

SECTION C: PERFORMANCE WORK STATEMENT

C.1 INTRODUCTION AND BACKGROUND

The National Oceanic and Atmospheric Administration is an agency that enriches life through science. Our reach goes from the surface of the sun to the depths of the ocean floor as we work to keep citizens informed of the changing environment around them. We provide environmental intelligence for the nation.

From daily weather forecasts, severe storm warnings, and climate monitoring, to fisheries management, coastal restoration, and maintaining marine commerce, NOAA's products and services support economic vitality and more than one-third of America's gross domestic product. The people of NOAA use research and tools to provide citizens, planners, emergency managers, and other decision makers with reliable and timely environmental intelligence.

C.2 OBJECTIVES

The overall objectives of the ProTech program are to:

- Obtain high-quality professional and technical service
- Develop an industrial base of partners
- Develop and maintain performance-based contracts
- Contribute to the NOAA mission

Services not covered by the Oceans Domain scope of work include the following:

- Architect and Engineering (A&E) Services subject to the Brooks Act and FAR Subpart 36.6 acquisition procedures;
- Inherently Governmental functions – see the prohibition at FAR 7.503(a);
- Personal services as defined in FAR 37.104(a);
- Legal services;
- Requirements where the primary objective or the predominance of the work is to obtain information technology (IT) services; and
- Requirements for any IT products and services, except where (1) the IT cannot feasibly be separated from the non-IT requirements or (2) when the IT is incidental to contract performance.
 - IT is defined by Office of Management and Budget (OMB) Memorandum 15-14, *Management and Oversight of Federal Information Technology*, as: Any services or equipment, or interconnected system(s) or subsystem(s) of equipment, that are used in the automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the agency; where such services or equipment are 'used by an agency' if used by the agency directly or if used by a contractor under a contract with the agency that requires either use of the services or equipment, or requires use of the services or equipment to a significant extent in the performance of a service or the furnishing of a product. If delivering IT products or services, the contractor shall comply with government IT standards, such as those for IT security, and with requirements for sharing and efficiency at

- the federal, agency, bureau, and line office levels.
- IT is incidental to a contract when the IT services or products are neither contract deliverables nor create, modify, operate or maintain IT used by the government or on its behalf.

C.3 OCEANS SERVICES DOMAIN

The primary clients of this Domain will be the offices of the National Ocean Service (NOS). NOS' mission is to provide science-based solutions through collaborative partnerships with industry to address evolving economic, environmental, and social pressures on our ocean and coasts. NOS has identified three priorities that reflect the primary statutory and mission drivers and reflect NOAA's commitment to navigation services, coastal research and observations, emergency response, and place-based conservation programs. Other NOAA offices may also use the contracts included within this Domain if their requirements are covered herein. The National Ocean Service provides data, tools, and services that support coastal economies and their contribution to the national economy. NOS is dedicated to advancing the following priorities:

Safe and efficient transportation and commerce. Ships move \$1.5 trillion worth of products in and out of U.S. ports every year. Every ship moving in and out of U.S. ports relies on navigation charts and water level information that NOS alone provides. All mapping, charting, and transportation activities and infrastructure are founded on a reliable, accurate national coordinate system. NOS is solely responsible for maintaining that system, which provides more than \$2.4 billion in potential annual benefits to the U.S. economy. Businesses in the maritime community rely on NOS for a range of decisions, from how much cargo to load to choosing the safest and most efficient route between two points. They use NOS data, tools, and services to plan seasonally for ship schedules to service global trade more safely and efficiently as significantly larger vessels transit through U.S. ports as a result of the Panama Canal expansion.

Preparedness and risk reduction. Coastal communities represent a major economic engine for the United States. Immediate and potentially life-threatening events such as hurricanes, as well as long-term issues like high tide flooding, are real challenges to coastal communities. NOS brings a unique range of information and capabilities to help communities prepare for, respond to, and recover from these events. For example, NOS maintains the nation's network of coastal tide and water level sensors to provide real-time data that supports accurate weather forecasts, coastal storm and flood predictions, and tsunami warnings. NOS provides data and tools that enable businesses and coastal communities to better plan for and mitigate risk from changing conditions. The agency provides information and data to protect human health and coastal economies with early warnings of harmful algal blooms and other threats. Every year, NOS responds to natural disasters and more than 150 oil and chemical spills in U.S. and state waters, which damage environments and disrupt economies. As the authoritative resource for science related to marine debris, oil, and chemical spills, NOS provides responders with the information they need to understand the severity of a spill and where it will travel.

Stewardship, recreation, and tourism. The United States boasts some of the most important natural, cultural, and historical resources in the world—not just on land but under the water as well. The value of the U.S. coastal tourism and recreation industry in 2009 was \$62 billion. NOS plays a critical role in protecting and promoting access to these special coastal and marine places. NOS is entrusted with the responsibility to manage a network of underwater parks encompassing more than 600,000 square miles of coastal, marine, and Great Lakes waters. Across all national marine sanctuaries, about \$8 billion annually is generated in local economies from activities like commercial fishing, tourism, and recreation. NOS also partners with states to manage national estuarine research reserves, a network of 29 coastal sites designated to protect and study estuarine systems. The reserves reflect the rich diversity of environments along our coasts and Great Lakes, and provide places for education, recreation, and boosting local economies.

See the NOS website <https://oceanservice.noaa.gov/> for more information on NOS programs.

The services provided under ProTech will support NOS worldwide. To support NOS, the Contractor shall provide the full range of program management, professional scientists, technical experts, consultants, and administrative support to provide professional and technical services, as well as all equipment, facilities, and travel needed to complete the work, on a timely basis in the broad areas described below and as specified by each individual task order.

C.3.1 Studies, Analyses, and Reports

The Contractor shall conduct studies, numerical modeling, assessments, analyses, and reporting in an effort to understand outcomes, define issues, or highlight problems and areas for improvement. Program studies and analyses will involve developing, evaluating, analyzing, and reviewing coastal and ocean programs and policies that develop strategies and contribute to the state-of-the-science assessments of the climate. Specific emphasis shall be focused on identifying and mitigating any Organizational Conflict of Interest (OCI) concerns for any contractors that assist the Government in conducting special studies of NOS operations. The program studies, analyses, and reports shall identify and promote the use of best practices in coastal and ocean habitat planning and may be used to inform program modification and redesign. The Contractor shall develop new analytical and quantitative tools, analyze data, and develop a final report of results and recommendations.

Program studies, analyses and reports shall include, but are not limited to, the following:

C.3.1.1 Provide collection of coastal and ocean data and information products and perform time series, harmonic, spectral, and other statistical analyses of field data and model-generated data.

C.3.1.2 Perform routine or 24×7 real-time monitoring and quality control of oceanographic, navigation, and meteorological data collected by sensors deployed in nearshore, coastal environments, as well as offshore field environments (including marine, terrestrial, aerial, and space) to ensure the availability, accuracy, and quality of tide, water level, current and other marine environmental information.

C.3.1.3 Perform routine or 24×7 real-time monitoring and quality control of oceanographic, navigation, and meteorological data collected by sensors deployed in deep ocean environments

and offshore field environments (including marine, terrestrial, aerial, and space) to ensure the availability, accuracy, and quality of tide, water level, current and other marine environmental information.

C.3.1.4 Provide services to investigate and report data problems (inconsistent or questionable readings, changes in sensor status, etc.) utilizing appropriate oceanographic principles, such as inter-comparisons (neighbor checks, observations vs. predictions, etc.).

C.3.1.5 Provide services to collect, analyze, evaluate, correct, and spectrally combine terrestrial, marine, airborne, and satellite gravity data and support creation of a geoid for use in geodetic control and other modeling. Support publishing terrestrial and airborne gravity data for use in geodetic control modeling.

C.3.1.6 Provide services to collect, analyze, evaluate, correct, and spectrally combine terrestrial, marine, airborne, and support creation and use of modeling. Support publishing data for use in other modeling.

C.3.1.7 Provide scientific support to analyze satellite data in support of Coastal and Oceanic programs.

C.3.1.8 Provide data entry, manipulation, verification, quality control, and evaluation of oceanographic, meteorological data, and nautical charting systems.

C.3.1.9 Process, analyze, quality control, and disseminate data (to include data categorized as sensitive) and derived products from oceanographic, navigation and nautical charting systems, and meteorological data collected by sensors deployed in the field or space.

C.3.1.10. Develop and support routine state-of-the-science assessments of the climate system for informed decision-making; and provide archeology support to coastal and oceanic programs.

C.3.1.11 Analyze and report on deficiencies in operational systems, evaluate system enhancements, and provide insight into new sensor behavior.

C.3.1.12 Provide scientific expertise support in ocean science, biology, physical science, science policy, science project management, and natural resource management disciplines.

C.3.2 Applied Research, Development, Engineering, Consulting and Operations

The Contractor shall provide scientific and engineering expertise to conduct applied research, development, engineering, consulting, and operations to support oceanic and atmospheric research for program managers and policymakers in developing state-of-the-science models, selecting new technologies for development, and determining if further program performance information is needed. The Contractor shall identify and apply appropriate methodologies and research designs needed to test particular technologies or answer a specific research question. The Contractor shall analyze data and develop a final report of results and recommendations.

Applied research, development, engineering, consulting, and operations support shall include, but are not limited to, the following:

C.3.2.1 Provide oceanic and atmospheric research coordination and support delineating regional ecosystems, promote partnerships at the ecosystem level, and implement cooperative strategies to improve regional ecosystem health to include scientific diving operations.

C.3.2.2 Provide oceanographic and hydrodynamic 3-D (layered) modeling and modeling systems to include: analysis, research and development, experiments and evaluation, data management, findings and interpretive products, coastal ocean assessments and reports, ocean observing, and technical feasibility studies for Coastal and Ocean programs.

C.3.2.3 Enhance partner development and system engineering to advance integration across participating federal agencies and the Integrated Ocean Observing System (IOOS) Regional Associations.

C.3.2.4 Provide services for marine operations of Remote Operation Vehicles, including but not limited to: passive buoyancy or autonomous or uncrewed surface platforms, uncrewed underwater platforms, uncrewed airborne systems, drop cameras, benthic grabs, and other state of the art and advancing technology. These are to be used to: characterize the seafloor and associated biota habitats; observe and explore oceans; acquire and process field data for nearshore, coastal and deep ocean, as well as offshore field environments, including non-navigationally significant waters of both domestic and international/high seas; and assess habitat damage post natural disasters.

C.3.2.5 Provide services for aerial and space operations of Remote Operation Vehicles, including but not limited to: autonomous or uncrewed aerial platforms, uncrewed airborne systems, cameras, lidar, and other state of the art and advancing technology. These are to be used to: characterize the seafloor and associated biota habitats; observe and explore oceans; acquire and process field data for nearshore, coastal and deep ocean, as well as offshore field environments, including non-navigationally significant waters of both domestic and international/high seas; and assess habitat damage post natural disasters.

C.3.2.6 Provide services for terrestrial operations of Remote Operation Vehicles, including but not limited to: autonomous or uncrewed platforms and other state of the art and advancing technology. These are to be used to: characterize the seafloor and associated biota habitats; observe and explore oceans; acquire and process field data for nearshore, coastal and deep ocean, as well as offshore field environments, including non-navigationally significant waters of both domestic and international/high seas; and assess habitat damage post natural disasters.

C.3.2.7 Provide scientific services for the coordination, development, and evaluation of new simulation and predictive models to predict species habitat utilization patterns and the advancement of understanding of ecosystems.

C.3.2.8 Provide advanced technology for monitoring and observing systems in deep ocean environments, as well as offshore field environments to expand and enhance the agency's

capabilities, such as: weather and oceanographic observations; ice forecasts and nowcasts; geodetic, hydrographic and topographic surveys; habitat characterization; and to provide accurate, up-to-date information.

C.3.2.9 Provide advanced technology for monitoring and observing systems in nearshore and coastal environments, as well as offshore field environments to expand and enhance the agency's capabilities, such as: weather and oceanographic observations; ice forecasts and nowcasts; geodetic, hydrographic and topographic surveys; habitat characterization; and to provide accurate, up-to-date information.

C.3.2.10 Provide system-wide boat planning and use management, and assistance to the Government on new boat construction and acquisition.

C.3.2.11 Maintain a boat inventory and database; develop safe-operation guidelines and operation manuals; provide boat maintenance, repair, and services; and provide day-to-day boat operations in nearshore and coastal field environments.

C.3.2.12 Maintain a boat inventory and database; develop safe-operation guidelines and operation manuals; provide boat maintenance, repair, and services; and provide day-to-day boat operations in deep ocean and offshore field environments.

C.3.2.13 Provide vessel support, transportation services, and small boat operations for expeditions related to special science and exploration, data collection, ecosystem monitoring, and seafloor and habitat characterization. Expeditions will occur in associated biota in nearshore, coastal field environments for all field office operations and on-the-water operations.

C.3.2.14 Provide vessel support, transportation services, and large boat operations for expeditions related to special science and exploration, data collection, ecosystem monitoring, and seafloor and habitat characterization. Expeditions will occur in associated biota in deep ocean and offshore field environments for all field office operations and on-the-water operations.

C.3.2.15 Provide installation and maintenance of mooring buoys, boundary markers, instrument moorings, and instrumentation packages, and provide technical support to the team in preparation, field deployment, field maintenance and retrieval of ReCon System components.

C.3.2.16 Transfer ReCon data and integrate real-time sensor data into web displays; provide technical support to the engineering design process based on field and lab data analysis; and conduct sensor interoperability testing comparing ease of integration of existing software to interoperability software.

C.3.2.17 Provide Geographic Information System (GIS) services for coastal and ocean resource management and navigation and nautical charting systems.

C.3.2.18 Provide technical and analytical services for remote sensing support for coastal and ocean resource management and navigation.

C.3.2.19 Provide programmatic and technical support for marine debris projects and research for oceans and coastal hazards.

C.3.2.20 Provide Facilities support and operational services that may include but not limited to: system-wide facilities planning and use management; assistance to the Government on new facilities design; maintenance of a facility inventory and database; maintenance and repair of facilities; and development of safe day-to-day operation guidelines and manuals for all field offices.

C.3.2.21 Provide remote engineering services to facilitate and coordinate the transfer of large amounts of data from nearshore and offshore field sensors to various data communication hubs (i.e. shoreside, shipside, or an uncrewed surface platform hub) using automated means and learning to transition data to the cloud or via telepresence in as near real time as possible, as it relates to the concept of operations.

C.3.3 Field Sampling, Data Collecting, and Surveys

The Contractor shall conduct field sampling, data collection, and surveys. These services shall support program managers in evaluating and employing state-of-the-art-data collection technologies and determine if further sampling and collection is required. Surveys shall require Contractors to identify and apply appropriate evaluation methodologies and research designs needed for a particular program or answer a specific research question. The Contractor shall analyze data and develop final reports of results and recommendations. Additionally, collection shall require accessing databases from appropriate sources, constructing databases, and consulting with other experts as required.

Field sampling, data collecting, and surveys shall include, but are not limited to, the following:

C.3.3.1 Provide nearshore and coastal field environments services in the design, installation, and maintenance of field data collection and field condition monitoring platforms and programs and the collection of marine and freshwater field data which may include, but is not limited to: scientific diving (including SCUBA) in relation to work in marine archeology, research coordination, scientific research, buoy operations, environmental monitoring, seafloor and habitat characterization, and characterization of associated biota. All diving must adhere to OSHA Diving Regulations.

C.3.3.2 Provide deep ocean and offshore field environments services in the design, installation, and maintenance of field data collection and field condition monitoring platforms and programs and the collection of marine field data which may include, but is not limited to: scientific diving (including SCUBA) in relation to work in marine archeology, research coordination, scientific research, buoy operations, environmental monitoring, seafloor and habitat characterization, and characterization of associated biota. All diving must adhere to OSHA Diving Regulations.

C.3.3.3 Provide and assist in the design and implementation of coastal and ocean-related social science tools and methods, including, but not limited to, surveys, interviews, and focus groups.

C.3.3.4 Analyze (using both quantitative and qualitative methods) and report socio-economic data that results from coastal and oceanic social science-based inquiries.

C.3.3.5 Provide analytical and operational services to collect, process, and document full-scale coastal and oceanic data. Data will be included as part of literature to be published in scientific journals.

C.3.3.6 Collect, develop, integrate, map, and analyze geospatial data for use in coastal and oceanic resource management, navigation, and nautical charting systems, may include: creating, updating and maintaining geodetic models, classifying of shoreline elements and updating nautical charts.

C.3.3.7 Collect biological and physical samples for chemical characterization and histopathological analysis.

C.3.4 Consulting, Program and Project Management

The Contractor shall provide consulting, program and project management services to assist in program execution, improvements, and measurements. Services shall include redesigning and improving the quality of the performance measurement process, performance data, and the system and method by which data is collected. Activities shall include collection and analysis of program data; writing of field observation reports; advising on improvement of agency measurement systems; disseminating methods to other Government agencies and interested organizations; developing assessments, reports, and plans; and conducting logistics support, technical training, independent reviews, and education and outreach activities.

Consulting, program and project management services shall include, but are not limited to, the following:

C.3.4.1 Provide services to the Government with strategic planning, policy development, project programming, congressional affairs, and budgeting system support to designated programs.

C.3.4.2 Provide assistance to the Government with planning, developing, and implementing Government quality assurance programs and/or Quality Management Systems. Develop strategies for improving the quality of climate observations, analyses, interpretation, and archiving.

C.3.4.3 Provide quality assurance support for acquiring, describing, and maintaining archived coastal and oceanic data and data products, metadata, and related information.

C.3.4.4 Provide assistance to the Government with developing and coordinating NOAA's homeland security-related plans, programs, and policies to enhance NOAA-wide program response, risk management, continuity of operations, and other contingency planning and program infrastructure.

C.3.4.5 Provide assistance to the Government with environmental compliance may include:

evaluation, development of environmental impact assessments; analysis and review of Coastal and Oceans programs; management of policies and guidance; and provision of technical assistance, development, review, and comment for ongoing or planned environmental assessments, National Environmental Policy Act (NEPA), and other documentation to demonstrate compliance with environmental statutes and other environmental permitting activities.

C.3.4.6 Develop instructions, guides, procedures, and processes for operating, maintaining, and configuring oceanographic, navigation and nautical charting systems, and meteorological systems.

C.3.4.7 Develop, test, implement, and quality control of processes and procedures for collecting coastal and ocean data.

C.3.4.8 Support document development for requirements, business analysis, and design specifications for oceanographic, navigation, and meteorological systems.

C.3.4.9 Provide assistance to the Government with administrative and technical support to the formulation and management of multi-year budgets, development of budget strategies, collection and analysis of financial data, collection and estimation of costs, and development of spend plans, cost tracking and reporting systems.

C.3.4.10 Support the development and maintenance of software for the operation of budget formulation databases and for producing tracking and reports.

C.3.4.11 Provide assistance to the Government with financial services support to NOAA programs including but not limited to Interagency Agreements, grants, and other federal funding opportunities.

C.3.4.12 Provide assistance to the Government with coordinating, planning, and operating facilities, to include providing access and security requirements for visitors, coordinating all employee separation procedures, and cataloging/archiving issuance and receipt of keys to facilities, vehicles, and offices.

C.3.4.13 Provide communication, request for information, and outreach project support including document development, editing and graphic art services, and compliance with Section 508 of the Americans with Disabilities Act. Services shall include design, layout, word processing, copy-editing and photocopying of reports, materials, brochures, and other printed or electronic materials. Graphic services include graphic artists, preparation of graphs based on the analysis of technical data, and the preparation of flyers, pictures, posters, bookmarks, meeting agendas, certificates, artwork, pamphlets, covers, logos, promotional materials, and end-to-end video services including producing, editing, managing, cataloging, and all associated technical matters.

C.3.4.14 Provide assistance to the Government with programmatic and financial technical assistance, and general administrative support services to Coastal and Ocean programs and program offices.

C.3.4.15 Provide assistance to the Government with the development of economic guidelines and standards, and in forecasting trends and formulating economic policy. Formulate recommendations, policies, or plans to address economic problems or to interpret relevant markets.

C.3.4.16 Provide planning and logistics support for meetings, conferences, working groups, and hearings including, but not limited to, coordinating locations, participants, rapporteurs, exhibits, agendas, presentations and briefing materials, accommodations, speakers, travel, multimedia requirements and facilitation services.

C.3.5 Capacity Building

The Contractor shall provide products and services to support enhancing external audiences' knowledge and skills of the mission of the National Ocean Service.

Capacity building shall include, but is not limited to, the following:

C.3.5.1 Provide technical training for coastal professional audiences, including instructional design and materials to incorporate adult learning theory and technologies for topics which may include but are not limited to ocean acidification, sea-level rise, river-delta algae blooms, oil spills, and other climate-mitigation issues.

C.3.5.2 Provide education information focused on ocean and estuarine literacy related to NOS mission, for K–12, community members and teacher audiences, including learning networks, and instructional design to incorporate educational and instructional theory and technologies for topics which may include but are not limited to ocean acidification, sea-level rise, river-delta algae blooms, oil spills, and other climate-mitigation issues.

C.3.5.3 Provide technical assistance to address coastal and oceanographic management issues, providing support on the development and maintenance of coastal and oceanographic products and services and working directly with stakeholders in local communities including underserved communities, tribes, and non-governmental entities to identify the needs of these communities.

C.3.5.4 Provide logistical and programmatic support for designing and delivering collaborative processes and facilitation support.

C.3.5.5 Develop, implement, and coordinate NOAA fellowship programs.

C.4 IT SECURITY REQUIREMENTS