Ocean and Coastal Carbon Observing Optimization Studies

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NOTICE OF FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

Federal Agency Name(s): Oceanic and Atmospheric Research (OAR), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce

Funding Opportunity Title: Ocean and Coastal Carbon Observing Optimization Studies

Announcement Type: Initial

Funding Opportunity Number: NOAA-OAR-OAP-2024-2008263

Federal Assistance Listings Number: 11.017, Ocean Acidification Program (OAP)

Dates: An informational webinar will be held December 8th at 4pm Eastern time. The webinar will be recorded and posted to the Ocean Acidification Program website. To register for the webinar please go to this link: https://attendee.gotowebinar.com/register/7078097742909317974 Full applications must be received and validated by Grants.gov by 11:59 p.m. Eastern Time on March 17th, 2024. Applications received after the deadline will not be considered. When developing your submission timeline, keep in mind the following information necessary to submit an application on Grants.gov: (1) a free annual registration process in the electronic System for Award Management (SAM) may take between three and five business days or as long as several weeks, as described in Section IV.G. of this Announcement, (2) required institution registration with eRA commons may take up to 4 weeks, and (3) if you submit an application via Grants.gov, you will receive a series of email notifications for up to two business days before learning via validation or rejection whether NOAA has received your application. If use of Grants.gov is not feasible, contact the NOAA OAP Program Manager (see Section VII for contact information) as soon as possible and no later than two weeks before the due date to assess whether alternative arrangements can be made.

Funding Opportunity Description: The NOAA Ocean Acidification Program (OAP), in partnership with the Global Ocean Monitoring and Observing (GOMO) Program is soliciting proposals to optimize sampling strategies that improve carbonate chemistry observing systems co-developed with an observing data product end user that can inform real-time data delivery and forecasting of ocean acidification relevant parameters. The optimization design should be geared towards delivering the data needed to support the end user's specific decision support needs. Funding is contingent upon the availability of Federal appropriations.

Total funding for this research: Applicants should submit proposals not to exceed $500,000 per year for projects generally 2-3 years in duration, with a total multi-year budget not to exceed $1,500,000 (Option 1.a.: Up to $350,000 per year for three years; Option 1.b.: Up to $200,000

per year for three years; Option 2: Up to $500,000 per year for three years). Should funds become available for this program, up to approximately $4,000,000 may be available in Fiscal Year 2024 for the first year. We anticipate funding 2-5 projects with expected start dates of September 1, 2024. Funding for this program is contingent upon availability of funds, which have not been appropriated at the time of this announcement.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

NOAA’s Ocean Acidification Program (OAP) as part of the Oceanic and Atmospheric Research Line Office (OAR) was established by the Federal Ocean Acidification Research and Monitoring (FOARAM) Act. OAP coordinates research, monitoring, and other activities to improve our understanding of how the chemistry of the ocean is changing, how variable that change is by region, and what impacts these changes are having on marine organisms, people, and the local, regional, and national blue economies. NOAA’s mission is to understand and predict changes in the world’s oceans, share that knowledge, and conserve coastal and marine ecosystems. The OAP plays an integral role in NOAA’s mission by monitoring changes in ocean chemistry, measuring the biological response of ecologically and economically important species, assessing the socioeconomic impacts of the ocean chemistry changes and organismal responses, promoting ocean acidification educational opportunities, engaging in national public outreach activities related to ocean acidification and its impacts, and coordinating ocean acidification activities with other agencies and international ocean science bodies.

The mission of the Global Ocean Monitoring and Observing (GOMO) Program within NOAA and OAR is to undertake research and monitoring activities to provide and support high quality global ocean observations that improve scientific understanding, monitor changes in the global oceans, and improve ocean knowledge and services for a range of climate, weather, ocean, and coastal needs. The strategic goals of GOMO include developing a sustained global ocean monitoring and observing system; harnessing innovative technologies to improve and expand the ocean observing system to address emerging needs and opportunities for ocean health, ocean economy, weather and climate; improving the value, accessibility, and usability of observational data for informed decision-making; and increasing the expertise, diversity and capacity of the ocean observing enterprise. To achieve these goals, GOMO supports interdisciplinary earth-system research and coordinated activities to improve understanding and monitoring of ocean physical, chemical, and marine ecological features. GOMO coordinates ocean monitoring and observing research with other appropriate intergovernmental, national, and international ocean science and observing bodies.

Ocean Acidification:

The amount of carbon dioxide in the atmosphere has been rapidly increasing for over 250 years, since the onset of the Industrial Revolution. The world's oceans act as a sink for a

portion of the carbon dioxide emitted by humans, and this absorption is causing changes in ocean chemistry including a reduction in surface ocean pH, otherwise known as ocean acidification. A growing number of laboratory experiments have demonstrated that ocean acidification adversely affects many marine organisms, especially those that construct their shell material from calcium carbonate. Ocean acidification has the potential to threaten the future health of the world's oceans and the ecosystem services it provides.

To address ocean acidification and related ecological, economic, and societal impacts, the U.S. Congress enacted the FOARAM Act in 2009. The FOARAM Act requires NOAA to respond to this pressing issue through research and monitoring. In recent legislation, the US Congress also tasked the OAP with providing technical assistance to socioeconomically vulnerable States, local governments, Tribal governments, communities, and industries impacted by ocean and coastal acidification to support their development of ocean and coastal acidification mitigation strategies. Several states including Washington, Maine, New York and Maryland have created state specific OA action plans (https://www.oaalliance.org/member-examples) and/or passed legislation to understand the impacts of OA on their resources (https://doi.org/10.1080/08920753.2021.1947166). While many States, local governments, Tribal governments, communities and industries have established monitoring, some entities lack the resources and technical capacity to optimize those existing observations to monitor for changes in the carbonate system or to monitor for impacts from acidification. The goal of this NOFO is to provide funding to facilitate the co-development of an observing optimization study in order to increase the capacity and long term knowledge transfer with the end-user/co-development partner.

The federal government identifies its priorities for national and regional ocean acidification research in the Second Strategic Plan for Federal Research and Monitoring of Ocean Acidification. (https://oceanacidification.noaa.gov/wp-content/uploads/2023/09/StrategicPlanforFederalResearchandMonitoringofOceanAcidification.pdf). This announcement specifically addresses the priorities listed in Themes 2 (Monitoring) and 3 (Modeling), which include a specific short-term goal to “use models to guide observational sampling strategies” including Observing System Simulation Experiments (OSSEs) “to plan the most effective and efficient design for sampling.”

NOAA priorities for ocean acidification research are informed by the NOAA Ocean, Coastal and Great Lakes Acidification Research Plan: 2020-2029 (https://oceanacidification.noaa.gov/wp-content/uploads/2023/02/ResearchPlan2020-2029_comp.pdf). This announcement specifically addresses Action 1.1.5: Conduct observational and numerical simulation experiments to inform strategic deployment of … observing assets for optimal spatial and temporal coverage.

Global Ocean Carbon and Climate:

NOAA’s GOMO program supports long-term global ocean carbon observations from the

sea surface to the ocean interior at a range of spatial and temporal scales from a variety of platforms including ships, moorings, and autonomous platforms. The observations provide accurate knowledge of the sources and sinks of ocean carbon, which is critical for constraining ocean carbon uptake, balancing the global carbon budget, projecting future climate, and supporting the development of climate policies. GOMO's priorities for ocean carbon cycle observing and research are informed by the GOMO Strategic Plan 2021-2025 (https://globalocean.noaa.gov/wp-content/uploads/2022/07/GOMO-Strategic-Plan-2021-2025.pdf). In addition, the ocean carbon observations supported by GOMO comprise NOAA's Global Ocean Carbon Network, as established by the NOAA Observing Systems Committee (OSC), which is composed of NOAA's contribution to U.S. GO-SHIP and surface water CO2 from moorings and Ships of Opportunity as part of the recently established Surface Ocean CO2 Reference Observing Network (SOCONET).

NOAA, OAP, and GOMO encourage applicants and awardees to support the principles of diversity, equity and inclusion when writing their proposals and performing their work. OAP is committed to building inclusive research, extension, communication and education programs that serve people with unique backgrounds, circumstances, needs, perspectives, and ways of thinking. We encourage applicants of all ages, races, ethnicities, national origins, gender identities, sexual orientations, disabilities, cultures, religions, citizenship types, marital statuses, education levels, job classifications, veteran status types, and socioeconomic status types to apply for this opportunity. In the application we encourage applicants to share how their end products advance the principles of diversity, equity and inclusion.

B. Program Priorities

The NOAA Ocean Acidification Program (OAP) in partnership with the Global Ocean Monitoring and Observing (GOMO) Program is soliciting proposals to evaluate how to optimize sampling strategies to readily acquire the requisite data of known uncertainty necessary to track and forecast ocean carbon system (e.g. carbonate mineral saturation state, carbonate ion concentration, pH, etc.) dynamics on short term (daily to subseasonal to annual) to long term (multidecadal to centennial) time-scales.

NOAA currently deploys a portfolio of observing technologies that include both fixed and mobile autonomous assets as well as regional ship-based biogeochemical surveys to understand and track carbonate chemistry across a range of time-scales in an effort to better inform our understanding of how our changing ocean carbonate chemistry (ie - ocean acidification) could impact U.S. living marine resources and the nation's blue economy. Given the opportunistic locations of the current observing assets (many deployed to leverage other missions), configuration of the existing network may be suboptimal for the intended purpose of characterizing the in situ carbonate dynamics most relevant to marine resources

and industry needs. Ideally an observing network should consider not only surface conditions, but also conditions at depths where sensitive organisms may reside. Additionally, observing networks should consider time-scales which capture not only long-term trends, but also seasonal dynamics and short-term extremes which can be significant in coastal and estuarine waters. An optimized design should maximize the usefulness of the data obtained specific to end user needs, maximize the synergy with existing observational assets, and minimize the operational costs of deploying and maintaining such a network.

More information on observing systems and modeling efforts that may be relevant to this opportunity can be found through the following resources:

-OAP-sponsored coastal ocean acidification cruises:
https://oceanacidification.noaa.gov/ocean-acidification-research-cruises/
-GO-SHIP cruises: https://www.go-ship.org/
-NOAA Ocean Acidification Observing System buoys:
https://oceanacidification.noaa.gov/ocean-acidification-monitoring/
-Surface Ocean CO2 Observing Network (SOCONET):
https://www.aoml.noaa.gov/ocd/gcc/SOCONET/
-Regional Ocean Modeling System (ROMS): https://www.myroms.org/
-JISAO Seasonal Coastal Ocean Prediction of the Ecosystem (JSCOPE):
https://www.nanoos.org/products/j-scope/
-Ocean Observatories Initiative: https://oceanobservatories.org/
-NOAA Pacific Marine Environmental Laboratory carbon group:
https://www.pmel.noaa.gov/co2/story/Observations+and+Data
-NOAA Atlantic Oceanographic and Meteorological Laboratory ocean chemistry and ecosystems group: https://www.aoml.noaa.gov/ocd/ocdweb/occ.html
-NOAA Integrated Ocean Observing Systems: https://ioos.noaa.gov/ioos-in-action/
US Regional carbon observing information can be found by visiting the coastal acidification network websites listed below:
- Northeast Coastal Acidification Network: http://necan.org/
- Mid-Atlantic Coastal Acidification Network: https://midacan.org/
- Southeast Coastal Acidification Network: https://www.socan.secoora.org/
- Alaska Ocean Acidification Network: https://aoan.aoos.org/
- California Current Acidification Network: https://c-can.info/
- Gulf of Mexico Coastal Acidification Network: https://gcoos.org/gcan/

On a global scale, further development of the NOAA Global Ocean Carbon Network will benefit from an objective evaluation of augmentations that would reduce uncertainties in modeled fields of ocean carbon system parameters. In particular, it is necessary to determine

whether the ocean carbon sink is keeping pace with the atmospheric CO2 increase by (i) reconciling differences between observations and model-based estimates of ocean carbon uptake and (ii) improving observations and quantification of the biological and/or solubility carbon pumps. To achieve a holistic understanding of carbon cycling in the global ocean, GOMO is soliciting proposals that address the previous priorities listed above (i) and/or (ii) through the application of Observing System Simulation Experiments (OSSEs) that optimize the use of emerging technologies (e.g., ASVs) and platforms to observe carbon system measurements (e.g., f/pCO2, DIC/DOC, PIC/POC, etc.) in climate-critical regions.

Originally developed for optimizing meteorological observations, model-based Observing System Simulation Experiments (OSSEs) represent one possible approach for optimizing an ocean and coastal carbon observing network. In recent years, the approach has been increasingly applied to ocean observing systems including improving our ability to monitor ocean carbon flux (e.g. Majkut et al., 2014). Other approaches have adopted the methodologies of optimal experimental design (e.g. best linear unbiased estimator, Ripley, 1987) which was employed to optimize fixed observational assets in a coastal observatory (Frolov et al., 2008). Both approaches (and others) may be considered for this call.

Conducting such an analysis demands that the primary modes of variability of a given system have been sufficiently resolved to generate a high-resolution nature run. A nature run is the output of a model that incorporates the best available knowledge on physics and biogeochemistry, calibrated to the system of interest, and validated against the best available data. The nature run should ideally estimate the dynamic ranges from subseasonal to multi-decadal. The outputs from this nature run then serve as a reference field such that simulated observations using various sampling strategies can be evaluated. This evaluation involves assessing the error characteristics intrinsic to the simulated observations through a comparison of the nature run versus the analyzed field derived from the simulated observations. In some regions, the requisite variability may not be sufficiently constrained from available observing data to derive a suitable nature run. Therefore, this funding opportunity includes two options: 1) a regionally targeted model-based objective assessment of observing system design specific to the ocean carbonate system or 2) a regionally targeted field intensive involving the targeted short-term deployment of observing assets to better characterize the dominant modes of variability.

Successful applicants to Options 1.a. and Option 2, below, will co-develop this project with an observing partner so that the results from this funded work will be incorporated into future observing system design and implementation. Examples of partnerships could include but are not limited to: states or tribal entities who are designing an optimal observing network or incorporating carbonate parameters into an existing sampling regime; or public or private entities interested in designing an observing network to quantify the efficacy of marine carbon removal in a particular region.

Applicants must choose ONLY one of the following three project options:

Option 1.a.: Observing System Optimization Study (U.S.): $350,000 per year for up to three years. Proposals submitted under this option will target U.S. Large Marine Ecosystem (LME) regions for which sufficient data currently exist to allow for a fully consistent three-dimensional analysis of ocean carbonate system variables for the purpose of evaluating how best to use monitoring assets to optimally characterize regionally integrated fields of interest at subseasonal to decadal time-scales. Applicants should work with their partner entity to assess the existing relevant observing assets in the region to evaluate potential gaps or redundancies in observing data. Examples of carbonate parameters of interest include 3-D mapped distributions of: carbonate mineral saturation state, calcium carbonate ion activity product, pH, total dissolved inorganic carbon, total alkalinity, time-of-emergence indicators (time period required to discern a trend amid high-frequency variability), etc. Proposals submitted under this option should directly address one or more of the priority elements (see below). For this call, fields of interest should be optimized for spatial (including vertical) and temporal (e.g. subseasonal to decadal) resolutions that are relevant to the partner entity observing needs and this should be clearly articulated in the proposal.

Option 1.b.: Observing System Optimization Study (Global): $200,000 per year for up to three years. Proposals submitted under this option will assess climate-critical regions outside of the U.S. LMEs, such as the Southern Ocean, Tropics, or other open ocean regions. As above, proposals will evaluate how to best use monitoring assets to optimally characterize carbon system parameters across time-scales including assessment of existing, redundant, or gaps in observing data. High-accuracy, climate quality observational parameters will be considered, including, but not limited to: partial pressure or fugacity of CO2, total dissolved inorganic and organic carbon, particulate inorganic and organic carbon, total alkalinity, and pH as well as parameters that influence climate through biogeochemical feedbacks (e.g., N2O, CH4). Applicants should address cutting-edge challenges in ocean carbon and climate science (e.g., discrepancies between modeled and observational products of ocean uptake of CO2, closing the ocean carbon cycle budget, etc., see i and ii above). Proposals that include innovative platforms in carbon system observing design, such as autonomous surface vehicles (ASVs), are also highly desired. Proposals submitted under this option should directly address one or more of the priority elements identified below.

Option 2: Regional Field Intensive: Up to $500,000 per year for no more than 3 years with an overall three year total of no more than $1,500,000. For U.S. LMEs that lack the observational data to allow for the generation of a suitable nature run, the NOAA OAP will consider proposals for a three-year field intensive specifically aimed at characterizing the subseasonal to decadal variability which contributes the dominant error to the ocean

carbonate system parameters of interest. PIs should include a justification for why the field intensive is needed in their region and this justification should include end user relevance. Such intensives are envisioned to adopt the short-term (not to exceed two years) deployment and subsequent recovery of appropriate observing assets and conduct data analysis to establish the prerequisites for conducting an OSSE should subsequent funding become available. In addition, the project should also produce a detailed methodology document (i.e. standard practices guide) detailing the approach. Such a document could generically inform similar studies conducted in other LMEs should similar field intensives be advanced in the future. While the outcomes from projects funded under option 2 fall short of directly delivering on the priority elements (see below), they should be conducted to ensure maximum success of a subsequent OSSE (option 1) carried out under a future opportunity. As such, it's imperative that the applicants include explicit partnerships with relevant modeling researchers to ensure they are configuring the field intensive and data outputs in a manner that is most readily usable in models relevant to that LME.

Regardless of which option is chosen, all projects are required to convene an Advisory Committee and set aside funds to attend a PI meeting. The Advisory Committee should consist of at least five people and be made up of modelers, observing experts, resource managers or other potential end users of the optimized observing system. The Advisory Committee will ensure outcomes of the project are relevant to the users of an optimized observing system. PIs need to incorporate travel funding to attend one all PI, in person workshop during the first year of the project, likely in conjunction with the Fall 2024 AGU meeting, held in Washington DC. PIs and co-PIs must attend. This workshop will last two full days. Subsequent PI meetings will be held either virtually or in conjunction with widely attended events.

Priority Elements

The NOAA Ocean Acidification Program is accepting proposals (through Option 1.a and Option 2) that address one or more of these priority elements:

1. The studies proposed for this call should be co-developed with a partner entity to target one of the following U.S. Large Marine Ecosystems (LMEs; www.st.nmfs.noaa.gov/ecosystems/lme/): Northeast, Southeast, Gulf of Mexico, Caribbean Sea , California Current, Gulf of Alaska, Bering Sea and the Pacific Islands Ecosystem Complex. Focus areas can extend from estuaries and coastal river mouths seaward to the outer margins of major currents or the edge of continental shelves. Alternatively, proposals may be considered for high-priority sub-regions of a U.S. LME in cases where model fidelity is best optimized at finer scales such as in important major estuaries (e.g., Puget Sound, Chesapeake Bay). Justification for the size and scope of the project should match the needs of the partner entity;

2. Evaluate the capability of existing ocean carbonate system assets (inclusive of applicable federal and state time-series) within the area of interest to adequately characterize the carbonate system in response to the needs of the partner entity; and
3. Explore alternative configurations of an ocean carbonate system observing network that would minimize errors in 3-D mapped fields of interest, maximize synergies with the existing observational assets, characterize uncertainty in the measured fields and minimize the operational costs for the partner entity.

The Global Ocean Monitoring and Observing Program will consider proposals (through Option 1.b. above) that address one or more of these priority elements:
1. Studies co-developed via collaborative Advisory Committee (see above) assessing high-accuracy ocean carbon parameter(s) in a climate-critical global region;
2. Evaluate the capability of existing ocean carbon system assets within the region of interest to adequately characterize the carbon system; and
3. Explore alternative configurations of an ocean carbon observing network that would minimize errors in mapped fields of interest, maximize synergies with the existing observational assets, and minimize the operational costs.

C. Program Authority

Federal Ocean Acidification Research and Monitoring Act 33 U.S.C. Sec. 3701- 3708

## II. Award Information

### A. Funding Availability

Applicants should submit proposals 2-3 years in duration not to exceed: $350,000 per year for Option 1.a.; $200,000 per year for Option 1.b.; $500,000 per year for Option 2. If funds become available for this program, up to approximately $4,000,000 may be available in fiscal year 2024 for the first year of about 2-5 projects with expected start dates of September 1, 2024. Funding for this program is contingent upon availability of funds, which have not been appropriated at the time of this announcement. Proposals not funded in the current fiscal period may be considered for funding in the next fiscal period without NOAA repeating the competitive process outlined in this announcement.

### B. Project/Award Period

Full applications may cover a project/award period up to 3 years, but shorter-term project proposals are also encouraged. Awards may be funded incrementally, generally on an annual basis, but, once awarded, those awards will not compete for funding in subsequent years. Once approved, full applications are not required for the continuation of the award in

out years. Funding for each year's activity is contingent upon the availability of funds from Congress, satisfactory performance, and is at the sole discretion of the agency.

During the implementation phase of research projects funded under this announcement, regardless of the funding mechanism used, OAP Program Managers will analyze progress reports for each continuing award, and will have dialogue with the Principal Investigators (PI) and Authorized Representatives of the recipient institutions to discuss research progress and expected timelines for the remaining award period. If NOAA experiences budget reductions in future fiscal years, the amount of funding provided in any given fiscal year will be determined on a project-specific basis by the remaining tasks to be completed, the overall pace of the research and the length of time remaining on the award and/or across the board reductions based on the overall funds available.

Regardless of the budget for any given fiscal year, Program Managers will consider the length of time remaining for each project, the amount of funds available, the tasks to be completed in the upcoming fiscal year, the pace of research, and any delayed progress relative to that originally proposed, before determining the funding amount in any given fiscal year.

C. Type of Funding Instrument

In an effort to maximize the use of limited resources, applications from non-Federal, non-NOAA Federal and NOAA Federal applicants will be evaluated in the same competition, with different funding instruments applied depending on the type of applicant.

The funding instrument for a research application selected for funding from a non-Federal researcher is expected to be a cooperative agreement. A cooperative agreement is appropriate when substantial Federal government involvement is anticipated. "Substantial involvement" will be coordinated and communicated by OAP Program Managers, and can include collaboration and participation by NOAA researchers, as well as OAP Program Manager involvement in PI meetings, setting up management advisory groups, development of management transition plans, and communication of project results.

If the non-Federal applicant is at an institution that has a NOAA approved Cooperative Ecosystem Studies Units (CESU), it is allowed to submit applications that reference the CESU. If the applicant is a member of one of these CESUs and is interested in using its CESU status, it may state its wishes in a cover letter to the application stating its desire to have the application associated with the CESU. This letter should specify the name of the CESU. Of the seventeen CESUs across the nation, NOAA is a member of ten: North and West Alaska, California, Hawaii-Pacific Islands, South Florida-Caribbean, Gulf Coast, Piedmont-South Atlantic Coast, Chesapeake Watershed, North Atlantic Coast, Pacific Northwest, and Great Plains. If an applicant is associated with a CESU NOAA is not a member of, the application must be submitted through their institution without reference to CESU status.

The following criteria must be met for NOAA to use the established partnerships with CESUs:
1. The proposed funding opportunity must fit within the objectives of the National CESU Network Program - to provide research, technical assistance, and education to federal land management, environmental, and research agencies and their partners in biological, physical, social, cultural, and engineering disciplines needed to address natural and cultural resource management issues at multiple scales and in an ecosystem context.
2. The proposed funding opportunity must fit the intent of the Cooperative and Joint Agreements, which means:
a. The research partnership will carry out or stimulate an activity (data, products or services) for a public purpose; AND
b. NOAA will be significantly involved in the work.
Previous research completed by a local CI will be considered in decisions made to issue an award using an institution's CESU status.

The funding instrument for a selected application from an eligible NOAA Federal applicant will be an intra-agency transfer of funds.
The funding instrument for a selected application from a non-NOAA Federal applicant will be through an inter-agency transfer of funds, provided legal authority exists for the Federal applicant to receive funds from another agency. Non-NOAA Federal applicants that intend to be the lead institution must contact Erica Ombres erica.h.ombres@noaa.gov or 301-734-1072 to discuss technical details. PLEASE NOTE: Before non-NOAA Federal applicants may be funded, they must demonstrate that they have applicable legal authority for an interagency transfer of funds. Because this announcement is not proposing to procure goods or services from applicants, the Economy Act (31 USC 1535) is not an appropriate legal basis. Support may be solely through OAP or partnered with other Federal offices and agencies.
The intra- and inter-agency transfers of funds are not Federal assistance (grants or cooperative agreements) and the policies described in this NOFO applicable to Federal assistance awards do not apply to Federal entities receiving intra- and inter-agency transfers of funds. Refer to the Agency Contact officials in Section VII. for more information.

## III. Eligibility Information

### A. Eligible Applicants

Eligible applicants for Federal financial assistance in this competition are institutions of higher education, other non-profits, state, local, Indian Tribal Governments, for-profit

organizations, U.S. Territories and Federal agencies that possess the statutory authority to receive transfers of funds. DOC/NOAA supports cultural and gender diversity and encourages applications involving women and minority individuals and groups. In addition, DOC/NOAA is strongly committed to broadening the participation of historically black colleges and universities, Hispanic serving institutions, tribal colleges and universities, and institutions that work in underserved areas. DOC/NOAA encourages applications involving any of the above institutions to apply.
Please note that:
(1) PIs should be employees of an eligible entity listed above and applications should be submitted through that entity. Non-Federal researchers should comply with their institutional requirements for application submission.
(2) Non-NOAA Federal applicants will be required to submit certifications or documentation showing that they have specific legal authority to accept funds for this type of research.
(3) Foreign researchers must apply as subawards or contracts through an eligible US entity.

B. Cost Sharing or Matching Requirement

None

C. Other Criteria that Affect Eligibility

None

## IV. Application and Submission Information

A. Address to Request Application Package

Address to Request Application Package:
Erica Ombres
1315 East West Highway
SSMC3 12864
Silver Spring MD 20910
email: erica.h.ombres@noaa.gov

Applications submitted in response to this announcement are strongly encouraged to be submitted through the Grants.gov web site. The full funding announcement for this program is available via the Grants.gov web site: http://www.grants.gov. You will be able to access, download and submit electronic grant applications for NOAA Programs in this announcement at http://www.grants.gov. NOAA strongly recommends that you do not wait until the application deadline date to begin the application process through Grants.gov. Applicants must register with Grants.gov before any application materials can be submitted.

To use Grants.gov, applicant must have an institutional eRA commons account and be registered in the System for Award Management (SAM), and periodic renewals are required. Allow a minimum of five days to complete the SAM registration. (Note: Your organization's Unique Entity Identifier (UEI) will be needed on the application form). An organization's one-time registration process may take up to four weeks to complete. In addition, it may take two days until the applicant is notified as to whether NOAA received the application, so allow sufficient time to ensure applications are submitted before the closing date.

After electronic submission of the application through Grants.gov, the person submitting the application will receive within the next 24 to 48 hours two email messages from Grants.gov updating them on the progress of their application. The first email will confirm receipt of the application by the Grants.gov system, and the second will indicate that the application has either been successfully validated by the system before transmission to the grantor agency or has been rejected because of errors. Only validated applications are sent to NOAA for review. After the application has been validated, this same person will receive a third email when the application has been downloaded by the Federal agency.

In addition to Grants.gov, this announcement will also be available by contacting the program official identified in Section VII. Please refer to important information in Submission Dates and Times (Section IV.D.) to help ensure your application is received on time.

B. Content and Form of Application

Required Elements:

Collaborative Proposals - If more than one institution is collaborating in a project awarded funds, the lead institution will be responsible for distributing funds to the partner institutions with the exception of Federal partners. Federal partners will be funded with either intra- or inter- agency agreements initiated by OAP. Collaborating institutions expected to receive funds must be budgeted as sub-awards or contracts. Unfunded collaborators may also participate.

Each application must substantially comply with the following sixteen elements to be forwarded for merit review. The Summary, Title page, Abstract, Project Description, References, Biographical Sketch, and Budget Justification must be single spaced in 12 point font with 1-inch margins. The Collaborators List must be an Excel spreadsheet. The sixteen elements are as follows:

(1) Standard Form 424. The applicant must submit the Standard Form, SF-424, "Application for Federal Assistance," to indicate the total amount of funding proposed for the whole project period. This form is to be the cover page for the original application and is the first required form in the grants.gov application package.

(2) Summary title page. One-page maximum. The Summary title page identifies the

project's title and the PI's and all Co-PI's names, affiliations, phone and E-mail information. The requested funding amounts for each fiscal year should be included on the Summary title page.

(3) One-page abstract/project summary. The summary (abstract) should appear on a separate single page, headed with the proposal title, institution(s), investigator(s), total proposed cost, and budget period. It should be written in the third person. The summary is used to help compare proposals quickly and allows the respondents to summarize their key points in their own words. Project summaries of applications that receive funding may be posted on program-related websites. The project summary should include an introduction of the problem, rationale, scientific objectives and/or hypotheses to be tested, and a brief summary of work to be completed. The project summary should also briefly include information about the partner entity, the co-development process and how this work will support them.

(4) Project Description. The description of the proposed project must include narratives of the Proposed Research (elements i through iv), The Advisory Committee structure and function (element v), and the Data Management Plan (element vi). The description of the proposed project must not be more than 15 pages for elements (i) through (v) and an additional 2 pages for the Data Management Plan (vi). The Proposed Research Narrative should be thorough and explicitly indicate its relevance to the program goals and scientific priorities by:

(i) Identifying the topic that is being addressed by the proposal, the region proposed for work, and the relevance of the work to advancing/optimizing carbon observing systems;

(ii) Describing the proposed scientific objectives and research activities in relation to the present state of knowledge in the field and in relation to previous and current work by the proposing principal investigator(s);

(iii) Discussing how the proposed project lends value to the program goals and provides direct technical assistance to the co-development partner entity;

(iv) Identifying the function of each PI and partner entity. The Lead PI (s) will be responsible for communicating with the Federal Program Manager on all pertinent verbal or written information. He/She may also be a primary liaison to the Advisory Committee;

(v) Identifying who will serve on the Advisory Committee, their expertise and role in advising on the project. All projects will be required to stand up an Advisory Committee (at least five people) made up of modelers, observing experts, resources managers or other potential end users of the optimized observing system. The NOAA Program Manager and the partner entity are de facto members of the advisory committee.

(vi) Providing a detailed Data Management Plan that describes how metadata and data collected as part of the project will be disseminated to the broader community, and plans for longer term archiving of these data. National Centers for Environmental Information (NCEI) serves as the data management focal point for the NOAA Ocean Acidification Program

(https://www.ncei.noaa.gov/products/ocean-carbon-acidification-data-system). All data resulting from NOAA OAP-funded projects must be archived and accessible through NCEI. Costs associated with use of data centers, or data archiving, should be included in the application budget. See the section on the NOAA Data Reporting requirements below (Section VI. C.).

(5) References cited. Reference information is required. Each reference should include the names of all authors in the same sequence they appear in the publications, the article title, the journal or book title, volume number, page numbers, and year of publication. While there is no established page limitation, this section should include bibliographic citations only and should not be used to provide parenthetical information outside of the Project Description.

(6) Milestone chart. Provide timelines of major tasks covering the duration of the proposed project.

(7) Biographical sketch. All PI(s) co-PI(s) must provide summaries of up to 2 pages that include the following:

(a) A listing of professional and academic credentials and mailing address;

(b) A list of up to five publications most closely related to the proposed project and five other significant publications.

(8) Current and pending support. Describe all current and pending Federal financial/funding support for all PI(s) and co-PI(s). Continuing grants must also be included. You should respond to this element whether or not you have any current and/or pending support, e.g., by indicating “not applicable.”

(9) A list of all known applicable permits that will be required to perform the proposed work. You should respond to this requirement element whether or not permits are required.

(10) Accomplishments from Prior Federal Support. If any PI or co-PI identified on the project has received Federal funding in the past five years addressing OA or carbon relevant observing systems, information on the award(s) is required. Each PI and co-PI who has received more than ONE award (excluding amendments) must report on the award most closely related to the proposal. This section should not exceed two pages per PI per award in addition to the 15 pages for the Project Description. The following information should be provided:

a) the Federal agency, award number, amount and period of support;

b) the title of the project;

c) a summary of the results of the completed work;

d) publications resulting from the award;

e) a brief description of outputs and outcomes; and

f) as appropriate, a description of the relation of the completed work to the proposed work. When applicable, this information will be considered by reviewers in the evaluation of overall qualifications of applicants. You should respond to this element whether or not you have accomplishments from prior Federal support; e.g. by indicating “no prior Federal

research on OA or carbon relevant observing systems."

(11) Budget narrative/justification. In order to allow reviewers to fully evaluate the appropriateness of costs, all applications must include a detailed budget narrative and a justification to support all proposed budget categories for each fiscal year. Personnel costs should be broken out by named PI and number of months and percentage of time requested per year per PI. Support for each PI should be commensurate with their stated involvement each year in the milestones chart (see Required Elements (6) Milestone chart). Any unnamed personnel (graduate students, post-doctoral researchers, technicians) should be identified by their job title, and their personnel costs explained similar to PI personnel costs above. The contribution of any personnel to the project goals should be explained. Travel costs should be broken out by number of people traveling, destination and purpose of travel, and projected costs per person. Equipment costs should describe the equipment to be purchased, and its contribution to the achievement of the project goals. Each subaward should be listed as a separate item in the budget justification. Provide separate budget justifications for each subaward and indicate the basis for the cost estimates. Describe project activities for subawards and products/services to be obtained for acquisitions, and indicate the applicability or necessity of each to the project.

For additional information concerning each of the required categories and appropriate level of disclosure please see http://www.ago.noaa.gov/grants/docs/gmd_budget_narrative_guidance_-_05-24-2017_final.pdf.

If more than one institution is collaborating in a project awarded funds, a separate budget justification is required for each subaward. Signed approval from each identified subaward institution is also required. The lead institution is responsible for sending funds to their subaward institutions. For acquisition contracts, the purpose and cost or price must be fully justified and the contract must fully comply with 2 C.F.R. 200.317-.326.

An applicant requesting funds for indirect costs in its proposal budget that has a current Federally approved rate should submit documentation of the indirect cost rate agreement as an attachment to its application submission. An applicant without a Federally approved rate should refer to Section IV.F. of this Announcement regarding options.

(12) CD 511. Certification Regarding Lobbying. Lead institutions can submit these forms through the grants.gov CD511 document placeholder without a hard signature because electronic signatures are allowed on documents from the submitting institution.

(13) Standard Form 424B. Assurances - Non-Construction Programs. Lead institutions can submit these forms through the grants.gov SF 424B document placeholder without a hard signature because electronic signatures are allowed on document from the submitting institutions.

(14) Standard Form 424A. All applicants are required to submit a SF-424A Budget Form that identifies the budget for each fiscal year of the proposal. Place each fiscal year in

separate columns in Section B of page 1 on the SF424A by filling in the fiscal years 1 to 3 in Section A Budget Summary - Grant Program Function or Activity column. (Note that this revised 424A Section B format is a NOAA requirement that is not reflected in the Instructions for the SF 424A). The budget figures must correspond with the descriptions contained in the proposal. Each subaward should provide a SF424A listing each year of funding being requested. List total subaward costs under line item 6.h. other on the SF-424A. Signed approval from the institution of each identified subaward should be provided.

(15) Provide one list that includes all (U.S. and Foreign) collaborators, advisors, and advisees for each investigator (PI(s) and co-PI(s), post-docs, and subawardees), complete with corresponding institutions. Submit only one, combined and alphabetized list per application in an excel spreadsheet using Last Name, First Name and Institution for the column headings. Collaborators are individuals who have participated in a project or publication within the last 48 months with any investigator, including co-authors on publications in the resumes. Collaborators also include those persons with which the investigators may have ongoing collaboration negotiations. Advisees and Advisors do not have a time limit. Advisees are persons with whom the individual investigator has had an association as thesis advisor or postdoctoral sponsor. Advisors include an individual's own graduate and postgraduate advisors. Unfunded participants in the proposed study should also be listed (but not their collaborators). This information is critical for identifying potential conflicts of interests and avoiding bias in the selection of reviewers.

(16) Key Contacts form. All applicants must submit the Key Contacts form. This form identifies the official applicant contacts.

In addition to the sixteen required elements, applicants may provide the following:

(1) A list of potential merit reviewers on a page after the Summary Title Page.

(2) Letters from unfunded collaborators, verifying their contribution to the project, and advisory committee members, verifying their willingness to serve. These letters do not count against the page limit for the Project Description. Letters of support may also be included, but they count against the page limit for the Project Description. These elements can be uploaded into the Optional Form box under Other Attachments in Grants.gov.

Application format and assembly. Applications submitted via Grants.gov APPLY should follow the format guidelines below:

Attachments must be submitted in Adobe Acrobat PDF, text document or Microsoft word or excel format to maintain format integrity. Please submit the required documents as described below. Follow the instructions found on the Grants.gov web site for application submission into the Grants.gov system. All required forms that do not have specific placeholders in the Mandatory Document box must be submitted in the Optional Form box as Other Attachments and labeled with the document name: i.e. collaborator list, budget narrative, milestone chart etc. For a collaborative application: The documents for each

additional institution should be combined into one file. The lead institution should label the file with the name of the institution and upload the file into the Optional Form box as Other Attachments. Repeat this procedure for each collaborating institution. Save your completed application package with two different names before submission to avoid having to re-create the package should you experience submission problems. If you experience submission problems that may result in your application being late, send an email to support@grants.gov and call the Grants.gov help desk. Their phone number is posted on the Grants.gov web site. The Program Manager associated with this FFO will use programmatic discretion in accepting applications due to documented electronic submission problems. Please note: If more than one submission of an application is performed, the last application submitted before the due date and time will be the official version.

Applications containing known subawards must provide - SF424A, Budget Justification, Current and Pending Support, and Key Contacts from each subaward. Signed approval from the institution of each subaward and contractor should be provided. We also request submission of the indirect rate agreement for subawards, if applicable. Applicants should provide Key Contacts for acquisition contracts and may provide additional information similar to that requested in this section for an acquisition contract if it may help NOAA assure compliance of the contract with 2 C.F.R. 200.317-.326. Permits, accomplishments, Biographical sketches and the collaborators lists should be supplied to the lead institution in order for them to be combined within the lead application information.

It will be the applicant's responsibility to obtain all necessary Federal, state and local government permits and approvals where necessary for the proposed work to be conducted. Applicants are expected to design their proposals so that they minimize the potential adverse impact on the environment. If applicable, documentation of requests or approvals of environmental permits should be received by the Program Manager prior to funding. Applications will be reviewed to ensure that they have sufficient environmental documentation to allow program staff to determine whether the proposal is categorically excluded from further National Environmental Policy Act (NEPA) analysis, or whether an Environmental Assessment is necessary in conformance with requirements of the NEPA. For those applications needing an Environmental Assessment, affected applicants will be informed after the peer review stage, and will be requested to assist in the preparation of a draft of the assessment (prior to award). Failure to apply for and/or obtain Federal, state, and local permits, approvals, letters of agreement, or failure to provide environmental analysis where necessary (e.g. NEPA environmental assessment) may delay the award of funds if a project is otherwise selected for funding. The NOAA NEPA Questionnaire is not required to be submitted with an application.

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

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 application; (ii) Provide a valid unique entity identifier (UEI) in its application; and (iii) Continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency. NOAA may not make a Federal award to an applicant until the applicant has complied with all applicable UEI 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.

In order to submit an application through Grants.gov, an applicant must register for a Grants.gov user ID and password. Note that this process can take between three to five business days or as long as four weeks if all steps are not completed correctly. To avoid delays, applicants are strongly encouraged to start early and not wait until the approaching application deadline before registering, logging in, reviewing the application instructions, and applying. Information about the Grants.gov registration process for organizations can be found at http://grants.gov/applicants/organization_registration.jsp. Please note that organizations already registered with Grants.gov do not need to re-register; however, all registered organizations must keep their Grants.gov password and SAM database (which now incorporates CCR) registration up-to-date or their applications will not be accepted by Grants.gov. Note that your CCR username will not work in SAM. You must create a new SAM user account to renew or update your registration. Registration on SAM is a requirement. To obtain additional information and to verify that all required registrations are current, please visit www.sam.gov/portal/public/SAM. An institution registration with eRA commons is also required and may take up to 4 weeks.

If you experience a Grants.gov systems issue (technical problems or glitches with the Grants.gov website) that you believe threatens your ability to complete a submission before the application deadline, please do ALL of the following:

*Print any error message received

*Call the Grants.gov Contact Center at 1-800-518-4726 for immediate assistance

*Contact NOAA using the contact information in section VIII. of this NOFO prior to the close of the competition

*Ensure that you obtain a case number regarding your communications with Grants.gov

In the event of a confirmed systems issue, NOAA reserves the right to accept an application in an alternate format prior to the application deadline. Problems with an applicant organization’s computer system or equipment are not considered systems issues. Similarly, an applicant’s failure to do the following are not considered systems issues:

*Complete the required registrations (including: eRA commons, SAM, grants.gov)

*Ensure that a registered Authorized Organization Representative (AOR) submits the application
*Read an email message with guidance from Grants.gov

D. Submission Dates and Times

An informational webinar will be held December 8th at 4pm Eastern time. The webinar will be recorded and posted to the Ocean Acidification Program website (https://oceanacidification.noaa.gov/). To register for the webinar please go to this link: https://attendee.gotowebinar.com/register/7078097742909317974

The deadline for receipt of full applications is 11:59 p.m., Eastern Time on March 17th, 2024.
Full applications should be submitted electronically to Grants.gov (http://www.grants.gov) and must be received and validated by Grants.gov by the deadline. Applications received after the deadline will be rejected and returned to the sender without further consideration. Investigators submitting applications via grants.gov are advised to submit well in advance of the deadline.
If use of grants.gov is not feasible, an applicant is concerned about possible problems associated with the grants.gov system, or grants.gov is unable to accept an application electronically in a timely fashion, they should notify the Program Manager no later than two weeks prior to the deadline (refer to Section VII) to see if other methods of submission will be allowed.
Important: All applicants should be aware that adequate time must be factored into applicant schedules for delivery of the application. Electronic applicants are advised that volume on Grants.gov is currently extremely heavy, and if Grants.gov is unable to accept applications electronically in a timely fashion, applicants are encouraged to begin the submission process well in advance of the deadline.

E. Intergovernmental Review

Applications under this program are not subject to Executive Order 12372, "Intergovernmental Review of Federal Programs." It has been determined that this notice is not significant for purposes of Executive Order 12866. Pursuant to 5 U.S.C. 553(a) (2), an opportunity for public notice and comment is not required for this notice relating to grants, benefits and contracts. Because this notice is exempt from the notice and comment provisions of the Administrative Procedure Act, a Regulatory Flexibility Analysis is not required, and none has been prepared. It has been determined that this notice does not contain policies with Federalism implications as that term is defined in Executive Order 13132.

F. Funding Restrictions

Indirect Costs: If an applicant has not previously established an indirect cost rate with a Federal agency it may choose to use the de minimis indirect cost rate of 10% of Modified Total Direct Cost as allowable under 2 C.F.R. §200.414 or negotiate a rate with the Department of Commerce. The negotiation and approval of such a new rate is subject to the procedures required by NOAA and the Department of Commerce Standard Terms and Conditions, Section B.06.

NOAA OAP and GOMO will not fund start up or operational costs for private business ventures and neither fees nor profits will be considered as allowable costs. If indirect costs are applied incorrectly, an approved indirect cost agreement or budget revision will be required before an application can be recommended for funding.

G. Other Submission Requirements

None

V. Application Review Information

A. Evaluation Criteria

1. Importance and/or relevance and applicability of proposed project to the program goals: This ascertains whether the proposed work has intrinsic value, and is relevant to NOAA's mission and responsive to the requirements of the Federal Ocean Acidification Research & Monitoring Act. Does the research address the priorities stated in this NOFO? Are the expected research products clearly identified, including how they will improve regional ocean carbonate system observing? (30 percent)

2. Technical/scientific merit: This assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, whether there are clear project goals and objectives. Does the proposal include an acceptable Data Management Plan that includes details on the types of environmental data and information expected and how and when the data will be publically accessible? (30 percent)

3. Overall qualifications of applicants: This ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. This includes the capability of the investigator and collaborators to complete the proposed work as evidenced by past research accomplishments, previous cooperative work, timely communication, and the sharing of findings, data, and other research products (as described in the Accomplishments from Prior Federal Support). It may also include experience and capacity for communicating with advisory committees,

community partners, and coordination with co-PIs. (10 percent)

4. Project costs: The Budget is evaluated to determine if it is realistic and commensurate with the project needs and time-frame. (10 percent)

5. Outreach, Education and Co-Development: NOAA assesses whether this project provides a focused and effective education and outreach strategy that includes diversity and inclusion regarding NOAA's mission to protect the Nation's natural resources. The applicant must include plans for communicating and disseminating the results of research in ways that are appropriate to inform the relevant entities that will use the results of the proposed work, including specific products, outcomes, and timing of the proposed work that will be used in achieving this goal. This will include plans for the formation of an advisory committee. For options 1a and 2 this will also evaluate the Co-development with a partner entity. Is there an appropriate co-development partnership in place? Have the partners indicated if they have had past success with co-development (either as separate entities or together)? If not, have the partners included sufficient details to outline how the co-development partnership would function? Do the partners indicate how they collaborated on the proposal ideas? Are assigned roles conducive to co-development? Is it clear how the knowledge transfer/capacity building/technical assistance will be facilitated throughout the project? (20 percent)

B. Review and Selection Process

Once an application has been received by NOAA, an initial administrative review is conducted to determine compliance with requirements and completeness of the application. Ineligible, incomplete, and/or non-responsive applications may be eliminated from further review. NOAA, in its sole discretion, may continue the review process for applications with non-substantive issues that can easily be rectified or cured. All applications that pass this initial review will be evaluated and scored individually by independent peer mail review and/or by independent peer panel review. Both Federal and non-Federal experts may be used in this process.

The peer mail reviewers will be several individuals with expertise in the subjects addressed by particular applications. Each mail reviewer will see only certain individual applications within his or her area of expertise, and score them individually out of 100 based on the review criteria listed above. Reviewers will consider the relative weighting of the evaluation criteria in providing an overall proposal score in the form of an overall rating of Excellent, Very Good, Good, Fair or Poor. Proposals rated Excellent will fall among the top 10% of proposals in the subfield and are the highest priority for support. This category should be used only for truly outstanding proposals. Very Good proposals will fall among the top 1/3 of proposals in the subfield; should be supported. Good proposals will fall among the middle 1/3 of proposals in the subfield; worthy of support. Fair proposals will fall among the lowest 1/3 of proposals in the subfield; should not be supported without serious revision. Poor - Proposal has serious deficiencies; should not be supported.

The peer panel will comprise several individuals, with each individual having expertise in a separate area, so that the panel, as a whole, covers a range of relevant scientific expertise. The panel will have access to all mail reviews of proposals and will use the mail reviews in discussion and evaluation of the entire slate of proposals. The peer panel shall rate the proposals using the evaluation criteria and scoring instructions provided above and used by the mail reviewers. The individual peer panelists' scores shall be combined to obtain a numerical ranking of the proposals. If a full review (mail and panel) is conducted, only the panel scores shall be used to rank each proposal. If more than one non-Federal reviewer is used, no consensus advice will be given by the independent peer mail review or the review panel.

The Program Manager will neither vote or score applications as part of the independent peer review panel nor participate in discussion of the merits of the applications other than to ask questions. Those applications receiving an average panel score of ``Fair'' or ``Poor'' will not be given further consideration, and applicants will be notified of non-selection.

For the applications scored by the reviewers as either "Excellent," "Very Good," or "Good", the Program Manager will (a) create a ranking of the applications to be recommended for funding using the average panel scores; (b) recommend the total duration of funding for each application; and (c) recommend the amount of funds available for each application subject to the availability of fiscal year funds. Recommendations for funding are forwarded from the Program Manager to the Director of the Ocean Acidification Program and to the Director of GOMO, for the final funding recommendation decision. Recommendations will be made in rank order from the peer-review process unless the proposal is justified to be selected out of rank order based on the selection factors listed below in Section V.C.

NOAA reserves the right to negotiate the budget with the applicants that have been selected to receive awards, which may include requesting that the applicant removes certain costs, combine budgets into a single application, or change the lead or sub institution. Additionally, NOAA may request that the applicant modify objectives or work plans and provide supplemental information required by the agency prior to award. NOAA may select some, all, or none of the applications, or part(s) of any particular application, and may request that applicants combine projects. In addition, applications rated by the panel as either "Excellent," "Very Good," or "Good" that are not funded in the current fiscal period, may be considered for funding in another fiscal period without having to repeat the competitive review process.

C. Selection Factors

Proposals may 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. Geographically.
b. By type of institutions.
c. By type of partners.
d. By research areas.
e. By project types.

3. Whether this project duplicates other projects funded or considered for funding by NOAA or other Federal agencies.
4. Program priorities and policy factors. Refer to section I.B.
5. Applicant's prior award performance.
6. Partnerships and/or participation of targeted groups.
7. Adequacy of information necessary for NOAA to make a NEPA determination and draft necessary documentation before recommendations for funding are made to the grants officer.

Awards may also be modified for selected projects depending on budget availability or according to the selection factors listed above.

D. Anticipated Announcement and Award Dates

Subject to the availability of funds, review of the applications will begin in Spring 2024. Applicants may be notified of award or declination by September, 2024, and applicants should use a start date of September 1, 2024.

## VI. Award Administration Information

### A. Award Notices

The Selecting Official will make recommendations to the NOAA Grants Management Division, and the final approval of selected applications and issuance of awards will be by the NOAA Grants Officer. The award decisions of the NOAA Grants Officer are final. When a decision has been made (whether an award or declination), verbatim anonymous copies of reviews and summaries of review panel deliberations, if any, will be made available to the applicant. Declined applications will be held in OAP for three years in accordance with current retention policies, and then destroyed.

The NOAA Grants Officer will review financial and grants administration aspects of a proposed award, including conducting an assessment of the risk posed by the applicant in accordance with 2 C.F.R. 200.205.

In addition, NOAA reserves the right to reject an application in its entirety where information is uncovered that raises a significant risk with respect to the responsibility or suitability of an applicant. The final approval of selected applications and issuance of awards will be by the NOAA Grants Officer. The award decision of the Grants Officer is final and

there is no right of appeal.
In accordance with Federal appropriations law expected to be in effect at the time of award, NOAA will provide a successful corporate applicant a form to be completed by its authorized representatives certifying whether the corporation has Federally-assessed unpaid or delinquent tax liability or recent felony criminal convictions under any Federal law.
The applicant will be notified by e-mail that their application was recommended for funding. The applicant must be aware that the email notification is NOT the official award notice. Official notification happens only when the applicant receives an award notice from a federal grants or procurement officer (NOAA funding awardees will be notified by a grants officer), electronically.

B. Administrative and National Policy Requirements

UNPAID OR DELINQUENT TAX LIABILITY
In accordance with Federal appropriations law expected to be in effect at the time of award, NOAA will provide a successful corporate applicant a form to be completed by its authorized representatives certifying whether the corporation has Federally-assessed unpaid or delinquent tax liability or recent felony criminal convictions under any Federal law.

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.

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.

DOC TERMS AND CONDITIONS
Successful applicants who accept a NOAA award under this solicitation will be bound by Department of Commerce Financial Assistance Standard Terms and Conditions. This document will be provided in the award package and can be found at http://www.ago.noaa.gov.

LIMITATION OF LIABILITY

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

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) AND OTHER PERMITTING REQUIREMENTS

All federal agencies must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or proposals which are seeking federal funding opportunities. Detailed information on NOAA compliance with NEPA, for example, can be found at the following NOAA NEPA website: http://www.nepa.noaa.gov/, including the NOAA Administrative Order 216-6 for NEPA, http://www.nepa.noaa.gov/NAO216_6.pdf, and the Council on Environmental Quality implementation regulations, http://energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf. 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 federal agencies in drafting an environmental assessment, if deemed necessary. Applicants will also be required to cooperate 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 agencies to make an assessment on any impacts that a project may have on the environment. 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 agencies to make an assessment on any impacts that a project may have on the environment. See the Required Elements section for information about permitting.

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. 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.

DATA SHARING POLICY

1. 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

INDIRECT COST RATE
An applicant with a current Federally-approved indirect cost rate that is proposing indirect costs in its budget should include a copy of the approved rate with its application. 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 Modified Total Direct Costs (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: Michele Mazzocchetti, Grants Officer, NOAA Grants Management Division, 1325 East West Highway, 9th Floor, Silver Spring, MD 20910, or michele.mazzocchetti@noaa.gov

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.

FREEDOM OF INFORMATION ACT (FOIA)
In the event that 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), 5 U.S.C 552, are found at 15 C.F.R. Part 4, 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 the applicant, the confidentiality of the content of funded applications will be maintained to the maximum extent permitted by law.

INTELLECTUAL PROPERTY

The rights to any work or other intangible property produced or acquired under a Federal award are determined by 2 C.F.R. § 200.315 (Intangible property). The non-Federal entity owns any work produced or purchased under a Federal award subject to the DOC's royalty free, nonexclusive, and irrevocable right to obtain, reproduce, publish, or otherwise use the work or authorize others to receive, reproduce, publish, or otherwise use the work for Government purposes. For more details on Intellectual Property please see section .03 of the Department of Commerce's Standard Terms and Conditions (https://www.commerce.gov/sites/default/files/2020-11/DOC%20Standard%20Terms%20and%20Conditions%20-%2012%20November%202020%20PDF_0.pdf).

C. Reporting

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

## VII. Agency Contacts

OAP point of contact for technical and grant related matters: Erica Ombres, Program Manager phone: 301-734-1072 email: erica.h.ombres@noaa.gov

## VIII. Other Information

Check List for Required and Requested Documents:

(1) SF-424
(2) Title Page
(3) Abstract
(4) Project Description
(5) References
(6) Milestone Chart
(7 ) Bio Sketch (For each PI and co-PI)
(8) Current and Pending Support (For each PI and co-PI)
(9) Permits (if none, say so)
(10) Accomplishments (if none, say so)
(11) Budget Narrative and Justification (One for the lead institution and each subaward/subcontract).
(12) CD-511
(13) SF-424B

(14) SF-424A (One for the lead institution and each subaward/subcontract)
(15) Alphabetized Collaborator List (ONE excel spreadsheet for all)
(16) Key Contact form
Indirect Rate Agreement (requested).
If Applicable: Signed Approval from subaward/subcontractor institutes, SF-LLL