



BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XF957

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Cook Inlet Pipeline Cross Inlet Extension Project

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

ACTION: Notice; issuance of incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA), as amended, notification is hereby given that NMFS has issued an incidental harassment authorization (IHA) to Harvest Alaska, LLC (Harvest), to incidentally take, by Level B harassment, eight species of marine mammals incidental to oil and gas pipeline installation activities associated with the Cook Inlet Pipeline Cross Inlet Extension Project (CIPL), Cook Inlet, Alaska.

DATES: The IHA is valid from April 25, 2018, through April 24, 2019.

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

SUPPLEMENTARY INFORMATION:

Availability

An electronic copy of the IHA and supporting documents, as well as a list of the references cited in this document, may be obtained online at

<https://www.fisheries.noaa.gov/node/23111>. In case of problems accessing these documents, please call the contact listed above (see **FOR FURTHER INFORMATION CONTACT**).

Background

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 issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth.

NMFS has defined “negligible impact” in 50 CFR 216.103 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.

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 MMPA states that the term “take” means to harass, hunt, capture, kill or attempt to harass, hunt, capture, or kill any marine mammal.

Except with respect to certain activities not pertinent here, 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).

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our proposed action (*i.e.*, the issuance of an incidental harassment authorization) with respect to potential impacts on the human environment.

Accordingly, NMFS prepared an Environmental Assessment (EA) to consider the environmental impacts associated with the issuance of the proposed IHA and, on April 25, 2018, issued an associated Finding of No Significant Impact. NMFS’ EA and FONSI are available at <https://www.fisheries.noaa.gov/node/23111>.

Description of Proposed Activity

The proposed CIPL project includes the installation of two new steel subsea pipelines in the waters of Cook Inlet. Work includes moving subsea obstacles out of the pipeline corridor, pulling two pipelines (one oil, one gas) into place on the seafloor, securing pipelines with sandbags, and connecting the pipelines to the existing Tyonek platform. The positioning and installation of the offshore pipeline would be accomplished using a variety of pipe pulling, positioning, and securing methods supported by dive boats, tug boats, and/or barges and winches. Work would be limited to the pipeline corridor from Ladd Landing to the Tyonek Platform and could occur for up to 108 days. The installation of the subsea pipelines, specifically presence of and noise generated from work vessels, has the potential to take marine mammals by harassment. NMFS has authorized Harvest to take small numbers of eight species of marine mammals incidental to the project.

Dates and Duration

The CIPL project will take place for approximately 108 days if able to work without interruption (*e.g.*, weather delays). Work will be staged with repositioning of obstacles (*e.g.*, boulders) lasting approximately 15 days, pipe pulling lasting approximately 11 days (weather permitting) and the remainder of the project, including equipment mobilization, pipeline securing, pipeline connection to the Tyonek platform, and demobilization constituting the remainder of the 108 day project.

Specific Geographic Region

Cook Inlet is a complex Gulf of Alaska estuary (as described in BOEM 2016) that covers roughly 7,700 square miles (mi²; 20,000 square kilometers (km²)), with approximately 840 miles (mi) (1,350 linear kilometer (km)) of coastline (Rugh *et al.*, 2000). Cook Inlet is generally divided into upper and lower regions by the East and West Forelands (see Figure 1-1 in

Harvest's application). Northern Cook Inlet bifurcates into Knik Arm to the north and Turnagain Arm to the east. Overall, Cook Inlet is shallow, with an area-weighted mean depth of 148 feet (ft) (44.7 meters (m)). The physical oceanography of Cook Inlet is characterized by complex circulation with variability at tidal, seasonal, annual, and inter-annual timescales (Musgrave and Statscewich, 2006). This region has the fourth largest tidal range in the world and as a result, extensive tidal mudflats that are exposed at low tides occur throughout Cook Inlet, especially in the upper reaches. These tides are also the driving force of surface circulation. Strong tidal currents drive the circulation in the greater Cook Inlet area with average velocities ranging from 1.5 to 3 m per second (3 to 6 knots).

The project area is located a few km north of the village of Tyonek between Ladd Landing and the Tyonek Platform (see Figure 1-2 of Harvest's application). On April 11, 2011, NMFS designated beluga whale (*Delphinapterus leucas*) critical habitat in the action area. Critical habitat includes known fall and winter Cook Inlet beluga whale foraging and transiting areas (see Figure 4-1 in Harvest's application).

Detailed Description of Specific Activity

A complete description of the specified activity may be found in our notice of the proposed IHA (83 FR 8437; February 27, 2018) and a summary is provided below. No changes to the proposed project have occurred since publication of that notice.

The project includes the installation of two new steel subsea pipelines in the waters of Cook Inlet: a 10-inch (in) nominal diameter gas pipeline (Tyonek W 10) between the Tyonek Platform and the Beluga Pipeline (BPL) Junction, and the 8-in nominal diameter oil pipeline (Tyonek W 8) between the existing Tyonek Platform and Ladd Landing. Pipelines installation activities would be conducted in phases and include moving subsea obstacles out of the pipeline

corridor, pulling two pipelines (one oil, one gas) into place on the seafloor, securing pipelines with sandbags, and connecting the pipelines to the existing Tyonek platform. The positioning and installation of the offshore pipeline would be accomplished using a variety of pipe pulling, positioning, and securing methods supported by dive boats, tug boats, and/or barges and winches. The barge would be relocated approximately two to three times per day. Work would be limited to the pipeline corridor from Ladd Landing to the Tyonek Platform and could occur for up to 108 days. Table 1 contains construction scenarios during the phased project and associated use duration.

Table 1. Construction Scenarios, Associated Equipment and Estimated Source Levels during the 108-day CIPL project.

Project Component/Scenario	Noise Source	Approximate Duration (days)	Approximate hours per day
Obstruction Removal and Pipeline pulling (subtidal)	Tug (120 ft) x 2	68	10-12
	Dive boat ¹	28	9
	Sonar boat ²	9	12
	Work boat (120 ft) ¹	68	9
	Crew boat (48 ft) ¹	68	9
	Barge anchoring ³		
Pipeline pulling (intertidal)	Tug x 2	16	10-12
	Barge anchoring	16	
	Crew boat		
Trenching (transition zone)	Tug x 2	10	12
	Backhoe/bucket dredge ⁴ (beach-based)	10	12
Mid-line Pipeline Tie-In Work	Tug x 2	7	10-12
	Dive boat	4	9
	Work boat	7	12
	Barge anchoring	7	6
Connections of Tyonek Platform	Tug x 2	7	10-12
	Work boat	7	8
	Dive boat	7	9
	Underwater tools (hydraulic wrench, pneumatic grinder, and pressure washer)	7	30 minutes
Total Duration ⁵	Tug x 2	108	
	Dive boat	39	
	Sonar boat	9	
	Work/crew boat	108	

¹The dive boat, crew boat, and work boat durations are shorter than tugs because they would be tied to the barge most of the time. Main engines would not be running while tied up, but a generator and compressors would be running to support diving operations.

² Sonar boat engine noise only. Sonar equipment would operate at frequencies over 200 kHz.

³ Barge is equipped with four anchors.

⁴ Backhoe and tug will be used approximately 2-4 hours per low/slack tide to complete transition zone installation.

⁵ Total time does not include allowance of 6 weather days because vessels would not operating during those days.

Comments and Responses

A notice of proposed IHA was published in the *Federal Register* on February 27, 2018 (83 FR 8437) for public comment. During the 30-day public comment period, NMFS received comment letters from the Marine Mammal Commission (Commission) and a group of students from the University of Arizona (Students). The public comment letters received on the notice of proposed IHA are available on the internet at: <https://www.fisheries.noaa.gov/node/23111>.

Following is a summary of the public comments and NMFS' responses.

Comment 1: The Commission acknowledged that the activities will likely have lesser impacts than other sound-producing activities but indicated that NMFS should explain why the activities, in combination with ongoing and other planned activities in Cook Inlet, would affect only a small number of Cook Inlet beluga whales and have no more than a negligible impact on the population.

NMFS Response: In accordance with the MMPA and our implementing regulations at 50 CFR 216.104(c), and as described in this notice, we use the best available scientific evidence to determine whether the taking of marine mammals by the specified activity within the specified geographic region will have a negligible impact on the affected species or stock. The MMPA requires these findings be made with respect to the specified activity contained within an applicant's request for authorization. However, our negligible impact finding considers the potential impact of the specified activity in consideration of the status of the stock and existing threats. That is, the impacts from other past and ongoing anthropogenic activities are incorporated into the negligible impact analysis via their impacts on the environmental baseline

(e.g., density/ distribution and status of the species, population size and growth rate, and ambient noise). Here, as acknowledged by the Commission, the potential impact of the specified activity is low. Moreover, the IHA contains a number of mitigation and monitoring measures designed to minimize, reducing both frequency of take and intensity of take (which is already low). Further, as described here, we have compared the number of take to the stock abundance and determined that we are authorizing take of a small number of marine mammals per stock.

NMFS has made the necessary findings to issue the IHA to Harvest for take of marine mammals incidental to their pipeline installation activities. Nonetheless, NMFS agrees that caution is appropriate in the management of impacts on this small resident beluga population with declining abundance and constricted range. Accordingly, NMFS is requiring that Harvest submit weekly and monthly reports on their daily marine mammal monitoring efforts.

Consistent with our implementing regulations, if NMFS determines that the level of taking is having or may have a more than negligible impact on a species or stock, NMFS may suspend or modify an LOA, as appropriate, following notice and comment.

Comment 2: The Commission recommends that NMFS include take authorization for California sea lions, increase the number of authorized takes of harbor porpoises from 10 to at least 72, and require Harvest to notify NMFS immediately if the numbers of takes approach the authorized limits for any species.

NMFS Response: NMFS has reviewed a suite of industry monitoring reports, NMFS marine mammal survey data, and NMFS anecdotal sighting database in consideration of the Commission's comments with respect to all species proposed for authorization and determined that an adjustment of take numbers for almost all species was warranted to ensure the numbers of authorized takes for the project was sufficient given the nature of the project (*i.e.*, some activities

cannot be stopped once begun). We refer the reader to the “Estimated Take” section below for details on how the new take numbers were calculated. Specific to the Commission’s comment on harbor porpoise, NMFS authorized the take of 100 individuals in the IHA based on 2012 industry survey reports (which NMFS notes indicate an unusually large number of sightings compared to multiple and more recent survey years). NMFS has also added takes and associated analysis of California sea lions and gray whales included the recommended notification measure should Harvest approach take limits for any marine mammal species.

Comment 3: The Commission recommended, after reviewing proposed changes to the monitoring plan (see *Monitoring and Reporting* section), that NMFS require Harvest to deploy an additional protected species observer (PSO) on an alternate vessel located on the opposite side of the Level B harassment zone from the proposed land- or platform-based observer.

NMFS Response: The Commission’s comment reflect a concern for marine mammal detectability during the time activities are occurring in the middle of the project corridor between land and the Tyonek Platform. NMFS agrees detection at these distances is problematic; however, we disagree that placing another vessel on the water (which introduces additional underwater noise) is the appropriate response to addressing this issue. Instead, NMFS is requiring Harvest to place an observer at Ladd Landing and the Tyonek platform (concurrently) when pipelines installation activities occur 2 to 6.5 km from shore. Further, the PSO(s) would be in constant contact with vessel captains and crew and NMFS has included an additional monitoring measure requiring vessel-based crew to report any marine mammal sighting to the PSO.

Comment 4: The Commission requested clarification of certain issues associated with NMFS’s notice that one-year renewals could be issued in certain limited circumstances and

expressed concern that the process would bypass the public notice and comment requirements. The Commission also suggested that NMFS should discuss the possibility of renewals through a more general route, such as a rulemaking, instead of notice in a specific authorization. The Commission further recommended that if NMFS did not pursue a more general route, that the agency provide the Commission and the public with a legal analysis supporting our conclusion that this process is consistent with the requirements of 101(a)(5)(D) of the MMPA.

NMFS response: The process of issuing a renewal IHA does not bypass the public notice and comment requirements of the MMPA. The notice of the proposed IHA expressly notifies the public that under certain, limited conditions an applicant could seek a renewal IHA for an additional year. The notice describes the conditions under which such a renewal request could be considered and expressly seeks public comment in the event such a renewal is sought. Importantly, such renewals would be limited to where the activities are identical or nearly identical to those analyzed in the proposed IHA, monitoring does not indicate impacts that were not previously analyzed and authorized, and the mitigation and monitoring requirements remain the same, all of which allow the public to comment on the appropriateness and effects of a renewal at the same time the public provides comments on the initial IHA. NMFS has modified the language for future proposed IHAs to clarify that all IHAs, including renewal IHAs, are valid for no more than one year and that the agency would consider only one renewal for a project at this time (the latter accomplished by using the word “second”). In addition, notice of issuance or denial of a renewal IHA would be published in the *Federal Register*, as are all IHAs. Lastly, NMFS will publish on our website a description of the renewal process before any renewal is issued utilizing the new process.

Comment 5: The Students were concerned marine mammals access may be blocked by the project provided pipe segments, which are 2.5 mi long, and requested more information on mitigation measures designed to ensure animals have access to important foraging areas in the northern inlet.

NMFS Response: The project would not create physical barriers to accessing locations north and south of the project area. The pipelines would be pulled along the sea floor and the presence of the limited number of vessels involved in the project would not block access. Acoustically, we anticipate the highest noise levels to occur at the vessel and barge locations, not within an entire 2.5 mi stretch in any particular moment in time. As described in our *Federal Register* notice, we believe animals will detour around the project site but more specifically, around the work vessels generating the most amount of noise. Furthermore, the noise levels are not particularly high, and belugas are accustomed to industrial noises such as at the Port of Anchorage. There is ample evidence that construction noise at the Port of Anchorage, including impact pile driving, does not deter belugas from accessing critical foraging area higher in Knik Arm. Through the IHA, Harvest is also required to implement a number of mitigation measures designed to minimize both the frequency and degree of impact. These include lowering source levels of vessels at all times when full engine engagement is not required (*e.g.*, idle, tie up to barge and shut-down) and to delay the onset of activities if animals are observed within or entering the Level B harassment zone. Lastly, Harvest is required to submit weekly monitoring reports to NMFS for the duration of the project. Should monitoring by Harvest indicate marine mammals are experiencing anything more than the expected impacts, NMFS would employ an adaptive management approach to ensure impacts are not beyond those anticipated.

Comment 6: The Students expressed concern that information in the EA is not adequate to estimate amount of take and, specifically, harbor porpoise sightings have increased in recent years and should be considered.

NMFS Response: NMFS refers the reader to our response to the Commission’s comment regarding amount of take (Comment 2) and the “Estimated Take” section.

Comment 7: The Students indicated coordination with other agencies, local organizations, Inuit communities, US Fish and Wildlife Service, or other interest groups during development of the draft Environmental Assessment NMFS prepared for the project could result in a more effective project plan that could lessen the level B harassment on the marine mammals and allow for improved completion of the project.

NMFS Response: NMFS provided both the proposed IHA and draft EA for public comment. The agencies, communities, and interest groups referenced had opportunity to comment during this time and, as indicated in the *Federal Register* notice for the proposed IHA, NMFS considered all comments prior to issuing the IHA and finalizing the EA. Moreover, the MMPA requires NMFS to prescribe mitigation measures that effect the least practicable impact on marine mammal species and stocks, which we believe has been achieved.

Description of Marine Mammals in the Area of Specified Activities

In the *Federal Register* notice announcing our proposed IHA (83 FR 8437; February 27, 2018), we summarized available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of six of the potentially affected species. We have determined two additional species, the gray whale and California sea lion, have the potential, albeit unlikely, to enter into the project area. Due to the nature of the activities and the inability to stop some of the operational activities once they commence (*e.g.*, pipe pulling or pushing the

barge), we are including, in an abundance of caution, these species in the final IHA. Table 2 provides a summary of the status of these species.

Table 2. Species with Potential Occurrence within the Action Area.

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ¹	Stock abundance (CV, N _{min} , most recent abundance survey) ²	PBR ³	Annual M/SI ⁴
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray whale	<i>Eschrichtius robustus</i>	Eastern North Pacific	-	20,990 (0.05, 20125, 2011)	624	132
Family Balaenopteridae (rorquals)						
Humpback whale	<i>Megaptera novaeangliae</i>	Central North Pacific	E;Y	10,103 (0.3, 7890, 2006)	83	24
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Beluga whale	<i>Delphinapterus leucas</i>	Cook Inlet	E;Y	312 (0.1, 287, 2014)	UND	0
Killer whale	<i>Orcinus orca</i>	Alaska Resident	-	2,347 (unk, 2,347, 2012)	24	1
Killer whale	<i>Orcinus orca</i>	Gulf of Alaska, Aleutian, Bering Sea Transient	-	587 (unk, 587, 2012)	5.9	1
Family Phocoenidae (porpoises)						
Harbor porpoise	<i>Phocoena phocoena</i>	Gulf of Alaska	N;Y	31,046 (0.214, N/A, 1998)	UND	72
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
Steller sea lion	<i>Eumetopias jubatus</i>	Western U.S.	E;Y	50,983 (unk, 50,983, 2015)	306	236
California sea lion	<i>Zalophus californianus</i>	U.S.	-	296,750 (n/a, 153,337, 2014)	9,200	389
Family Phocidae (earless seals)						
Harbor seal	<i>Phoca vitulina</i>	Cook Inlet/Shelikof Strait	-	27,386 (unk, 25,651, 2011)	770	234
<p>1 - 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.</p> <p>2- NMFS marine mammal stock assessment reports online at: www.nmfs.noaa.gov/pr/sars/. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable.</p>						

3 – UND is an undetermined Potential Biological Removal (PBR)

4 - These values, found in NMFS's 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. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

In summary, eight marine mammal species, including five cetaceans and three pinnipeds, may be found within Cook Inlet during the project (Table 2). These are the Cook Inlet beluga whale, humpback whale, gray whale, killer whale, harbor porpoise, harbor seal, Steller sea lion and California sea lion. We refer the reader to the *Federal Register* notice for information regarding species previously considered. We provide a summary of the relevant information for the additional species (gray whale and California sea lion) below. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SAR; www.nmfs.noaa.gov/pr/sars/) and more general information about these species (e.g., physical and behavioral descriptions) may be found on NMFS's website (<https://www.fisheries.noaa.gov/about/office-protected-resources>).

Gray whales

Each spring, the Eastern North Pacific stock of gray whale migrates 8,000 km (5,000 mi) northward from breeding lagoons in Baja California to feeding grounds in the Bering and Chukchi seas, reversing their travel again in the fall (Rice and Wolman, 1971). Their migration route is for the most part coastal until they reach the feeding grounds. A small portion of whales do not annually complete the full circuit, as small numbers can be found in the summer feeding along the Oregon, Washington, British Columbia, and Alaskan coasts (Rice *et al.*, 1984, Moore *et al.*, 2007).

Most gray whales migrate past the mouth of Cook Inlet to and from northern feeding grounds. However, small numbers of summering gray whales have been observed within Cook Inlet, mostly in the lower inlet (e.g., Owl Ridge, 2014). Gray whales have not been observed in

the upper inlet; however, seismic surveys encompassing the middle and upper inlet (including the project area) have observed gray whales. On June 1, 2012, there were three gray whale sightings during marine mammal monitoring for a seismic survey; the survey area included the pipeline project area (SAE, 2012). It is not known if this was the same animal observed multiple times or multiple individuals. A lone gray whale was also observed near the middle inlet in 2014 and in May 2015, what was believed to be a gray whale based on blow shape was observed during marine mammal monitoring conducted for seismic surveys (SAE 2014, 2015).

Threats to this species include ship strike, entanglement in fishing gear, and increased human use of more northern latitudes as ice melts (Caretta *et al.*, 2015).

California sea lions

California sea lions (*Zalophus californianus*) are distributed along the North Pacific waters from central Mexico to southeast Alaska, with breeding areas restricted primarily to island areas off southern California (the Channel Islands), Baja California, and in the Gulf of California (Wright *et al.*, 2010). The population is comprised of five genetically distinct populations: the United States population that breeds on offshore islands in California; the western Baja California population that breeds offshore along the west coast of Baja California, Mexico; and three populations (southern, central and northern) that breed in the Gulf of California, Mexico. Males migrate long distances from the colonies during the winter whereas females and juveniles remain close the breeding areas. The approximate growth rate for this species is 5.4 percent annually (Caretta *et al.*, 2004).

California sea lions are very rare in Cook Inlet and typically are not observed farther north than southeast Alaska. However, NMFS' anecdotal sighting database contains four California sea lion sightings in Seward and Kachemak Bay (pers. comm., Kate Savage, NMFS,

March 27, 2018). In addition, an industry survey report contains a sighting of two California sea lions in lower Cook Inlet; however, it is unclear if these animals were indeed California sea lions or a mis-identified Steller sea lions (SAE, 2012). Regardless, in an abundance of caution, we have included take for California sea lions in the final IHA.

Threats to this species include incidental catch and entanglement in fishing gear, such as gillnets; biotoxins, as a result of harmful algal blooms; and gunshot wounds and other human-caused injuries, as California sea lions are sometimes viewed as a nuisance by commercial fishermen (NOAA 2016).

Potential Effects of Specified Activities on Marine Mammals and their Habitat

In the ‘‘Potential Effects of the Specified Activity on Marine Mammals and Their Habitat’’ section of the notice of proposed IHA (83 FR 8437, February 27, 2018), NMFS included a qualitative discussion of the different ways that Harvest’s pipelines installation activities may potentially affect marine mammals. The information contained in the notice has not changed. Please refer to that notice for the full discussion. Below we provide a summary.

The CIPL project has the potential to harass marine mammals from exposure to noise from working vessels (*e.g.*, tugs pushing barges) and construction activities such as removing obstacles from the pipeline path, pulling pipelines, anchoring the barge, divers working underwater with noise-generating equipment, trenching, etc. In this case, NMFS considers potential harassment from the collective use of vessels working in a concentrated area for an extended period of time and noise created when moving obstacles, pulling pipelines, trenching in the intertidal transition zone, and moving the barge two to three times per day using two tugs. Essentially, the project area will become be a concentrated work area in an otherwise non-

industrial, serene setting. In addition, the presence of the staging area on land and associated work close to shore may harass hauled-out seals and sea lions.

We anticipate effects of the project to be limited to masking and behavioral disturbance (e.g., avoidance, cessation of vocalizations, increased swim speeds, etc.). We do not anticipate auditory threshold shift, permanent (PTS) or temporary (TTS), to occur due to low source levels and the fact marine mammals species are unlikely to be exposed for periods of time needed to incur the potential for PTS or TTS from the sources involved with pipeline installation. We also do not anticipate marine mammals transiting to an intended destination to abandon the effort; we expect the length of any detour around working vessels to be minimal.

Estimated Take

This section provides the number of incidental takes authorized through the IHA, which informed both NMFS' consideration of "small numbers" and the negligible impact determination.

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 would be by Level B harassment only, in the form of disruption of behavioral patterns individual marine mammals resulting from exposure to multiple working vessels and construction activities in a concentrated area. For reasons described in the *Federal*

Register notice for the proposed IHA, Level A harassment is not anticipated or authorized. No mortality is anticipated or authorized for this activity. Below we describe how the take was quantified.

Described in the most basic way, we estimate take by considering: 1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; 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) and the number of days of activities. Below, we describe these components in more detail and present the authorized take estimate.

Acoustic Thresholds

Using the best available science, NMFS uses acoustic thresholds 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 PTS of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources – 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 (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.*, 2007, Ellison *et al.*, 2011). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a

manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 decibels (dB) re 1 micro pascal (μPa) (root means square (rms)) for continuous (*e.g.* vibratory pile-driving, drilling) and above 160 dB re 1 μPa (rms) for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources.

Harvest's activity includes the use of multiple continuous sources and activities (*e.g.*, vessels, pipe pulling) and therefore the 120 dB re 1 μPa (rms) threshold is applicable. As described above, in this case we believe it is not any one of these single sources alone that is likely to harass marine mammals, but a combination of sources and the physical presence of the equipment. We use this cumulative assessment approach below to identify ensouffled areas and take estimates.

Level A harassment for non-explosive sources - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NMFS, 2016b) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). Harvest's activity includes the use of non-impulsive (*e.g.*, tugs pushing a barge, pipe pulling) sources.

These thresholds are provided in the Table 3. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2016 Technical Guidance, which may be accessed at: <http://www.nmfs.noaa.gov/pr/acoustics/guidelines.htm>.

Table 3. Thresholds identifying the onset of Permanent Threshold Shift.

	PTS Onset Acoustic Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	<i>Cell 2</i> $L_{E,LF,24h}$: 199 dB
Mid-Frequency (MF) Cetaceans	<i>Cell 3</i> $L_{pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	<i>Cell 4</i> $L_{E,MF,24h}$: 198 dB
High-Frequency (HF) Cetaceans	<i>Cell 5</i> $L_{pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	<i>Cell 6</i> $L_{E,HF,24h}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	<i>Cell 8</i> $L_{E,PW,24h}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	<i>Cell 10</i> $L_{E,OW,24h}$: 219 dB
<p>* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.</p> <p><u>Note:</u> Peak sound pressure (L_{pk}) has a reference value of 1 μPa, and cumulative sound exposure level (L_E) has a reference value of 1 μPa²s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript “flat” is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds 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 acoustic thresholds will be exceeded.</p>		

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds.

When NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help

predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced will typically be overestimates of some degree, which will result in some degree of overestimate of Level A harassment. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available. NMFS will continue to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. Although vessels are mobile, we are considering them stationary for purposes of this project due to the confined area of work. For stationary sources, NMFS' User Spreadsheet predicts the closest distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would not incur PTS. Inputs used in the User Spreadsheet and the resulting isopleths are reported below.

The sources and activities involved with the CIPL project are relatively low compared to other activities for which NMFS typically authorizes take (*e.g.*, seismic surveys, impact pile driving). However, these sources will be operating for extended periods and NMFS' PTS thresholds now incorporate a time component. That time component is based on both the duration of the activity and the likely amount of time an animal would be exposed. To determine if there is potential for PTS from the CIPL project, we considered operations may occur throughout the day and night, and despite tugs being on stand-by for much of the time, a full day (24 hours) was the most conservative approach for estimating potential for PTS. Therefore, we used a source level of 170 dB measured at 1 m (estimated tug noise), a practical spreading loss model ($15\log R$), and the weighting factor adjustment (WFA) for vibratory pile driving as a proxy for vessels (2.5 kHz). The distances to PTS thresholds considering a 24 hour exposure duration

is provided in Table 4. Based on these results, we do not anticipate the nature of the work has the potential to cause PTS in any marine mammal hearing group; therefore, we do not anticipate auditory injury (Level A harassment) will occur.

Table 4. Distances to NMFS PTS Thresholds.

Hearing Group	Distance to PTS Threshold (m)
Low-frequency cetaceans	22.6
Mid-frequency cetaceans	2.0
High-frequency cetaceans	33.4
Phocids	13.8
Otarids	1.0

Each construction phase involves multiple pieces of equipment that provide physical and acoustic sources of disturbance. For this project, we anticipate the ensonified area to shift as the project progresses along the pipeline corridor. That is, at the onset of the project, work will be concentrated in the intertidal zone close to shore and, as work continues, moving offshore towards the Tyonek platform. We also anticipate that the sound field generated by the combination of several sources will expand and contract as various construction related activities are occurring. For example, pushing the barge may require tugs to use increased thruster power, which would likely result in greater distances to the 120 dB re 1 μ Pa threshold in comparison to general movement around the area. Therefore, calculating an ensonified area for the entire pipeline corridor would be a gross overestimate and we offer an alternative here.

Because we consider the potential for take from the combination of multiple sources (and not any given single source), we estimate the ensonified area to be a rectangle centered along the pipeline corridor which encompasses all in-water equipment and a buffer around the outside of the cluster of activities constituting the distance calculated to the 120 dB threshold from one tug (*i.e.*, 2,200 m). NMFS determined a tug source level (170 dB re: 1 μ Pa) for the duration of the

project would be a reasonable step in identifying an ensonified zone since tugs would be consistently operating in some manner, and other sources of noise (*e.g.*, trenching, obstacle removal, underwater tools) are all expected to produce less noise. Anchor handling during barge relocation is also a source of noise during the project; however, we believe using the tug is most appropriate. NMFS is aware of anchor handling noise measurements made in the Arctic during a Shell Oil exploratory drilling program that produced a noise level of 143 dB re 1 μ Pa at 860 m (LGL *et al.*, 2014). However, that measurement was during deployment of 1 of 12 anchors in an anchor array system associated with a large drill rig and it would be overly conservative to adopt here.

Although vessels and equipment (*e.g.*, tugs, support vessels, barge) spacing would vary during the course of operations, a single layout must be assumed for modeling purposes. We assume the barge used for pipe pulling and supporting trenching and stabilization is placed in the middle of a group of vessels and directly in line with the pipeline corridor. The sonar and dive boats would also be concentrated along the pipeline corridor path. We conservatively assume tugs would be spaced approximately 0.5 km from the barge/pipeline corridor during stand-by mode and could be on opposite sides of the corridor. Also, vessels and equipment would shift from nearshore to offshore as the project progresses. For simplicity, we divided the pipeline corridor (8.9 km) in half for our ensonified area model because each pipe pulled would be approximately 4.45 km each. We then considered the estimated distance to the 120 dB threshold from the tug (2.2 km). We then doubled that distance and adjusted for a 0.5 km distance from the pipeline corridor to account for noise propagating on either side of a tug. We used those distances to calculate the area of the rectangle centered around the pipeline corridor (Area = length x width or $A = 4.45 \text{ km} \times ((2.2 \text{ km} + 0.5 \text{ km}) \times 2)$ for a Level B ensonified area of 24.03

km². As the work continues, this area would gradually shift from nearshore to farther offshore, terminating at the Tyonek platform.

Marine Mammal Occurrence

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

There are eight marine mammal species that have the potential to occur within the action area from April through October. The NMFS National Marine Mammal Laboratory (NMML) maintains a database of Cook Inlet marine mammal observations collected by NOAA and U.S. Coast Guard personnel, fisheries observers, fisheries personnel, ferry operators, tourists, or other private boat operators. NMFS also collects anecdotal accounts of marine mammal sightings and strandings in Alaska from fishing vessels, charter boat operators, aircraft pilots, NMFS enforcement officers, Federal and state scientists, environmental monitoring programs, and the general public. These data were used to inform take estimates.

Empirical estimates of beluga density in Cook Inlet are difficult to produce. One of the most robust is the Goetz *et al.* (2012) model based on beluga sighting data from NMFS aerial surveys from 1994 to 2008. The model incorporated several habitat quality covariates (*e.g.*, water depth, substrate, proximity to salmon streams, proximity to anthropogenic activity, etc.) and related the probability of a beluga sighting (presence/absence) and the group size to these covariates. The probability of beluga whale presence within the project area from April through September is 0.001 belugas per km². Moving into October and the winter, density is likely to increase; however, Harvest anticipates all work will be completed no later than September.

Harvest provided density estimates for all other species with likely occurrence in the action area in their IHA application; however, data used to generate those densities do not

incorporate survey efforts beyond 2011. Therefore, we developed new density estimates based on data collected during NMFS aerial surveys conducted from 2001 to 2016 (Rugh *et al.* 2005; Shelden *et al.* 2013, 2015, 2017). The numbers of animals observed over the 14 survey years were summed for each species. The percent area of survey effort for each year (range 25 to 40 percent) was used to calculate the area surveyed which was summed for all years (Rugh *et al.* 2005; Shelden *et al.* 2013, 2015, 2017). Density estimates were then derived by dividing the total number of each species sighted during the survey by the total area of survey coverage (Table 5).

Table 5. Density Estimates for Marine Mammals Potentially Present within the Action Area based on Cook Inlet-wide NMFS aerial surveys 2001-2016.

Species	No. of Animals	Area (km ²)	Estimated Density (No. Animals/km ²)
CI beluga whale	-	-	0.001 ¹
Humpback whale	204	87,123	0.0023
Killer whale	70	87,123	0.0008
Harbor porpoise	377	87,123	0.004
Harbor seal	23,912	87,123	0.2745
Steller sea lion	74.1 ²	87,123	0.00085
Gray whale	10	87,123	0.00011
California sea lion ³	0	87,123	0

¹ CI beluga whale density based on Goetz *et al.* (2012).
² Actual counts of Steller sea lions was 741; however, it is well documented this species almost exclusively inhabits the lower inlet south of the Forelands with rare sightings in the northern inlet. Therefore, we adjusted the number of animals observed during the NMFS surveys (which cover the entire inlet) by 1/10 to account for this skewed concentration.
³ This species has not been documented in the project area during the referenced surveys; however, an occasional, rare sighting has been made during industry- supported surveys.

Take Calculation and Estimation

The method for calculating take was described in the *Federal Register* notice for the proposed IHA and is summarized here with a description of modifications.. Take was first calculated using a density-based method (Take = density x ensonified area x project days). As an example, for beluga whales, the estimated take is calculated as 24.03 km² x 0.001 x 108 days for a total of 2.59 belugas. However, for this and other species, we also consider additional

sighting data (*e.g.*, industry surveys, anecdotal sightings), anticipated residency time, and group size. From that analysis, we derived an authorized take level. In general, the amount of authorized take is an increase from the proposed numbers. In consideration of the nature of project activities (inability to shut down for some activities), we determined an increase in take numbers was warranted. Table 6 provides the results from our final take analysis.

Table 6. Quantitative Assessment of Authorized Take, by Level B harassment.

Species	Density	Calculated Take ¹	Average group size	Authorized Take (Level B)
CI beluga whale	0.001	2.59	8	40 ²
Humpback whale	0.0023	5.07	1-2	5
Killer whale	0.0008	1.77	5	10 ³
Harbor porpoise	0.004	8.83	1-3 ⁴	100 ⁴
Harbor seal	0.2745	605.67	1-10 ⁵	972 ⁶
Steller sea lion	0.00085	1.88	1-2	6 ⁷
Gray whale	0.00011	0.285	1	5 ⁸
California sea lion	0	0	1	5 ⁹

¹ Calculated Take = density x ensonified area (24.03 km²) x # of project days (108).
² The proposed take amount was 29 beluga whales which reflected the potential for one group of eight belugas per month or two groups of four animals per month. We increased to 40 authorized takes to account for possibility animals may be more frequent than originally assessed and to account for potential for one to two large group (up to 20 whales) to come within ensonified area during activities.
³ Adjusted take is based on two groups of five animals.
⁴ Average group size from Sheldon *et al.* 2014. Authorized take adjusted to account for known increase in harbor porpoise occurrence in upper Cook Inlet in recent years and is approximately 50% of the number of harbor porpoise observed during industry marine mammal surveys (n=190) near the action area.
⁵ Represents range of group sizes observed during a seismic survey in the middle Inlet from May 6 through September 30, 2012 (Lomac-MacNair *et al.*, 2012).
⁶ The proposed IHA used density-based method for proposed take; however, we have adjusted based on the maximum of 9 harbor seals observed during aerial surveys in the project area based on NMFS aerial surveys from 1997-2011 (9 seals/day x 108 days = 972).
⁷ As in the proposed IHA, we consider the potential for 1-2 Steller sea lions to remain in the area for multiple days.
⁸ We have authorized five takes of gray whales in the rare chance they enter the ensonified area and operations cannot be shut down.
⁹ We have authorized five takes of California sea lions in the rare chance they enter the ensonified area and operations cannot be shut down.

Cook Inlet beluga whales are expected to be transiting through the action area in group sizes ranging from 3 to 14 animals with an average of 8 animals/group. These group sizes are

based on NMFS aerial surveys and anecdotal reports near Tyonek from April through October (pers comm. K Sheldon, January 25, 2018). Harvest requested take for up to 29 beluga whales in anticipation that one group of 8 animals may pass through the action area once per month for the duration of the project (*i.e.*, 8 animals/group x 1 group/month x 3.6 months). However, during the public comment period, we considered, in more detail, the number of animals that could pass through the action area during operations that could result in take. Specifically, a 2012 June monitoring report (SAE 2012) reported an unusually high number of sightings of marine mammals, including many at river mouths south of the project area. If we consider the potential for those groups to move north to the Beluga River/Susitna, Knik and Turnigan Arm areas, there is a possibility animals could enter Harvest's ensounded zone. If operations (*e.g.*, pile pulling, barge moving) has already begun, these activities are not able to cease due to operational and safety concerns. Therefore, in the IHA, we have authorized up to 40 beluga whales to be taken by Level B harassment.

We also considered group size for other cetaceans. Killer whales have the potential to travel through the project area in groups exceeding the take calculated based on density. Because sighting data indicates killer whales are not common in the Upper Inlet, we anticipated one group to pass through the project area in the proposed IHA but have increased this to two groups for a total authorized take of 10 killer whales. For harbor porpoise, we considered the density-based take calculation to be great enough to encompass their small group size ($n=8$); however, harbor porpoise sightings in the mid- to upper inlet have increased in recent years. Despite them typically occurring in the lower inlet, we have increased the authorized amount of take to 100 individuals, which is approximately 50 percent of the individuals observed during the 2012 industry survey ($n = 190$). We did not authorize the same amount of individuals observed

considering the industry survey area was much larger than the harassment zone for the CIPL project and extended lower in the inlet where harbor porpoise are more common.

Harbor seals and Steller sea lions are expected to occur as solitary animals or in small groups and may linger in the action area more so than transiting cetaceans. Harbor seal take estimates based on density reflect a likely occurrence, so we did not adjust authorized take levels. However, Steller sea lion density calculations produce an estimated take of one animal during the entire project. While Steller sea lions are rare in the action area, this species may not be solitary and may also remain in the action area for multiple days. In 2009, a Steller sea lion was observed three times during Port of Anchorage construction (ICRC 2009). During seismic survey marine mammal monitoring, Steller sea lions were observed in groups of one to two animals during two of three years of monitoring (Lomac-MacNair 2013, 2015). Therefore, we increased the amount of take to six Steller sea lions to account for up to two animals to be observed over the course of three days (*i.e.*, two animals exposed three times).

Harvest did not request, and we did not propose, take for any other species in our proposed IHA notice. However, we have included take for gray whales and California sea lions in the final IHA. It is unlikely these species would come within the project area; however, in the *Description of Marine Mammals in the Area of Specified Activities* section, we describe sightings of these species during industry surveys and anecdotal sightings. Because some activities may not be able to cease once they begin, we have authorized take for these species (Table 6).

Effects of Specified Activities on Subsistence Uses of Marine Mammals

The availability of the affected marine mammal stocks or species for subsistence uses may be impacted by this activity. The subsistence uses that may be affected and the potential impacts of the activity on those uses are described below. Measures included in this IHA to

reduce the impacts of the activity on subsistence uses are described in the Mitigation section. The information from this section and the Mitigation section is analyzed to determine whether the necessary findings may be made in the Unmitigable Adverse Impact Analysis and Determination section.

The villages of Tyonek, Ninilchik, Anchor Point, and Kenai use the upper Cook Inlet area for subsistence activities. These villages regularly harvest harbor seals (Wolfe *et al.*, 2009). Based on subsistence harvest data, Kenai hunters harvested an about 13 harbor seals on average per year, between 1992 and 2008, while Tyonek hunters only harvested about 1 seal per year (Wolfe *et al.*, 2009). Traditionally Tyonek hunters harvest seals at the Susitna River mouth (located approximately 20 mi from the project area) incidental to salmon netting, or during boat-based moose hunting trips (Fall *et al.*, 1984). Alaska Natives are permitted to harvest Steller sea lions; however, this species is rare in mid- and upper Cook Inlet, as is reflected in the subsistence harvest data. For example, between 1992 and 2008, Kenai hunters reported only two sea lions harvested and none were reported by Tyonek hunters (Wolfe *et al.*, 2008). Sea lions are more common in lower Cook Inlet and are regularly harvested by villages well south of the project area, such as Seldovia, Port Graham, and Nanwalek.

Cook Inlet beluga subsistence harvest has been placed under a series of moratoriums beginning 1999. Only five beluga whales have been harvested since 1999. Future subsistence harvests are not planned until after the 5-year population average has grown to at least 350 whales. Based on the most recent population estimates, no beluga harvest will be authorized in 2018.

Harvest's proposed pipeline construction activities would not impact the availability of marine mammals for subsistence harvest in Cook Inlet due to the proximity of harvest locations

to the project (for harbor seals) and the general lack of Steller sea lion harvest. Beluga subsistence harvest is currently under moratorium. Further, animals that are harassed from the project are expected to elicit behavioral changes that are short-term, mild, and localized.

Mitigation

In order to issue an IHA under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses. NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such 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, we carefully consider 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) 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, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

NMFS anticipates the project will create an acoustic footprint above baseline of approximately 24 km² around the concentration of vessels and operational activities. There is a discountable potential for marine mammals to incur PTS from the project as source levels are relatively low, non-impulsive, and animals would have to remain at very close distances for multiple hours, to accumulate acoustic energy at levels which could damage hearing. Therefore, we do not believe there is potential for Level A harassment and there is no designated shut-down/exclusion zone established for this project. However, Harvest will implement a number of mitigation measures designed to reduce the potential for and severity of Level B harassment and minimize the acoustic footprint of the project.

Harvest will establish a 2,200 m safety zone from working vessels and along the pipeline corridor and employ NMFS-approved protected species observers (PSOs) to conduct marine mammal monitoring for the duration of the project. Prior to commencing activities for the day or if there is a 30-minute lapse in operational activities, the PSO will monitor the safety zone for marine mammals for 30 minutes. If no marine mammals are observed, operations may commence. If a marine mammal(s) is observed within the safety zone during the clearing, the PSO will continue to watch until either: (1) the animal(s) is outside of and on a path away from the safety zone; or (2) 15 minutes have elapsed. Once the PSO has determined one of those conditions are met, operations may commence.

Should a marine mammal be observed during pipe-pulling, the PSO will monitor and carefully record any reactions observed until the pipe is secure. No new operational activities would be started until the animal leaves the area. PSOs will also collect behavioral information on marine mammals beyond the safety zone.

Other measures to minimize the acoustic footprint of the project include: the dive boat, sonar boat, work boat, and crew boat will be tied to the barge or anchored with engines off when practicable; all vessel engines will be placed in idle when not working if they cannot be tied up to the barge or anchored with engines off; and all sonar equipment will operate at or above 200 kHz.

Finally, Harvest would abide by NMFS marine mammal viewing guidelines while operating vessels or land-based personnel (for hauled-out pinnipeds); including not actively approaching marine mammals within 100 yards (in-water or on land) and slowing vessels to the minimum speed necessary. NMFS Alaska Marine Mammal Viewing Guidelines may be found at <https://alaskafisheries.noaa.gov/pr/mm-viewing-guide>.

The mitigation measures are designed to minimize Level B harassment by avoiding starting work while marine mammals are in the project area, lowering noise levels released into the environment through vessel operation protocol (*e.g.*, tying vessels to barges, operating sonar equipment outside of marine mammal hearing ranges) and following NMFS marine mammal viewing guidelines. There are no known marine mammal feeding areas, rookeries, or mating grounds in the project area that would otherwise potentially warrant increased mitigation measures for marine mammals or their habitat. The proposed project area is within beluga whale critical habitat; however, use of the habitat is higher in fall and winter when the project would not occur nor would habitat be permanently impacted other than the presence of the pipelines on

the seafloor. Thus mitigation to address beluga whale critical habitat is not warranted. Finally, the mitigation measures are practicable for the applicant to implement. NMFS 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.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) 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 in the proposed action area. 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 should 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 action; 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.

Harvest will abide by all monitoring and reporting measures contained within their Marine Mammal Monitoring and Mitigation Plan, dated March 15, 2018, with the additional condition described below regarding number and location of observers. This plan was revised from the original that was available for public comment. During the public comment period, Harvest found that there was limited space on the vessels and safety issues prevented a PSO from being placed on the barge. In the revised plan, Harvest moved the PSO from vessel-based to land- or Tyonek Platform- based. Harvest proposed that during the beginning of the project when activities are occurring close to shore, a PSO will be positioned on a 100-foot high bluff at Ladd Landing, which provides a marine mammal sighting distance of approximately 3 mi. As work progresses toward the Tyonek Platform, the PSO shall be stationed on the Tyonek platform which also provides for an approximately 100- foot high observation point. The elevation of both these observation points provides advantages than working aboard a single vessel. However, NMFS determined that a single land-based observer was not sufficient and is therefore requiring monitoring based on where along the pipeline corridor activities are occurring. That is, a PSO shall be stationed at Ladd Landing when activities are occurring 0-2 km from shore. A

PSO shall be stationed at the Tyonek Platform when activities are occurring greater than 6.5 km from shore. When project activities are occurring from 2 to 6.5 km from shore, a PSO shall be stationed at both Ladd Landing and the Tyonek Platform. All other monitoring measures included in the proposed IHA and in Harvest's monitoring plan remain in effect. NMFS has also included a provision in the IHA that PSOs will report on detectability and estimated range of observer coverage during all marine mammal monitoring shifts. Please see the IHA, posted at <https://www.fisheries.noaa.gov/node/23111>, for the complete set of reporting requirements.

In recognition of the status of Cook Inlet beluga whales, Harvest is required to submit weekly reports to NMFS documenting marine mammal observations, behavior, and ability to detect marine mammals within the monitoring zone. If Harvest fails to abide by the mitigation, monitoring and/or reporting conditions contained within the IHA or NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals, NMFS may modify the mitigation or monitoring measures if doing so creates a reasonable likelihood of more mitigation and monitoring leading to reduced impacts. Possible sources of new data that could contribute to the decision to modify the mitigation or monitoring measures include: results from Harvest's marine mammal monitoring report, information from beluga whale researchers, and information from subsistence users or local community residents.

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 responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), 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’s 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 environmental 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, our analysis applies to all the species listed in Table 6, given that NMFS expects the anticipated effects of the pipeline installation activities to be similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, NMFS has identified species-specific factors to inform the analysis.

Marine mammal habitat may be impacted by elevated sound levels, but these impacts would be temporary. In addition to being temporary and short in overall duration, the acoustic footprint of the pipeline installation activities is small relative to the overall distribution of the animals in the area and their use of the area. Feeding behavior is not likely to be significantly impacted, as no areas of biological significance for marine mammal feeding are known to exist in the survey area. For beluga whales, there are no major river outfalls which provide prey within the action area.

The proposed project would create an acoustic footprint around the project area for an extended period time (3.6 months) from April through September. Noise levels within the footprint would reach or exceed 120 dB rms. We anticipate the 120 dB footprint to be limited to 20km² around the cluster of vessels and equipment used to install the pipelines. The habitat within the footprint is not heavily used by marine mammals during the project time frame (*e.g.*, Critical Habitat Area 2 is designated for beluga fall and winter use) and marine mammals are not known to engage in critical behaviors associated with this portion of Cook Inlet (*e.g.*, no known breeding grounds, foraging habitat, etc.). Most animals will likely be transiting through the area; therefore, exposure would be brief. Animals may swim around the project area but we do not expect them to abandon any intended path. We also expect the number of animals exposed to be small relative to population sizes. Finally, Harvest will minimize potential exposure of marine mammals to elevated noise levels by not commencing operational activities if marine mammals are observed within the ensonified area.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized;
- The project does not involve noise sources capable of inducing PTS and no injury is anticipated or authorized;
- Exposure would likely be brief given transiting behavior of marine mammals in the action area, resulting in, at most, temporary avoidance and modification to vocalization behavior, and diverting around the project area;

- The project area does not contain concentrated foraging, mating, or breeding habitat;
- Marine mammal densities are low in the project area and the number of marine mammals potentially taken is small compared to the population size; and
- Harvest would monitor for marine mammals daily and minimize exposure to operational activities as required in the IHA.

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 proposed activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under Section 101(a)(5)(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 the number of individuals taken 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. Additionally, qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Table 7 provides the quantitative analysis informing our small numbers determination. For most species, the amount of take proposed is less than 3.5 percent of all stocks except beluga whales. For beluga whales, the amount of take proposed represents 12.8 percent of the population.

Table 7. Percent of Stock Proposed to Be Taken by Level B harassment.

Species	Stock	Abundance (Nbest)	Proposed Take (Level B)	% of Population
Beluga whale	Cook Inlet	312	40 ²	12.8
Humpback whale	Central North Pacific	10,103	5	0.04
Killer whale	Alaska Resident	2,347	10 ³	0.4
	Gulf of Alaska, Aleutian, Bering Sea Transient	587		1.7
Harbor porpoise	Gulf of Alaska	31,046	100	0.3
Harbor seal	Cook Inlet/Shelikof Strait	27,386	972	3.5
Steller sea lion	Western U.S.	50,983	6	0.01
Gray whale	Eastern North Pacific	20,990	5	0.02
California sea lion	U.S.	296,750	5	0.001

Based on the analysis contained herein of the proposed activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

In order to issue an IHA, 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 village of Tyonek engages in subsistence harvests; however, these efforts are concentrated in areas such as the Susitna Delta where marine mammals are known to occur in greater abundance. Harbor seals are the only species taken by Alaska Natives that may also be harassed by the proposed project. However, any harassment to harbor seals is anticipated to be short-term, mild, and not result in any abandonment or behaviors that would make the animals unavailable to Alaska Natives.

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 there will not be an unmitigable adverse impact on subsistence uses from Harvest's proposed activities.

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure 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 issuance of IHAs, NMFS consults internally, in this case with Alaska Regional Office, whenever we propose to authorize take for endangered or threatened species.

On April 25, 2018, NMFS Alaska Region issued a Biological Opinion to NMFS Office of Protected Resources which concluded Harvest's CIPL project is not likely to jeopardize the continued existence of Cook Inlet beluga whales, the WDPS Steller sea lions, or Mexico and Western North Pacific humpback whales DPSs or destroy or adversely modify critical habitat.

Authorization

NMFS has issued an IHA to Harvest for the harassment of small numbers of eight marine mammal species incidental to pipeline installation activities in Cook Inlet, provided the previously mentioned mitigation, monitoring and reporting requirements are incorporated.

Donna S. Wieting,

Director, Office of Protected Resources,

National Marine Fisheries Service.

[FR Doc. 2018-09242 Filed: 5/1/2018 8:45 am; Publication Date: 5/2/2018]