STATEMENT OF WORK

Passive Acoustic Monitoring for Marine Mammals and Hicks Rocks Pinniped Haul-Out Survey at Portsmouth Naval Shipyard, Kittery, ME

A. Introduction

Portsmouth Naval Shipyard (PNS) is located on Seavey Island, within the Piscataqua River in Kittery, ME. The PNS is approximately 2.5 miles from the mouth of the Piscataqua River, which drains directly to the Atlantic Ocean.

As one of the Navy's four public shipyards, PNS performs a vital role in national defense and Fleet readiness by performing effective and timely maintenance for the Navy's submarines. The Navy established the Shipyard Infrastructure Optimization Program (SIOP) office in May 2018 to bring critical Navy assets to modern standards. The Navy anticipates several future SIOP projects at PNS that may have an underwater construction component. In order to fully realize the impacts associated with these future SIOP projects, a greater understanding of marine mammal presence within the Piscataqua River and usage of available haul-out sites is required to support informed decision-making and to identify adequate minimization and mitigation measures for protected species.

B. Objective

The purpose of this solicitation is twofold. First, the Navy would like to apply enhanced passive acoustic monitoring capabilities to detect and characterize vocalizations of marine mammals that may occur in the Piscataqua River surrounding Seavey Island. High frequency cetaceans and pinnipeds will be specifically targeted to determine species presence/absence and identify any patterns of occurrence as well as to provide an estimate of frequency, abundance, and density. Those species that may be more cryptic, such as harbor porpoise [*Phocoena phocoena*], are of particular interest. The project will install, at a minimum, two, full-spectrum, autonomous passive acoustic monitoring (APAM) stations with the capability to capture marine mammal vocalizations in the Piscataqua River and Back Channel. The units shall be installed for one year, with data checked and downloaded monthly, or as appropriate. At the end of a full year of deployment, the units shall be removed from the water, unless the Cooperator is notified by the Navy that additional funding has been received to continue the study for additional survey years, as described below in the Period of Performance section. These efforts are further defined below and in the Request for Statements of Interest.

Secondly, the Navy would like to gain a better understanding of pinniped usage, abundance, and frequency of the nearby haul-out area known as Hick's Rocks. Hick's Rocks is a rocky feature consisting of a series of rock outcroppings interspersed with sandy areas and is located approximately 1,300 feet east of PNS and approximately 230 feet offshore of Kittery Point, Maine. Depending on tidal state the feature has an area up to approximately 17,000 square yards (SY). While it is known anecdotally that Hick's Rocks is used as a haul-out site for pinnipeds year-round there have been no official surveys recording species composition, frequency, and abundance. In addition to the PAM survey, this project will conduct weekly surveys of Hick's Rocks during low tide for a period of one year. All efforts shall be made to coordinate both field

survey efforts to maximize efficiency. This effort is further defined below and in the Request for Statements of Interest.

C. Servies Requested

The Cooperator will conduct natural resources surveys as described in the tasks below.

Task 1: Autonomous Passive Acoustic Monitoring – Acquisition and IT Coordination

a. The cooperator shall provide a minimum of two autonomous monitoring units for passively detecting marine mammals and acquire all associated software and/or licensing, as well as all necessary hardware and mooring equipment.
b. The cooperator shall modify the configuration, if necessary, to create an APAM unit (custom platform) capable of being attached to a fixed anchor and suspended mid-depth in the water. Any new fixed anchors shall be sighted so as to avoid impacts to sensitive resources (e.g. eelgrass beds) and navigation channels.
c. The cooperator shall supply all necessary labor, support, and liaison with PNS EV and security during the validation and information assurance data collection phase to obtain authority to operate (ATO) for the APAM.
d. The cooperator shall provide one year of support to maintain the APAM system (to be extended dependent upon funding availability, as noted above in the Period of Performance section).

Task 2: APAM Testing and Location

a. The cooperator shall provide calibration testing of the units seasonally to determine the maximum detection distances for the system.
b. The cooperator shall test the system for approximately one week before deployment to ensure it is accurately calibrated and recording.
c. The cooperator shall install the APAM units in the Piscataqua River, taking into account environmental conditions such as tide, currents, and seasonal conditions as well as anthropogenic factors such as noise, boat traffic, and fishing considerations when selecting and discussing sites for installation with the Contracting Officer Representative (COR) and the Installation Representative (IR).

Task 3: APAM Installation and Monthly Equipment Checks / Data Download

a. The cooperator shall install, at a minimum, two fixed anchor positions at locations within the Piscataqua River, proximal to the installation on Seavey Island. Locations should be selected based on system performance requirements and limitations to optimize detection of marine mammal vocalizations. Potential locations include the Sound Basin mooring field, MWR pier areas, the back channel mooring field on the northwest side of the island, Bridge 1 or 2, adjacent to Berth 13 area (outside of the floating security barrier), or Four Tree Island (Figure 1). The target species for the survey is harbor porpoise; however, any other marine mammal species detected vocalizing should be included in the analysis and associated reporting. The cooperator shall ensure that site selections are coordinated with the COR and IR and in conjunction with installation security prior to deployment. Further coordination with agencies such as USCG or USACE may depend on the mooring location selected (i.e., using a current

mooring area vs establishing a new one) and shall be determined in conjunction with the installation EV office once the CESU is awarded.

b. The cooperator shall install the APAM units and perform necessary testing to ensure the communication of the system is working as expected based on the testing completed in Task 2, above.
c. The cooperator and COR/IR will work together to ensure all notifications and approvals (i.e. USACE, Coast Guard, etc.) for installation of equipment in the Piscataqua River are complete prior to system deployment. Coordination with any Federal Agency shall be completed through the installation EV office unless designated otherwise.
d. Equipment shall be labeled with Property of U.S. Government, Portsmouth Naval Shipyard. If found, please contact Erika Fuery at 207-438-2828.
e. Equipment will be checked monthly to ensure it is in proper working order and data will be downloaded during these monthly checks for processing and reporting.

Task 4: One Year Pinniped Haul-Out Survey

a. The Cooperator shall provide all equipment and materials, as well as staff trained/experienced in marine mammal identification in order to survey, identify, and quantify the composition, frequency, and abundance of pinniped usage of the Hick's Rocks haul-out site.
b. The Cooperator and COR/IR will work together to ensure any permits or approvals from NOAA Fisheries are obtained prior to start of the survey period, if required.
c. The Cooperator shall conduct weekly surveys at Hick's Rocks, for a period of one year (12 months). Surveys shall be conducted in a manner consistent with NOAA Fisheries marine life viewing guidelines and shall not result in harassment of, or unauthorized take of, any marine mammal.
d. To the extent practicable and to maximize the available habitat at Hick's Rocks, surveys shall be conducted within one hour of peak low tide. The following data shall be collected, at a minimum:
    i. Date and time of day;
    ii. Weather parameters, including air temperature, humidity, wind speed and direction, percent cloud cover, visibility;
    iii. Water conditions such as sea state, tidal state (feet above/below mean sea level), and water temperature,
    iv. Pinniped data, including species present, number of each species present, species breakdown by cohort (adults/juveniles), sex, behaviors, etc.
    v. River activity information such as level of nearby boat traffic or anthropogenic noise.

Task 5: Work Plan, Reporting and GIS Deliverables

Prior to the initiation of the tasks described herein, a draft and final work plan will be submitted to the COR and IR for review and comment. The work plan will describe: the PAM systems proposed for use, propose primary and alternate installation locations, detail the testing, installation, maintenance, and data collection processes, and the weekly pinniped survey protocols.

All passive acoustic data shall be collected from the PAM systems and processed/analyzed monthly for soundscape metrics, species identification, frequency, and abundance to maintain data quality and completeness. At the end of the full year of data collection, the cooperator shall remove all equipment from the River (unless the next Option Year is awarded, in which case equipment will be serviced as needed and either relocated to another survey location or placed back in the existing location for the next survey year). If equipment is purchased as part of this CESU, it shall become property of the Government at the end of the survey and shall be provided to the PNS EV office for future use.

The Cooperator shall compile information from the monthly PAM download and four weeks of pinniped surveys into brief monthly summary reports, NTE ten pages. A comprehensive report shall be prepared and provided to the COR and IR at the end of the full year of PAM deployment (and annually if options are awarded), inclusive of the full year of pinniped survey data and results. This comprehensive report shall consist of both draft and final summary reports. The draft and final reports shall include maps, habitat descriptions, methodologies, results, any management or conservation recommendations, as well as recommendations for improvement to the surveys. All reports (monthly and annual) will be provided in electronic format, with copies submitted to both the COR and IR.

Figure 1. Potential Mooring Locations

Additionally, the Cooperator shall provide a monthly project status report, NTE 2 pages, which can be attached to the monthly project summary reports as an appendix. The monthly status reports shall include a table summarizing funds spent per month, per fiscal year, with a total for the fiscal year and an overall total for all fiscal years. An example funding table is below.

Month	FY25	FY26
Jan	$	$
Feb	$	$
Mar	$	$
Apr	$	$
May	$	$
Jun	$	$
Jul	$	$
Aug	$	$
Sep	$	$
Oct	$	$
Nov	$	$
Dec	$	$
Fiscal Year Total	$	$
Project Total		$

All spatial data and relevant mapping information shall be provided in a Geographical Information System (GIS) format and displayed on report maps, where appropriate. Draft GIS data will be submitted to the Navy and will conform to the standards outlined in Navy Specification attached at the end of this Scope, with necessary revisions based on feedback from the Navy GIS analyst before the final GIS deliverable is accepted.

D. Roles of the Government and Cooperator

Substantial Government Participation

- The Navy will coordinate base and restricted area access for Cooperating partner and delivery vendors.
- The Navy will substantially assist the Cooperators with study design and procedures, study site selection trials, equipment set up and testing, participation in monthly and weekly surveys (to the extent practicable), coordination with regulatory agencies, and in preparing and reviewing reports.
- The Navy and Cooperator will jointly prepare documentation for necessary permits and approvals for the survey described herein. Navy participation is required in development of permitting documentation to ensure documents comply with security requirements and restrictions on release of information that may be considered CUI.
- The Navy will provide available survey data and existing reports relevant to the work requested in this CESU.

Cooperator Responsibilities

- The Cooperator will provide equipment to conduct surveys as noted in the SOW, including but not limited to, the APAM systems, software, and mooring apparatuses; survey boat; cameras; and other miscellaneous field supplies,
- The Cooperator will coordinate with the Navy on site selection, field survey efforts, and preparing documentation for any necessary permits.
- The Cooperator will utilize software to analyze data and coordinate the results with the Navy for review and concurrence. The Cooperator and Navy will jointly prepare reports based on survey results.

E. Products/Deliverables

The primary objective of this section is to provide detailed specifications for collection and delivery of geospatial data commonly referred to as Geographic Information System (GIS) data. Additionally, this section provides guidance to ensure that all GIS data delivered is compatible and will add value to the NAVFAC Midlant GeoReadiness Center (GRC) Installation Geospatial Information and Services (IGI&S) Geodatabase. The NAVFAC Midlant GRC is the single, authoritative source and distribution point for all geospatial facility data within the region. The GRC houses the most current geospatial information for the entire Region and provides access to the comprehensive data set and analysis tools to Regional and DOD decision makers/managers, sponsored contractors, and other sponsored individuals via a secure Government Internet site.

Failure to comply with the specifications outlined in this document will result in non-acceptance of data deliverables.

1.1.1 Point of contact for NAVFAC MIDLANT EV GIS Coordinator

The Point of Contact (POC) for assistance in preparation of Environmental GIS deliverables is:

Midlant Environmental GIS Coordinator
9742 Maryland Avenue
Bldg Z140
Naval Station Norfolk
Norfolk, VA 23511
(757) 341-0493 (Main Number)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals
GIS Data Deliverables; G

1.3 GOVERNMENT GEOSPATIAL DATA, SCHEMA, AND DOMAINS

Geo-spatial data is based on the Spatial Data Standards for Facilities, Infrastructure and Environment (SDSFIE) Navy Data Model (NDM). Because there are recurring business

driven modifications and or adaptations within the SDSFIE schema, provide all spatial and non-spatial data in the most current version utilized by the GRC at the time of delivery.

1.3.1 Data Request Package Requirements

Request the existing GIS Data, Schema and Data Collection Guidance (DCG), via the Government sponsor utilizing the NAVFAC MIDLANT Data Release Form.

The GIS Data Request should be submitted prior to the start of data collection efforts and again 4 weeks prior to data delivery to ensure that GIS data has been created and will be delivered utilizes the most up to date SDSFIE schema.

1.3.1.1 Instruction for submitting a Geospatial DRP to the Contracting Officer Representative (COR)

1. Each COR will provide NAVFAC MIDLANT Data Release forms upon request from the Contractor. Complete the request and include all information as instructed on the data release form.
2. Request only GIS data, schema and domains for feature classes that are relevant to the Contract and within the boundary of project area and provide justifications as necessary.
3. Attach the Scope of Work, which is defined by this GIS DATA DELIVERABLES section for each GIS Data Request submittal.
4. Return the NAVFAC MIDLANT Data Release Form to the COR for sponsorship and submittal to the EV GIS Coordinator as instructed with required attachments and justifications for submittal.
5. Incomplete forms may delay receipt of the requested GIS data.
6. GIS data deliverables do not supplement or replace as-built drawings.

1.3.2 Data Collection and Utility Locates

1. Utilize the most up to date SDSFIE Schema when delivering GIS Data.
2. Data shall be collected in the appropriate manner and stored in the proper feature class as defined in the NAVFAC Data Collection Guide (DCG).
3. Verify the current DCG release version with the Government. The current DCG will be provided by the EV GIS Coordinator.
4. Prior to GPS efforts all underground utilities are to be located utilizing a utility locating service in order to obtain and verify accurate feature locations.
5. Actual conditions in the field always supersede drawings. Locate and field verify all features to ensure location is correctly recorded.
6. Data will be created to represent the real world, for example, water, sewer, and transportations systems will be connected. All segments will be created from source to sink in the direction of flow.
7. Research may be required to collect data. Verification of existing data which is located must be coordinated with the COR.
8. Non-Utility data, may be collected utilizing Sub-Foot or better GPS data collection methods.
9. Utility data, will be collected utilizing Survey Grade GPS data collection methods.

1.3.3 Attribute Data Requirements

1. Populate all attributes in accordance with the guidelines published in the NAVFAC Data Collection Guide (DCG). Obtain attributes via Contract specifications, plans and record drawings.
2. Verify the current DCG release version with the Government.
3. Capture, attribute, and deliver Demolished / Removed Real Property data in the Demolished feature classes which include BuildingDemolished (Area) and StructureDemolished (Area).
4. Capture, attribute, and deliver Demolished / Removed UTILITY data by creating a new feature class which will consists of adding DEMO to the feature's naming convention for each feature, such as, but not limited to the following examples: DEMO.wHydrant (point), DEMO.swDrainageBasin,(polygon), and DEMO.wLine (polyline)
    a. Properly deliver demolished features with the current attributes associated with the feature and additionally updating the new Contract number, date of demolishment, and optional status.
5. Spatial and non-spatial data may be copied from existing data, with the exception of specific attributes. Potable water wells are an exception to this rule and shall remain in the feature class and attributed as Removed or Abandoned In Place (AIP).
6. Locate and update AIP utility lines in the current feature data set and be attributed as AIP as required.

1.3.4 GIS Topology Rules for Geospatial Data

All data must be created using GIS topology rules for polygons, points and lines, such as, but not limited to the following examples:

1. Create utility and transportation systems from source to sink.
2. Draw all utilities in the direction of flow with no breaks in polyline except for fittings, manholes and other features nodes within the feature Dataset.
3. Create all utility or infrastructure system data, which is, but is not limited to, transportation system and electrical, water, thermal distribution, and wastewater collection, etc., using GIS spatial connectivity rules which specify that vertex, edge and endpoints be snapped to features within the system.
4. Close all polygons without slivers and be topologically correct.
5. All polylines must be topologically correct, and should be connected to avoid undershoots, overshoots and dangles. Cross polylines only if they share a point in common, at least one of which is not an endpoint.

1.3.5 Global Positioning System (GPS) Data Collection

Utilize field survey GPS data collected by means of non-recreational GPS equipment

1. Do not use bench marks that are not included in the Navy Geodetic Survey Base Station Network GPS data collection.
2. Mission planning is essential. Utilize the best Position Dilution of
    a. Precision (PDOP) values for data accuracy.
3. Conduct mission planning for GPS collection when positional dilution of precision (PDOP) value is 4 or less.
4. Spatial accuracy requirements

a. Survey and Sub-Foot GPS grade data collection requirements are as follows:
    i. Sub-Foot requirements:
        1. All points must be within plus or minus 12 inches
        2. 95 percent accuracy rate for all points.
    ii. Survey Grade requirements:
        1. All points must be within plus or minus 1 centimeter
        2. 98 percent accuracy rate for all points
5. Capture feature locations without using Offsets. Note all Offsets in the Final Report for each feature.
    a. Resubmittal of data will be required if PDOP planning was not observed per this specification.

1.3.6 Coordinate System Requirements

Collect data in the following Spatial Reference / Coordinate System for each feature based on the area of interest:

1. Transverse Mercator (UTM) Zone 16N, 17N, 18N or 19N
    a. World Geodetic System 1984 (WGS84) horizontal datum
    b. North American Vertical Datum 1988 (NAVD88) vertical datum.
2. Domain precision of 1000 which will result in a database accuracy of 1/1000 m

1.3.7 Formats and Version Guidelines

Present all data deliverables in the following formats and/or versions.

1. GIS data will be provided in an ESRI geodatabase matching the current ArcGIS version of the GRC repository. Verify the current version with the COR before any submittals.
2. Microsoft Windows 10 operating system, unless otherwise approved by the Government.
3. Deliver all reports and maps as a hard copy and in a searchable Adobe Portable Document Format (PDF).

1.3.8 GIS Deliverable Submittal Requirements

Submit all GIS Submittals for analysis by Government GIS personnel prior to final approval. Failure to comply with the specifications outlined in this document will result in non-acceptance of GIS data deliverables.

1. Prior to any spatial and non-spatial development, provide the Government with a technical approach document, in PDF format, for review and approval. Describe in detail the Contractor's technical approach for developing GIS data to include utility locating, collecting, and attributing all GIS data.
2. Provide a GIS deliverable at the end of each phase and at each Beneficial Occupancy Date (BOD) when contracted efforts, studies or construction are delivered in phases.
3. To ensure specifications compliance and quality a preliminary GIS deliverable shall be provided for review when 25 percent of the data has been collected and updated according to this specification.
4. Deliver digital geographic maps, GPS collection files and related data. All working text and documents and personal geodatabase will be included for review in the draft and final delivery of data in PDF format.
5. Do not deliver blank unused schema or feature class data with no attributes. Deliver only data pertinent to the Contract that adds value to the Geodatabase per this section.

6. Do not include existing data in the GIS deliverable.
7. Provide spatial and non-spatial GIS data in a format that does not require translation or pre/post processing.
8. Perform quality assurance for all data and related materials required in this section prior to submitting product to the Government.
9. Analyze for discrepancies in subject content, correct format in accordance with this Section, and compatibility with the existing SDSFIE Schema as well as all other specifications included in this section.

1.3.9 GIS Deliverable Package Requirements

Provide all reports in pdf format. Submit each GIS deliverable must containing the following information and be in the most up to date SDSFIE format utilized by the GRC at the time of delivery.

1. Digital and Paper Maps.
    a. Submit all maps of GIS DATA DELIVERABLES in ANSI C size.
    b. Include a project title, Contract number, scale, legend, standard symbology, attributes, i.e., building numbers, road names, etc., for each map.
    c. Label all utilities with direction of flow and segment line size.
    d. Provide paper copy and pdf copies of Maps for project.
    e. Provide a copy of all red-line construction drawings in pdf format.
    f. Communication data will be provided on a separate map.
2. Provide all spatial and non-spatial data for review and acceptance.
3. Provide a report of specific procedures, list GPS equipment, software and versions that were utilized for the GPS data collection and creation of geospatial data.
4. Submit all GPS data files collected in the field.
5. Provide details on any offsets to include justification as to why offsets were utilized and which features and or points offsets were used.
6. Provide the source that was utilized for required attributes, such as redlines drawings and or field notes.
7. Summit DD form 1354, Transfer and Acceptance of DOD Real Property.
8. Provide a coversheet that specifies the COR, Contract number, Contract title, point of contact for GIS related questions.
9. Submit all geospatial data, reports, spreadsheet, database files, reports, and maps on a Digital Versatile Disc (DVD) platform.
10. Failure to comply will result in non–compliance and rejection of data.

1.3.10 Ownership

All digital files, hardcopy products, GPS raw data, source data acquired for this project, and related materials, including that furnished by the Government, will become the property of the Government and will not be issued, posted, distributed, or published by the Contractor. Deliver all documentation in the final delivery. Note: No endorsement of software or hardware is implied.

Navy GIS data shall not be used for any purpose except for those specified in the contract.

All contract Navy GIS data must be removed from contractor computer systems upon completion of the contract.

1.4 ATTRIBUTE DATA COLLECTION AND GPS REQUIREMENTS FOR REAL PROPERTY AND OTHER MISCELLANEOUS FEATURES THAT ARE NOT CONSIDERED A UTILITY

For Attributes and Data Collection for specific Navy installation, please consult the EV GIS Coordinator, for a checklist and copy of the most recent Data Collection Guide.

1.4.1 Non-Compliance

Failure to follow the specification outlined in this document will result in non-acceptance of data deliverable.

Note: Geospatial data delivery does not replace record drawing requirements.

F. Points of Contact

Administrative Office / Representative:
Elizabeth Eliason-Carey, Contract Specialist
NAVFAC Atlantic
Phone: 757-322-4844
E-mail: Elizabeth.s.eliason-carey.civ@us.navy.mil

Contracting Officer Representative (COR)
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Naval Facilities Engineering Command Atlantic
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