Susitna Delta area will maintain a speed above ground below 4 knots. PSOs will note the numbers, date, time, coordinates, and proximity to vessels of all belugas observed during operations and report these observations to NMFS in monthly reports.
- Vessel crew will be trained to monitor for ESA-listed species prior to and during all vessel movement within the Susitna Delta Exclusion Zone. The vessel crew will report sightings to the PSO team for inclusion in the overall sighting database and reports.
- Vessel operators will not move their vessels when they are unable to adequately observe the 100-m zone around vessels under power (in gear) due to darkness, fog, or other conditions, unless necessary for ensuring human safety.

The Susitna Delta Exclusion Zone (see figure 1) is defined as the union of the areas defined by:

(i) A 16-km (10-mile) buffer of the Beluga River thalweg seaward of the MLLW line;

(ii) A 16-km (10-mile) buffer of the Little Susitna River thalweg seaward of the MLLW line; and

(iii) A 16-km (10-mile) seaward buffer of the MLLW line between the Beluga River and Little Susitna River.

(iv) The buffer extends landward along the thalweg to include intertidal waters within rivers and streams up to their mean higher high water (MHHW) line. The seaward boundary has been simplified so that it is defined by lines connecting readily discernable landmarks.

Time/Area Restriction

Pile driving associated with the Mainline MOF will not occur from June 1 to September 7.

Between April 15 and October 15, 8 Star Alaska will not conduct pile driving or AHT activities with Level B harassment isopleths that would extend shoreward of the MLLW line in the Susitna Delta (Beluga River to the Little Susitna River; see figure 1) and project vessel(s) operating in or transiting through Cook Inlet will maintain a distance of at least 1.5 nautical miles (2.8 km) seaward of the MLLW line in the Susitna Delta (Beluga River to the Little Susitna River).

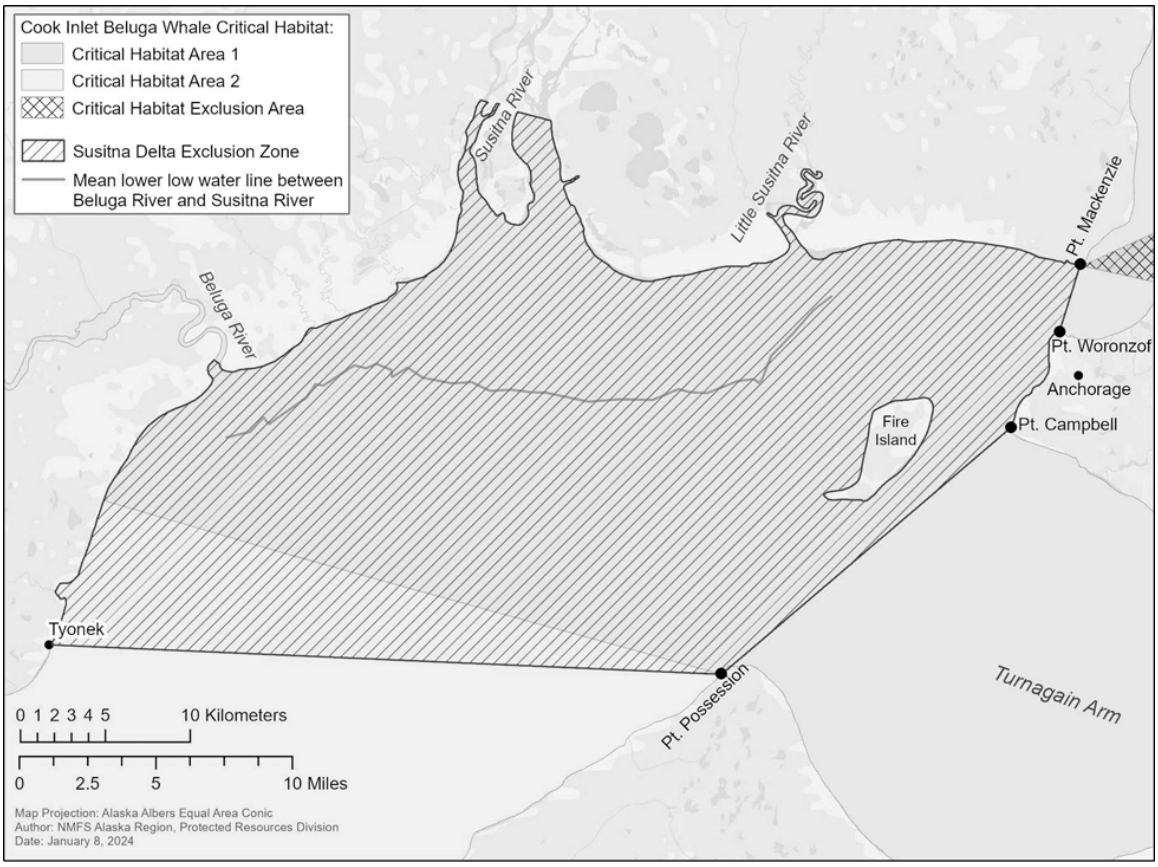

Figure 1 -- Susitna Delta Exclusion Zone, showing MLLW line between the Beluga and Little Susitna Rivers

Noise Attenuation

8 Star Alaska will use a noise attenuation device, such as a bubble curtain, and test it for effectiveness through SSV (see **Monitoring** section below) at the beginning of pile driving. If the results show at least a 2 dB source reduction is achieved, 8 Star Alaska

will employ the use of noise attenuation, such as bubble curtains, throughout construction. Once the contractor is selected, 8 Star Alaska will work with the contractor and NMFS to identify the appropriate type of noise attenuation system for the specific hammer and equipment.

NMFS conducted an independent evaluation of the mitigation measures and has determined that the mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for subsistence uses.

Monitoring and Reporting

In order to issue an LOA for an activity, section 101(a)(5)(A) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present while conducting the activities. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS for this project contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization,

propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the activity; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);

- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

The monitoring and reporting requirements described in the following were proposed by 8 Star Alaska in its adequate and complete application or are the result of subsequent coordination between NMFS and 8 Star Alaska following receipt of the application. 8 Star Alaska has agreed that all of the mitigation measures are appropriate. NMFS describes these requirements below and has included them in the regulations.

Visual Monitoring

Marine mammal monitoring will be conducted in accordance with 8 Star Alaska's NMFS-approved Marine Mammal Monitoring and Mitigation Plan, dated April 4, 2025, and included as Appendix A in its application.

Marine mammal monitoring during pile driving and removal will be conducted by NMFS-approved PSOs in a manner consistent with the following:

- PSOs must be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods.

- 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 or Letter of Concurrence.
- 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. PSOs may also substitute Alaska native traditional knowledge for experience (NMFS recognizes that PSOs with traditional knowledge may also have prior experience and be eligible to serve as the lead PSO).
- 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.
- PSOs must be approved by NMFS prior to beginning any activity subject to this rule.

PSOs should have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field of identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for

implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and

- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

For all pile driving activities, a minimum of two PSOs will be on duty at all times. In general, PSOs will be stationed on a stable land-based platform with sufficient height, such as bluffs, to provide excellent viewing conditions for marine mammals, although detection varies by species and is affected by weather conditions. For anchor handling, two PSOs will be on the barge, and one PSO will always be on duty.

PSOs will not exceed 4 consecutive watch hours, will have at least a 2-hour break between watches, and will not exceed a watch schedule of more than 12 hours per 24-hour period. PSOs will have no other construction-related tasks while conducting monitoring. Monitoring will be conducted from 30 minutes prior to activity (pile driving or anchor handling), throughout the time of the activity (pile driving or anchor handling), and for 30 minutes following the conclusion of the activity (pile driving or anchor handling). PSOs will monitor using the naked eye, standard (7x) binoculars, and high-magnification (25x) binoculars. Monitoring distances will be measured with range finders, and distances to animals must be based on the best estimate of the PSO, relative to known distances to objects in the vicinity of the PSO.

Acoustic Monitoring

8 Star Alaska will conduct SSV in accordance with accepted methodology as described in the Sound Source Verification Plan, which 8 Star Alaska will develop after its contractor is selected. NMFS will review and approve the plan prior to implementation. 8 Star Alaska will conduct SSV at the beginning of pile driving to characterize the sound levels associated with different pile and hammer types and assess

attenuation devices, such as bubble curtains. The SSV will be conducted in accordance with the following conditions:

- 8 Star Alaska must measure a minimum of two piles of each type and size.
- The following data, at minimum, shall be collected during acoustic monitoring and reported: (1) hydrophone equipment and methods: recording device, sampling rate, distance (m) from the pile where recordings were made; depth of water and recording device(s); (2) type and size of pile being driven, substrate type, method of driving during recordings (*e.g.*, hammer model and energy), and total pile driving duration; (3) whether a sound attenuation device is used and, if so, a detailed description of the device used and the duration of its use per pile; (4) for impact pile driving (per pile): number of strikes and strike rate; depth of substrate to penetrate; pulse duration and mean, median, and maximum sound levels (dB re: 1 μPa): root mean square sound pressure level (SPL_{rms}); cumulative sound exposure level (SEL_{cum}), peak sound pressure level (SPL_{peak}), and single-strike sound exposure level (SEL_{s-s}); (5) for vibratory driving/removal (per pile): duration of driving per pile; mean, median, and maximum sound levels (dB re: 1 μPa): root mean square sound pressure level (SPL_{rms}), cumulative sound exposure level (SEL_{cum}) (and timeframe over which the sound is averaged).

An SSV report will be submitted to NMFS for approval within 5 days after finalization of field measurements and report data. If appropriate, the results of the SSV report could be used to adjust the extent of the Level A and Level B harassment zones for in-water pile driving.

Reporting

8 Star Alaska will submit interim monthly reports for all months in which pile driving or anchor handling occurs. Monthly reports will be due 14 days after the conclusion of each calendar month, and must include a summary of marine mammal

species and behavioral observations, delays, and activities completed. They will also include an assessment of the amount of work (pile driving and anchor handling) remaining to be completed, in addition to the number of CIBWs observed within estimated harassment zones to date.

8 Star Alaska will submit draft annual reports to NMFS within 90 calendar days of the completion of construction (pile driving, anchor handling) each year. Each report will include an overall description of all work completed, a narrative regarding marine mammal sightings, and associated marine mammal observation data sheets (data must be submitted electronically in a format that can be queried such as a spreadsheet or database). Specifically, the report will include the following information:

- Date and time that monitored activity begins or ends;
- Activities occurring during each observation period, including (a) the type of activity; (b) the total duration of each type of activity; (c) when nighttime operations were required; (d) the number and type of piles that were driven and the method (*e.g.*, impact, vibratory), and (e) total duration of driving time for each pile (vibratory driving) and total number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring;
- Environmental conditions during monitoring periods (at the beginning and end of the PSO shift and whenever conditions change significantly), including Beaufort sea state, tidal state, and any other relevant weather conditions, including cloud cover, fog, sun glare, overall visibility to the horizon, and estimated observable distance;
- Upon observation of a marine mammal, (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), (d) PSO confidence in identification and the composition

of the group if there is a mix of species, (e) distance and location of each observed marine mammal relative to the AHTs or pile being driven for each sighting, (f) estimated number of animals (min/max/best estimate), (g) estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*), (h) animal's closest point of approach and estimated time spent within the harassment zone, and (i) 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);

- Number of marine mammals detected within the harassment zones, by species; and
- 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.

If no comments are received from NMFS within 30 days of receipt of the draft report, the report will be considered final. If comments are received, 8 Star Alaska will submit a final report addressing NMFS' comments within 30 days following receipt of any NMFS comments on the draft reports.

In the event that personnel involved in 8 Star Alaska's activities discover an injured or dead marine mammal, 8 Star Alaska will report the incident to the Office of Protected Resources, NMFS, and to the Alaska Regional Stranding Coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, 8 Star Alaska will immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the incidental take authorization. 8 Star Alaska

will not resume their activities until notified by NMFS. The report will include the following information:

- Time, date, and location (latitude and longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through harassment, NMFS considers other factors, such as the likely nature of any impacts or responses (*e.g.*, intensity, duration), the context of any impacts or responses (*e.g.*, critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338, September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.*, as reflected in the regulatory status of the

species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the majority of our analysis applies to all species listed in table 1, except for CIBWs, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar. For CIBWs, there are meaningful differences in anticipated responses to activities, impact of expected take on the population, or impacts on habitat; therefore, we provide a separate independent detailed analysis for CIBWs following the analysis for other species for which we are authorizing take.

Marine Mammals Except CIBWs

NMFS has identified several key factors to assess whether potential impacts associated with a specified activity should be considered negligible. These include (but are not limited to) the type and magnitude of taking, the amount and importance of the available habitat for the species or stock that is affected, the duration of the anticipated effect on the individuals, and the status of the species or stock. The potential effects of the specified activity on humpback whales, minke whales, gray whales, fin whales, killer whales, Dall's porpoises, harbor porpoises, Pacific white-sided dolphins, Steller sea lions, harbor seals, and California sea lions are discussed below. These factors also apply to CIBWs; however, additional analysis for CIBWs is provided in a separate sub-section below.

8 Star Alaska's specified activities have the potential to disturb or displace marine mammals, and the number of takes authorized for 8 Star Alaska's activities have been identified above in the **Estimated Take of Marine Mammals** section. Takes are anticipated to occur when marine mammals are present in zones ensonified above the thresholds for Level B harassment, identified above, while activities are underway. Additionally, for impact pile driving activities, potential takes by Level A harassment

could occur if marine mammals are present in zones ensonified above relevant threshold criteria for sufficient periods of time to incur auditory injury. 8 Star Alaska's activities and associated impacts will occur within a limited, confined area of the affected species or stocks' range. Pile driving is planned to occur over a total of 324 total days over the course of 5 years, ranging from 36 days to 83 days in a single year. The use of AHTs for anchor handling will occur for only 2 days in year 3 and 53 days in year 4. The intensity and duration of take by Level A and Level B harassment will be minimized through use of mitigation measures described herein. NMFS does not anticipate that Level A harassment will occur other than in association with impact pile driving, or that serious injury or mortality will occur, as a result of 8 Star Alaska's planned activity given the nature of the activity, even in the absence of required mitigation.

Exposure to elevated sound levels produced during AHTs engaged in anchor handling and pile driving activities has the potential to cause behavioral disturbance of some individuals within the vicinity of the sound source. Behavioral responses of marine mammals to 8 Star Alaska's AHTs engaged in anchor handling activities are expected to be mild, short term, and temporary. Effects on individuals that are taken by Level B harassment, as enumerated in the **Estimated Take of Marine Mammals** section, on the basis of reports in the literature as well as monitoring from other similar activities (Horsley and Larson, 2023, 2024), would likely be limited to behavioral response such as increased swimming speeds, changes in directions of travel and diving and surfacing behaviors, increased respiration rates, or interrupted foraging (if such activity were occurring) (Ridgway *et al.*, 1997; Nowacek *et al.*, 2007; Thorson and Reyff, 2006; Kendall and Cornick, 2015; Goldbogen *et al.*, 2013; Blair *et al.*, 2016; Wisniewska *et al.*, 2018; Piwetz *et al.*, 2021). Marine mammals within the Level B harassment zones may not present any visual cues if they are disturbed by activities. Alternatively, they may become alert, avoid the area, leave the area, or have other mild responses that are not

observable such as increased stress levels (*e.g.*, Rolland *et al*., 2012; Bejder *et al*., 2006; Rako *et al*., 2013; Pirotta *et al*., 2015; Pérez-Jorge *et al*., 2016). They may also exhibit increased vocalization rates (Dahlheim, 1987; Dahlheim and Castellote, 2016), louder vocalizations (Frankel and Gabriele, 2017; Fournet *et al.*, 2018), alterations in the spectral features of vocalizations (Castellote *et al.*, 2012), or a cessation of communication signals (Tsujii *et al*., 2018). However, Hilcorp's monitoring results from tugging activities have shown little to no observable reactions in marine mammals that have frequented an area similar to where 8 Star Alaska's activities will take place (Horsley and Larson, 2023).

AHTs engaged in anchor handling are slow-moving as compared to typical recreational and commercial vessel traffic. Assuming an animal was stationary, exposure to sound above the Level B harassment threshold from the moving AHT configuration would be on the order of minutes in any particular location. The slow, predictable, and generally straight path of this activity is expected to further lower the likelihood of more than low-level responses to the sound. Also, this slow transit along a predictable path is planned in an area of routine vessel traffic where many large vessels move in slow straight-line paths, and some individuals are expected to be habituated to these sorts of sounds. While it is possible that animals may swim around the project area, avoiding closer approaches to the vessels, we do not expect them to abandon any intended path. Further, most animals present in the region would likely be transiting through the area; therefore, any potential exposure is expected to be brief. Based on the characteristics of the sound source and the other activities regularly encountered in the area, it is unlikely 8 Star Alaska's planned anchor handling activities would be of a duration or intensity expected to result in significant behavioral responses that may be more likely to result in impacts on reproduction or survival.

Effects on individuals that are taken during pile driving, on the basis of reports in the literature as well as monitoring from other similar activities, would likely be limited to reactions such as increased swimming speeds, increased surfacing time, or interrupted foraging (if such activity were occurring; *e.g.*, Thorson and Reyff, 2006; HDR Inc., 2012; Lerma, 2014; ABR, 2016; 61 North Environmental, 2021, 2022a, 2022b, 2022c, 2025). Most likely, individuals would simply move away from the sound source and be temporarily displaced from the areas of pile driving (Degraer *et al*., 2022). If sound produced by project activities is sufficiently disturbing, animals would be likely to simply avoid the area while the activity is occurring.

Further, most of the species present in the region would only be present temporarily based on seasonal patterns or during transit between other habitats. These temporarily present species would be exposed to even shorter periods of noise-generating activity, further decreasing the impacts. Most likely, individual animals would simply move away from the sound source and be temporarily displaced from the area. Takes also have the potential to occur during important feeding times. However, the project area represents a small portion of available foraging habitat and impacts on marine mammal feeding for all species should be minimal.

We anticipate that any potential reactions and behavioral changes would subside quickly when the exposures cease, and, therefore, we do not expect long-term adverse consequences from 8 Star Alaska's activities for individuals of any species. The intensity of harassment events will be minimized through use of mitigation measures described herein, which were not quantitatively factored into the take estimates. 8 Star Alaska will use PSOs to monitor for marine mammals before commencing any of the specified activities, which will minimize the potential for marine mammals to be present within the estimated Level A and Level B harassment areas, further reducing the likely amount of any potential Level A or Level B harassment. Further, given the absence of any major

rookeries or areas of known biological significance for marine mammals (*e.g.*, foraging hot spots) within the estimated harassment zones (other than critical habitat and a BIA for CIBWs as described below), we predict that potential takes by Level B harassment would have an inconsequential short-term effect on individuals and would not result in population-level impacts.

In addition to evaluating the anticipated impacts of the single instances of takes, it is important to understand the degree to which individual marine mammals may be disturbed repeatedly across multiple days of the year. In this case, given the number of takes by harassment as compared to the number of harbor seals anticipated to occur in the project area, it is likely that some portion of the individuals taken are taken repeatedly over a limited number of days. However, it is unlikely that repeated takes would occur either in numbers or clumped across sequential days in a manner likely to impact foraging success and energetics or other behaviors such that reproduction or survival of any individuals is likely to be impacted.

Theoretically, repeated, sequential exposure to elevated noise from vibratory and impact pile driving and noise from AHTs over a long duration could result in more severe impacts to individuals that could affect individual fitness or reproductive success (via sustained or repeated disruption of important behaviors such as feeding, resting, traveling, and socializing; Southall *et al*., 2007). Alternatively, marine mammals exposed to repetitious sounds may become habituated, desensitized, or tolerant after initial exposure to these sounds (reviewed by Richardson *et al*., 1995; Southall *et al*., 2007). Cook Inlet is a regional hub of marine transportation and is used by various classes of vessels, including container ships, bulk cargo freighters, tankers, commercial and sport-fishing vessels, and recreational vessels. Off-shore vessels, tug vessels, and tour boats represent 86 percent of the total operating days for vessels in Cook Inlet (Bureau of Ocean Energy Management, 2016). Given that marine mammals still frequent and use

Cook Inlet despite being exposed to anthropogenic sounds such as those produced by pile driving, tug boats and other vessels across many years, and that it is unlikely that any individual will be exposed to repeated, sequential exposures or repetitious sounds from 8 Star Alaska's activities, no impacts to the reproduction or survival of any marine mammal individuals from the additional noise produced by the specified activities are anticipated.

NMFS anticipates take by Level A harassment of three species due to the potential that an animal could enter and remain within the area between a Level A harassment zone and shutdown zone during impact pile driving for a duration long enough to be taken by Level A harassment. Any take by Level A harassment is expected to arise from, at most, a small degree of AUD INJ, because animals would need to be exposed to higher levels and/or longer duration than are expected to occur here in order to incur any more than a small degree of AUD INJ. Additionally, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. Because of the small degree anticipated, though, any permanent threshold shift (PTS) or TTS potentially incurred here is not expected to adversely impact individual fitness, let alone annual rates of recruitment or survival.

Impacts to marine mammal prey species are also expected to be minor and temporary and to have, at most, short-term effects on foraging of individual marine mammals and likely no effect on the populations of marine mammals as a whole. Overall, as described above, the area anticipated to be impacted by 8 Star Alaska's planned activities is very small compared to the available surrounding habitat and does not include habitat of particular importance to marine mammals. The most likely impact to prey would be temporary behavioral avoidance of the immediate area. While AHTs are engaged in anchor handling and pile driving activities, it is expected that some fish would

temporarily leave the area of disturbance (*e.g.*, Nakken, 1992; Olsen, 1979; Ona and Godo, 1990; Ona and Toresen, 1988), thus impacting marine mammals' foraging opportunities in a limited portion of their foraging range. But, because of the relatively small area of the habitat that may be affected and lack of any foraging habitat of particular importance, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences. Additionally, the habitat within the estimated acoustic footprint is not known to be heavily used by marine mammals.

Finally, 8 Star Alaska will minimize potential exposure of marine mammals to elevated noise levels by implementing mitigation measures for AHTs engaged in anchor handling and pile driving activities. For anchor handling activities conducted by AHTs, 8 Star Alaska will delay anchor handling activities if marine mammals are observed in the clearance zones during the pre-clearance monitoring period. For pile driving, 8 Star Alaska will delay the start of pile driving activities if marine mammals are observed during the pre-clearance monitoring period and will implement hearing group-specific shutdown zones during the activities if marine mammals are observed. 8 Star Alaska will implement soft-start procedures to provide warning and/or give marine mammals a chance to leave the area prior to the hammer operating at full capacity. If SSV shows that bubble curtains are effective to result in at least a 2 dB reduction in sound during pile driving, bubble curtains will be implemented.

In summary and as described above, the following factors (with additional analyses for CIBWs included below) primarily support our determination that the impacts resulting from 8 Star Alaska's activities are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or authorized;

- Take by Level A harassment is authorized for only three species, and the Level A harassment is expected to be of a lower degree that would not impact the fitness of any animals;
- The intensity of anticipated takes by Level B harassment is low for all stocks consisting of, at worst, temporary modifications in behavior, and would not be of a duration or intensity expected to result in impacts on reproduction or survival;
- Take will not occur in places and/or times where take is more likely to impact reproduction or survival, such as within ESA-designated or proposed critical habitat or BIAs (other than for CIBWS as described below) or other habitats critical to recruitment or survival (*e.g.*, rookery);
- The project area represents a very small portion of the available foraging area for all potentially impacted marine mammal species;
- Take will occur only within middle Cook Inlet, a limited, confined area of any given stock's home range;
- Monitoring reports from previous projects with pile driving and/or tugging activities in Cook Inlet have documented little to no observable effect on individuals of the same species impacted by the specified activities; and
- The required mitigation measures are expected to be effective in reducing the effects of the specified activity by minimizing the numbers of marine mammals exposed to sound and the intensity of the exposures.

Cook Inlet Beluga Whales

For CIBWs, we further discuss our negligible impact findings in addition to the findings discussed above for all species in the context of potential impacts to the endangered stock based on our evaluation of the authorized take (table 14).

All of 8 Star Alaska's activities will be conducted in a manner implementing best management practices to preserve water quality, and no work will occur around creek

mouths or river systems leading to prey abundance reductions. In addition, no physical structures will restrict passage, though impacts to the acoustic habitat are relevant and discussed here. While the Recovery Plan for the Cook Inlet Beluga Whale (NMFS, 2016) considers noise to be of high relative concern for the CIBW and the specified activities will occur within CIBW Critical Habitat Area 2 and the CIBW small and resident BIA (see the **Description of Marine Mammals in the Area of Specified Activities** section in the notice of the proposed rule (90 FR 35762, July 29, 2025)), monitoring data from similar regional activities suggest that the presence of tugs under load does not discourage CIBWs from transiting throughout Cook Inlet and between critical habitat areas and that the whales do not abandon critical habitat areas (*e.g.*, Horsley and Larson, 2023, 2024). In addition, large numbers of CIBWs have continued to use Cook Inlet and pass through the area, likely traveling to critical foraging grounds in upper Cook Inlet, while noise-producing anthropogenic activities, including vessel use, have taken place during the past two decades (*e.g.*, Shelden *et al.*, 2013, 2015b, 2017, 2022; Shelden and Wade, 2019; Goetz *et al.*, 2023). These findings are not surprising as food is a strong motivation for marine mammals. As described in Forney *et al*. (2017), animals typically favor particular areas because of their importance for survival (*e.g.*, feeding or breeding), and leaving may have significant costs to fitness (reduced foraging success, increased predation risk, increased exposure to other anthropogenic threats). Consequently, animals may be highly motivated to maintain foraging behavior in historical foraging areas despite negative impacts (*e.g.*, Rolland *et al.*, 2012).

Generation of sound may result in avoidance behaviors that will be limited in time and space relative to the larger availability of important habitat areas in Cook Inlet; however, the area ensonified by sound from the specified activity is anticipated to be small compared to the overall available critical habitat for CIBWs to feed and travel. Therefore, the specified activity will not create a barrier to movement through or within

important areas. We anticipate that disturbance to CIBWs would manifest in the same manner as other marine mammals described above (*i.e.*, increased swimming speeds, changes in the direction of travel and dive behaviors, increased respiration rates, decreased foraging (if such activity were occurring), or alterations to communication signals). We do not believe exposure to elevated noise levels during transit past 8 Star Alaska's activities will have adverse effects on individuals' fitness for reproduction or survival.

Although data demonstrate that CIBWs are not abandoning the planned project area during anthropogenic activities, results of an expert elicitation (EE) at a 2016 workshop, which predicted the impacts of noise on CIBW survival and reproduction given a specific amount of lost foraging opportunities, helped to inform our assessment of impacts on this stock. The 2016 EE workshop used conceptual models of an interim population consequences of disturbance (PCoD) for marine mammals (National Research Council, 2005; New *et al*., 2014; Tollit *et al*., 2016) to help in understanding how noise-related stressors might affect vital rates (survival, birth rate and growth) for CIBW (King *et al*., 2015). NMFS (2016) suggests that the main direct effects of noise on CIBWs are likely to be through masking of vocalizations used for communication and prey location and habitat degradation. The 2016 workshop on CIBWs was specifically designed to provide regulators with a tool to help understand whether chronic and acute anthropogenic noise from various sources and projects are likely to be limiting recovery of the CIBW population. The full report can be found at *https://www.smruconsulting.com/publications/* with a summary of the expert elicitation portion of the workshop below.

For each of the noise effect mechanisms chosen for the EE, the experts provided a set of parameters and values that determined the forms of a relationship between the number of days of disturbance a female CIBW experiences in a particular period and the

effect of that disturbance on her energy reserves. Examples included the number of days of disturbance during the period April, May, and June that would be predicted to reduce the energy reserves of a pregnant CIBW to such a level that she is certain to terminate the pregnancy or abandon the calf soon after birth, the number of days of disturbance in the period April-September required to reduce the energy reserves of a lactating CIBW to a level where she is certain to abandon her calf, and the number of days of disturbance where a female fails to gain sufficient energy by the end of summer to maintain herself and her calf during the subsequent winter. Overall, median values ranged from 16 to 69 days of disturbance depending on the question. However, for this elicitation, a "day of disturbance" was defined as any day on which an animal loses the ability to forage for at least one tidal cycle (*i.e.*, it forgoes 50–100 percent of its energy intake on that day). The day of disturbance considered in the context of the report is notably more severe than any Level B harassment expected to result from these activities, which as described is expected to be comprised predominantly of temporary modifications in the behavior of individual CIBWs (*e.g.*, faster swim speeds, longer dives, decreased sighting durations, alterations in communication). Also, NMFS is authorizing a maximum of 30 instances of take in one year (with 11 instances of take for each of the other 4 years of the rule), with the instances representing disturbance events within a day—this means that either 30 different individual CIBWs are disturbed on no more than 1 day each, or some lesser number of individuals may be disturbed on more than 1 day, but with the product of individuals and days not exceeding 30. Given the overall take authorized, it is unlikely that any one CIBW would be disturbed on more than a couple of days.

Further, 8 Star Alaska will implement mitigation measures specific to CIBWs. 8 Star Alaska will not begin anchor handling activities should a CIBW be observed within the Level B harassment zone. In addition, 8 Star Alaska will implement shutdown zones for pile driving for beluga whales that extend to the Level B harassment isopleth, or in

cases where the Level B harassment zones are too large to fully observe, to the extent that PSOs can observe, minimizing Level B harassment of beluga whales. While Level B harassment is authorized, these measures, along with other mitigation measures described herein, will limit the severity of the effects of that Level B harassment to behavioral changes such as increased swim speeds, changes in diving and surfacing behaviors, and alterations to communication signals, not the loss of foraging capabilities. NMFS is also requiring time/area restrictions, such that noise will be restricted in the Susitna Delta during critical foraging times and high CIBW density. Finally, take by mortality, serious injury, or Level A harassment of CIBWs is not anticipated or authorized.

In summary, and as described above, the additional following factors primarily support our determination that the impacts resulting from 8 Star Alaska's activities are not expected to adversely affect the CIBWs through effects on annual rates or recruitment or survival:

- The area of exposure will be limited to habitat primarily used for transiting and not areas known to be of particular importance for feeding or reproduction;
- The activities are not expected to result in CIBWs abandoning critical habitat nor are they expected to restrict passage of CIBWs within or between critical habitat areas; and
- Any disturbance to CIBWs is expected to be limited to temporary modifications in behavior and would not be of a duration or intensity expected to result in impacts on reproduction or survival.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the total marine mammal take from the activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted previously, only take of small numbers of marine mammals may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares maximum number of individuals taken in any year to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted maximum annual number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers (see 86 FR 5322, January 19, 2021). Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

For all stocks whose abundance estimate is known the amount of taking is less than one-third of the best available population abundance estimate (see table 15). The number of animals authorized for take from these stocks, therefore, would be considered small relative to the relevant stock abundance even if each estimated take occurred to a new individual.

There is no stock-wide abundance estimate for Northeast Pacific fin whales. However, Muto *et al*. (2021) estimate the minimum stock size for the areas surveyed is 2,554. NMFS is authorizing an annual maximum of two takes of this stock. Comparison to the minimum population estimate shows, at most, less than 1 percent of the stock would be expected to be impacted.

Abundance estimates for the Mexico-North Pacific stock of humpback whales are based upon data collected more than 8 years ago and, therefore, current estimates are considered unknown (Young *et al*., 2024). The most recent minimum population estimates (N_{MIN}) for this population include an estimate of 2,241 individuals between

2003 and 2006 (Martínez-Aguilar, 2011) and 766 individuals between 2004 and 2006 (Wade, 2021). NMFS' Guidelines for Assessing Marine Mammal Stocks suggest that the N_{MIN} estimate of the stock should be adjusted to account for potential abundance changes that may have occurred since the last survey and provide reasonable assurance that the stock size is at least as large as the estimate (NMFS, 2023). The abundance trend for this stock is unclear; therefore, there is no basis for adjusting these estimates (Young *et al.*, 2024). NMFS is authorizing an annual maximum of 6 takes of the Mexico-North Pacific stock of humpback whale. This represents small numbers of this stock (less than 1 percent of the stock assuming a N_{MIN} of 766 individuals).

A lack of an accepted stock abundance value for the Alaska stock of minke whale did not allow for the calculation of an expected percentage of the population that may be affected. The most relevant estimate of partial stock abundance is 1,233 minke whales in coastal waters of the Alaska Peninsula and Aleutian Islands (Zerbini *et al*., 2006). NMFS is authorizing an annual maximum of three takes of this stock. Comparison to the best estimate of stock abundance shows that, at most, less than one percent of the stock would be impacted.

The Alaska stock of Dall's porpoise has no official NMFS abundance estimate for this area, as the most recent estimate is greater than 8 years old. As described in the 2021 Alaska SAR (Muto *et al*., 2022) the minimum population estimate is assumed to correspond to the point estimate of the 2015 vessel-based abundance computed by Rone *et al*. (2017) in the Gulf of Alaska (N = 13,110; CV = 0.22). NMFS is authorizing an annual maximum of 6 takes of the stock. Comparison to the minimum population estimate shows that, at most, 0.05 percent of the stock would be expected to be impacted.

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that

small numbers of marine mammals would be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

In order to promulgate regulations, NMFS must find that the specified activity will not have an "unmitigable adverse impact" on the subsistence uses of the affected marine mammal species or stocks by Alaskan Natives. NMFS has defined "unmitigable adverse impact" in 50 CFR 216.103 as an impact resulting from the specified activity: (1) that is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) causing the marine mammals to abandon or avoid hunting areas; (ii) directly displacing subsistence users; or (iii) placing physical barriers between the marine mammals and the subsistence hunters; and (2) that cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

The Marine Terminal construction activities on the east side of Cook Inlet will occur closest to the subsistence area used by residents of Nikiski, while the offshore pipeline and Mainline MOF will occur closest to the subsistence use area used by residents of Tyonek. Subsistence hunting in Cook Inlet consists mostly of opportunistic hunting of seals. Subsistence hunting of whales is not known to currently occur in Cook Inlet.

Residents of Nikiski, a small community located on the northwestern end of the Kenai Peninsula on the eastern side of Cook Inlet and just north of the planned Marine Terminal, conduct minimal subsistence harvesting of marine mammals. In a 2014 survey conducted by Alaska Department of Fish & Game (ADF&G) (the most recent subsistence survey conducted here) 0.4 percent of the population reported hunting marine mammals and less than 3 percent reported using harvested marine mammals (Jones and Kostick, 2016). Marine mammal species used included bowhead whales (1 percent of households),

harbor seals (2 percent of households), and unknown seal species (1 percent of households) (Jones and Kostick, 2016). The bowhead whales were likely received from hunters that harvested elsewhere, as bowhead whales are a circumpolar species that do not occupy Cook Inlet.

The construction of the Mainline MOF will occur approximately 5 miles (8 km) north of Tyonek. According to a 2013 survey (the last known survey of Tyonek subsistence harvesting), 6.1 percent of households reported harvesting marine mammals, all harbor seals, between June and September (Jones *et al.*, 2015). The search areas encompassed an area stretching approximately 20 miles along the Cook Inlet coast, from the McArthur Flats north to the Beluga River (Jones *et al.*, 2015). Seals were searched for or harvested in the Trading Bay area as well as from the beach adjacent to Tyonek.

8 Star Alaska's pile driving and anchor handling may overlap with subsistence hunting of seals. Subsistence hunting occurs mostly nearshore and near river mouths. The majority of anchor handling activities will occur offshore and are therefore expected to have little overlap with subsistence hunting. Any harassment to harbor seals due to pile driving is anticipated to be short-term, mild, and not result in any abandonment or behaviors that would make the animals unavailable for harvest, nor are the activities expected to directly displace subsistence users or place physical barriers between the marine mammals and the subsistence hunters.

To further minimize any potential effects of their action on subsistence activities, 8 Star Alaska has prepared a stakeholder engagement plan outlining previous meetings with stakeholders, including subsistence users, throughout the planning process and plans to continue to meet with them throughout the construction process. 8 Star Alaska will coordinate with local Tribes as described in its stakeholder engagement plan, notify the communities of any changes in operation, and work with communities to avoid or mitigate impacts to subsistence harvest through pre-construction planning,

communication, or other actions. In addition, in-water mitigation measures to minimize effects on behavior of marine mammals are also expected to minimize effects on opportunities for harvest by subsistence communities.

Based on the description of the specified activity, the measures described to minimize adverse effects on the availability of marine mammals for subsistence purposes, and the mitigation and monitoring measures, NMFS has determined that there will not be an unmitigable adverse impact on subsistence uses from 8 Star Alaska's activities.

Adaptive Management

These regulations contain an adaptive management component. Our understanding of the effects of pile driving and AHTs engaged in anchor handling (*e.g.*, acoustic stressors) on marine mammals continues to evolve, which makes the inclusion of an adaptive management component both valuable and necessary within the context of 5-year regulations.

The monitoring and reporting requirements in this rule will provide NMFS with information that helps us to better understand the impacts of the project's activities on marine mammals and informs our consideration of whether any changes to mitigation and monitoring are appropriate. The use of adaptive management will allow NMFS to consider new information and modify mitigation, monitoring, or reporting requirements, as appropriate, with input from 8 Star Alaska regarding practicability, if such modifications will have a reasonable likelihood of more effectively accomplishing the goals of the measures.

The following are some of the possible sources of applicable data that would be considered through the adaptive management process: (1) results from monitoring reports, including the monthly and annual reports required; (2) results from research on marine mammals, noise impacts, or other related topics; and (3) any information which reveals that marine mammals may have been taken in a manner, extent, or number not

authorized by these regulations or LOAs issued pursuant to these regulations. Adaptive management decisions could be made at any time as new information warrants. NMFS could consult with 8 Star Alaska regarding the practicability of the modifications.

Classification

Endangered Species Act

Section 7(a)(2) of the ESA of 1973 (16 U.S.C. 1531 *et seq*.) requires that each Federal agency ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the promulgation of regulations, NMFS consults internally whenever we propose to authorize take for endangered or threatened species. In this case, NMFS OPR consulted with the NMFS AKRO.

NMFS OPR is authorizing take of fin whale, humpback whale (Northeast Pacific and Mexico-North Pacific), beluga whale (Cook Inlet), and Steller sea lion (Western), which are listed under the ESA.

NMFS OPR has consulted with NMFS AKRO pursuant to Section 7 of the ESA on the promulgation of regulations and issuance of a subsequent LOA. NMFS AKRO issued a Biological Opinion on October 31, 2025, which found that the Alaska LNG project is not likely to jeopardize the continued existence of fin whale, humpback whales of the Northeast Pacific and Mexico-North Pacific DPS, CIBWs, and Steller sea lions of the Western DPS.

National Environmental Policy Act

To comply with NEPA (42 U.S.C. 4321 *et seq*.) and NOAA Administrative Order 216-6A, NMFS must review our action (*i.e.*, promulgation of regulations and subsequent issuance of a 5-year LOA) with respect to potential impacts on the human environment.

NMFS participated as a cooperating agency on the 2020 Alaska LNG Project EIS, which was finalized on March 6, 2020, and is available at *https://www.ferc.gov/industries-data/natural-gas/environment/final-environmental-impact-statement-feis*. When acting as a cooperating agency, as is the case with this project, NMFS may satisfy its independent NEPA obligations by either preparing a separate NEPA analysis for its issuance of an ITA or, if appropriate, by adopting the NEPA analysis prepared by the lead agency. NMFS independently reviewed and evaluated the 2020 Alaska LNG Project EIS and determined it was adequate and sufficient to meet our responsibilities under NEPA for the issuance of the 2020 Alaska LNG Cook Inlet LOA (85 FR 59291, September 21, 2020). NMFS therefore adopted the 2020 Alaska LNG Project EIS and signed a Record of Decision on February 16, 2021.

NMFS prepared a SIR, which considered minor changes to the project and analyses and new scientific literature, and determined that a supplemental EIS is not warranted. Consistent with NEPA, applicable NOAA NEPA procedures, and the information and analysis contained in this final rule, NMFS has determined that this final rule and subsequent LOA will not result in impacts that were not fully considered in the 2020 Alaska LNG Project EIS. As indicated in this final rule, 8 Star Alaska has made no substantial changes to the activities that are relevant to environmental concerns nor are there substantial new circumstances or information about the significance of adverse effects that bear on the analysis. Therefore, NMFS has determined that the 2020 Alaska LNG EIS remains valid, and there is no need to supplement the document for this rulemaking. NOAA therefore, has adopted the 2020 Alaska LNG EIS. NMFS has prepared a separate Record of Decision. NMFS' Record of Decision for adoption of the 2020 Alaska LNG EIS and issuance of this final rule and subsequent LOA can be found at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-oil-and-gas*.

Executive Order 12866

The Office of Management and Budget (OMB) has determined that this final rule is significant for purposes of Executive Order 12866.

The Alaska LNG project involves an 807-mile pipeline delivering 3.5 billion cubic feet of gas daily. The project would create economic benefits by increasing the capacity to transport LNG, allowing more LNG to come to market more efficiently.

It is important to note that 8 Star Alaska initiated a request for a MMPA incidental take authorization, which suggests that the company is relying on NMFS' authorization to proceed with its proposed action. While a MMPA incidental take authorization is not a pre-condition for conducting the proposed action (8 Star Alaska is ultimately responsible for this decision), it would provide 8 Star Alaska with two key benefits: (1) a legal exemption from the MMPA's general prohibition on the take of marine mammals (assuming 8 Star Alaska complies with the terms and conditions of its permit); and (2) regulatory certainty because 8 Star Alaska will be fully cognizant of NMFS' expectations in regard to the steps needed to be taken to address risks to marine mammals and how to minimize its legal exposure under the statute. 8 Star Alaska will also incur costs to comply with certain mitigation and monitoring requirements, as required by the MMPA. Despite the additional costs of such measures, the costs related to MMPA compliance for the Alaska LNG project are small compared with expenditures on other aspects of construction and operations, and direct compliance costs of the regulatory requirements are unlikely to result in material impacts to the project.

In addition, cost savings may be generated by the reduced administrative effort required to obtain a LOA under the framework established by a rule compared to what would be required to obtain annual incidental harassment authorizations (IHA) under section 101(a)(5)(D). Absent the rule, to attain equivalent compliance with the MMPA, 8 Star Alaska would need to apply for IHAs annually over the 5-year duration of the rule.

Although not monetized, NMFS' analysis indicates that the upfront work associated with the rule (*e.g.*, analyses, modeling, process for obtaining LOA valid for 5 years) likely saves significant time and money.

The rule also results in certain non-monetized benefits. Should 8 Star Alaska proceed with the project, the protection of marine mammals afforded by this rule benefits the regional economic value of marine mammals via tourism and recreation to some extent. Marine mammals within Cook Inlet that overlap with the proposed action are likely to benefit from the extensive suite of mitigation and monitoring measures required by the rule; thereby, helping to ensure their long-term survival and their contribution to tourism and other recreational activities in the region. In addition, some degree of benefits can be expected to accrue solely via ecological benefits to marine mammals and other wildlife as a result of this rulemaking. The published literature is clear that healthy populations of marine mammals and other co-existing species benefit regional economies and provide social welfare benefits to people. However, the literature does not provide a basis for quantitatively valuing the cost of anticipated incremental changes in environmental disturbance and marine mammal harassment associated with the rule.

Executive Order 14192

This rule is an Executive Order 14192 deregulatory action. The promulgation of incidental take regulations under MMPA section 101(a)(5)(A), as requested by applicants, is deregulatory because issuance allows an otherwise prohibited action (i.e., those expected to result in incidental take of marine mammals) to proceed. The regulations increase flexibility and reduce burden by allowing for authorization of otherwise prohibited marine mammal take.

Regulatory Flexibility Act (RFA)

Pursuant to section 605(b) of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*), the Chief Counsel for Regulation of the Department of Commerce certified to the

Chief Counsel for Advocacy of the Small Business Administration at the proposed rule stage that this rule would not have a significant economic impact on a substantial number of small entities. No comments were received that would change this determination. As a result, a final regulatory flexibility analysis is not required and none has been prepared.

Paperwork Reduction Act (PRA)

This rule contains collection-of-information requirements subject to the provisions of the PRA. These requirements have been approved by OMB under control number 0648-0151 and include the applications for regulations, subsequent LOAs, and reports. Notwithstanding any other provision of law, no person is required to respond to nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the PRA unless that collection of information displays a currently valid OMB control number.

Promulgation of this Final Rule

As a result of these determinations, NMFS hereby promulgates regulations that allow for the authorization of take of 12 species (15 stocks) of marine mammals, by Level A harassment (3 species comprising 3 stocks) and Level B harassment (12 species comprising 15 stocks), incidental to 8 Star Alaska's pile driving and AHT activities in Cook Inlet, Alaska for a 5-year period from January 1, 2026, through December 31, 2030, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Waiver of Delay of Effective Date

The Assistant Administrator for Fisheries has determined that there is a sufficient basis under the Administrative Procedure Act (APA) to waive the 30-day delay in the effective date of the regulations contained in the final rule. Section 553 of the APA provides that the required publication or service of a substantive rule shall be made not less than 30 days before its effective date with certain exceptions, including (1) for a

substantive rule that relieves a restriction or (2) when the agency finds and provides good cause for foregoing delayed effectiveness (5 U.S.C 553(d)(1) and (d)(3)). Here, the issuance of regulations under section 101(a)(5)(A) of the MMPA relieves a restriction, specifically the incidental taking of marine mammals associated with 8 Star Alaska's specified activities.

The Assistant Administrator for NMFS has also determined that there is good cause to waive the 30-day delay in the effective date of this final rule. No individual or entity, other than 8 Star Alaska, is affected by the provisions of these regulations, and 8 Star Alaska does not require 30 days to prepare for implementation of the regulations. Also, 8 Star Alaska's project has great societal and economic importance and delays in project execution because take authorization has not been effectuated are contrary to the public interest. For these reasons, the subject regulations will be made effective on January 1, 2026.

List of Subjects in 50 CFR Part 217

Administrative practice and procedure, Acoustics, Endangered and threatened species, Fish, Fisheries, Marine mammals, Penalties, Reporting, and recordkeeping requirements, Wildlife.

Dated: December 8, 2025.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs,

National Marine Fisheries Service.

For reasons set forth in the preamble, NMFS amends 50 CFR part 217 as follows:

PART 217 – REGULATIONS GOVERNING THE TAKE OF MARINE MAMMALS INCIDENTAL TO SPECIFIED ACTIVITIES

1. The authority citation for part 217 continues to read as follows:

Authority: 16 U.S.C 1361 *et seq.*

2. Revise subpart E, consisting of §§ 217.40 through 217.49, to read as follows:

Subpart E – Taking Marine Mammals Incidental to 8 Star Alaska Liquefied Natural Gas Facilities Construction in Cook Inlet, Alaska

Sec.

Subpart E – Taking Marine Mammals Incidental to 8 Star Alaska Liquefied Natural Gas Facilities Construction in Cook Inlet, Alaska

§ 217.40 Specified activity and specified geographical region.

(a) Regulations in this subpart apply only to 8 Star Alaska or successor entities and those persons it authorizes or funds to conduct activities on its behalf for the taking of marine mammals that occurs in the area outlined in paragraph (b) of this section and that occurs incidental to the activities described in paragraph (c) of this section. Requirements imposed on 8 Star Alaska must be implemented by those persons it authorizes or funds to conduct activities on its behalf.

(b) The taking of marine mammals by 8 Star Alaska may be authorized in a Letter of Authorization (LOA) only if it occurs within 8 Star Alaska's Alaska liquefied natural gas (LNG) facilities' construction areas, which are located between the Beluga Landing

shoreline crossing on the north and the Kenai River south of Nikiski on the south in Cook Inlet, Alaska.

(c) The taking of marine mammals during this project is only authorized if it occurs incidental to activities associated with 8 Star Alaska's construction of LNG facilities.

§ 217.41 Effective dates.

Regulations in this subpart are effective January 1, 2026, through December 31, 2030.

§ 217.42 Permissible methods of taking.

(a) Under LOAs issued pursuant to § 216.106 of this chapter and this subpart, the holder of the LOAs and those persons it authorizes or funds to conduct activities on its behalf (hereinafter "8 Star Alaska") may incidentally, but not intentionally, take marine mammals within the area described in § 217.40(b) by Level A harassment and Level B harassment associated with construction of LNG facilities, provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate LOA.

(b) [Reserved]

§ 217.43 Prohibitions.

Except for the taking permitted in § 217.42 and authorized by the LOA issued under § 216.106 of this chapter and this subpart, it is unlawful for any person to do any of the following in connection with the activities specified activities in § 217.40:

(a) Violate or fail to comply with the terms, conditions, and requirements of this subpart or the LOA issued under this subpart;

(b) Take any marine mammal not specified in the LOA;

(c) Take any marine mammal specified in the LOA in any manner other than as specified in the LOA;

(d) Take any marine mammal specified in the LOA after NMFS determines such taking results in more than a negligible impact on the species or stock of such marine mammal; or

(e) Take any marine mammal specified in the LOA after NMFS determines such taking results in an unmitigable adverse impact on the species or stock of such marine mammal for taking for subsistence uses.

§ 217.44 Mitigation requirements.

When conducting the activities identified in § 217.40(c), the mitigation measures contained in this section and any LOAs issued under § 216.106 of this chapter and this subpart must be implemented. These mitigation measures include:

(a) A copy of any issued LOA must be in the possession of 8 Star Alaska, its designees, and work crew personnel operating under the authority of the issued LOA.

(b) 8 Star Alaska must employ protected species observers (PSOs) and establish monitoring locations pursuant to § 217.45.

(c) 8 Star Alaska must implement shutdown zones for pile driving and clearance zones for anchor handling with radial distances as identified in any LOA issued under §§ 216.106 of this chapter and 217.46.

(1) Monitoring of shutdown or clearance zones must take place from 30 minutes prior to commencing impact and vibratory pile driving or use of tugs for anchor-handling (AHTs), or if there is a 30-minute lapse in such activities, and must continue for 30 minutes following conclusion of the activity.

(i) Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the PSO(s) to observe the entirety of the shutdown zone for impact pile driving and at least 2 km for vibratory pile driving and anchor handling, except in cases where anchor handling operations occur during nighttime hours. In these circumstances,

8 Star Alaska must ensure the clearance zones are clear of marine mammals to the maximum extent possible.

(ii) The specified activities identified in § 217.40(c) may only commence following 30 minutes of observation when PSOs determine that the shutdown or clearance zones are clear of marine mammals.

(iii) If the activity is delayed or halted due to the presence of a marine mammal, the activity must not commence until either the animal(s) has voluntarily exited and been visually confirmed beyond the shutdown zone or 30 minutes (large whales and beluga whales) or 15 minutes (pinnipeds and other cetaceans) have passed without redetection of the animal in the shutdown zone.

(2) Pile driving must be halted upon observation of a marine mammal entering or within the shutdown zone. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily left and has been visually confirmed beyond the shutdown zone or 30 minutes (large whales and beluga whales) or 15 minutes (pinnipeds and other cetaceans) have passed without redetection in the shutdown zone.

(i) If work ceases for more than 30 minutes, the shutdown zones must be cleared again for 30 minutes prior to reinitiating pile driving. A determination that the pile driving shutdown zone is clear must be made during a period of good visibility.

(ii) If a shutdown procedure should be initiated but human safety is at risk as determined by the best professional judgment of the vessel operator or project engineer, the in-water activity, including pile driving, is allowed to continue until the risk to human safety has dissipated. In this scenario, pile driving may continue only until the current segment of the pile is driven; no additional sections of pile or additional piles may be driven until the Lead PSO has determined that the shutdown zones are clear of marine

mammals and for Cook Inlet beluga whales (CIBWs), any observed whale(s) is at least 100 meters (m) past the shutdown zone and on a path away from the zone.

(3) If a PSO(s) can no longer effectively monitor the entirety of the corresponding shutdown zone during impact pile driving, or at least 2 km during vibratory pile driving, due to environmental conditions (*e.g.*, fog, rain, wind), pile driving may continue only until the current segment of the pile is driven; no additional sections of pile or additional piles may be driven until conditions improve such that the zone can be effectively monitored. If the shutdown zone cannot be monitored for more than 15 minutes, the entire zone must be cleared again for 30 minutes prior to reinitiating pile driving.

(4) If a species for which authorization has not been granted or a species for which authorization has been granted but the authorized takes have been reached is observed approaching, entering, or within the corresponding zone, in-water work must be delayed (if during pre-clearance) or shut down (except for AHTs engaged in anchor handling). Activities must not resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown or clearance zone or 30 minutes (large whales and beluga whales) or 15 minutes (pinnipeds and other cetaceans) have passed without re-detection of the animal within the shutdown or clearance zone.

(d) 8 Star Alaska must use soft start techniques when impact pile driving. Soft start requires 8 Star Alaska to conduct three sets of strikes (three strikes per set) at reduced hammer energy with a one-minute waiting period between each set. 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.

(e) 8 Star Alaska must coordinate with local subsistence communities as described in their stakeholder engagement plan, notify the communities of any changes in operation, and work with communities to avoid or mitigate impacts to subsistence harvest through pre-construction planning, communication, or other actions.

(f) 8 Star Alaska must not conduct pile driving associated with the Mainline Material Offloading Facility (MOF) from June 1 to September 7.

(g) Between April 15 and October 15, 8 Star Alaska must not conduct pile driving or AHT activities with Level B harassment isopleths that would extend shoreward of the mean lower low water (MLLW) line in the Susitna Delta (Beluga River to the Little Susitna River) and project vessel(s) operating in or transiting through Cook Inlet must maintain a distance of at least 1.5 nautical miles (2.8 km) seaward of the MLLW line in the Susitna Delta (Beluga River to the Little Susitna River).

(h) Operators of vessels must avoid approaching within 100 yards (92 m) of marine mammals.

(i) If a whale's course and speed are such that it would likely cross in front of a vessel that is underway or approach within 100 yards (92 m) of the vessel, if maritime conditions safely allow, and if practicable, the engine must be put in neutral and the whale must be allowed to pass beyond the vessel.

(j) Vessel operators must avoid placing the vessel in the path of a whale and must not cut in front of the whale in a way or at a distance that causes the whale to change direction of travel or behavior (including breathing/surface pattern).

(k) When within 300 yards (274 m) of a whale, vessels must travel at less than 5 knots (9 km/hour), and vessel operators must avoid changes in direction and speed unless doing so is necessary for maritime safety.

(l) Vessel operators must reduce speed to 10 knots (18.5 km/hour) or less when weather conditions reduce visibility to 1.6 km (1 mile) or less.

(m) For vessels operating in the Susitna Delta Exclusion Zone, the following must be implemented:

(1) All project vessels operating within the designated Susitna Delta Exclusion Area must maintain a speed over ground below 4 knots (7.4 km/hour). PSOs must note

the numbers, date, time, coordinates, and proximity to vessels of all belugas observed during operations and report these observations to NMFS in monthly PSO reports.

(2) Vessel crew must be trained to monitor for Endangered Species Act (ESA)-listed species prior to and during all vessel movements within the Susitna Delta Exclusion Zone. The vessel crew must report sightings of ESA-listed species to the PSO team for inclusion in the overall sighting database and reports.

(3) Vessel operators must not move their vessels when they are unable to adequately observe the 100-m zone around vessels under power (in gear) due to darkness, fog, or other conditions, unless necessary for ensuring human safety.

(4) The Susitna Delta Exclusion Zones is defined as the union of the areas defined by:

(i) A 16-km (10-mile) buffer of the Beluga River thalweg seaward of the MLLW line;

(ii) A 16-km (10-mile) buffer of the Little Susitna River thalweg seaward of the MLLW line; and

(iii) A 16-km (10-mile) seaward buffer of the MLLW line between the Beluga River and Little Susitna River.

(iv) The buffer extends landward along the thalweg to include intertidal waters within rivers and streams up to their mean higher high water line (MHHW).

(n) 8 Star Alaska must conduct sound source verification (SSV) measurements at the beginning of all pile driving activities at each location. During SSV, a sound attenuation device must be tested for effectiveness. If the results show that a sound source reduction of at least 2 dB is achieved, 8 Star Alaska must employ the use of the sound attenuation device.

(1) Any sound attenuation device used by 8 Star Alaska must meet minimum requirements as determined by NMFS in the SSV plan.

(2) [Reserved]

(o) 8 Star Alaska must abide by the reasonable and prudent measures and terms and conditions of the Biological Opinion and Incidental Take Statement issued by NMFS pursuant to section 7 of the Endangered Species Act.

§ 217.45 Requirements for monitoring and reporting.

(a) *Visual Monitoring*. Monitoring must be conducted by qualified, NMFS-approved PSOs, in accordance with the following conditions:

(1) PSOs must be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods;

(2) 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 or Letter of Concurrence;

(3) 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. PSOs may also substitute Alaska native traditional knowledge for experience;

(4) 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;

(5) PSOs must be approved by NMFS prior to beginning any activity subject to a NMFS-issued incidental take authorization; and

(6) 8 Star Alaska must adhere to the following marine mammal monitoring protocols:

(i) For all single hammer pile driving activities for the Mainline MOF, between Beluga and Tyonek, and the Marine Terminal near Nikiski, a minimum of two PSOs must be on duty at all times.

(ii) For all concurrent pile driving activities at the Marine Terminal near Nikiski, a minimum of three PSOs must be on duty at all times.

(iii) For anchor handling, two PSOs must be on the barge, and one PSO must be on duty at all times.

(iv) PSOs must monitor for marine mammals from the best available vantage point to allow for an unobstructed view of the water.

(v) When conducting observations from the barge during anchor handling, PSOs must have an unobstructed 360-degree view of the water.

(vi) PSO(s) must use a combination of equipment to scan the appropriate monitoring area and to verify the required monitoring distance from the project site, including the naked eye, standard (7x) binoculars, and high-magnification (25x) binoculars.

(vii) Monitoring distances must be measured with range finders, and distances to animals must be based on the best estimate of the PSO, relative to known distances to objects in the vicinity of the PSO.

(viii) PSOs must not exceed 4 consecutive watch hours; must have a minimum 2-hour break between watches; and may not exceed a combined watch schedule of more than 12 hours in a 24-hour period.

(ix) PSOs must have no other construction-related tasks while conducting monitoring.

(x) Monitoring must take place from 30 minutes prior to initiation of pile driving or anchor handling activity, through 30 minutes post completion of pile driving activity or anchor handling activity.

(b) *Acoustic Monitoring*. Acoustic monitoring must be conducted in accordance with the following conditions:

(1) 8 Star Alaska must conduct SSV at the beginning of pile driving at each location to characterize the sound source levels associated with different pile and hammer types and assess attenuation devices. The SSV must be conducted in accordance with the following conditions:

(i) 8 Star Alaska's SSV plan must be approved by NMFS.

(ii) 8 Star Alaska must measure a minimum of two piles of each type, size, and installation method for single pile driving scenarios.

(iii) The following data, at minimum, shall be collected during acoustic monitoring and reported:

(A) Hydrophone equipment and methods: recording device, sampling rate, distance (m) from the pile where recordings were made; depth of water and recording device(s);

(B) Type and size of pile being driven, substrate type, method of driving during recordings (*e.g.*, hammer model and energy), and total pile driving duration;

(C) Whether a sound attenuation device is used and, if so, a detailed description of the device used and the duration of its use per pile;

(D) For impact pile driving (per pile): Number of strikes and strike rate; depth of substrate to penetrate; pulse duration and mean, median, and maximum sound levels (dB re: 1 μPa): root mean square sound pressure level (SPL_{rms}); cumulative sound exposure level (SEL_{cum}), peak sound pressure level (SPL_{peak}), and single-strike sound exposure level (SEL_{s-s});

(E) For vibratory driving/removal (per pile): Duration of driving per pile; mean, median, and maximum sound levels (dB re: 1 μPa): root mean square sound pressure

level (SPL_{rms}), cumulative sound exposure level (SEL_{cum}) (and timeframe over which the sound is averaged);

(F) Transmission loss values for attenuated and unattenuated impact and vibratory installation of each pile size and type;

(iv) An SSV report must be submitted to NMFS for approval within 5 days after the finalization of field measurements and report data.

(v) If appropriate, the results of the SSV report may be used to adjust the extent of the Level A and Level B harassment zones and shutdown zones for in-water pile driving. NMFS must approve any such adjustments.

(c) *Reporting*. 8 Star Alaska must adhere to the following reporting requirements:

(1) 8 Star Alaska must submit interim monthly reports for all months in which pile driving or anchor handling occurs. Monthly reports are due 14 days after the conclusion of each calendar month. The monthly reports must include the following:

(i) Summary of marine mammal species and behavioral observation, delays, and activities completed.

(ii) Assessment of the amount of work (pile driving and anchor handling) remaining to be completed.

(iii) Number of Cook Inlet beluga whales observed within estimated harassment zones to date.

(2) 8 Star Alaska must submit a draft annual report to NMFS within 90 calendar days of the completion of construction (pile driving and anchor handling) each year. Each report must include an overall description of all work completed, a narrative regarding marine mammal sightings, and associated marine mammal observation data sheets (data must be submitted electronically in a format that can be queried such as a spreadsheet or database). Specifically, the report must include the following information:

(i) Date and time that monitored activity begins and ends;

(ii) Activities occurring during each observation period, including:

(A) The type of activity,

(B) The total duration of each type of activity,

(C) When nighttime operations were required,

(D) The number and type of piles that were driven and the method (*e.g.*, impact, vibratory), and

(E) Total duration of driving time for each pile (vibratory driving) and total number of strikes for each pile (impact driving);

(iii) PSO locations during marine mammal monitoring;

(iv) Environmental conditions during monitoring periods (at the beginning and end of the PSO shift and whenever conditions change significantly), including Beaufort sea state, tidal state, and any other relevant weather conditions, including cloud cover, fog, sun glare, overall visibility to the horizon, and estimated observable distance;

(v) Upon observation of a marine mammal:

(A) Name of PSO who sighted the animal(s);

(B) PSO location and activity at time of sighting;

(C) Time of sighting;

(D) Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified);

(E) PSO confidence in identification and the composition of the group if there is a mix of species;

(F) Distance and location of each observed marine mammal relative to the tugs or pile being driven for each sighting;

(G) Estimated number of animals (min/max/best estimate);

(H) Estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*);

(I) Animal's closest point of approach and estimated time spent within the harassment zone;

(J) 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) 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.

(3) If no comments are received from NMFS within 30 days of receipt of the draft annual report, the report shall be considered final. If comments are received, 8 Star Alaska must submit a final report addressing NMFS' comments within 30 days following receipt of any NMFS comments on the draft reports.

(4) In the event that personnel involved in 8 Star Alaska's activities discover an injured or dead marine mammal, 8 Star Alaska must report the incident to NMFS Office of Protected Resources (OPR) and to the Alaska Regional Stranding Coordinator no later than 24 hours after the initial observation. If the death or injury was caused by the specified activity, 8 Star Alaska must immediately cease the specified activities until NMFS OPR is able to review the circumstances of the incident. 8 Star Alaska 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.

§ 217.46 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to this subpart, 8 Star Alaska must apply for and obtain an LOA;

(b) An LOA, unless suspended or revoked, may be effective for a period of time not to exceed December 31, 2030, the expiration date of this subpart;

(c) In the event of projected changes to the activity or to mitigation and monitoring measures required by the LOA, 8 Star Alaska must apply for and obtain a modification of the LOA as described in § 217.47;

(d) The LOA must set forth:

(1) Permissible methods of incidental taking;

(2) Means of effecting the least practicable adverse impact (*i.e.*, mitigation) on the species, its habitat, and on the availability of the species for subsistence uses; and

(3) Requirements for monitoring and reporting.

(e) Issuance of the LOA must be based on a determination that the level of taking will be consistent with the findings made for the total taking allowable under the regulations of this subpart; and

(f) Notice of issuance or denial of the LOA must be published in the **Federal Register** within 30 days of a determination.

§ 217.47 Modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 of this chapter and 217.46 for the specified activities may be modified upon request by 8 Star Alaska, provided that:

(1) The specified activity and mitigation, monitoring, and reporting measures, as well as the anticipated impacts, are the same as those described and analyzed for this subpart (excluding changes made pursuant to the adaptive management provision in paragraph (c)(1) of this section); and

(2) NMFS' OPR determines that the mitigation, monitoring, and reporting measures required by the previous LOA under this subpart were implemented.

(b) For an LOA modification request by 8 Star Alaska that includes changes to the specified activity or the mitigation, monitoring, or reporting (excluding changes made pursuant to the adaptive management provision in paragraph (c)(1) of this section), the LOA shall be modified, provided that:

(1) NMFS' OPR determines that the changes to the activity or the mitigation, monitoring, or reporting do not change the findings made for the regulations in this subpart and do not result in more than a minor change in the total estimated number of takes (or distribution by species or years); and

(2) NMFS' OPR may, if appropriate, publish a notice of proposed LOA in the **Federal Register**, including the associated analysis of the change, and solicit public comment before issuing the LOA.

(c) An LOA issued under §§ 216.106 and 217.46 of this chapter for the specified activity may be modified by NMFS OPR under the following circumstances:

(1) Through adaptive management, NMFS' OPR may modify (including delete, modify, or add to) the existing mitigation, monitoring, or reporting measures (after consulting with 8 Star Alaska regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring;

(i) Possible sources of data that could contribute to the decision to modify the mitigation, monitoring, or reporting measures in an LOA include, but are not limited to:

(A) Results from the 8 Star Alaska's monitoring;

(B) Results from other marine mammal and/or sound research or studies; and

(C) Any information that reveals marine mammals may have been taken in a manner, extent or number not authorized by this subpart or subsequent LOA.

(ii) If, through adaptive management, the modifications to the mitigation, monitoring, or reporting measures are substantial, NMFS' OPR shall publish a notice of proposed LOA in the **Federal Register** and solicit public comment.

(2) If NMFS' OPR determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in the LOA issued pursuant to §§ 216.106 of this chapter and 217.46, the LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within 30 days of the action.

§§ 217.48 -- 217.49 [Reserved]

[FR Doc. 2025-22513 Filed: 12/10/2025 8:45 am; Publication Date: 12/11/2025]