FY2024 Coastal and Ocean Modeling Testbed Project

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NOTICE OF FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

Federal Agency Name(s): National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce

Funding Opportunity Title: FY2024 Coastal and Ocean Modeling Testbed Project

Announcement Type: Initial

Funding Opportunity Number: NOAA-NOS-IOOS-2024-2008197

Federal Assistance Listings Number: 11.012, Integrated Ocean Observing System (IOOS)

Dates: Full proposals must be received no later than 11:59 PM Eastern on Monday, 26 February 2024.

Funding Opportunity Description: The U.S. Integrated Ocean Observing System (IOOS®) is a national and regional partnership working to provide ocean, coastal and Great Lakes observations, data, tools, and forecasts to improve safety, enhance the economy, and protect our environment. NOAA and IOOS stakeholders view a coastal and ocean modeling test environment as essential to achieve a sustained and operational IOOS. The Coastal and Ocean Modeling Testbed (COMT) was established to advance predictions and forecasts by fostering continued coordination of development and testing work between federal and non-federal operational and research partners. The COMT aims to support projects that facilitate and accelerate the transition of models and model based technologies from research environments toward operational readiness. The goal of this effort is to grow the federal suite of operational ocean modeling products to better understand coastal, ocean and lake processes and to improve predictions of events and changes that impact coastal lives and livelihoods. Of particular interest are coastal, ocean and lake phenomena that intersect the mission goals of NOAA, other operational agencies, and the IOOS Regional Associations.

The U.S. IOOS Program is seeking to fund projects which advance new or existing solutions that address long standing and emerging coastal modeling and forecast product development challenges. This announcement specifically funds activities needed to progress through the transitional stages from research toward full operations (such as system integration, testing, validation, and verification). Projects will be expected to participate in and advance the operation of the U.S. IOOS COMT under a community modeling environment. Funding will be targeted to models, tools or products, with demonstrated operators and end users, that are sufficiently mature for evaluation and transition to long term operations.

Total estimated funding for all awards is up to $1.5 million per year from the U.S. IOOS Program. Multiple awards are anticipated, subject to availability of funds, in amounts up to $300,000 per year. Proposals may be submitted for a duration of up to 5 years. However, funding will be provided in years 4 and 5 only to those projects that require model development and testing activities required for transition to an operational framework. The number of awards is anticipated to range from approximately three (3) to five (5) awards, and will be adjusted based on availability of funds. Proposals not funded in the current fiscal period may be considered for funding in the next fiscal period (Fiscal Year 2025) without NOAA repeating the competitive process outlined in this announcement. PIs and Transition PIs will work with NOS modelers throughout the project period to ensure smooth transition of model developments.

Investigators are highly encouraged to visit the U.S. IOOS Coastal and Ocean Modeling Testbed website for more information about the Testbed: Coastal and Ocean Modeling Testbed (https://ioos.noaa.gov/project/COMT/) and The US Integrated Ocean Observing System/ (https://ioos.us/comt).

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

The overarching purpose of the U.S. Integrated Ocean Observing System (IOOS®) is to address regional and national needs for ocean information, to gather reliable data on key coastal, ocean, and Great Lakes variables, and to ensure timely and sustained dissemination and availability of these data. IOOS is a national, regional and private-sector partnership working to enhance the nation's ability to collect, disseminate, and use ocean information. U.S. IOOS is designed to address regional and national needs for ocean information, to gather specific data on key coastal, ocean, and Great Lakes variables, and to ensure timely and sustained dissemination and availability of these data to support national defense, marine commerce, navigation safety, weather, climate, and marine forecasting, energy siting and production, economic development, ecosystem-based marine, coastal, and Great Lakes resource management, public safety, and public outreach training and education.

The IOOS Coastal and Ocean Modeling Testbed (COMT) is an ongoing, multi-year effort to transition prototype ocean, coastal, and Great Lakes models, modeling tools and techniques, products, and data management advances to operations using a process that includes stakeholder engagement from industry, government, academia, and others invested in the modeling and prediction of the nation's ocean and coastal regions. IOOS, along with the other seven program offices within the National Ocean Service (NOS), has recently published a NOS Modeling Strategy (https://aambpublicoceanservice.blob.core.windows.net/oceanserviceprod/tools/coastal-predictions/NOS-Modeling-Strategy-2023.pdf) that describes a holistic, interdisciplinary, and community built modeling portfolio to deliver the applications and services needed to reduce risks to life and property, enhance the economy, and promote social well-being in concert with our ocean, coastal, and Great Lakes environments. The COMT program aims to bring this vision to fruition through co-development of operational models. Operational mode is defined as the actual application of the technology in its final form and under mission requirements.

Within this context, the U.S. IOOS Program is managing a competitive research and development project in which the IOOS Program funds advanced ocean, coastal, and Great Lakes modeling, prediction innovation projects designed to enable evaluation and transition of these models, modeling tools and techniques to operations mode. This funding will support modeling and prediction transitions in regions across the United States.

B. Program Priorities

The overarching goal of the COMT is to bolster an operational oceanography capability for the nation which provides sustained accurate oceanographic products and services to support decision making. In support of that goal, IOOS has identified the following priorities for this COMT funding call:

Advancing the Coastal Component of the Unified Forecast System

We envision a community partnership as a mechanism to evolve existing operational services (within or outside of the NOS operational suite as described above) through new and innovative capabilities to improve coastal predictions. We are seeking innovative advancements to models and source code of model components, to better understand coastal and oceanographic features.

Combining observational data with numerical model predictions (data assimilation) may provide the best estimate of the ocean state. The Joint Effort for Data Assimilation Integration(JEDI; https://jointcenterforsatellitedataassimilation-jedi-docs.readthedocs-hosted.com/en/latest/), also described in section IB) is an open, community resource to enhance, develop, and test tools, components, and methodologies for data assimilation (DA) across multiple DA and modeling systems.

Focus areas of this effort include:

(1) Improvements to temperature and salinity predictions

(2) Improvements to nearshore ocean dynamics (for example, wave friction parameterization, internal waves and freshwater influences)

(3) Development or improvement of models that accurately capture ocean dynamics of the continental shelf especially for areas of ecosystem or economic value (for example, estuaries and ports)

(4) Geographic expansion of coastal models to complement the existing operational suite

(5) Development of National Unified Operational Prediction Capability (NUOPC) to couple coastal and ocean models with other model components including the National Water Model, WaveWatch III, CICE ice model, and FV3 atmospheric models

(6) Enhancing the capability of the NOS operational models to assimilate all ocean and coastal observations using the JEDI framework

Successful proposals will articulate how the proposed research is addressing gaps and tools for advancement of current operational models and capabilities.

Coastal Resilience and Ecosystem Modeling

Coastal communities face mounting threats and costs from harmful algae and pollutant loading, inundation and erosion and changing ecosystems. This priority focuses on the need to advance coastal predictions through coastal coupling of numerical ocean models with hydrologic, and biologic, geologic and chemical (BGC) models to accurately predict conditions on our coasts. Predictions of changing coastal conditions will help communities better assess risks and plan for the future.

Focus areas may include:

(1) Advancements to BGC models to support ocean acidification, pollutant transport, harmful alga bloom, parasite, and bacteria predictions

(2) Efficient approaches to couple regional ecosystem, estuary and marsh models with existing UFS physical modeling frameworks (ROMS, FVCOM, SCHISM) and the National Water Model V3/NextGen

(3) Evaluation of marsh models for accuracy and performance through reanalysis/hindcasting, skill assessment, and/or development of performance metrics for sites of various geographies and environmental conditions

Partnerships and Transition

Applicants to the COMT must demonstrate that NOAA, IOOS Regional Associations, and/or other potential operational hosts are integral to the transition activities. Additional partners are encouraged, especially those representing an end user or customer for the proposed product.

Readiness Levels are used as a measure of model development maturity. COMT uses NOAA’s Readiness Levels (RLs) ontology (see NOAA Administrative Order 216-105B at NAO 216-105B: POLICY ON RESEARCH AND DEVELOPMENT TRANSITIONS (https://www.noaa.gov/organization/administration/nao-216-105b-policy-on-research-and-

development-transitions) to assess the maturity of R&D projects from research to operation, application, commercial product, or service, or other (Note: NOAA's RL's are similar to Technology Readiness Levels developed by NASA and embody the same concept for quantifying the maturity of research. RLs are used as a systematic metric/measurement system that supports assessments of the maturity of a particular technology, and enables a consistent comparison between different types of technologies. COMT specifically focuses on transitioning models and model techniques that are, at project inception, between RLs 4 and 8 with plans to advance at least two RLs; in effect transforming the innovative research developed externally from this Project into operational products. Applicants are asked to identify the Readiness Level (RL) of the models or techniques with which they are working and how far they expect to advance in RLs through the project period. Each application will state clearly how the applicant determined that his/her proposed project is at an appropriate RL level for this funding opportunity.

Applicants should identify intended end users of the model or product that will be evaluated in the Testbed. Commitment from operators and end users is critical to the eventual success of each project and the transition and adoption of the models, tools or forecast products for sustained use. A successful project will involve operators and practitioners, to the fullest extent possible, from the beginning of the project. The applicant must show a clear path for further developing the partnerships and opportunities for transfer throughout the course of the project. To ensure that research leads to practical and valuable management outcomes, proposals should include a minimum of two investigators, a Scientific Principal Investigator and a Transition Principal Investigator. In order to ensure transition of management tools to application, the duties and responsibilities of the two PIs are presented below:

Scientific Principle Investigator: will coordinate research and modeling activities, such as:

(1) Data management.

(2) Development and validation of models.

(3) Development of tool prototypes.

(4) Working with Transition PI to refine and develop models or tools based on input from end users.

(5) Identify the transition metrics that are used to measure progress toward transition.

Transition Principal Investigator: will be responsible for activities related to transitioning the

research information and tools toward operational application, such as:

(1) Developing application concept based on stakeholder outreach.

(2) Coordination and communications with the operator and end user groups, ensuring continuous engagement in project activities (meetings, workshops), and outreach of project results.

(3) Ensuring that the milestones representing transition of research to operations are met.

(4) Enabling collaboration within projects and between COMT project teams to improve COMT and the impact and value of the technical projects done within it.

The operator(s) that will ultimately adopt the models or products for operational use should demonstrate a strong interest in and commitment to the proposed evaluation or model. As the model or product matures and the likelihood of success increases, and the commitment of the operator(s) is expected to grow, including resource commitments to incorporate and maintain the new model or product in operational settings.

Applicants are expected to commit to developing a draft transition plan using the guidance in NAO 216-105B: POLICY ON RESEARCH AND DEVELOPMENT TRANSITIONS (https://www.noaa.gov/organization/administration/nao-216-105b-policy-on-research-and-development-transitions). The draft transition plan will be required no later than the end of year one and follow the guidelines provided in the NOAA Transition Procedural Handbook. See page 9 for section on Transition Plans - (Transition Plans).

Applicants are expected to show how projects will engage in the COMT to meet its mission and vision. This will minimally include working with the COMT project manager, participation in at least one meeting annually with all COMT project teams and participation with Data Management and Communication (DMAC) activities led by the IOOS Program Office to share appropriate data sets and provide input to meet COMT publication or information requirements.

Within the project narrative applicants are encouraged to identify modular components of the project and priority order in which the modules could be funded individually if funding available for the COMT is less than expected.

C. Program Authority

Statutory authority for this project is provided under the Integrated Coastal and Ocean Observation System (ICOOS) Act of 2009, 33 U.S.C. 3601-3610; public Law 111-11; and the Federal Ocean Acidification Research and Monitoring Act 33 U.S.C. 3701-3708.

II. Award Information

A. Funding Availability

Total estimated funding for all awards is up to $ 1.5 million per year from the U.S. IOOS Program and partner program within NOAA. Multiple awards are anticipated, subject to availability of funds, in amounts up to $300,000 per year. Proposals may be submitted for a duration of up to 5 years. However, funding will be provided in years 4 and 5 only to those projects that require model development and testing activities required for transition to an operational framework The number of awards is anticipated to range from approximately three (3) to five (5), and will be adjusted based on availability of funds. Proposals not funded in the current fiscal period may be considered for funding in the next fiscal period (Fiscal Year 2022) without NOAA repeating the competitive process outlined in this announcement.

There is no guarantee that funds will be available to make awards for this Notice of Funding Opportunity or that any proposal will be selected for funding. If an applicant incurs any costs prior to receiving an award agreement signed by a NOAA grants officer, the applicant does so at the applicant's own risk. In no event will NOAA or the Department of Commerce be responsible for any proposal preparation costs. Recipients and subawards are subject to all Federal laws and agency policies, regulations, and procedures applicable to Federal financial assistance awards. Applicants must be in good standing with respect to all existing NOAA awards in order to receive funds.

B. Project/Award Period

Funding is contingent upon availability of funds and the satisfactory performance of the recipient and is at the sole discretion of NOAA. The start date should always begin on the first day of the month and the end date should always end on the last day of any given month when making a projection for the award start and end dates.

C. Type of Funding Instrument

NOAA will issue a cooperative agreement, therefore, the Federal government will be substantially involved by, for example, coordinating partners and teams to accomplish the work; assisting with technical aspects of the project; and/or coordinating access to Federal operational entities, data or facilities needed to support the work.

III. Eligibility Information

A. Eligible Applicants

Eligible funding applicants for this competition are institutions of higher education, nonprofit and for-profit organizations, and State, local and tribal governments. Federal agencies or institutions and foreign governments may not be the primary recipient of awards under this announcement, but they are encouraged to partner with applicants when appropriate. If an applicant has a partner(s) who would receive funds, the lead grantee will be expected to use subcontracts or other appropriate mechanisms to provide funds to the partner(s). If a partner is a NOAA office or laboratory, the IOOS office will transfer funds internally. Applicants should note that paying for transportation, travel, or other expenses for any Federal employee are unallowable costs.

B. Cost Sharing or Matching Requirement

Not required.

C. Other Criteria that Affect Eligibility

Applicants must include at least one IOOS Regional association partner to qualify, and must contact them at least 30 days prior to application deadline.

IV. Application and Submission Information

A. Address to Request Application Package

Application packages are available online as part of the NOFO announcement on grants.gov and will only be accepted via submission through www.grants.gov.

B. Content and Form of Application

Applicants must be responsive to all requirements stated in this announcement or their application will not be considered.

FULL APPLICATION:
The proposal narrative must total no more than 20 pages (double-spaced, 12-point font). The 20-page limit does not include the proposal title page, a table of contents, the data sharing plan, the project summary referenced below under item two (2), and any required appendices. Appendices should be limited to:

(1) Materials that directly support the main body of the proposal (e.g., support letters, resumes, references, lists of data sources, and maps), which may not exceed 30 pages in

length.

(2) Detailed Budget (see guidance at: https://www.noaa.gov/organization/acquisition-grants/how-to-apply); not to exceed 10 pages. In addition to an overall budget, an SF-424A (https://apply07.grants.gov/apply/forms/readonly/SF424A-V1.0.pdf) must be submitted for each year of the proposal. Applicants must also provide a separate budget for each subcontract. SF-424A will not be included in the page count of the proposal or appendices. For your convenience, sample forms and instructions to on how to fill out the forms can be found online at https://www.grants.gov/web/grants/forms.html.

(3) Environmental Compliance materials, including all of the information referenced in Section C (NEPA) below. Answers to questions in the NOAA NEPA questionnaire are not required at the time of application. See section VI.B Administrative and National Policy requirements below for information concerning NEPA

(4) Standard Form 424 - Application for Federal Assistance

(5) Form CD-511 - Certification Regarding Lobbying

Applicants should paginate their proposal and any appendices. Appendices may be paginated as standalone documents (individually) or collectively. Applicants should present their work plan in priority order and identify options for scalability such that if less money is available than is requested the process of modifying proposals is simplified.

All funding application packages must contain the following components:

a. Title Page (Proposal Cover Sheet). Include proposal title, complete contact information for the Principal Investigator and Financial Representative, duration of proposed project, funding type (cooperative agreement), applicant type (non-profit, state, etc.) and funding request. If funds are to be transferred to a NOAA partner on the project, also state the amount to NOAA on the cover.

b. Project Summary. Provide a one-to-two-page summary of the proposed project. The summary should be prepared to be readable to a broad audience and contain the following Sections:

(1) Project Name/Title

(2) Primary Contact (name, address, telephone, fax, e-mail)

(3) Primary Recipient Institution

(4) Other Investigators (name, affiliated institution or agency)

(5) Brief Project Summary including objectives and intended benefits

(6) Partners

c. Project Description. All project descriptions (proposals) must include the following sections:

d. Goals and Objectives. Describe in the narrative the specific project goals and objectives to be achieved. Goals and objectives should be specific for each year of the work plan presented. Recipients will be required to submit semi-annual progress reports in which progress against these goals and objectives will be reported.

e. Background. Provide sufficient background information for NOAA and non- NOAA reviewers to assess independently the significance of the proposed project. Summarize the problem to be addressed and the status of ongoing efforts to address the identified needs.

f. Audience. Identify specific users of the results of the project, describe how they will use the results, and identify any training that will be needed for users to make full use of the results.

g. Approach. Provide a work plan that: identifies specific tasks to be accomplished; explains the technical approach (including quality assurance) needed to accomplish the tasks; identifies partner roles and contributions, including resources; and identifies potential obstacles to successful completion of the goals and objectives. Describe how end-users are involved in the Planning and design process.

h. Data/Information Sharing Plan. Proposals submitted in response to this announcement must include a data management plan (up to 2 pages). See section VI.B Administrative and National Policy requirements below for additional information of what the plan should contain. This plan should clearly address data management requirements and includes coordination with COMT cyberinfrastructure group, and the steps to be taken to achieve efficient and effective data access/sharing through U.S. IOOS and archiving that is compliant with Federal regulations as indicated in the Data Sharing Plan Policy under “Other Information”, below. In addition to below guidance data management plan name one data

manager point of contact (POC) and include plans to identify and disseminate at least one data set per year. Roles, responsibilities and contributions of Federal partners must be clearly identified.

i. Benefits. Identify, with a high degree of specificity, the users of the information derived from the work, and the benefits that will be achieved for those users, as well as society as a whole.
Document how valid user requirements are guiding the proposed work. Describe how the information from the project will be delivered to those users, and any special considerations or requirements for ensuring or improving the delivery of information.

j. Milestone Schedule. Display timelines for major tasks, target milestones for important intermediate and final products including deliverables and key project outcomes. Milestones should include expected readiness level achievements.

k. Readiness Level. Identify the current Readiness Level (RL) of the models or techniques and
how far they expect to advance in RLs through the project period. Clearly state how this funding will aid in the advancement of RL and potential for transition into NOAA operations.

l. Project Budget. Guidance on how to prepare a project budget is available on the NOAA Grants Management Division website here: https://www.noaa.gov/organization/acquisition-grants/how-to-apply. Provide a budget description that follows the categories and formats in the NOAA grants package SF-424A
(https://apply07.grants.gov/apply/forms/readonly/SF424A-V1.0.pdf) and a brief narrative justification of the budget. An SF-424A must be submitted for each year of the project as well as for each subcontract.

The budget narrative must also provide, to the extent possible, detailed information on travel, including costs, a description of anticipated travel, destinations, the number of travelers, and a justification of how the requested travel is directly relevant to the successful completion of the project. If actual trip details are unknown, applicants must state the basis for the proposed travel charges. Applicants should allocate travel funds for any coordination meetings at regional or national levels. Foreign travel must receive prior approval, and therefore, should be included in the proposal to avoid having to request prior approval after the project starts.

Applicants may factor in travel costs for participation in a NOAA Grants Management

Division workshop for recipients should one be offered.

If a NOAA or another non-NOAA Federal partner is requested to perform any work as part of the project, please be advised that the work to be performed and resources required must be reflected separately in the project description and partner budget. The budget should clearly show where all funds will go and how the funds will be used.

For a NOAA partner, applications for Federal assistance (SF-424 and SF-424A) must show the total amount less that which would go to the NOAA partner. Detailed budget and budget justifications within the proposal should show the total amount, including that which would go to the NOAA partner, and should include text stating that the applicant wishes for NOAA to retain those funds and transfer them to the NOAA partner.

For a non-NOAA Federal partner, applications for Federal assistance (SF-424 and SF-424A) must show the total amount including that which would go to the non- NOAA Federal partner. Detailed budget and budget justifications within the proposal should show the total amount, including that which would go to the non-NOAA Federal partner. NOAA will not retain the funds and transfer them to the non-NOAA Federal partner. That transfer will be the responsibility of the awardee.

Additional detailed budget information, including a description of complementary funding and in-kind contributions from project partners, should be included in an appendix (see IV.B.4 for additional information).

(1) Appendices - Resumes. Provide resumes of the Principal Investigator for the project and other key personnel critical to the success of the project. Ensure that resumes address qualifications relevant to conducting the proposed work.

(2) Detailed Budget Information, Including budgets of subawards and contracts, detailed information on travel, etc. Information should include the names of all entities receiving funds, the locations of the entities receiving funds (city, State, and Congressional district), and the locations of the primary places of performance under the contract/subaward. In this appendix, the budget narrative also shall clearly identify the priority and cost of separable elements of the proposed work and shall identify the elements of the project that the cooperator would recommend for revision or elimination in the event that sufficient funding is not available for all proposed activities.

These COMT projects usually involve the development of ocean and hydrologic modeling systems, an online tool, product and visualization development, as well as stakeholder

engagement. These activities are described in the IOOS Programmatic Environmental Assessment (PEA) under the DMAC and Cross-Cutting Subsystems (Sections 1.1.3) IOOS Programmatic Environmental Assessment 2016 (https://cdn.ioos.noaa.gov/media/2017/12/IOOS_PEA-with-Appendices_FINAL_June-2016.pdf). These subsystems are administrative in nature and/or are being conducted using established procedures in existing facilities. The facility-based, administrative subsystems are currently operating and are not expected to result in additional environmental impacts.

C. Unique Entity Identifier and System for Award Management (SAM)

Any applicant awarded in response to this Announcement will be required to use the System for Award Management (SAM), which may be accessed online at https://sam.gov/SAM/. SAM enables the use of a universal entity identifier and to build the quality of information available to the public as required by the Federal Funding Accountability and Transparency Act, 31 U.S.C. 6106 Note, to the extent applicable.

Each applicant (unless the applicant is an individual or federal awarding agency that is excepted from those requirements under 2 CFR 25.110(b) or (c), or has an exception approved by the federal awarding agency under 2 CFR 25.110(d)) is required to: (i) be registered in SAM before submitting its proposal, which takes an average of 7-10 business days after entering all information into SAM and requires the applicant's Employer Identification Number; (ii) provide a valid unique entity identifier in its proposal; and (iii) continue to maintain an active SAM registration with current information at all times during which it has an active federal award or a proposal or plan under consideration by a federal awarding agency. SAM registration must be revalidated and renewed every 12 months.

Applicants are advised to complete SAM registration or renewal well in advance of the full proposal deadline. For UEI registration visited this link, https://sam.directory/UEI?gclid=CjwKCAjw_b6WBhAQEiwAp4HyIJaUI9DfZ6GgKVQxxeLeLsp72ZneUyTrcA7qQsOB_vQdGh9Z8B_XIRoCm-0QAvD_BwE

NOAA may not make a federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time NOAA is ready to make a federal award, NOAA may determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant.

D. Submission Dates and Times

Full applications must be received by 11:59 PM Eastern on Monday, February 26, 2024. Applications received after this deadline will not be considered for funding. For applications

submitted through Grants.gov a date and time receipt indication is included and will be the basis of determining timeliness. Hard copy submissions will be date and time stamped when they are received in the U.S. IOOS Program Office. Faxed or emailed copies of applications will not be accepted.

E. Intergovernmental Review

Funding applications to NOAA are subject to Executive Order 12372, "Intergovernmental Review of Federal Programs." It is the State agency's responsibility to contact their State's Single Point of Contact (SPCO) to find out about and comply with the State's process under EO 12372. To assist the applicant, the names and addresses of the SPOCs are listed on the Office of Management and Budget's Web site www.whitehouse.gov/omb/grants/spoc/.

F. Funding Restrictions

No funding restrictions.

G. Other Submission Requirements

Requirements FULL APPLICATION:

Application packages must be submitted through Grants.gov/apply. No e-mail or fax copies will be accepted.

Applicants using Grants.gov must locate the downloadable application package for this solicitation by the Funding Opportunity Number or the CFDA number (11.012). Applicants will be able to download a copy of the application package, complete it off line, and then upload and submit the application through Grants.gov.

Grants.gov will provide information about submitting a proposal through the site as well as the hours of operation. After electronic submission of the application, the person submitting the application will receive within the next 24 to 48 hours two e- mail messages from Grants.gov updating him or her on the progress of the application. The first e-mail will confirm receipt of the application by Grants.gov, and the second will indicate that the application has been either successfully validated by the system prior to transmission to the grantor agency, or rejected due to errors. After the application has been validated, this same person will receive another e-mail when the application has been downloaded by the Federal agency.

To use Grants.gov, applicants must have a Dun and Bradstreet Data Universal Numbering

System (DUNS) number and be registered in the Central Contractor Registry (CCR). Allow a minimum of five days to complete the CCR registration. (Note: Your organization's Employer Identification Number (EIN) will be needed on the application form.)

Please refer to important information in "Submission Dates and Times" above to help ensure your application is received on time. Please be advised that potential funding applicants must register with Grants.gov before any application materials can be submitted. An organization's one-time registration process may take up to three weeks to complete, so please allow sufficient time to ensure applications are submitted before the closing date. Grants.gov contains directions for submitting an application, the application package (forms), and is also where the completed application is submitted.

Full applications must be received by 11:59 PM Eastern on Monday, February 26, 2024. Applications received after this deadline will not be considered for funding. For applications submitted through Grants.gov a date and time receipt indication is included and will be the basis of determining timeliness. Hard copy submissions will be date and time stamped when they are received in the U.S. IOOS Program Office. Faxed or emailed copies of applications will not be accepted.

V. Application Review Information

A. Evaluation Criteria

FULL PROPOSAL EVALUATION CRITERIA:

1. Importance/Relevance and Applicability of Application to the Project Goals (35%)

This ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, Federal, regional, State, and/or local activities. This includes importance and relevance to the scientific priorities described in the Funding Opportunity. Proposed Projects will be assessed on their ability to advance new or existing modeling and prediction solutions that address coastal and ocean modeling issues, tool needs or product development, and data management challenges. Funding will be targeted to projects focused on: 1) modeling tools and techniques for which there are demonstrated operational end-users who commit to integrated, long-term use of those modeling advancements and products; 2) are transitioning technology from RLs 4 through 7 to at least two higher level RLs (one higher level if starting at RL7), up to RL8 (i.e. 4 to 6, 5 to 7, or 7 to 8); and 3) significant engagement with partners from at least one IOOS Regional Association, academia, and a federal agency. The PI's record of making his/her data accessible and usable by the scientific community in the past will also be considered when evaluating the importance and

relevance of the application.

2. Technical/Scientific Merit (30%)

This assesses whether the approach is technically sound and/or innovative, whether the methods are appropriate, and whether there are clear project goals and objectives. The proposed work should have focused objectives and a complete and technically sound strategy for model evaluation, demonstrated end users, and a data sharing plan that includes plans for data standard compliance with existing COMT cyberinfrastructure. The proposed work should demonstrate the modeling tools, techniques, or forecast products are mature, scalable and ready for evaluation as part of long- term operations. This will also assess whether modular components or scalability has been identified for project execution if full funding is not available.

3. Overall Qualifications of Applicants (10%)
This criterion assesses whether the applicant team possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. This assesses if scientific and transition PIs have each been identified and have requisite experience to perform those roles.

4. Project Costs (10%)
This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time frame.

5. Outreach and Education (15%)
This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding partner agency missions, including NOAA's mission to understand and protect the Nation's natural resources. It also assesses whether the proposed work demonstrates how the applicant is positioned to provide engagement with the COMT program, all the appropriate modeling groups, and a robust plan for engagement and outreach with operators and end users to ensure proposed work meets their requirements.

B. Review and Selection Process

An initial administrative screening is conducted to determine compliance with requirements/completeness for the proposal. Proposals that do not meet the requirements and goals of this NOFO, will not be evaluated.

All full proposals will be evaluated and individually scored in accordance with the assigned

weights of the above evaluation criteria by at least three independent peer evaluations as part of a larger impartial expert panel review process. The merit reviewers' ratings are used to produce a rank order of the proposals. The Selecting Official will award in the rank order unless proposals are justified to be selected out of rank order based upon one or more of the selection factors provided below. The Selecting Official or designee may negotiate the funding level of the proposal.

C. Selection Factors

The competition manager will present selection recommendations to the selecting officials in rank order as determined by the merit review ratings. The selection official shall award in rank order unless the proposal is justified to be selected out of rank order based upon one or more of the following factors:

1. Availability of funding

2. Balance/distribution of funds:

a. By number and type of partners

b. By project type

c. By operational focus

d. By type of institutions

e. By geographic region

f. By industry type

3. Leveraging of other projects funded or considered for funding by NOAA/Federal agencies

4. Project priorities and policy factors

5. Applicant's prior award performance

6. Partnerships with/participation of targeted groups

The Selecting Official makes final recommendations for awards to the Grants Officer who is authorized to obligate the funds.

D. Anticipated Announcement and Award Dates

The start date on proposals should be September 1, 2024, or the first day of the month of any month after August 1, 2024, but no later than October 1, 2024.

VI. Award Administration Information

A. Award Notices

Successful applicants will receive notification that the application has been recommended for funding by an official of the U.S. IOOS Program Office. This notification is not an authorization to begin performance of the project. Official notification of funding, signed by a NOAA Grants Officer, is the authorizing document that allows the project to begin. Notifications will be issued to the applicant's Authorized Representative and the Principal Investigator of the project.

PRE-AWARD COSTS.

NOAA authorizes award recipients to expend pre-award costs up to 90 days before the period of performance start date at the applicant's own risk without approval from NOAA and in accordance with the applicant's internal policies and procedures. Such costs are allowable only to the extent that they would have been allowable if incurred after the date of the Federal award. This does not include direct proposal costs (as defined at 2 CFR 200.460). In no event will NOAA or the Department of Commerce be responsible for direct proposal preparation costs. Pre-award costs will be a portion of, not in addition to, the approved total budget of the award. Pre-award costs expended more than 90 days prior to the period of performance start date require approval from the Grants Officer.

GRANTS OFFICER SIGNATURE.

Proposals submitted in response to this solicitation are not considered awards until the Grants Officer has signed the grant or cooperative agreement. Only Grants Officers can bind the Government to the expenditure of funds.
The Grants Officer's digital signature constitutes an obligation of funds by the federal government and formal approval of the award.

LIMITATION OF LIABILITY.

Funding for programs listed in this notice is contingent upon the availability of funds. Applicants are hereby given notice that funds may not have been appropriated yet for the

programs listed in this notice. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds.

B. Administrative and National Policy Requirements

1. The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements

The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of December 30, 2014 (79 FR 78390) are applicable to this solicitation and may be accessed online at http://www.gpo.gov/fdsys/pkg/FR-2014-12-30/pdf/2014-30297.pdf

2. Uniform Administrative Requirements, Cost Principles, and Audit Requirements

Through 2 C.F.R. § 1327.101, the Department of Commerce adopted Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, which apply to awards in this program. Refer to http://go.usa.gov/SBYh and http://go.usa.gov/SBg4.

3. Successful applicants who accept a NOAA award under this solicitation will be bound by Department of Commerce Financial Assistance Standard Terms and at chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.commerce.gov/sites/default/files/2020-11/DOC%20Standard%20Terms%20and%20Conditions%20-%2012%20November%202020%20PDF_0.pdf .

4. Limitation of Liability

Funding for programs listed in this notice is contingent upon the availability of continuing Congressional appropriations. Applicants are hereby given notice that funds have not yet been appropriated for the programs listed in this notice. In no event will NOAA or the Department of Commerce be responsible for proposal preparation costs. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds.

5. National Environmental Policy Act (NEPA).

NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or proposals which are seeking NOAA federal funding opportunities. Detailed information on NOAA compliance with

NEPA can be found at the following NOAA NEPA website: http://www.nepa.noaa.gov/, including our NOAA Administrative Order 216-6 for NEPA, http://www.nepa.noaa.gov/NAO216_6.pdf, and the Council on Environmental Quality implementation regulations, https://ceq.doe.gov/laws-regulations/regulations.html

Consequently, as part of an applicant's package, and under their description of their program activities, applicants are required to provide detailed information on the activities to be conducted, locations, sites, species and habitat to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use and disposal of hazardous or toxic chemicals, introduction of non- indigenous species, impacts to endangered and threatened species, aquaculture projects, and impacts to coral reef systems).

In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be requested to assist NOAA in drafting an environmental assessment, if NOAA determines an assessment is required. Applicants will also be required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. Failure to do so shall be grounds for not selecting an application. In some cases, if additional information is required after an application is selected, funds can be withheld by the Grants Officer under a special award condition requiring the recipient to submit additional environmental compliance information sufficient to enable NOAA to make an assessment on any impacts that a project may have on the environment.

Paperwork Reduction Act Statement: Public reporting burden for this collection of NEPA information is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering, and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other suggestions for reducing this burden to NOAA NEPA Coordinator, NOAA Office of Program Planning and Integration, SSMC 3, Room 15700, 1315 East West Highway, Silver Spring, MD 20910. The information collection does not request any proprietary or confidential information. No confidentiality is provided.

Notwithstanding any other provisions of the law, no person is required to respond to, nor shall any person be subjected to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number. The valid OMB Control Number is 0648-0538, which expires on November 30, 2024.

6. Review of Risk

After applications are proposed for funding by the Selecting Official, the Grants Office will perform administrative reviews, including an assessment of risk posed by the applicant under 2 C.F.R. 200.205. These may include assessments of the financial stability of an applicant and the quality of the applicant's management systems, history of performance, and the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities. GMD also performs a search for SAM registration, SAM entity and Key Personnel Exclusions, and when appropriate, a FAC, on the Federal Audit Clearinghouse search to pull a current Single Audit Report. Special conditions that address any risks determined to exist may be applied. Applicants may submit comments to SAM about any information included in the system about their organization for consideration by the awarding agency.

The Federal Funding Accountability and Transparency Act of 2006, includes a requirement for awardees of applicable Federal grants to report information about first-tier sub-awards and executive compensation under Federal assistance awards issued in FY 2011 or later. All awardees of applicable grants and cooperative agreements are required to report to the Federal Sub-award Reporting System (FSRS) available at www.FSRS.gov on all sub-awards over $25,000.

7. Indirect Cost Rate

If an applicant has not previously established an indirect cost rate with a Federal agency they may choose to negotiate a rate with the Department of Commerce or use the de minimis indirect cost rate of 10% of MTDC (as allowable under 2 C.F.R. §200.414). The negotiation and approval of a rate is subject to the procedures required by NOAA and the Department of Commerce Standard Terms and Conditions.

The NOAA contact for indirect or facilities and administrative costs is:

Raishan Adams
NOAA Grants Management Division
1325 East West Highway, 11th Floor
Silver Spring, Maryland 20910
raishan.adams@noaa.gov

8. Minority Serving Institutions

The Department of Commerce/National Oceanic and Atmospheric Administration

(DOC/NOAA) is strongly committed to increasing the participation of Minority Serving Institutions (MSIs), i.e., Historically Black Colleges and Universities, Hispanic-serving institutions, Tribal colleges and universities, Alaskan Native and Native Hawaiian institutions, and institutions that work in underserved communities.

9. Freedom of Information Act (FOIA)

If an application contains information or data that you do not want disclosed prior to award for purposes other than the evaluation of the application, mark each page containing such information or data with the words "Privileged, Confidential, Commercial, or Financial Information - Limited Use" at the top of the page to assist NOAA in making disclosure determinations. DOC regulations implementing the Freedom of Information Act (FOIA) are found at 5 U.S.C 552, which sets forth rules for DOC to make requested materials, information, and records publicly available under FOIA. The contents of funded applications may be subject to requests for release under the FOIA. Based on the information provided by you, the confidentiality of the content of funded applications will be maintained to the maximum extent permitted by law.

10. Bureau Terms and Conditions

Successful applicants who accept an award under this solicitation will be bound by bureau-specific standard terms and conditions. For NOAA awards only, the Administrative Standard Award Conditions for National Oceanic and Atmospheric Administration (NOAA) Financial Assistance Awards U.S. Department of Commerce are applicable to this solicitation and may be accessed online at https://www.noaa.gov/organization/acquisition-grants/financial-assistance.

11. Human Subjects Research

For research projects involving Human Subjects, an Institutional Review Board (IRB) approval or an exemption determination will be required in accordance with DOC Financial Assistance Standard Terms and Conditions “Research Involving Human Subjects” found at https://www.commerce.gov/oam/policy/financial-assistance-policy.

12. NOAA Sexual Assault and Sexual Harassment Prevention and Response Policy

NOAA requires organizations receiving federal assistance to report findings of sexual harassment, or any other kind of harassment, regarding a Principal Investigator (PI), co-PI, or any other key personnel in the award. NOAA expects all financial assistance recipients to

establish and maintain clear and unambiguous standards of behavior to ensure harassment free workplaces wherever NOAA grant or cooperative agreement work is conducted, including notification pathways for all personnel, including students, on the awards. This expectation includes activities at all on- and offsite facilities and during conferences and workshops. All such settings should have accessible and evident means for reporting violations and recipients should exercise due diligence with timely investigations of allegations and corrective actions.

For more information, please visit: https://www.noaa.gov/organization/acquisitiongrants/noaa-workplace-harassment-training-for-contractors-and-financial.

13. Science Integrity

a. Maintaining Integrity. The non-Federal entity shall maintain the scientific integrity of research performed pursuant to this grant or financial assistance award including the prevention, detection, and remediation of any allegations regarding the violation of scientific integrity or scientific and research misconduct, and the conduct of inquiries, investigations, and adjudications of allegations of violations of scientific integrity or scientific and research misconduct. All the requirements of this provision flow down to subrecipients.

b. Peer Review. The peer review of the results of scientific activities under a NOAA grant, financial assistance award or cooperative agreement shall be accomplished to ensure consistency with NOAA standards on quality, relevance, scientific integrity, reproducibility, transparency, and performance. NOAA will ensure that peer review of "influential scientific information" for "highly influential scientific assessments" is conducted in accordance with the Office of Management and Budget (OMB) Final Information Quality Bulletin for Peer Review and
NOAA policies on peer review, such as the Information Quality Guidelines.

c. In performing or presenting the results of scientific activities under the NOAA grant, financial assistance award, or cooperative agreement and in responding to allegations regarding the violation of scientific integrity or scientific and research misconduct, the non-Federal entity and all subrecipients shall comply with the provisions herein and NOAA Administrative Order (NAO) 202-735D, Scientific Integrity, and its Procedural Handbook, including any amendments thereto. That Order can be found at http://nrc.noaa.gov/ScientificIntegrityCommons.aspx.

d. Primary Responsibility. The non-Federal entity shall have the primary responsibility to prevent, detect, and investigate allegations of a violation of scientific integrity or scientific

and research misconduct. Unless otherwise instructed by the grants officer, the non-Federal entity shall promptly conduct an initial inquiry into any allegation of such misconduct and may rely on its internal policies and procedures, as appropriate, to do so.

e. By executing this grant, financial assistance award, or cooperative agreement the non-Federal entity provides its assurance that it has established an administrative process for performing an inquiry, investigating, and reporting allegations of a violation of scientific integrity or scientific and research misconduct; and that it will comply with its own administrative process for performing an inquiry, investigation, and reporting of such misconduct.

f. The non-federal entity shall insert this provision in all subawards at all tiers under this grant, financial assistance award, or cooperative agreement.

14. Review and Evaluation

The applicant acknowledges and understands that information and data contained in applications for financial assistance, as well as information and data contained in financial, performance and other reports submitted by applicants, may be used by the Department of Commerce in conducting reviews and evaluations of its financial assistance programs. For this purpose, applicant information and data may be accessed, reviewed and evaluated by Department of Commerce employees, other Federal employees, and also by Federal agents and contractors, and/or by non-Federal personnel, all of whom enter into appropriate conflict of interest and confidentiality agreements covering the use of such information. As may be provided in the terms and conditions of a specific financial assistance award, applicants are expected to support program reviews and evaluations by submitting required financial and performance information and data in an accurate and timely manner, and by cooperating with the Department of Commerce and external program evaluators. In accordance with §200.303(e), applicants are reminded that they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information created or obtained in connection with a Department of Commerce financial assistance award.

15. Research Terms and Conditions

For awards designated on the CD-450 as Research, the Commerce Terms, and the Federal-wide Research Terms and Conditions (Research Terms) as implemented by the Department of Commerce, currently, at https://www.nsf.gov/awards/managing/rtc.jsp, both apply to the award. The Commerce Terms and the Research Terms are generally intended to harmonize

with each other; however, where the Commerce Terms and the Research Terms differ in a Research award, the Research Terms prevail, unless otherwise indicated in a specific award condition.

16. Data Sharing Plan

Environmental data and information collected or created under NOAA grants or cooperative agreements must be made discoverable by and accessible to the general public, in a timely fashion (typically within two years), free of charge or at no more than the cost of reproduction, unless an exemption is granted by the NOAA Program. Data should be available in at least one machine-readable format, preferably a widely-used or open-standard format, and should also be accompanied by machine-readable documentation (metadata), preferably based on widely used or international standards. 2. Proposals submitted in response to this Announcement must include a Data Management Plan of up to two pages describing how these requirements will be satisfied. The Data Management Plan should be aligned with the Data Management Guidance provided by NOAA in the Announcement. The contents of the Data Management Plan (or absence thereof), and past performance regarding such plans, will be considered as part of proposal review. A typical plan should include descriptions of the types of environmental data and information expected to be created during the course of the project; the tentative date by which data will be shared; the standards to be used for data/metadata format and content; methods for providing data access; approximate total volume of data to be collected; and prior experience in making such data accessible. The costs of data preparation, accessibility, or archiving may be included in the proposal budget unless otherwise stated in the Guidance. Accepted submission of data to the NOAA National Centers for Environmental Information (NCEI) is one way to satisfy data sharing requirements; however, NCEI is not obligated to accept all submissions and may charge a fee, particularly for large or unusual datasets. 3. NOAA may, at its own discretion, make publicly visible the Data Management Plan from funded proposals, or use information from the Data Management Plan to produce a formal metadata record and include that metadata in a Catalog to indicate the pending availability of new data. 4. Proposal submitters are hereby advised that the final pre-publication manuscripts of scholarly articles produced entirely or primarily with NOAA funding will be required to be submitted to NOAA Institutional Repository after acceptance, and no later than upon publication. Such manuscripts shall be made publicly available by NOAA one year after publication by the journal.

More information can be found on NOAA’s Data Management Procedures at: https://nosc.noaa.gov/EDMC/documents/Data_Sharing_Directive_v3.0_remediated.pdf and at NAO 212-15 Management of Environmental Data and Information:

https://www.noaa.gov/organization/administration/nao-212-15-management-of-environmental-data-and-information

C. Reporting

NOAA awardees will be required to submit financial and performance (technical) progress reports electronically through Grants Online. Instructions for submitting financial and progress reports will be provided by the NOAA Grants Management Division as part of the award terms and conditions.

The Federal Funding Accountability and Transparency Act of 2006, includes a requirement for awardees of applicable Federal grants to report information about first-tier sub-awards and executive compensation under Federal assistance awards issued in FY 2011 or later. All awardees of applicable grants and cooperative agreements are required to report to the Federal Sub-award Reporting System (FSRS) available at www.FSRS.gov on all sub-awards over $30,000.

VII. Agency Contacts

For questions regarding this announcement, contact: Debra Esty, at debra.esty@noaa.gov. For questions of a technical nature, contact: Tracy Fanara at tracy.fanara@noaa.gov

VIII. Other Information

Official notification of an award notice is provided by the Grants Management Division, not the U.S. IOOS Program Office. If one incurs any costs prior to receiving an award agreement from an authorized NOAA grant official, one would do so solely at one's own risk of these costs not being included under the award.

Successful applicants will be requested to ensure that all progress reports a) clearly state the resulting impact of their project and products in the coastal management community and on forecasting environmental events; and b) indicate whether financial reports have been submitted to NOAA's Grants Management Division and are up-to-date. Applicants in their final progress report will be asked to certify that "Final financial reports have been submitted to NOAA's Grants Management Division and a final funding draw-down has been made through the Automated Standard Application for Payments (ASAP)."

A Data Sharing Policy

Environmental data and information, collected and/or created under NOAA grants/cooperative agreements must be made visible, accessible, and independently understandable to general users, free of charge or at minimal cost, in a timely manner (typically no later than two (2) years after the data are collected or created), except where limited by law, regulation, policy or by security requirements.

1. Unless otherwise noted in this Federal funding announcement, a Data/Information Sharing Plan of no more than two pages shall be required as part of the Project Narrative. A typical plan may include the types of environmental data and information to be created during the course of the project, including model runs; the tentative date by which data will be shared; the standards to be used for data/metadata format and content; policies addressing data stewardship and reservation; procedures for providing access, data, and security; and prior experience in publishing such data. Plan must include participation in ongoing COMT Cyberinfrastructure(CI) including meeting metadata guidelines of CI group. Guidance and templates for the development of this plan can be found at: US Dept. of Commerce/NOAA Environmental Data Management Committee EDMC) - NOAA PD Data Sharing Policy (https://nosc.noaa.gov/EDMC/PD.DSP.php). The Data/Information Sharing Plan will be reviewed as part of the NOAA Standard Evaluation Criteria, Item 1 -- Importance and/or Relevance and Applicability of Proposed Project to the Mission Goals. This data plan must include participation in existing COMT cyber infrastructure framework.

2. The Data/Information Sharing Plan (and any subsequent revisions or updates) will be made available at time of award and, thereafter, will be posted with the published data.

3. Any software routines, modeling system, framework or tools, modeling testing and evaluation techniques, protocols and metrics, modeling evaluation criteria, modeling standards and protocols, concept of operations for the modeling system, or other project results are expected to be shared with all partners and will be shared with the ocean and coastal modeling community upon completion of the work.

4. Failing to share environmental data and information in accordance with the submitted Data/Information Sharing Plan may lead to disallowed costs and be considered by NOAA when making future award decisions.

References:

COMT Program (https://ioos.us/comt)
COMT Terms of Reference
(https://cdn.ioos.noaa.gov/media/2017/12/comt_terms_of_reference_091412.pdf)
NOAA's Ecological Forecasting (https://oceanservice.noaa.gov/ecoforecasting/)
Advancing coastal ocean modeling, analysis, and prediction for the US Integrated Ocean Observing System (http://www.tandfonline.com/doi/abs/10.1080/1755876X.2017.1322026)
NOS Modeling Strategy
(http://www.tandfonline.com/doi/abs/10.1080/1755876X.2017.1322026)
NOAA's Ocean, Coastal and Great Lakes Acidification Research Plan: 2020-2029
(https://oceanacidification.noaa.gov/ResearchPlan2020/Download.aspx)
NOAA's Unified Forecast System, (https://www.ufscommunity.org/science/plan/)
The National Environmental Modeling System (NEMS)
(https://noaa-emc.github.io/NEMS_doc_ufs-v1.1.0/index.html)
JEDI data assimilation interface
(https://jointcenterforsatellitedataassimilation-jedi-docs.readthedocs-hosted.com/en/latest/)
Readiness Levels: NAO 216-105B: POLICY ON RESEARCH AND DEVELOPMENT TRANSITIONS (https://www.noaa.gov/organization/administration/nao-216-105b-policy-on-research-and-development-transitions)