

APPLICATION FOR CERTIFICATION AS A REGIONAL INFORMATION COORDINATION ENTITY

1. Type of Application:

New Renewal Revision

2. Applicant Information:

Legal Name:

Address:

Street 1:

Street 2:

City:

State:

Zip Code:

3. Name and contact information of person to be contacted on matters involving this application:

Prefix:

First Name:

Last Name:

Title:

Organizational Affiliation:

Telephone Number:

Fax Number:

Email:

Directions:

For the purposes of these certification guidelines, when the verb “describe” is used it indicates that the RICE shall give an account in text that responds to the requirement. This text shall contain sufficient information to demonstrate how the RICE satisfies the certification requirement. The RICE may include a link(s) to additional information. When the verb “document” is used, it indicates that the RICE shall furnish a document(s) that responds to the requirement. A text statement accompanying the document(s) will normally be necessary to provide context for the document(s) and to demonstrate how the RICE satisfies the certification requirement. The RICE may include a link to a document in the accompanying text statement.

Documentation that addresses the certification requirements may include references to existing RICE documents. All documents and materials may be submitted directly to the U.S. IOOS Program Office or made accessible for public viewing on the RICE’s website.

§997.21 Organizational Structure

(b) The application shall:

- 1) Describe the RICE’s organizational structure (e.g., 501(c)(3) tax-exempt organization, establishment via MOU or MOA).

Description (approx. 200 words)

All documents supporting this application for certification can be found at www.neracoos.org/governance

NERACOOS was established as an independent, 501(c)(3) nonprofit organization in 2008. NERACOOS is governed by a Board of Directors with standing Executive, Finance, and Nominating Committees. The NERACOOS Board of Directors is responsible for the overall operations of the Corporation and complies with its adopted Bylaws (November 13, 2008; amended December 2009, February 2015, August 2017). The Executive Director is responsible for the day-to-day business activities of the Corporation and to support the Board and Committees. The office is responsible for management of awards to NERACOOS including subaward management and reporting to funding agencies. The Executive Director is a full-time position, is not a member of the Board, and is the Principal Investigator of many NERACOOS proposals. The rest of the NERACOOS staff assist the Executive Director, as well as members of the Board and Committees. Employee positions include: Finance Director (a full-time position), Operations Manager (a full-time position), Product & Engagement Manager (a part-time position), NECAN Coordinator & NERACOOS Administrator (a full-time position), Engagement & Research Association (a part-time position), and Communications Manager (a full-time position).

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS documents its 501(c)(3) status through the determination letter from the IRS at <https://drive.google.com/file/d/1vFYQkyldtfl8vIKNAmoDeIO1rDqDqJqV/view>. In addition, please see Appendix 2.1 of the NERACOOS Strategic Operating Plan for a visual and narrative description of the NERACOOS organizational structure, <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- 2) Document the RICE’s ability to satisfy applicable legal criteria for accepting and disbursing funds, and entering into agreements. Sufficient documentation may be provided in the form of: 1) evidence of a current grant, cooperative agreement, or

contract in good standing with the Federal government; or 2) evidence of fiscal agreements, standard operating procedures for financial activities, and proof of an audit process.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS meets this criteria as evidenced by Cooperative Agreement, NA21NOS0120095 with NOAA National Ocean Service. Please see <https://neracoos1.org/wp-content/uploads/2022/11/NA21NOS0120095-Official-Accepted-CD-450.pdf> and <https://neracoos1.org/wp-content/uploads/2022/11/GrantsOnline-Screenshot.png>

- 3) Document the RICE’s measures for addressing issues of accountability and liability. For this criterion, accountability and liability refer to the RICE’s governance and management activities. Sufficient documentation may be provided in the form of 1) a conflict of interest policy for the Governing Board or governing body, which clearly states that a member of the governing board will declare any conflict of interest he or she may have and will recuse him or herself from associated funding decisions that may result in the Board member or a direct family member benefiting financially, and 2) a policy statement in the RICE’s by-laws that addresses liability issues.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

The NERACOOS board of directors formally adopted a Conflict of Interest Policy in August 2009. See the NERACOOS Conflict of Interest Policy at <https://drive.google.com/file/d/1a790iomfS7mAKIH50xLz3PPJRRGfEfyf/view?usp=sharing>

- 4) Describe the process the RICE uses to set priorities for distributing funds (e.g., requirement for Governing Board or governing body approval when responding to funding opportunities or adjusting to funding level changes in existing agreements); and

Description (approx. 200 words)

For preparation of the main five-year proposal for the U.S. IOOS Office, the NERACOOS Board forms an oversight committee of unconflicted Directors to monitor and assess the process developed and implemented by staff and ensure its openness and transparency, as well as to evaluate the performance of existing Co-PIs. The overall process consists of a formal stakeholder engagement process to identify priority needs and gaps, an open call for mini-proposals based on these priorities, and then mini-proposal review by unconflicted board members. The result is a prioritized set of integrated projects that are then reviewed by the Executive Director and other staff, and a final slate of projects approved for inclusion in the proposal by the Executive Director.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see Section 1.2.2 Five-year proposal process on page 4 of the NERACOOS Strategic Operating Plan. Please see <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- 5) Document the by-laws, signed articles of agreement, or any binding agreements that demonstrate how the RICE establishes and maintains a Governing Board or governing body. The documentation shall demonstrate:
- i. How the composition of the Governing Board or governing body is selected and how it is representative of regional ocean observing interests. NOAA defines “representative” in this specific context to include geographic, sector, expertise, and stakeholder considerations.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

The NERACOOS By-laws (Article IV, sections 2 and 3, pages 2 - 4) document the structure and process of board member nominations. Please see <https://drive.google.com/file/d/1920T7dZx57nydPWumCU-X0rHII4g9jTs/view?usp=sharing>

- ii. How and with what frequency the RICE solicits and receives advice on RICE participant diversity, stakeholder coordination, and engagement strategies, to ensure the provision of data and information that satisfy the needs of user groups.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS documents this criterion within its Strategic Operating Plan. Please see Section 1.2.1 Engagement, Planning, Prioritization, and Evaluation' beginning on page 3 of the NERACOOS Strategic Operating Plan. <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- iii. How the RICE collects and assesses user feedback to gauge the effectiveness of the regional system and subsystems in satisfying user needs, and how the RICE responds to this user feedback in setting its priorities. Sufficient documentation may be provided in the form of a description of the method the RICE uses in its annual planning process to assess priorities among the identified user needs in the region and to respond to those user needs, and

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS documents this process in its Strategic Operating Plan, please see Sections 1.2.2 Five-year proposal process and 1.2.3 Annual planning process beginning on page 4 of the NERACOOS Strategic Operating Plan. <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- iv. Steps the RICE takes to ensure decisions on priorities and overall regional system design are transparent and available. At a minimum, RICE priorities and regional system design decisions shall be made accessible for public viewing on the RICE's website.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS utilizes an open and transparent process to solicit input for regional system design described throughout Section 1.2 Governance & Management Subsystem beginning on page 3 and ending on page 6 of the NERACOOS Strategic Operating Plan. <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>
As described therein the 5 year proposals to the NOAA IOOS Program are made accessible at <https://neracoos1.org/wp-content/uploads/2022/11/FINAL-NERACOOS-IOOS-FY2021-Proposal-for-Board-Pls.pdf>

§997.22 Membership Policy

The application shall describe:

- (a) The process by which individuals or organizations may formally participate in the governance activities of the RICE;
- (b) The rights and responsibilities of this participation;

Description (approx. 200 words)

Individuals serving on the NERACOOS Board of Directors are encouraged to participate in the membership program. Membership, however, is not a prerequisite to being elected to the NERACOOS Board of Directors. Identification of candidates to become new Directors and Officers is the responsibility of the Nominating Committee, with the full Board voting on candidates. The process is detailed further in the NERACOOS Bylaws.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see the NERACOOS website (www.neracoos.org/governance/) regarding information on the Membership Program, as well as the NERACOOS bylaws. Please see https://neracoos1.org/wp-content/uploads/2022/11/Membership-Program-and-Form_2020.pdf and <https://drive.google.com/file/d/1920T7dZx57nydPWumCU-X0rHII4g9jTs/view?usp=sharing>

- (c) The process by which the RICE strives for organizational diversity through intra-regional geographic representation, and diversity of activities and interests from both public and private sectors; and
- (d) How the RICE allows for participation from adjacent regions or nations.

Description (approx. 200 words)

The NERACOOS By-laws specify the composition of Board of Directors with diversity across sectors and geographic representation. The Bylaws also call for inclusion of Directors from Canada recognizing that NERACOOS has responsibility for observing transboundary ocean waters.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

The number and qualifications of directors are documented in the Bylaws: Article IV, section 2, pages 2 - 3. Please see <https://drive.google.com/file/d/1920T7dZx57nydPWumCU-X0rHII4g9jTs/view?usp=sharing>

§997.23 Strategic Operational Plan

(b) Background and Context

The Strategic Operational Plan shall contain a Background and Context section that describes:

- 1) The role of the RICE in furthering the development of the regional component of the System;

Description (approx. 200 words)

Initial sustained ocean observing capacity was established in the late 1990s and early 2000's through sub-regional pilot programs included the Long Island Sound Coastal Observing System (LISICOS), the Gulf of Maine Ocean Observing System (GoMOOS), and the UNH center for Coastal Ocean Observation and Analysis (COOA). NERACOOS was incorporated as an independent, 501-c3 nonprofit organization in the fall of 2008 after a multiyear governance planning process. Over the past decade NERACOOS has evolved these sub-regional systems into a more integrated and effective regional observing system, expanded in new directions beyond these initial programs. To achieve this goal NERACOOS uses an integrated system design comprised of several subsystems, these include governance and management, data management and cyberinfrastructure, modeling and analysis, and an observing system composed of fixed platforms, mobile platforms, and remote sensing. NERACOOS aims for our operational observing system to be the largest regional provider of publicly available continuous real-time ocean information in the Northeast that is relied upon by those using and managing the coastal ocean.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see Section 1.1 Background and Context on page 1 of the Strategic Operating Plan.
<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- 2) The process by which the RICE updates the Strategic Operational Plan at least once every five years and how the RICE seeks inputs from the broader user community; and

Description (approx. 200 words)

Implementation of the observing system is informed by the ongoing multi-faceted stakeholder engagement process that identifies end-user needs and more broadly how NERACOOS addresses four primary themes, including:

1. Marine operations,
2. Coastal hazards,
3. Ecosystems, fisheries and water quality, and
4. Climate variability and change.

Engagement of key users was built into the initial governance structure with Directors derived from state government, industry, and academic organizations. The NERACOOS team brings together stakeholders from various sectors to create and implement plans and priorities. Additionally, staff members regularly attend meetings and conferences to further understand user needs and to communicate activities. NERACOOS also helps coordinate and lead regional initiatives such as the Integrated Sentinel Monitoring Network (ISMN) and the Northeast Coastal Acidification Network (NECAN). NERACOOS and the Northeast Regional Ocean Council (NROC) have developed two joint working groups, one on Ocean and Coastal Ecosystem Health (OCEH) and another on Coastal Hazards Resiliency. The website, newsletters, social media, and an Annual Report communicate programs and document success. Collaboration through the IOOS Outreach Committee leverages expertise in outreach and communications. National collaboration is achieved through involvement with the IOOS Association and IOOS Office. Binational collaboration with Canada is facilitated through the Gulf of Maine Council (GOMC, Kritzer is a councilor) and Canadian Coastal Ocean Observing System Atlantic (CIOOS, Motyka is an advisor).

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see Sections 1.2.1 Engagement, Planning, Prioritization, and Evaluation beginning on page 3 of the Strategic Operating Plan.
<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- 3) The RICE’s primary partners and any contributing observing systems. For the purposes of § 997.23, NOAA defines a primary partner as any organization or individual that contributes significant staff time, funding or other resources to project activities. This is not an exhaustive list of all RICE partners but the primary partners the RICE is working with on a given project.

Description (approx. 200 words)

UNIVERSITY OF MAINE Observing: fixed platform & remote sensing
UNIVERSITY OF NEW HAMPSHIRE Observing: fixed platform
WOODS HOLE OCEANOGRAPHIC INSTITUTION Observing: mobile platform & remote sensing
UNIVERSITY OF RHODE ISLAND Observing: fixed platform and Data management & cyberinfrastructure
UNIVERSITY OF CONNECTICUT Observing: fixed platform and Modeling & analysis
GULF OF MAINE RESEARCH INSTITUTE Data management & cyberinfrastructure
BEDFORD INSTITUTE OF OCEANOGRAPHY Data management & cyberinfrastructure and Modeling & analysis
UNIVERSITY OF MASSACHUSETTS, DARTMOUTH Modeling & analysis
U.S. GEOLOGICAL SURVEY: MAINE Observing: fixed platform
CHARYBDIS GROUP Observing: fixed platform
WOODS HOLE GROUP Observing: fixed platform
MAINE CENTER FOR COASTAL FISHERIES Observing: fixed platform

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS' primary partners are detailed in Section 1.3 beginning on page 6 of the Strategic Operating Plan.
<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

(c) Goals and Objectives

The Strategic Operational Plan shall contain a Goals and Objective section that describe:

- 1) How the RICE addresses marine operations; coastal hazards; ecosystems, fisheries and water quality; and climate variability and change; and

Description (approx. 200 words)

NERACOOS partners and users identified two strategic priorities of particular importance that will shape the execution of this Plan:

1. Our observing activities and infrastructure must keep pace with accelerating climate change, the effects of which are already being felt throughout the Northeast.
2. We must be attentive to the principles of Diversity, Equity, Inclusion, and Accessibility (DEIA), ensuring that we serve all people in the region who are connected to the ocean. These issues will be touchstones that guide many of the actions we take to achieve our vision of communities, economies, and marine ecosystems made more productive and resilient through access to ocean information.

The NERACOOS Strategic Priorities include:

- Sustain and modernize the ocean observing system.
- Provide reliable and accessible ocean data.
- Develop new tools and networks to meet the challenges nearshore environments are facing.
- Expand partnerships and activities focused on marine life and habitats.
- Engage with people to understand their needs and communicate our work.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

The goals and objectives of NERACOOS are documented in Section 1.1.1 beginning on page 1 of the Strategic Operating Plan.
<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- 2) The major objectives that guide the RICE’s priorities for data collection and management, development of products and services, research and development, and education and outreach.

Description (approx. 200 words)

NERACOOS partners and users identified two strategic priorities of particular importance that will shape the execution of this Plan:

1. Our observing activities and infrastructure must keep pace with accelerating climate change, the effects of which are already being felt throughout the Northeast.
2. We must be attentive to the principles of Diversity, Equity, Inclusion, and Accessibility (DEIA), ensuring that we serve all people in the region who are connected to the ocean. These issues will be touchstones that guide many of the actions we take to achieve our vision of communities, economies, and marine ecosystems made more productive and resilient through access to ocean information.

The NERACOOS Strategic Priorities include:

- Sustain and modernize the ocean observing system.
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Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

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<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

(d) Operational Plan for the Observing System

The Strategic Operational Plan shall include or reference an Operational Plan for the Observing System that:

- 1) Describes the desired outcomes of the observing system;

Description (approx. 200 words)

NERACOOS aims for our operational observing system to be the largest regional provider of publicly available continuous real-time ocean information in the Northeast that is relied upon by those using and managing the coastal ocean.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see Section 1.1 Background and Context on page 1 of the Strategic Operating Plan. <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- 2) Describes the elements of the operational integrated observing system that will deliver those outcomes;

Description (approx. 200 words)

To achieve this goal NERACOOS uses an integrated system design comprised of several subsystems, these include governance and management, data management and cyberinfrastructure, modeling and analysis, and an observing system composed of fixed platforms, mobile platforms, and remote sensing.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see Section 1.1 Background and Context on page 1 of the Strategic Operating Plan. <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- 3) Documents to NOAA’s satisfaction that the individual(s) responsible for RICE operations has the necessary qualifications and possesses relevant professional education and work experience to deliver observations successfully. At a minimum the Strategic Operational Plan shall:
 - i. Identify the individual(s) responsible for overall RICE management;
 - ii. Identify, as applicable, the individual(s) responsible for observations system management across the region;
 - iii. Provide the curriculum vitae for each identified individual; and

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

i. Jake Kritzer, NERACOOS Executive Director
ii. Jackie Motyka (NERACOOS), Neal Pettigrew (University of Maine), James O'Donnell (University of Connecticut), Doug Vandemark (University of New Hampshire), Andrew Thomas (University of Maine), Anthony Kirincich (Woods Hole Oceanographic Institution), Mark Baumgartner (Woods Hole Oceanographic Institution), Francesco Peri (Charybdis Group, LLC.), David Walsh (Woods Hole Group), Tom Shyka (NERACOOS), Riley Young Morse (Gulf of Maine Research Institute), Alex Kerney (Gulf of Maine Research Institute) and Dylan Pugh (Gulf of Maine Research Institute).
iii. Information regarding responsibilities can be found in Section 1.6 of the Strategic Operations Plan <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf> and CVs found at <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Key-RICE-Personnel-CVs.pdf>

- iv. Identify the procedures used to evaluate the capability of the individual(s) identified in subsection §997.23(d)(3) to conduct the assigned duties responsibly; and

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see Section 1.2.4 of the Strategic Operating Plan beginning on page 5, <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

- 4) Describes how the RICE manages ongoing regional system operations and maintenance. At a minimum the Strategic Operational Plan shall:
 - i. Describe the RICE’s standard operating procedures for calibrating, validating, operating, and maintaining equipment owned and/or operated by the RICE regularly and in accordance with manufacturer guidance or industry best practice. Equipment is defined in §997.1; and

Description (approx. 200 words)

All equipment purchased for the NERACOOS observing system are owned and managed by external subcontractors who have been selected to operate the equipment. NERACOOS sub-awards to subcontractors provide guidance and instruct them to use best-practices for equipment operation and maintenance. All equipment are calibrated, operated, and maintained in accordance with manufacturers' guidelines.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see Section 1.3.1 and 1.3.2 on page 7 of the Strategic Operating Plan and the NERACOOS Funded Assets document. <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>
<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Funded-Assets-2.pdf>

- ii. Describe the RICE's standard operating procedures for maintaining equipment inventories, shipping logs and instrument history logs for equipment owned and/or operated by the RICE.

Description (approx. 200 words)

All equipment is the responsibility of the individual co-PI charged with operating the equipment. In accordance with NERACOOS inventory management best practices, each co-PI maintains digital records of equipment performance, history, location, and utilization, including but not limited to: a) instrument deployment details (location, date/time, status, data frequency); b) service records (date, repair reason, calibration coefficients); c) instrument location, including shipping logs (deployed, in-transit, in lab); d) instrument serial number; and e) instrument insurance records (including current value and replacement cost). All equipment purchased for NERACOOS activities is owned and managed by the partner organization. All academic organizations purchase, manage, and dispose of equipment in compliance with section § 200.313 Equipment of 2 CFR Part 215 – Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-profit Organizations. This requires that property records are maintained including a description and serial number, a physical inventory taken at least every two years and that it is reconciled with records, control systems are developed to ensure adequate safeguards to prevent loss, damage, or theft of the property, and that maintenance procedures must be developed to keep the property in good condition.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see section 1.3.2 Maintaining equipment inventories, shipping, and instrument logs beginning on page 7 of the Strategic Operating Plan.
<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

(e) Development of a Strategy to Sustain and Enhance the System

The Strategic Operational Plan shall describe its strategy for balancing changes in regional priorities with the need to maintain established data sets, the primary value of which may be in their long-term records. At a minimum the description shall:

- 1) Identify the guiding principles that inform the strategy;
- 2) Reference and show connections to a long-term (five-to-ten-year) regional Build-out Plan for the full implementation of the regional observing system based on the RICE’s priorities and identified user needs; and
- 3) Relate the annual planning process the RICE uses to review its priorities in light of funding levels and its plans for system enhancement as outlined in the regional Build-out Plan.

Description (approx. 200 words)

As discussed above, the organization goes through an assessment every five years in preparation of the five-year proposal to the U.S. IOOS Office. A critical component of this process is assessing the existing observing system, considering opportunities for enhancements and upgrades, as well as new activities that should be included for inclusion. Additionally, NERACOOS works closely with partners to seek complementary support to evolve the observing system, as informed by the Regional Build-Out Plan.

NERACOOS initially developed a Regional Build-Out Plan (RBOP) in 2011. Since then, this Plan has evolved and been updated to include regional priorities and gaps as informed by stakeholder needs and the five-year proposal to IOOS. The RBOP acts as a roadmap for the organization, connecting needs with technologies.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see sections 1.2.5 Strategy to Sustain and Enhance the System and 1.2.5.1 Connection the Regional Build-out Plan beginning on page 7 of the Strategic Operating Plan.
<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

(f) Data Management and Communications (DMAC) Plan

The Strategic Operational Plan shall include or reference a DMAC plan that:

- 1) Documents to NOAA’s satisfaction that the individual(s) responsible for management of data operations for the RICE has the necessary technical skills, and possesses relevant professional education and work experience to support DMAC capabilities and functionality for the System. At a minimum the DMAC Plan shall:
 - i. Identify the individual(s) responsible for the coordination and management of observation data across the region;
 - ii. Provide the curriculum vitae for the identified individual(s); and

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS uses the contract process as a mechanism for managing its DMAC services. The DMAC contract is administered by the Executive Director and the Product and Engagement Manager who are responsible for managing and prioritizing DMAC activities working with the contract service provider. The DMAC contract is with the Gulf of Maine Research Institute who provides DMAC services, infrastructure, and support for NERACOOS. DMAC system management structure and responsibilities are described on pages 4-5 of the NERACOOS DMAC Plan at https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS_DMAC_Plan_V3.0_Nov_2022.pdf, key RICE personnel are identified on pages 12-13 of the Strategic Operations Plan <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf> and CVs are available here <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Key-RICE-Personnel-CVs.pdf>

- iii. Identify the procedures used to evaluate the capability of the individual(s) identified in subsection §997.23(f)(1) to conduct the assigned duties responsibly.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS manages data management services and data products through annually contracted services with the Gulf of Maine Research Institute (GMRI). The GMRI contract Statement of Work identifies the services that they agree to provide and this is used to evaluate the quality of work provided by the contractor. The NERACOOS Executive Director and Product and Engagement Manager coordinate an annual contract review of the DMAC contractor. Additionally, the DMAC management team meets several times a year to evaluate the status and progress of DMAC activities. A description of the NERACOOS contractor review process is in section 1.2.4 on page 5 of the Strategic Operating Plan here <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>. The hiring and employment evaluation procedures for GMRI are available at <https://neracoos1.org/wp-content/uploads/2022/11/Hiring-Policy-and-Principles-2018-10-02.pdf> and <https://neracoos1.org/wp-content/uploads/2022/11/Compensation-Policy-FINAL.pdf>

- 2) Describes how data are ingested, managed and distributed, including a description of the flow of data through the RICE data assembly center from the source to the public dissemination/access mechanism. The description shall include any transformations or modifications of data along the data flow pathway including, but not limited to, format translations or aggregations of component data streams into an integrated product.

Description (approx. 200 words)

The NERACOOS Data Management System (DMS) handles the integration, discovery, and dissemination of data from the region. The primary method for acquiring data from providers is directly from standards-based storage systems via automated web services and APIs (application programming interface). Data ingestion can accommodate data providers with differing levels of technology capacity. Using web services and automated scripts (written primarily in Python) data are acquired directly from providers (e.g., remote THREDDS/ERDDAP, API/web services, rsync, sFTP) and autonomously ingested into the DMS. In some cases, additional metadata transformations are applied before serving data back out. For data providers lacking bandwidth or capacity to serve data regularly or in compliant formats, the DMS can also ingest various file formats (e.g., csv, txt), then process, store, and distribute through standard formats. The NERACOOS DMAC team works closely with the data providers to transform observation data and metadata into compliant formats that conform to data and quality control standards and protocols. Data managed and curated through the NERACOOS DMS can be aggregated in region-wide products though the data are served from distributed systems. NERACOOS datasets have been registered with the IOOS Catalog since its inception and are also exposed to the catalog crawler through search-engine friendly Web Accessible Folders (WAF). The data access services available through the NERACOOS DMS enables end users to access data directly and programmatically.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

An overview and diagram of the NERACOOS data flow process can be found in the NERACOOS DMAC Plan (Section 5, Figures 2, 3a, and 3b)
Data Services are described in the NERACOOS DMAC Plan (Section 5.3)
Technology stack described in the NERACOOS DMAC Plan (Section 5.4)
Detailed description of the flow of NERACOOS funded data provider's data described in the NERACOOS DMAC Plan (Section 6)
Public dissemination and access are described in the NERACOOS DMAC Plan (Section 7)
https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS_DMAC_Plan_V3.0_Nov_2022.pdf

- 3) Describes the data quality control procedures that have been applied to data, not obtained through a federal data source, that are distributed by the RICE. All data shall be quality controlled and QARTOD procedures shall be employed for data with QARTOD manuals. For each data stream, describe the quality control procedure applied to the data, by the RICE or other named entity, between the data's collection and publication by the RICE. The description will also include a reference to the procedure used.

Description (approx. 200 words)

The majority of non-federal data made available through NERACOOS is near real-time data that originates from sensors operated by academic institutions or private companies that are contracted by NERACOOS. The Principle Investigators (PI) and the teams that operate NERACOOS sensors are recognized experts in oceanographic data collection. NERACOOS funding agreements require that QA/QC is performed on data streams and requires QARTOD tests be implemented by the data providers. The majority of this NERACOOS data currently undergoes a robust QA/QC process that includes many of the required QARTOD tests as well as other QA/QC procedures.

NERACOOS and its funded data partners are in the process of phased implementation of required and additional QARTOD tests. All data providers are performing some of the required QARTOD tests on the majority of the data streams and are working on implementing the tests into all data streams. NERACOOS anticipates that implementation or required QARTOD tests be completed by the first quarter of 2023.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS quality control of non-federal data is described in the NERACOOS DMAC Plan (Sections 4 "Quality Control") with further details on funded data provider quality control procedures in the NERACOOS DMAC PLAN (Section 6 "NERACOOS Data Streams")
https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS_DMAC_Plan_V3.0_Nov_2022.pdf

- 4) Adheres to the NOAA Data Sharing Procedural Directive.¹ The System is an operational system; therefore the RICE should strive to provide as much data as possible, in real-time or near real-time, to support the operation of the System. When data are collected in part or in whole with funds distributed to a RICE through the U.S. IOOS Program Office, the RICE should strive to make the data

¹ NOAA Data Sharing Policy for Grants and Cooperative Agreements Procedural Directive, Version 2.0
https://www.nosc.noaa.gov/EDMC/documents/EDMC_PD-DSPNG_final_v2.pdf

available as soon as logistically feasible for each data stream. When data are not collected with funds distributed to a RICE through the U.S. IOOS Program Office, the data may be made available in accordance with any agreement made with the data provider.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS adheres to the NOAA Data Sharing Procedural Directive. All real-time and near real-time data funded by NERACOOS that have passed initial QA/QC tests and are not subject to a programmatic restriction are freely available through open services without delay or restriction. There are multiple options available for accessing NERACOOS data through the NERACOOS website [www.NERACOOS.org](http://neracoos.org/data/) with data services listed at <http://neracoos.org/data/>. These are described in (Section 7 "Data Sharing and Access" in the NERACOOS DMAC Plan https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS_DMAC_Plan_V3.0_Nov_2022.pdf

- 5) Describes how the RICE will implement data management protocols promulgated by the IOOC and the U.S. IOOS Program Office in a reasonable and timely manner as defined for each protocol; and

Description (approx. 200 words)

The NERACOOS DMAC Manager, Riley Young Morse of GMRI, and the NERACOOS Product and Engagement Manager, Tom Shyka, routinely participate with the IOOS Office and other RAs in standards coordination efforts. These include regular conference calls, review of documents, proposals, and other materials, testing of services, and at least on in-person meeting annually. NERACOOS staff, the GMRI DMAC team, and the NERACOOS funded data providers participate in regular DMAC calls to discuss and review data management activities and progress.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

See "DMAC Management Structure" pages 4-5 of the NERACOOS DMAC Plan at https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS_DMAC_Plan_V3.0_Nov_2022.pdf

- 6) Documents the RICE's data archiving process or describes how the RICE intends to archive data at a national archive center (e.g., NODC, NGDC, NCDC) in a manner that follows guidelines outlined by that center. Documentation shall be in the form of a Submission Agreement, Submission Information Form (SIF) or other, similar data producer-archive agreement.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS submitted a Request to Archive and Submission Agreement with NCEI in 2017. The request was approved through ATRAC project "NERACOOS and CariCOOS non-Federal Station Assets through the University of Maine" (<https://www.ncdc.noaa.gov/atrac/projectdetails.html?id=8774>). The approved transfer process is for NCEI to pull NERACOOS data from a Web Accessible Folder at (<http://www.neracoos.org/NCEI/>). For more details please see the NERACOOS DMAC Plan (Section 8.3 "Archival at NCEI", and https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS_DMCA_Plan_V3.0_Nov_2022.pdf), the NCEI Request to Archive Document <https://drive.google.com/file/d/1rkefqDO14ICCIQyMFYjQ7kXiaWyllu/view?usp=sharing>, and the NERACOOS Submission Agreement Document <https://drive.google.com/file/d/1bGJGmuaUDToshR6bMehA1xHHRIB7r182/view?usp=sharing> NERACOOS is working with NCEI to update our Submission Agreement to include data set descriptions, provider contacts, and workflow for all funded NERACOOS buoys.

(g) Budget Plan

The Strategic Operational Plan shall include or reference a Budget Plan that:

- 1) Identifies who supports the RICE financially;
- 2) Identifies how RICE priorities guide funding decisions; and
- 3) Assesses funding constraints and the associated risks to the observing System that the RICE must address for the future.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS documents its budget plan in Section 1.7, beginning on page 14 of the Strategic Operating Plan.
<https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

§997.24 Gaps Identification

(b) The application shall

- 1) Document that the RICE’s asset inventory contains up-to-date information. This could be demonstrated by a database or portal accessible for public viewing and capable of producing a regional summary of observing capacity;

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS assets are visible and accessible through a number of online avenues including the NERACOOS website, www.neracoos.org, specifically the Mariners Dashboard <http://mariners.neracoos.org/> and the NERACOOS ERDDAP <http://www.neracoos.org/erddap/index.html>

- 2) Provide a regional Build-out Plan that identifies the regional priorities for products and services, based on its understanding of regional needs, and a description of the integrated system (observations, modeling, data management, product development, outreach, and R&D). The RICE shall review and update the Build-out Plan at least once every five years; and

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Please see the NERACOOS Regional Build-out Plan at <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-2023-2028-Regional-Build-Out-Plan-FINAL.pdf>

- 3) Document the priority regional gaps in observation coverage needs, as determined by an analysis of the RICE asset inventory and Build-out Plan. The RICE shall review and update the analysis of priority regional gaps in observation coverage needs at least once every five years.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS documents its priorities for expansion page 3 and table 1 of the Regional Built-Out Plan here <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-2023-2028-Regional-Built-Out-Plan-FINAL.pdf>

§997.25 Financial Oversight

- (b) The application shall document compliance with the terms and conditions set forth in 2 CFR Part 215 – Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-profit Organizations, Subpart C – Post Award Requirements. Subpart C prescribes standards for financial management systems, among others. (Compliance with this criterion can be demonstrated by referencing any existing grant, cooperative agreement, or contract the RICE has with NOAA.)

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

NERACOOS meets this criterion as demonstrated by Cooperative Agreement #NA21NOS0120095 with NOAA's National Ocean Service. Please see <https://neracoos1.org/wp-content/uploads/2022/11/NA21NOS0120095-Official-Accepted-CD-450.pdf>

- (c) The RICE shall document annually the RICE's operating and maintenance costs for all observing platforms and sensors, etc., owned and/or operated by the RICE. This information shall be made available to NOAA upon request.

Documentation – Please provide a brief contextual statement, with relevant URL, and any details on how the information can be accessed (document section and/or page number)

Operating and maintenance costs can be found beginning on page 6 of the Strategic Operations Plan in Table 1 and ending on page 7 in Table 2. NERACOOS submits detailed annual budgets as part of the Cooperative Agreement, which are available to NOAA upon request. <https://neracoos1.org/wp-content/uploads/2022/11/NERACOOS-Strategic-Operations-Plan-2022-Final.pdf>

Jake Kritzer

Digitally signed by Jake Kritzer
Date: 2022.11.23 13:48:23 -05'00'

Signature

Date

*By signing this application, I certify that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances and agree to comply with any resulting terms if I accept certification. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

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