

FUNDING OPPORTUNITY ANNOUNCEMENT (FOA)

Funding Agency: US Army Corps of Engineers Alaska District PO Box 6898 JBER AK 99506	Funding Instrument: Cooperative Agreement Funding Opportunity W911KB-23-2-0012 No. CFDA No: 12.005 Program Authority 16 U.S.C. 670 (Sikes Act)
Issue Date: 21 July 2023	Application Due Date: 21 August 2023
Overview: Management, Species, Cook Inlet Beluga Whale Ice Conditions, Military Training Noise Impacts, and Acoustical Monitoring, Joint Base Elmendorf-Richardson, Alaska - The purpose of this Statement of Work (SOW) is to provide details of the work to be performed to support the U.S. Air Force through a cooperative agreement (CA) between the Recipient, the U.S. Army Corps of Engineers (USACE), and Joint Base Elmendorf-Richardson (JBER) in support of JBER's marine ecology and marine mammal programs. The recipient agency shall provide a lead technician with demonstrated experience working on research vessels in upper Cook Inlet (preferentially Knik Arm). See full Funding Opportunity Description in Section I.	
Estimated Total Funding: \$289,506.17	Estimated Number of Awards: 1
Contents of Full Text Announcement	
I. Funding Opportunity Description	V. Application Review Information
II. Award Information	VI. Award Administration Information
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Contact Information: Questions relating to Grants.gov including the registration process and system requirements should be directed to the Grants.gov Contact Center at 1-800-518-4726. For assistance with the requirements of this Funding Opportunity Announcement, please contact the Grants Specialist, casandra.a.hutchins@usace.army.mil .	
Instructions to Applicants: The complete Funding Opportunity Announcement, application forms, and instructions are available for download at Grants.gov. Applications in response to this Funding Opportunity Announcement shall be submitted by the application due date. Applications may be submitted electronically via email or through Grants.gov. Applicants shall have a Unique Entity Identification (UEI) number, registration with the System of Award Management (SAM), and registration with Grants.gov, if submitting application through Grants.gov. See Section IV of the Funding Opportunity Announcement for complete application submission information.	

Section I: Funding Opportunity Description

Management, Species, Cook Inlet Beluga Whale/Ice Conditions, (ACES # FXSBOS682923; RAM # FXSBA53237119)

Management, Species, Cook Inlet Beluga Whale Military Training Noise Impacts, (ACES # FXSB55953723; RAM# FXSBA53237119)

Management, Species, Beluga Acoustical Monitoring, (ACES # FXSBOS453623; RAM# FXSBA53237119)

**Joint Base Elmendorf-Richardson, Alaska
Fiscal Year 2023**

Task 1: Mgt, Species, Cook Inlet Beluga Whale/Ice Conditions: \$142,935.91

Task 2: Mgt, Species, Harbor Porpoise: \$ 93,194.64

Task 3: Mgt, Species, Beluga Acoustical Monitoring: \$ 53,375.62

Total Project Cost Ceiling \$289,506.17

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Statement of Work (SOW) is to provide details of the described work to be performed to support the U.S. Air Force through a cooperative agreement (CA) between the Recipient, the U.S. Army Corps of Engineers (USACE), and Joint Base Elmendorf-Richardson (JBER) in support of JBER's marine ecology and marine mammal programs. The recipient agency shall provide a lead technician with demonstrated experience working on research vessels in upper Cook Inlet (preferentially Knik Arm). This SOW is intended to describe a multi-year, ongoing study with a base period plus two (2) option periods.

1.2 Background

Military training on JBER: The U.S. Air Force and U.S. Army, located on JBER, are mandated to train combat troops for global deployment. Part of the training requirements for the Army units currently stationed on JBER includes live fire training with high explosive (HE) mortar and artillery rounds. The only area on JBER approved for such training is the Eagle River Flats Impact area (ERF) which is bisected by the tidally influenced Eagle River. Training with HE rounds in the ERF is currently only allowed during the winter from 1 Nov through 31 March and only when there is a sufficient layer of ice on ERF to protect the underlying sediment. The ice thickness requirements for training at ERF are: two (2) inches of ice cover on water bodies within ERF to enable firing of 60-mm and 81-mm mortars; and five (5) inches of ice cover on water bodies to enable firing of 105-mm howitzers or 120-mm mortars. Prior to winter firing each year, the Army measures ice thickness to determine whether the requirements stated above are met.

The U.S. Air Force trains using aircraft with thousands of overflights of Knik Arm per year. An Environmental Impact Statement (EIS) is currently underway which would reconfigure the airspace over Knik Arm and effectively move thousands of overflights over Eagle Bay.

Marine mammals common on JBER: Three (3) species of marine mammals, Cook Inlet beluga whale (CIBW), harbor porpoise, and harbor seal, make seasonal forays up to 4.2 km upstream, in Eagle River, and thus within the ERF. The use of the river and Eagle Bay by

the two (2) cetaceans is monitored via static passive acoustic monitoring. The passive acoustic system used to monitor movement within the upriver reaches of Eagle River has, thus far, only been successfully deployed during the open water season (period without ice) whereas biologists have developed techniques to allow year-round monitoring at the mouth.

Both harbor porpoise and CIBW utilize the upper portions of the tidally influenced portion of Eagle River into the late fall (into November) and are detected acoustically at the mouth year-round. All three (3) species are protected under the Marine Mammal Protection Act (MMPA), and the CIBW is further protected under the US Endangered Species Act (ESA). The MMPA strictly prohibits the unauthorized take of marine mammals (in this case, all three (3) species listed above), and ESA further prohibits the unauthorized take of listed species (in this case, CIBW). In order to analyze the potential for adverse impacts (takes) to these marine mammals, especially the CIBW as well as to its designated Critical Habitat (just off the installation) resulting from JBER actions, managers must conduct in-depth, thorough analyses, often leading to consultation with the National Marine Fisheries Service (NMFS), the regulatory agency for most marine mammals. In order to complete these analyses, managers must have a clear understanding of the habitat present within and adjacent to JBER as well as when and how marine mammals use that habitat. Unfortunately, there is little information on the habitat, life history and biology of the harbor porpoise (Gulf of Alaska stock) or the CIBW, especially in relation to the usage of Knik Arm and associated rivers during the months when ice is present.

An important habitat component in reference to cetaceans in the arctic and subarctic is the timing, extent, and quality of coastal ice. This is especially true in reference to coastal whales like belugas that utilize tidally influenced rivers such as Eagle River late in the fall and early winter during periods of ice formation. It is currently hypothesized, but not known for certain, that belugas do not venture under the ice in Eagle River. Indeed, belugas are capable of lengthy excursions under heavy ice cover. For instance, Sudyam et al. (2001), found that satellite tagged belugas in the Chukchi Sea travelled as far as 700 km through arctic waters with ice cover greater than 90%. However, Goetz et al. (2102), studying the movement of satellite tagged belugas relative to ice cover in Cook Inlet, found that while tagged whales in Cook Inlet did occasionally associate with compact ice, they were most often found in very open pack ice (10-30% cover) and open pack ice (40-50% cover). The authors reasoned that the observed movement of belugas from the Knik and Turnagain Arms into the mid inlet offshore waters during the winter was likely associated, in part, with the formation of ice in the Arms and uppermost Inlet. The mean sea ice concentration in Knik Arm from Dec-Feb is (70-80%) and in March (30-60%) (Mulherin et al., 2001). Goetz et al (2012), however, based their conclusions on data from a small number of whales (n=21) and an even smaller number that retained tags throughout the winter (n=4).

The apparent difference in affinity for ice of belugas in the Chukchi vs Cook Inlet may be an artifact of small sample sizes in both studies or, more likely, may be due to dramatically different conditions in these two (2) water bodies. The area traversed by the Chukchi whales, for instance, is deep (~3000m) with little tidal flux and very little movement of ice (Robert Sudyam, pers comm.), whereas the Knik Arm near Eagle Bay is shallow (~20 m max) with the second largest tidal differential in North America (~12 m) and considerable tidally driven vertical and horizontal movement of ice. Thus, belugas in Knik Arm must not only contend with ice that is moving rapidly with the current but also falling dramatically as the ebb proceeds. This, coupled with shallow water and complex bathymetry (e.g., shifting channels) may limit beluga movement in Knik Arm during periods of heavy ice cover. On the other hand, there is evidence that belugas make occasional forays into the Knik Arm even during months historically known for heavy ice cover (Dec and Jan) but these

detections have not yet been correlated to actual conditions during those months.

Very little is known about winter habitat conditions in Knik Arm and even less about conditions in Eagle River. Similarly, little is known about winter ecology of Cook Inlet belugas. If, as is the current hypothesis, belugas are inhibited from travelling up Eagle River, and thus into the active impact area, due to ice cover, it is imperative that we study the timing, extent, and quality of this important habitat component, especially as it relates to the movement of belugas and the ice threshold which controls the onset of live-fire training. Such investigation is made even more paramount given that the average annual temperature in Alaska has risen by three (3) degrees F in the last six (6) decades-a rate more than double that of the rest of the U.S. - with average winter temperature increases of six (6) degrees F (USEPA, 2019). This warming trend, especially if coupled with warmer water from other marine cycles (i.e., El Nino, Pacific Decadal Oscillation) will likely result in dramatically different ice regimes and thus beluga movement patterns in Knik Arm, and potentially into Eagle River, in the future.

The use of Eagle River and Eagle Bay by belugas has been investigated historically using static passive acoustic monitoring with echolocation data loggers (CPOD). The efficacy of using passive acoustics to detect CIBW has been well demonstrated in studies of both captive and free-ranging whales (e.g., Castellote et al., 2009; O'Corry-Crowe et al., 2009, Small 2011). Long term monitoring of year-round usage of Eagle Bay and Eagle River by CIBW and other marine mammals (deployments during open water season only due to instrument loss) is integral to inform ESA, MMPA and NEPA analyses, especially in light of changing climactic conditions (i.e., timing and extent of ice cover).

Another important habitat component is the acoustic environment, often called soundscape. The soundscape of a given location, that is, the sum of biotic, abiotic and anthropogenic sonic energy in a given area, is an important and often overlooked ecosystem component that can dramatically alter the ability of a species, particularly those that rely heavily on sound (e.g., belugas and harbor porpoise) to function effectively at that location. Small et al. (2017), described anthropogenic noise (bandwidth 0-12.5 kHz) in Eagle Bay over the course of 58 days within the open water season. There have been no, to our knowledge, studies that have successfully characterized a year-round, broad-band soundscape at the mouth of Eagle River (to include Eagle Bay).

1.3 Legal Drivers

Conducting endangered and threatened species management is required by the Endangered Species Act, Public Law 106-65 (Military Land Withdrawal Act) as mitigation for the land withdrawal LEIS and Public Law 86-797 (Sikes Act). Conservation measures aimed at protection of CIB and their habitat were included in the JBER INRMP and were deemed sufficient, as written, to preclude Eagle River from inclusion in the proposed critical habitat ruling (74 Federal Register [FR] 230). Threatened and endangered species are protected under provisions of the Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. 1531 *et. seq.*) Additionally, all marine mammals are protected by provisions of the Marine Mammal Protection Act of 1972 (MMPA), as amended (16 U.S.C. 1371(a)(5)). Furthermore, Section 7(a)(2) of the ESA requires that each federal agency ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of any critical habitat of such species.

2.0 OBJECTIVES

Task 1 (Ice Conditions) Objectives are:

Objective 1: Determine extent, timing, and quality of ice cover in winter in Eagle River.

Objective 2: Correlate beluga presence at the mouth of Eagle River with ice conditions.

Objective 3: Correlate river ice conditions with Army's currently used ice proxy.

Task 2 (Military Training Noise Impacts) Objectives are:

Objective 4: Characterize the waterborne acoustic environment (soundscape) in Eagle River and one (1) other location (TBD) along the JBER coast.

Task 3 (Beluga Acoustical Monitoring) Objectives are:

Objective 5: Determine beluga presence in Knik Arm during the winter.

Objective 6: Determine the presence of beluga in Knik Arm and the timing and extent of upstream movement of belugas in Eagle River during summer and fall.

Objective 7: Determine the number, composition, behavior, and spatial movements of belugas within Knik Arm, especially Eagle Bay and the lower portion of Eagle River, during the summer and fall.

3.0 MAJOR REQUIREMENTS AND TASKS

NOTE: All work in the Eagle River Flats Impact Area now (as of March 2023) requires escort by Army or Air Force Explosive Ordnance Disposal (EOD) personnel. This is anticipated to have a significant impact on the ability to work within ERF and may require modification, in close coordination with the JBER point of contact (POC), to the methods and locations mentioned below.

3.1 TASK 1: MGT, SPECIES, COOK INLET BELUGA WHALE/ICE CONDITIONS (ACES # FXSBOS682923; RAM # FXSBA53237119)

Sub-task 1-1: Implement sea/river ice monitoring protocol in Eagle River and Eagle Bay. This sub-task relates to objectives 1-3.

Methods: Recipient personnel (minimum of two (2) on land or one (1) by boat-boat space shall be taken up by boat captain and EOD) led or directed by JBER personnel, shall install and maintain, as practicable, up to ten (10) remote cameras along Eagle River and Eagle Bay. The mouth of Eagle River is accessed via approximately one-and-one-half (1.5) miles of trail through the Eagle River Flats Impact Area. Other sites within the river and bay will likely be accessed via a small boat launched out of the Anchorage small boat launch. The Recipient shall compile the data collected from this effort into a photo database and produce a summation field report. The field report shall detail the extent, timing, and quality of ice coverage in Eagle River and Eagle Bay.

Sub-task 1-2: Analyze ice data gathered under Sub-task 1-1 and work with the JBER marine mammal lead to describe any relationships evident upon comparison with beluga detections. Detection data shall be provided by the JBER marine mammal lead (JBER POC). This sub-task relates to objectives 1 & 2.

Sub-task 1-3: Evaluate Army ice proxy (i.e., ice thickness threshold required to fire high explosive munitions into ERF) as it relates to river ice conditions. The ice proxy currently in use by the Army as a threshold to commence winter firing of indirect weapon systems into Eagle River Flats Impact Area was originally designed to protect underlying

sediment irrespective of river ice conditions. This sub-task relates to objective 3.

Methods: Recipient personnel shall use ice data gathered by the Army, photos collected under sub-task 1-1, and satellite data (if available) to evaluate if the Army's thresholds, based on measurements of ice thickness of non-tidally influenced waterbodies, also predict ice cover on Eagle River.

The Recipient shall develop a final report for this task (including all subtasks) not later than (NLT) the end of the period of performance (POP) for the second option period. Report outline shall be developed in coordination with the JBER POC.

3.2 TASK 2: MGT, SPECIES, COOK INLET BELUGA WHALE MILITARY TRAINING NOISE IMPACTS (ACES # FXSB55953723; RAM# FXSBA53237119)

Sub-task 2-1: Use passive acoustic recorders to record waterborne sound in Eagle River and one (1) other location in Knik Arm along the JBER coast. This task relates to objective 4.

Methods: Recipient personnel (minimum of two (2)) led or directed by JBER personnel, shall install and maintain, as practicable, up to four (n=4) LS1 recorders (Loggerhead Instruments, USA) (or similar instrument approved by JBER POC) in the negative tide zone (if possible) at two (2) sites on JBER (technically on JBER although these sites will be submerged for much of the time). At least one (1) instrument at each site shall be deployed in custom-built protective housings with instruments not deployed held in reserve to save time for instrument swapping in the negative tide zone. Also included at each station shall be a water depth and temperature sensor (HOB0). Exact deployment design and locations shall be finalized in coordination with the JBER POC. The Recipient shall outline an idealized instrument servicing schedule based on tides, duty cycle, noise in the area (i.e., a particularly noisy spot will decrease the calculated operational time) and know Army range and EOD schedules. All acoustic data shall be stored on one (1) large external hard-drive and backed up on at least one (1) other.

Sub-task 2-2: Conduct visual observations of noise producing events (anthropogenic and natural) in Knik Arm for comparison with acoustic data. This task relates to objective 4.

Recipient personnel (minimum of two (2)) shall conduct visual observations at the two (2) sites with the goal of recording at a minimum, the timing, source, approximate or relative location, as well as any other relevant attributes of both natural and anthropogenic sound-producing events occurring in the area of the recorders. Observations shall follow a standard protocol and shall be recorded on a standard data sheet developed by the Recipient. This may be augmented with in-air recordings and video. Examples of sound producing sources in Knik Arm include (obviously not an all-inclusive list): boats, aircraft, explosions, pile-driving, gunfire, trains, marine mammals, earthquakes, rain, wind, tide, and ice. Observational methodology shall be developed in coordination with the JBER POC. This data shall be used to help identify recorded waterborne sounds. The Recipient shall enter this data into an excel file stored on the external hard-drives mentioned in sub-task 2-1.

The Recipient shall develop a field report of activities conducted under this task at the end of the season. Additionally, the Recipient shall develop a final report characterizing the waterborne acoustic environment at the monitoring sites by the end of the POP for the

second option period or the first option period (if funding is unavailable for the second option period).

3.3 MGT, SPECIES, BELUGA ACOUSTICAL MONITORING (ACES # FXSBOS453623; RAM # FXSBA53237119)

Sub-task 3-1: Use static passive acoustic instruments to monitor beluga presence during the frozen months when ice precludes access to Knik Arm by boat and winter firing into the ERF precludes access via land. This task relates to objective 5.

Methods: The presence of belugas in Knik Arm shall be monitored using static passive acoustic monitoring (frequency range of 20-160 kHz) in Eagle Bay, at the mouth of Eagle River using CPODs and FPODs both manufactured by Chelonia Limited. The PODs (minimum of two (2) - on CPOD and one (1) FPOD) shall be deployed within specially designed housings drilled into the mud or, in the case of Sixmile, in housings attached to rock, during an extreme low tide event as late in the fall as possible. Also included at each station shall be a water depth and temperature sensor (HOBO). Monitoring shall focus on echolocation signals. Locations for acoustic instrumentation are TBD. NOTE: alignment of multiple factors (e.g., tide, training, heavy siltation, ice, weather, etc.) is required for safe deployment of instruments. As such, there are years when it is not possible to safely deploy at both locations. The location at Eagle Bay is the preferred location but if it cannot be set due to safety, training or some other legitimate reason, instruments may be deployed near Sixmile Creek or some other location along the JBER coast (in coordination with JBER POC). Instruments may be deployed at both sites, if feasible.

Sub-task 3-2: Use static passive acoustic instruments to monitor beluga presence in Knik Arm and at multiple locations within the tidally influenced portion of Eagle River during the summer and fall. This task relates to objective 6.

Methods: Up to eleven CPODs manufactured by Chelonia Limited (UK) shall be deployed along Eagle River (with at least one (1) in Otter Creek) downstream of Bravo Bridge. The locations of the CPODs shall be determined based on data from previous acoustic monitoring studies. The CPOD location shall be geo-spatially recorded. If available, FPOD's may be deployed on the same line as the CPOD. Deployment shall begin as soon as the area is ice free in spring and shall end before ice builds up in fall. A combination of line, anchors and steel weights shall maintain the CPODs in position throughout the monitoring season (design supplied by JBER). Also included on the line at each station shall be a water depth and temperature sensor (HOBO). Vessel-based semimonthly service will ensure the safety of these moorings as well as the retrieval of their data. Service shall be completed by the Recipient and JBER personnel using boats furnished by JBER. At least one (1) of the recipient personnel shall have experience working on boats in upper Cook Inlet and preferentially in Knik Arm. Recipient personnel shall be responsible for preparation of boats and equipment for fieldwork initiation as well as termination.

Monitoring Knik Arm during the open water season shall consist of CPOD deployment at the mouth of Eagle River in the silos used for winter monitoring. This location at Eagle River mouth is the preferred location but if it cannot be set due to safety, training or some other legitimate reason, instruments may be deployed at or near Sixmile Creek or some other site approved by the JBER POC. Instruments can be deployed at both sites, if feasible.

Sub-task 3-3: Conduct visual observations of CIB in Knik Arm for comparison with acoustic data. This task relates to objective 7.

Methods: Recipient personnel (minimum of two (2), except that observations from the mouth of Sixmile can be conducted by a single technician provided that they stay near their vehicle) led or directed by JBER personnel, shall conduct visual observations of CIB from the mouth of Eagle River, at or near the mouth of Sixmile Creek, or other location determined in coordination with JBER POC. The mouth of Eagle River is accessed via approximately one-and-one-half (1.5) miles of trail through the Eagle River Flats Impact Area. All work in the ERF now requires escort by Army or Air Force EOD personnel. The mouth of Sixmile Creek and nearby areas are accessed via four-wheel drive vehicles and in some cases a combination of vehicles and foot access on game trails. Observations from Sixmile and its associated coast do not require EOD escort. Observations from the mouth of Eagle River are preferred if there are only enough personnel to observe from one (1) of the two (2) sites.

Observations shall follow a standard protocol developed by JBER and shall be recorded on a standard data sheet. The following information, at a minimum, shall be collected per 20-minute sampling rounds: environmental conditions, number and location of whales, composition of whale groups, behavior, obvious wounds or injuries, other noteworthy comments. Observations shall occur a minimum of two (2) days per week (minimum of eight (8) hours per day) unless military training, safety considerations or work under other tasks preclude such observations. The Recipient shall enter this data into an excel file and produce field report.

Sub-task 3-4: Assist with other Cook Inlet acoustics projects led by National Oceanic and Atmospheric Administration (NOAA) or Alaska Department of Fish (ADF&G) in keeping with JBER INRMP objective 4.5.

Methods: Recipient personnel shall assist the JBER POC with execution of various beluga related tasks within Cook Inlet under joint projects between the Department of Defense (DOD) and NOAA or ADF&G. The nature of the work performed shall be similar to that performed under Task 2 (e.g., visual observations and acoustics, work in negative tide zone, boat work in Cook Inlet waters, etc.). Access to some sites may require transport on commercial helicopters. Overnight trips are rare but, if necessary, all food, transportation and accommodations will be provided by either NOAA or ADF&G. Any specialized safety equipment needed for this Recipient work shall be provided by either NOAA, ADFG or DOD. Up to 80 hours should be allocated to these important cooperative projects.

4.0 GENERAL REQUIREMENTS

The following requirements are common to all tasks listed above and for all study periods:

4.1 Recipient Employee Government Access Requirements

4.1.1 The Recipient shall comply with applicable installation, facility, and area commander installation/facility access and local security policies and procedures. The Recipient shall also provide all information required for background checks to meet installation access requirements to be accomplished by installation Provost Marshall Office, Director of Emergency services, and/or Security Office.

4.1.2 The Recipient shall ensure that its employees, entering JBER installations or facilities, have obtained access badges and passes in accordance with facility regulations and that these badges and passes are obtained in advance so as not to delay the accomplishment of services.

4.1.3 The Recipient shall return all issued U.S. Government Common Access Cards (CACs), installation badges, and/or access passes to the Government Representative when the cooperative agreement is completed or when a Recipient employee no longer requires access to the installation or facility.

5.0 GOVERNMENT FURNISHED MATERIALS AND TRAINING

1. Military radios
2. Up to two (2) rugged, weatherproof, remote cameras (Reconyx Hyperfire 2 or similar) to include two (2) mounts
3. Hip waders (one (1) pair per recipient field employee) and waterproof day pack (one (1) per recipient field employee)
4. Sampling equipment (e.g., binoculars, GPS, rite-in-rain notebooks, and paper, etc.)
5. Bear spray
6. Unexploded ordnance and range safety training
7. Unexploded ordnance escort
8. Boat and captain (including fuel for boat)
9. Truck and trailer for larger boat (26 foot), if needed
10. CPODS (11), HOBOS (11), and associated terminal gear

6.0 RECIPIENT FURNISHED MATERIALS AND TRAINING

1. For Task 1 (Ice Conditions):
 - a. Up to ten (n=10) Hyperfire 2 Covert IR (Reconyx, USA) or equivalent approved by JBER POC per option period to replace lost or damaged cameras. Recipient shall be informed prior to submission of budget for the option period if instruments are NEEDED.
 - i. **For the BASE PERIOD: Eight (n=8) cameras: Hyperfire 2 Covert IR (Reconyx, USA) are needed**
 - b. Lithium batteries for operating cameras in extreme cold conditions (for up to ten (10) cameras)
 - c. Eight (n=8) mounts for cameras
2. For Task 2 (Military Training Noise Impacts):
 - a. Up to four (n=4) LS1 (Loggerhead Instruments, USA) or equivalent approved by JBER POC per option period to replace lost or damaged instruments. Recipient shall be informed prior to submission of budget for the option period if instruments are NEEDED.
 - i. **For the BASE PERIOD: Three (n=3) LS1 (Loggerhead Instruments, USA) are needed**
 - b. Three (3) rugged (stainless steel) silos for housing ST600: two (2) rock silos and one (1) mud silo
 - c. One (n=1) GRAS sound calibrator with coupler (Loggerhead Instruments, USA)
 - d. Three (n=3) large capacity hard drives (14+ TB each)

- e. One (n=1) field (rugged) laptop capable of handling large data downloads (up to \$6000.00)
 - f. One (n=1) field recorder and microphone for in-air noise
3. For Task 3 (Beluga Acoustical Monitoring):
- a. Up to four (n=4) Chelonia Limited, UK., FPOD's per option period to replace lost or damaged instruments. Recipient shall be informed prior to submission of budget for the option period if instruments are NEEDED.
 - i. **For the BASE PERIOD: two (n=2) FPOD's are needed**
 - b. Up to four (n=4) Chelonia Limited, UK., CPOD's, per option period, to replace lost or damaged instruments. Recipient will be informed prior to submission of budget for the option period if instruments are NEEDED.
 - i. **For the BASE PERIOD: two (n=2) CPOD's are needed**
 - c. One (n=1) rugged (stainless steel) silos
 - d. One (n=1) field (rugged) laptop (up to \$4,000.00)
4. Split between Tasks:
- a. Up to \$2500.00 in miscellaneous equipment or services coordinated with federal POC.
 - b. First aid and bear safety training for all Recipient personnel.
 - c. Any safety equipment OR training required by the cooperating agency to conduct this type of work and that is not provided by the Government.
 - d. One (1) four-wheel drive truck (plus fuel- approximately 50 miles per week) with tow package (capability to tow 5000 lbs). Needed for up to six (6) months. Cooperating personnel must be able to drive this vehicle. Note: can be leased.
 - e. One (1) four-wheel drive vehicle (plus fuel- approximately 50 miles per week) with capacity for a minimum of four (4) passengers. Needed for up to six (6) months. Cooperating personnel must be able to drive this vehicle. Note: can be leased.

NOTE: All monitoring equipment (e.g., cameras, FPOD's) purchased under this CA shall become property of the Government at the end of the POP unless otherwise negotiated with the project POC.

7.0 DELIVERABLES AND SCHEDULE

7.1 Deliverables for all tasks are summarized below. (NOTE: All data gathered during the course of this project is owned by the DOD and may not be retained or used by the Recipient without express permission from the JBER POC) ***NOTE: A copy of all deliverables (with the exception of raw data) shall be provided to the AFCEC POC (see end of Section 8.0 for contact information).***

Deliverable 1: Work Plan(s). The work plan(s) shall be written in collaboration with the Federal POCs and shall detail methods and recommended field schedule. This can be a combined plan for all three (3) tasks, or each task can have a separate plan.

Deliverable 2: Data from each task (acoustic, photographic, and observational) and any associated field survey and geospatial data. This data shall be housed on two (2) external hard drives (one (1) as a back-up). Delivery date for data from each task will depend on when the season ends per task.

- Photo data. In addition to .jpeg's, this dataset shall include an excel file detailing ice depths (obtained from Range Control) as well as sea temps at the Port of Anchorage.
- Observational data. This data shall be delivered in the form of the original datasheets (and field notebooks) along with a copy of the datasheets (as backup) in addition to an excel file (with data from the datasheets) in a separate folder on the two (2) hard drives.
- Acoustic and depth/temperature (.hobo files) data downloaded from CPOD/FPOD/HOBO/LS1 that overwintered in Eagle River/Knik Arm in addition to acoustic and depth/temperature data from CPOD/FPOD/HOBO/LSI deployed in Eagle River/Knik Arm during the spring to fall. This data shall be housed on two (2) external hard drives (one (1) as a back-up).

Deliverable 3: Field reports - one (1) for each task. These reports shall be written in collaboration with the Federal POCs and shall include a summary of the field work, maps of instrument locations, representative site photos, and recommendations for future field efforts. Further details on report components will be discussed and agreed upon during the kickoff meeting. Delivery date for the report from each task will depend on when the season ends per task. A draft report should be delivered to the JBER POC NLT 30 calendar days after the end of the season for each task with a final report due NLT 30 calendar days after receipt of comments from the JBER POC.

7.2 The following table describes a generalized project schedule with milestones. Note that this is an estimated schedule. The unpredictable nature of Alaskan maritime field work requires that project managers be somewhat adaptable as the natural world outside of the office setting does not conform to rigid time schedules. The Recipient Project Manager shall notify the USACE of delays expected to push back any field work or deliverable deadlines by more than 45 days.

Milestone #	Description	General timeframe
1	Kick off meeting for all three (3) tasks (can be teleconference)	NLT 30 days after agreement award
2	Present Draft Work Plan(s) can be WP with all three (3) tasks included or can be individual	NLT 30 days after kick off meeting
3	Present Final Work Plan(s) (Deliverable 1)	NLT 45 days prior to initiation of field work
4	Deploy winter cameras for monitoring ice conditions	TBD - depends on fall ice, tides and daylight (estimated late Oct- early Nov)
5	Ice proxy evaluation field work	TBD - depends on fall ice, tides and daylight (estimated late Oct- early Jan)
6	Deploy CPOD/FPOD/LS1 for overwinter	TBD - depends on fall ice, tides, daylight, weather and military schedule (estimated late Sep – Oct)
7	Service CPOD/FPOD in river	Sept - Dec (depending on ice) and again April or May-Sept
8	Conduct visual observations from the	Sept - Dec (depending on ice) and

	mouth of Eagle River and Sixmile Creek (when access to Eagle River is precluded)	again May-Sept
9	Deliver data (photo, acoustic and observational data) (Deliverable 2)	End of field season for each task – exact date will depend on conditions to include ice development and military training (i.e. artillery and mortar training in ERF in late fall/early winter precludes further work). In general, photo and acoustic data from the winter should be delivered by the end of June and acoustic data from the open water season should be delivered by the middle of December.
10	Retrieve Winter instruments and deploy CPOD/FPOD in river	April - June 2024- depends on ice and military/EOD schedule
11	Present draft field report(s) (Deliverable 3)	30 days after end of field season
12	Present Final field report(s) (Deliverable 3)	30 days after receipt of comments from JBER technical POC

8.0 POINTS OF CONTACT (POCS)

The Recipient shall coordinate with the JBER Technical POCs listed below and provide quarterly progress reports and final report to the JBER Technical POCs and the USACE Project Manager. The POC for USACE Project Management is Katie Russell. Cooperative Agreement questions should be addressed to the Grants Officer, Michelle Mandel. Correspondence shall be addressed as follows:

Katie Russell
U.S. Army Corps of Engineers
Environmental and Special Projects
Branch
ATTN: CEPOA-PM-ESP
P.O. Box 6898
JBER, AK 99506-0898
Phone: (907) 753-2535
Email: kathryn.russell@usace.army.mil

Michelle Mandel
U.S. Army Corps of Engineers Contracting Division
ATTN: CEPOA-CT
P.O. Box 6898
JBER, AK 99506-0898
Phone: (907) 753-2502
Email: michelle.r.mandel@usace.army.mil

The JBER Technical POC is:
JBER TECHNICAL POC

Mr. Christopher Garner
Biologist
673 CES/CEIEC
Joint Base Elmendorf Richardson (JBER)
Phone: (907) 602-0860 (cell)
Email: christopher.garner.9@us.af.mil

The AFCEC POC (for delivery of copy of deliverables):

Ms. Kristy Rouse
AFCEC CZOP/ISS
Joint Base Elmendorf Richardson (JBER)
Phone: (907) 552-7910
Email: kristy.rouse@us.af.mil

9.0 PERIOD OF PERFORMANCE

This is intended as a multi-year, ongoing study. The elements 1.0 - 8.0, outlined above, shall be the same for the base period and each of the two (2) option periods, with the exception of the potential for replacement of equipment in the option periods (see notes on equipment in section 6.0, numbers 1-3) and some possible minor adjustments based on lessons learned from the previous season.

10.0 LITERATURE CITED

Castellote, M., Tregenza, N., Leeney, R., J.A. Esteban, O'Corry-Crowe, G., Lucey, B., Stafford, K., Kovacs, K. M. Lydersen, C., Lauhakangas, R., Krasnova, V., Chernetsky, A., Agafonov, A. and V. Belkovich. 2009. Habitat use of beluga whales revealed by acoustic loggers. *Journal of the Acoustical Society of America* 125:2548 (abstract)

Clausen, K.T., Tougaard, J., Carstensen, J., Delefosse, M., & J. Teilmann (2018): Noise affects porpoise click detections – the magnitude of the effect depends on logger type and detection filter settings, *Bioacoustics*, DOI: 10.1080/09524622.2018.1477071

Goetz, K. T., P. W. Robinson, R. C. Hobbs, K. L. Laidre, L. A. Huckstadt, and K. E. W. Shelden. 2012. Movement and dive behavior of beluga whales in Cook Inlet, Alaska. AFSC Processed Rep. 2012-03, 40 p. Alaska Fish. Sci. Cent., NOAA, Natl. Mar. Fish. Serv., 7600 Sand Point Way NE, Seattle WA 98115

Mulherin, N.D., W.B. Tucker III, O.P. Smith and W. J. Lee,. 2001. Marine ice atlas for Cook Inlet , Alaska. U.S. Army Corp of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory ERD/CRREL TR-01-10

O'Corry-Crowe, G., Lucey, W., Castellote, M. and K. Stafford. 2009. Abundance, habitat use and behavior of beluga whales in Yakutat bay, May 2008; as revealed by passive acoustic monitoring, visual observations and photo-id. Final Report to Protected Resources Division, Alaska Regional Office. National Marine Fisheries Service, National Oceanic and Atmospheric Administration. Juneau, Alaska. March 2009

Sarnocinska J, Tougaard J, Johnson, M, Madsen PT, Wahlberg M. 2016. Comparing the performance of C-PODs and SoundTrap/PAMGUARD in detecting the acoustic activity of harbor porpoises (*Phocoena phocoena*). *Proceedings of Meetings on Acoustics*, Vol 27, 70013 (2016)

Small, R. J. 2011. ADF&G final report for "Acoustic Monitoring of Beluga Whales and Noise in Cook Inlet; NMFS Grant Number NA07NMF4390364

Suydam, R.S., L.F. Lowry, K.J. Frost, G.M. O'Corry-Crowe and D. Pikok. 2001. Satellite Tracking of Eastern Chukchi Sea Beluga Whales into the Arctic Ocean. *Arctic* 54:237-243

U.S. Environmental Protection Agency (USEPA). 2019. Climate Impacts in Alaska. Website: https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-alaska_.html. Accessed on 20 March, 2019

Section II: Award Information

The work described in this Funding Opportunity Announcement corresponds to a multi-year, ongoing study. The intent is to award a base period and two (2) option periods subject to availability of funding. This does not obligate the Government to extend this agreement beyond the initial base period of performance. The total Project Cost Ceiling for the Base Period is \$289,506.17.

Announcement Issue Date: 21 July 2023

Application Due Date: 21 August 2023

Estimated Award Date: On or About 6 September 2023

Section III: Eligibility Information

1. Eligible Applicants – Open to all that meet the criteria of this announcement.
2. Cost Sharing – This action will be 100% funded by USACE.
3. Other Information – None noted.

Section IV: Application and Submission Information

1. Address to Request Application Package:

The complete Funding Opportunity Announcement, application forms, and instructions are available for download at Grants.gov. USACE is not responsible for any loss of internet connectivity or for an applicant's inability to access documents posted at the referenced website.

The administrative point of contact is the Grants Specialist, Casandra Hutchins, casandra.a.hutchins@usace.army.mil.

2. Content and Form of Application Submission

All mandatory forms and any applicable optional forms must be completed in accordance with the instructions on the forms and the additional instructions below.

- a. SF 424 - Application for Federal Assistance
- b. SF 424 A – Budget Information for Non-construction Programs
- c. SF 424 B – Assurances – Non-Construction Programs
- d. Program Narrative – Brief program description illustrating applicant's ability to meet the goals and objectives described in Section VI Scope of Work of this announcement.

3. Application shall be submitted **NO LATER THAN 21 August 2023; 2:00 PM (Alaska Time)** via email or through Grants.gov.

4. Submission Instructions

Applications may be submitted by email or via the internet through Grants.gov. Choose ONE (1) of the following submission methods:

Via Email: Format all documents to print on Letter (8 ½ x 11") paper. E-mail proposal to the Grants Specialist, Casandra Hutchins, at casandra.a.hutchins@usace.army.mil.

Via Grants.gov:

Applicants are not required to submit proposals through Grants.gov. However, if applications are submitted via the internet, applicants are responsible for ensuring that their Grants.gov proposal submission is received in its entirety and within the date and time required. The Government bears no responsibility for data errors resulting from transmission of conversion processes associated with electronic submissions. The Government will bear no responsibility for delays in submissions due to technical difficulties at or with the Grants.gov website. All applicants choosing to use Grants.gov to submit proposals must be registered and have an account with Grants.gov. ***It may take up to three (3) weeks to complete Grants.gov registration.*** For more information on registration, go to <http://www.grants.gov/ForApplicants>.

Section V: Application Review Information

Offer Submission Evaluation Criteria and Basis of Award

Management, Species, Cook Inlet Beluga Whale/Ice Conditions, (ACES # FXSBOS682923; RAM # FXSBA53237119)

Management, Species, Cook Inlet Beluga Whale Military Training Noise Impacts, (ACES # FXSB55953723; RAM# FXSBA53237119)

Management, Species, Beluga Acoustical Monitoring, (ACES # FXSBOS453623; RAM# FXSBA53237119)

**Joint Base Elmendorf-Richardson, Alaska
Fiscal Year 2023**

July 2023

The Government will evaluate technical submissions in accordance with the criteria described herein and award a cooperative agreement to the responsible offeror whose submission is determined to represent the best overall value to the Government. The Government will not award a cooperative agreement to an offeror whose submission contains a deficiency.

The evaluation factors for this action are:

Factor 1, 40%: Experience (most important factor)
Factor 2, 35%: Technical Approach (2nd most important factor)
Factor 3, 25%: Cost (3rd most important factor)

The Government will assign an adjective rating of Outstanding, Good, Acceptable, Marginal, or Unacceptable to each technical factor which reflects the Government's confidence in each offeror's ability, as demonstrated in its submission, to perform the requirements stated in the Statement of Work (SOW). The ratings shall be assigned, using the following criteria, which incorporate a submission risk assessment:

Weight	Adjectival Rating	Description
4	Outstanding	Submission indicates an exceptional approach and understanding of the requirements and contains multiple strengths.
3	Good	Submission indicates a thorough approach and understanding of the requirements and contains at least one (1) strength.
2	Acceptable	Submission indicates an adequate approach and understanding of the requirements.
1	Marginal	Submission has not demonstrated an adequate approach and understanding of the requirements or contains an element of risk.
0	Unacceptable	Submission does not meet requirements of the solicitation and, thus, contains one (1) or more deficiencies and is unawardable.

OFFER EVALUATION AND SELECTION CRITERIA

Each Offeror shall be evaluated in accordance with the selection criteria below. The selection criteria are listed in descending order of importance.

Factor 1 Experience

The Offeror shall demonstrate prior project experience relevant to the attached SOW, completed within the last seven (7) years of this Funding Opportunity Announcement, and other qualifications and technical competence in all of the following areas:

1. Experience deploying and servicing passive acoustic monitoring (PAM) systems. Strong preference for Offeror with experience deploying and servicing PAM in a tidally influenced river system and especially river systems within Cook Inlet.
2. Experience working on small boats in an extreme marine environment (e.g., huge tidal variation, turbid water, shallow water with shifting channels, cold water, large standing waves, bore tide, heavy currents, moving ice pans, potential ice entrapment in fall). Strong preference for Offeror with experience working in Knik Arm.
3. Experience working around marine mammals and endangered marine mammals. Strong preference for Offeror with experience working around harbor porpoise and Cook Inlet beluga whales.
4. Experience conducting visual observation of marine mammals. Strong preference for Offeror with experience conducting visual observations of beluga behavior, composition, and numbers, especially in Cook Inlet.
5. Experience working with the Department of Defense (DoD). Strong preference for Offeror with experience working on JBER.
6. Experience working around unexploded ordnance. Strong preference for Offeror with experience working in active impact area.
7. Experience deploying and servicing time lapse cameras.

The Offeror shall provide examples of up to four (4) past projects of similar size, scope, and complexity that best demonstrate the above qualifications. Submit projects that are at least 25% complete or were completed within the past seven (7) years. The example project summaries shall be limited to one (1) page each. The example project summaries shall identify:

- Title/Subject
- Location
- Duration
- Brief description
- Roles and work self-performed
- Date project began and if completed
- Complexities or key accomplishments
- Client contact information

The Government will utilize the example project summaries to evaluate the capability and experience as a basis for comparing offerors to determine best value.

Factor 2 Technical Approach

The Offeror shall provide a brief narrative of their technical approach and a milestone schedule. The narrative shall be no more than two (2) pages per main task and must include:

- A discussion of the technical approach to accomplish the Statement of Work requirements, detailing number of hours anticipated to complete the project deliverables.
- A discussion of the quality assurance, quality control, and other technical activities that will be implemented to ensure that quality data is collected to support project data quality objectives.
- A discussion of applicable regulatory requirements and how project requirements will be implemented.
- A discussion of all assumptions.

The Offeror shall also provide an organizational chart with the proposed project team with defined roles, responsibilities, and lines of communication for all key personnel and sub-recipients.

The evaluation standard has been met when the Offeror demonstrates an understanding of the work that adequately addresses the requirements outlined in the SOW. The inclusion of numerous assumptions that significantly "assume away" Offeror risk with regard to major issues or problems that may be encountered on the project, will be considered unacceptable.

Factor 3 Cost

Provide proposed cost to the government. Allowable costs incurred by institutions of higher education are determined in accordance with the provision of OMB Circular A-21, "Cost Principles for Educational Institutions," ONR negotiated rates, and institutional policies. OMB's cost principles are contained in 2 CFR 200.400-.475 et seq.

Cost is considered less important than non-cost factors and will be evaluated for fairness and reasonableness per OMB cost principles. If more than one (1) offer is rated as having equal non-cost factors, the lowest cost tender of the offers received would be granted as the preferred tender unless there are extraordinary reasons for not doing so.

Section VI: Award Administration Information

Reserved.

Section VII: Agency Contacts

Reserved.

Section VIII: Other Information

Reserved.

All questions or inquiries regarding this Funding Opportunity Announcement shall be directed to the agency contact(s) noted in Section IV.