

Regional Vulnerability Assessments for Ocean Acidification (RVA-OA17)

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ANNOUNCEMENT OF FEDERAL 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: Regional Vulnerability Assessments for Ocean Acidification (RVA-OA17)

Announcement Type: Initial

Funding Opportunity Number: NOAA-OAR-OAP-2017-2005016

Catalog of Federal Domestic Assistance (CFDA) Number: 11.017, Ocean Acidification Program (OAP)

Dates: Letters of Intent (LOIs) are due no later than 5:00 PM Eastern Daylight Time November 4th 2016. LOIs received after that date and time will not be accepted. We anticipate that feedback from the LOIs will be sent November 23rd 2016. Full proposals are due no later than 5:00 PM Eastern Standard Time January 13th 2017. We anticipate that a review of full proposals will be completed during Spring 2017, and funding should begin during September 2017 for most approved projects. September 1, 2017, should be used as the proposed start date on proposals. Applicants should be notified of their status within 3 months of the closing date. All proposals must be submitted in accordance with the guidelines below. Failure to follow these guidelines will result in proposals being returned to the submitter.

Funding Opportunity Description: The purpose of this document is to advise the public that NOAA/OAR/Ocean Acidification Program (OAP) is soliciting proposals for collaborative projects of up to 2 years in duration that synthesize ocean acidification information at a regional scale (e.g. Large Marine Ecosystem, large estuary or collection of small estuaries, and state or collection of states in US waters) to determine where societal vulnerabilities to ocean acidification exist or are emerging, in order to provide actionable information for marine resource decision makers. This funding opportunity will not support the collection of new chemical or ecological observations or species response data. Social science data collection is permitted. Funding is contingent upon the availability of Fiscal Year 2017 Federal appropriations. It is anticipated that projects funded under this announcement will have a September 1, 2017 start date. Approximately 3-6 projects for 2 years in duration are expected to be funded at the level of approximately \$100,000 - \$350,000 per year per proposal. It is anticipated that up to \$2,000,000 may be available in FY 2017 for the first year of projects.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

NOAA's Ocean Acidification Program (OAP) 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 economies that depend on the ocean. NOAA's mission is to understand 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.

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 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 seriously threaten the future health of the world's oceans and the ecosystem services it provides.

To address ocean acidification and serious concerns as to possible 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. Washington, Maine and Maryland have also passed legislation to understand the impacts of OA on their resources.

The federal government identifies its priorities for national and regional ocean acidification research in the Strategic Plan for Federal Research and Monitoring of Ocean Acidification. This announcement specifically addresses the priorities listed in Theme 5, the Assessment of Socioeconomic Impacts and Development of Strategies to Conserve Marine Organisms and

Ecosystems. Assessments of the socioeconomic impacts of ocean acidification are essential for developing appropriate adaptation and conservation strategies; however, socioeconomic components have typically been lacking in past ocean acidification studies.

NOAA identifies its priorities for research in the NOAA Ocean and Great Lakes Acidification Research Plan

(<http://oceanacidification.noaa.gov/AboutUs/ProgramDrivers/NOAAOceanGreatLakesAcidificationResearchPlan.aspx>). This announcement specifically addresses the priorities for human dimensions, to estimate anticipated changes to ecosystem services as a consequence of ocean acidification and evaluate alternative management options, and synthesis of data and information to develop data and information tools for evaluating the consequences of ocean acidification to create more effective management strategies.

Additional Guiding Documents

In addition to the FOARAM and state legislation, several national-level and regional reports and products can provide background information on OA research and strategies and rationale for this Federal Funding Opportunity:

1. The 2013 Implementation plan for Executive Order 13547 for the Stewardship of the Ocean, Our Coasts, and the Great Lakes,
http://www.whitehouse.gov/sites/default/files/national_ocean_policy_implementation_plan.pdf.
2. Department of Commerce Climate Adaptation Plan
(http://www.osec.doc.gov/ofeq/Documents/OSEEP/Annual%20Rpts%20&%20Scrcards/Final%20DOC%20Adaptation%20Plan_Final_2014-6-10.pdf)
3. The NOAA Fisheries Fish Species Climate Vulnerability Assessment
<http://www.st.nmfs.noaa.gov/ecosystems/climate/tools/assessing-vulnerability-of-fish-stocks>
4. Social Indicators of Fishing Community Vulnerability and Resilience in the U.S
<http://www.st.nmfs.noaa.gov/humandimensions/social-indicators/index>
5. National Socioeconomic Indicators for US Coral Reef Jurisdictions
http://www.coris.noaa.gov/monitoring/resources/ncrmp_socio_econ_indicators.pdf
6. Documents generated by the Washington State Blue Ribbon Task Force for OA,
<http://www.ecy.wa.gov/water/marine/oa/panel.html>
7. Documents generated by the West Coast OA and Hypoxia Science panel,
(<http://westcoastoah.org/executivesummary/>)
8. The Maine OA Commission Report
(<http://www.maine.gov/legis/opla/Oceanacidificationreport.pdf>)
9. Maryland Task Force Report
(http://dnr2.maryland.gov/waters/bay/Pages/MDOATF/OATF_Home.aspx)
10. H.R 2553. Coastal Communities Ocean Acidification Act of 2015

(<https://www.congress.gov/bill/114th-congress/house-bill/2553/text>)

11. S 1886 To Reauthorize the Integrated Coastal and Ocean Observing System Act of 2009 (<https://www.congress.gov/bill/114th-congress/senate-bill/1886/text>)

B. Program Priorities

The NOAA/OAR/Ocean Acidification Program (OAP) is soliciting proposals for three types of collaborative projects that synthesize ocean acidification (OA) information at a regional-scale (e.g. Large Marine Ecosystem, large estuary or collection of small estuaries, and state or collection of states) to assess where societal vulnerabilities exist or are emerging, in order to provide actionable information for marine resource decision makers. This information is intended to provide national to local marine resource decision makers (including U.S. Congress, Federal, state, tribal, and local agencies) with an improved understanding of the complex ways in which OA may impact ocean and coastal ecosystems, ecosystem services, and human communities to facilitate adaptation to OA. Equipping decision makers with actionable information, used to develop adaptation strategies, requires the synthesis of disparate types of data (chemical, biological, ecological and social), as well as translation of multi-disciplinary OA science tailored to support decision-making needs.

Applicants must choose **ONLY** one of the following three project options.

Option 1: Regional Vulnerability Assessment. Proposals submitted under this option should develop a regional vulnerability assessment of human communities to OA, and can include both data synthesis activities and stakeholder meetings/workshops. Projects may last up to 2 years in duration and not exceed \$350k/yr. Proposers should ensure that the size of the region is scaled to the needs of the intended end users. These vulnerability assessments should provide information to support adaptation planning for, but not limited to, habitat, species, and ecosystem protection and restoration; fisheries management and other extractive uses of coastal and marine resources; traditional and cultural uses of coastal and marine resources and environments; and coastal community planning for mitigation, resilience, and adaptation. They can be new projects or distinct additions to existing regional assessment projects.

Option 2: Data Synthesis. Proposals submitted under this option should focus only on conducting data syntheses that are relevant to a regional vulnerability assessment of marine ecosystems and/or human communities to OA. Applicants should identify a user group that will utilize the data synthesis product for the purpose of conducting a vulnerability assessment. Alternatively, proposals could describe how the proposed activities and outputs would fit into a regional vulnerability assessment of human communities to OA. Projects

may last up to 2 years in duration and not exceed \$200k/year. (Teams awarded projects under Option 2 will receive special consideration for future Regional Vulnerability Assessment FFOs)

Option 3: Workshop that Builds Towards a Regional Vulnerability Assessment. Proposals submitted under this option should propose a larger workshop or series of small meetings that informs regional vulnerability assessments of human communities to OA. This workshop should bring together stakeholders from various backgrounds and disciplines (e.g., industry; academia; local, state, tribal, and federal government) to promote interdisciplinary partnerships and discuss what stakeholders would like to see in a vulnerability assessment of the impacts of OA on human communities. This workshop should also identify research needs/gaps in the region that are needed before a vulnerability assessment can be completed. The Washington State Blue Ribbon Panel on Ocean Acidification, West Coast Ocean Acidification and Hypoxia Panel, and Northeast Coastal Acidification Network exemplify efforts that have built the type of information needed for vulnerability assessments. A publication summarizing the outcomes of the workshop must also be produced and made publicly available within one year of the workshop. Projects may last up to 12 months in duration and not exceed \$100k/yr. (Teams awarded projects under Option 3 will receive special consideration for future Regional Vulnerability Assessment FFOs).

Priority Elements

The NOAA Ocean Acidification Program is accepting proposals that address one or more of these priority elements:

1. a clear summary of the information that end users and stakeholders have identified as requirements for sound decision making related to adaptation to OA or an actionable plan for generating this information by engaging with end users and stakeholders;
2. a plan to effectively structure and employ models and other tools that utilize chemical, climate, biological, ecological, and/or socio-economic information to assess the vulnerability of human communities to scenarios of OA;
3. a plan to generate techniques for presenting multidimensional information on OA that aid in the use of human community vulnerability assessments for adaptation and other decision-making;
4. a synthesis of existing data to produce the information and understanding on which human community vulnerability assessments are based; and
5. an assessment of whether current management strategies for coastal and marine

resources and communities are robust to scenarios of OA, conduct management strategy evaluations to assess the success of alternative management options under different scenarios of OA, and/or identify and test how to effectively insert OA-related information into management processes.

A single proposal is not required to address all of the elements listed above. However, understanding the vulnerability of marine ecosystems and related human communities to OA will require the integration of multiple types of data. Proposals are expected to be multi-disciplinary and may include components that address biogeochemistry, ecology, human dimensions, and ecosystem services. End user and stakeholder involvement will be required during the course of the research by, among other activities, including a representative end user of the information generated by the project (e.g., marine resource manager, Sea Grant extension agent, state or local policy maker) as a co-PI. Use of an end user advisory committee to guide the transition of research results toward applications from the outset of the project is encouraged (especially for those applying under Option 1). Models, projections, and visualization tools developed through this announcement should capitalize on NOAA's other investments in OA and related research, modeling, and observations. NOAA investigators are eligible to apply, however proposals must include participants from outside of NOAA. Where appropriate, proposals should show explicit linkages to, and utilization of, wider research, monitoring, and modeling efforts supported through federal, state, or regional entities.

Proposal requirements:

- Proposals must include interdisciplinary collaborations (e.g., between physical, ecological, social, economic scientists; managers/decision makers; industry leaders, etc.), and, if applicable, promote communication and partnerships between different groups to ensure continued use and shared understanding of information generated by the project
- Project teams must include a representative end user of the information generated by the project. The ability to produce usable science is greatly enhanced when researchers understand and are responsive to the interests and needs of end users; likewise, the application of knowledge increases when end users understand and acknowledge the capabilities of science to address their management challenges and actively seek to incorporate the research into management plans and decision processes.
- Proposals must clearly describe the process that will be followed to ensure that productive collaboration occurs among the project team and end users, including a mechanism for being adaptive and responsive to the respective input, needs, and capabilities of each.
- Projects must engage end users and other relevant partners and stakeholders throughout the entire project, from development through implementation.

- Proposals must include clear plans to communicate the potential consequences of OA to its targeted end users and stakeholders, and those projects that develop vulnerability assessments must include clear plans to deliver recommendations to end users and stakeholders to foster actions consistent with the understanding of human community vulnerability to OA developed by their activities.
- Proposals must identify the data and data synthesis products on which vulnerability assessments of human communities to OA will be based, outline pathways for developing relevant new data synthesis products, and/or describe the process by which stakeholder needs will define regional needs for vulnerability assessments of human communities to OA.

Projects developed through this announcement should capitalize on NOAA's other investments in OA and related research, modeling and observations (see <http://oceanacidification.noaa.gov/AboutUs/CurrentProjects.aspx>.) NOAA investigators are eligible to apply (see eligibility information below), however proposals must include participants from outside NOAA. Where appropriate, proposals should show explicit linkages to, and utilization of, wider research, monitoring and modeling efforts supported through Federal, state or regional entities.

All proposals are encouraged to collaborate with and/or leverage output from relevant research and decision-making institutions (e.g., non-governmental organizations; academic institutions; state, tribal, and local governments; private sector organizations; and federal agencies) to the extent this collaboration enhances the effectiveness of the project and its outcomes.

Proposals should justify their work and approaches by reference to one or more of the guiding documents listed at the end of the Program Objective section, or some similar compilation of research needs and approaches within their geographic region.

The NOAA Ocean Acidification Program website (<http://oceanacidification.noaa.gov/>) provides information about all of its activities, including regional perspectives on OA (http://oceanacidification.noaa.gov/current_projects).

Proposals should indicate the expected outputs and outcomes of the research, in addition to research activities. The OAP website provides an explanation of the difference between project outputs and project outcomes (<http://oceanacidification.noaa.gov/Opportunities/InformationforRecipients/OutputsandOutcomes.aspx>). Funded proposals will be required to include outputs and outcomes in their annual reports.

This FFO is NOT intended to support the collection of new chemical, biological or ecological observations or species response data. Social science data collection is permitted.

C. Program Authority

Federal Ocean Acidification Research and Monitoring Act (33 U.S.C. Chapter 50, Sec. 3701-3708)

II. Award Information

A. Funding Availability

Approximately 3-6 projects for 1 - 2 years in duration are expected to be funded at the level of approximately \$100,000 - \$350,000 per year per proposal. It is anticipated that up to \$2,000,000 may be available in FY 2017 for the first year of projects. However, there is no appropriation of funds at this time and no guarantee that there will be.

B. Project/Award Period

Applicants may submit multi-year applications covering up to 24 month period (depending on which Option is chosen) with an anticipated start date of September 1, 2017. FY 2017 funding is expected to cover 12 months of any multi-year grant. Subsequent funding is contingent on the availability of FY 2018 funding and performance under the current award.

C. Type of Funding Instrument

Proposals selected for funding will be funded through a grant or cooperative agreement depending upon the amount of collaboration, participation, or involvement by NOAA in the management of the project. Examples of substantial involvement may include, but are not limited to, proposals for collaboration between NOAA scientists and a recipient scientist. Funding for contractual arrangements for services or products for delivery to NOAA is not available under this notice.

III. Eligibility Information

A. Eligible Applicants

Eligible applicants are institutions of higher education; other nonprofits; commercial

organizations; state, local and Indian tribal governments; and Federal agencies. Applications from non-Federal and Federal applicants will be competed against each other. Proposals selected for funding from non-Federal applicants will be funded through a grant or cooperative agreement as described above in section II. C. of this notice. Proposals selected for funding from NOAA scientists shall be effected by an intra-agency fund transfer. Proposals selected for funding from a non-NOAA Federal agency will be funded through an inter-agency transfer. PLEASE NOTE: Before non-NOAA Federal applicants may be funded, they must demonstrate that they have legal authority to receive funds from another Federal agency in excess of their appropriation. The only exception to this is governmental research facilities for awards issued under the authority of 49 USC 44720(b). 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.

B. Cost Sharing or Matching Requirement

No cost sharing is required under this program.

C. Other Criteria that Affect Eligibility

Letters of Intent are required for this announcement. A full proposal that did not submit a Letter of Intent (LOI) will not be considered and will be returned to the proposer without review.

Each full proposal must substantially comply with the eighteen elements listed under Required Elements, (1)-(18), or it will be returned to sender without further consideration.

OAP adheres to the principals of scientific integrity. This policy can be found; <http://nrc.noaa.gov/scientificintegrity.html>.

It is 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 must 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) will also delay the award of funds if a project is otherwise selected for funding.

IV. Application and Submission Information

A. Address to Request Application Package

This solicitation, complete application packages (including required Federal forms) with instructions and the address for submission can be found at www.grants.gov, or by contacting Erica Ombres (Erica.Ombres@noaa.gov, 301-734-1072).

B. Content and Form of Application

1. Letter of Intent (LOI) - The purpose of the LOI process is to provide information to potential applicants on the relevance of their proposed project and the likelihood of it being funded in advance of preparing a full application. Full applications will be encouraged only for LOIs deemed relevant, however the final decision to submit a full proposal is made by the investigator, regardless of feedback they receive from the LOI process. The LOI should provide a concise description of the proposed work and its relevance to the targeted competition. Letters of Intent (LOI) must be submitted to the program manager by emailing a pdf or word document to Erica.h.ombres@noaa.gov with the title RVA-OA17 LOI_PIslastname. The LOI should be no more than two pages in length, single spaced in 12-point font with 1-inch margins and should include in order the components listed below.

If the below components are not included, the LOI risks a delayed response and may not be considered.

- 1) Project Type – Regional Vulnerability Assessment (Option 1), Data Synthesis (Option 2), OR Workshop that Builds Towards a Regional Vulnerability Assessment (Option 3).
- 2) Specification of a tentative project title.
- 3) Name(s) phone number(s), email address(s) and institution(s) of all Principal Investigator(s), and specification of which individual is the Lead Principal Investigator.
- 4) Approximate cost of the project.
- 5) Problem Statement and Response to End User and/or Stakeholder Needs – Describe the regional focus and issue(s) the project will address, discussing the importance and context, with particular emphasis on how the project will address one or more management or

stakeholder needs. Identify the project end user(s) and describe how the research is designed to meet their needs. Describe the process that was used to identify end user and other stakeholder needs. If applicable, briefly describe how the proposed work will leverage the outputs or outcomes of work previously supported by the NOAA Ocean Acidification Program.

6) Brief summary of work to be completed, methodology to be used, relevant stakeholder groups and the plan for coordination with ongoing NOAA and/or other federal agency, state or NGO funded OA work.

Program Managers from NOAA and other federal agencies will review each LOI to determine whether it is responsive to the Program's goals and priorities, as advertised in this notice. Emails to proposers are scheduled to be sent out three weeks after the due date to encourage or discourage a full application. LOIs from the same region may be asked to combine their proposals. In general, full proposals will be encouraged if they show evidence of application to the program priorities above, clear statements of the problem addressed and the methodologies to be used, understanding of stakeholder concerns, and strong collaboration with NOAA, a NOAA-related program, or other Federal, state or regional management bodies. The final decision to submit a full application will be made by the investigator, regardless of the recommendations of the program manager regarding the LOI. Late LOIs will not be considered and any associated full applications will not be accepted. In the feedback, the NOAA program manager may recommend that the proposers change the Option selected but it is up to the proposers to decide which Option they will apply for in their final proposal.

2. Applications

The provisions for full application preparation provided here are mandatory. Applications received after the published deadline (refer to DATES) or applications that deviate from the prescribed format will be returned to the sender without further consideration. Additional background information on the program is available on the OAP Opportunities page <http://oceanacidification.noaa.gov/Opportunities/>.

3. Required Elements

Each application must substantially comply with the following eighteen elements or it will be returned to sender without further consideration. The Summary, Title page, Abstract, Project Description, References, Biographical Sketch, Budget Narrative and Collaborators List must be single spaced in 12-point font with 1-inch margins. The eighteen elements are as follows:

(1) Standard Form 424. At the time of application submission, all applicants requesting direct funding must submit the Standard Form, SF-424, "Application for Federal

Assistance,” to indicate the total amount of funding proposed for their institution 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. Multi-institutional applications must include signed SF-424 forms from all institutions requesting direct funding. Original signatures are required on SF-424 forms provided to a lead institution by a collaborating institution for grants.gov submission.

(2) Summary title page - one page maximum. The Summary title page identifies the project's title, starting with the acronym: RVA-OA2017 and the Principal Investigator's (PI) name and affiliation, complete address, phone and E-mail information. It should also include:

- The option (1,2 or 3) the proposal is addressing should be identified on the summary title page.
- The requested funding amounts for each fiscal year should be listed on the summary title page.
- Multi-institution applications must also identify the lead investigator for each institution and the requested funding for each fiscal year for each institution on the title page. Lead investigator and separate budget information is not requested on the title page for institutions that are proposed to receive funds through a subaward to the lead institution; however, an accompanying budget justification must be submitted for each subaward. For further details on budget information, please see (14) Standard Form SF-424A of this part.

(3) One-page abstract/project summary. The summary (abstract) should appear on a separate single page, headed with the proposal title, the option (1,2, or 3) that this proposal is responsive to, 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 these key points in their own words. Project summaries of funded applications may be posted on the OAP website. The project summary shall include an introduction of the problem, rationale, scientific objectives and/or hypotheses to be tested, and a brief summary of work to be completed.

(4) Project description. The description of the proposed project must include narratives of the Proposed Research and not be more than 17 pages in length (including up to 2 pages for data sharing policy). The Proposed Research Narrative must be thorough and explicitly indicate its relevance to the program goals and scientific priorities by:

- (a) Identifying the topic that is being addressed by the proposal;
- (b) Describing the proposed scientific objectives and analytical 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).
- (c) Discussing how the proposed project supports relevant policy mandates;

(d) Identifying the function of each PI. The Lead PI (s) will be responsible for communicating with the Federal Program Manager on all pertinent verbal or written information.

(e) All proposals must include a data management plan which is compliant with NOAA's Public Access to Research Results Plan.

http://www.glerl.noaa.gov/review2016/reviewer_docs/NOAA_PARR_Plan_v5.04.pdf . A detailed data management plan will describe how metadata and data collected as part of the project will be disseminated to the broader community, and will describe 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 (<http://www.nodc.noaa.gov/oceanacidification/index.html>). All data resulting from NOAA OAP-funded projects must be archived and accessible through NCEI.

(5) The Applications to Management Narrative should establish the connection to relevant resource management needs by explicitly identifying the end user group(s) including evidence of the linkage between the scientific questions and management needs. If proposed, the format and role of management and technical advisory committees should be included in this section. All proposals should specifically identify direct participation of resource manager(s) as co-Principal Investigators. This narrative should provide the management justification for the research through:

(a) Articulating the coordination with one or more management entities;

(b) Discussing the expected significance of the project to resource management priorities and needs. Specific management targets, with proposed outputs and outcomes, should describe how this project will improve management capabilities. Outputs are defined as products (e.g. publications, models) or activities that lead to outcomes (changes in management knowledge or action). Definitions and examples of outputs and outcomes can be accessed at <http://oceanacidification.noaa.gov/Opportunities/InformationforRecipients/OutputsandOutcomes.aspx>. The timeline for achieving outcomes should be included in the Milestone Chart (below).

(c) Describing specific activities, such as workshops or development of outreach materials, that will enhance information transfer from project scientists to relevant management entities, other end-users, or the public.

(6) References cited. Reference information is required. Each reference must include the names of all authors in the same sequence they appear in the publications, the article title, volume number, page numbers, and year of publications. 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 17 page proposal descriptions.

(7) Milestone chart. Provide time lines of major tasks covering the duration of the proposed project.

(8) Biographical sketch. All principal and co-investigators 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. Additional lists of publications, and lectures should not be included;

(9) Current and pending support. Describe all current and pending federal financial/funding support for all principal and co-investigators, including unfunded collaborators making a substantial contribution to the research. Continuing grants must also be included. The capability of the investigator and collaborators to complete the proposed work in light of present commitments to other projects should be addressed. Therefore, please discuss the percentage of time investigators and collaborators have devoted to other Federal or non-Federal projects, as compared to the time that will be devoted to the project solicited under this notice. A current and pending support form is available on the OAP web site for your use:

<http://oceanacidification.noaa.gov/Opportunities/InformationforApplicants/ApplicationForms.aspx>. You must respond to the requirement whether or not you have any current and/or pending support.

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

(11) Accomplishments from Prior Federal Support. If any PI or co-PI identified on the project has received federal funding in the past five years for research, 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 and funded by OAP.

The following information must be provided:

- a) the 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.
- Reviewers will be asked to comment on the quality of the prior work described in this

section of the proposal. You must respond to the requirement whether or not you have accomplishments from prior OAP support

(12) 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. Budget narrative guidance can be found at <http://www.ago.noaa.gov/grants/training.html> For additional information concerning each of the required categories and appropriate level of disclosure please see <http://oceanacidification.noaa.gov/Opportunities/InformationforApplicants/OtherRequirementsInstructions.aspx>

A separate budget justification is required for each institution in a multi-institutional project and for each subcontract. Signed approval from each subaward and contractor's institution is also required.

(13) 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. However, these forms submitted through grants.gov as "Optional Documents" must have hard signatures i.e. collaborating institutions sending this form to the lead.

(14) SF 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. However, these forms submitted through grants.gov as "Optional Documents" must have hard signatures i.e. collaborating institutions sending this form to the lead.

(15) Standard Form 424A. At time of application submission, all applicants are required to submit a SF-424A Budget Form which 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. (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. Multi-institution applications must include a SF-424A for each institution, and multi-investigator applications using a lead investigator with a subaward approach must submit a SF-424A for each subaward. Each subaward should be listed as a separate item. Provide separate budgets for each subaward and contractor regardless of the dollar value and indicate the basis for the cost estimates. Describe products/services to be obtained and indicate the applicability or necessity of each to the project. List all subaward and contractor costs under line item 6f contractual on the SF-424A (Subawards can fall under other 6h, if the recipient prefers). Signed approval from the institution of each subaward and contractor must be provided. Indirect cost may not be applied to ship costs.

(16) Provide one list that includes all (US and Foreign) collaborators, advisors, and advisees for each investigator (principal and co-principal investigators, post-docs, and subawardees), complete with corresponding institutions. Submit only one, combined and alphabetized list per application. 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.

(17) Key Contacts form. At the time of application submission, all applicants must submit the Key Contacts form. This form can be found on the OAP website:
ftp://ftp.oar.noaa.gov/oa/FFO/key_contacts_form.pdf This form identifies the official applicant contacts.

(18) NEPA questionnaire: Please respond to questions 2-7, 10 and 18 of the OMB approved NOAA NEPA questionnaire that can be found here:
<http://www.nepa.noaa.gov/questionnaire.pdf>

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

Attachments must be submitted in Adobe Acrobat PDF 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. budget narrative, project description, milestone chart etc. For a collaborative application: The SF424's of the additional institutions should be uploaded separately and labeled using the name of the institution/SF424 and then submitted in the Optional Form box as Other Attachments. Combine all of the remaining required documents for the individual institution into one PDF file and submit the file labeled with the name of the institution. 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 the Federal Funding Opportunity notice 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.

In addition to the eighteen required elements, it is requested that the indirect rate agreement be provided upon application submission. It is allowable for applicants to suggest merit reviewers on a page after the Summary Title Page. These forms can be uploaded in to the Optional Form box under Other Attachments in Grants.gov.

Collaborative applications must be submitted by the lead institution and the following documents must be attached to the application for each collaborating institute:

Multi-institutional submissions - SF424, SF424A, Budget Justification, SF-424B, CD511, Current and Pending and Key Contracts are required. PLEASE NOTE: Signed SF424s from each applicant requesting direct funding is a submission requirement. We also request submission of the indirect rate agreement, if applicable.

Subaward submissions - SF424A, Budget Justification, SF-424B, CD-511, Current and Pending, and Key Contacts are required. Signed approval from the institution of each subaward must be provided. We also request submission of the indirect rate agreement, if applicable.

*Permits, accomplishments, Biographical sketches and the collaborators list must also be supplied to the lead institution in order for them to be combined within the lead application information.

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

To enable the use of a universal identifier and to enhance the quality of information available to the public as required by the Federal Funding Accountability and Transparency Act of 2006, to the extent applicable, any proposal awarded in response to this announcement will be required to use the System for Award Management (SAM), which may be accessed online at <https://www.sam.gov/portal/public/SAM/>. Applicants are also required to use the Dun and Bradstreet Universal Numbering System and will be subject to reporting requirements, as identified in OMB guidance published at 2 CFR Parts 25, 170 (2013), which may be accessed at http://www.ecfr.gov/cgi-bin/text-idx?SID=1ccffb4c1d4de03add6a041113460f9&mc=true&node=se2.1.200_1300&rgn=div8

D. Submission Dates and Times

LOIs are due no later than 5:00 PM Eastern Daylight Time November 4th 2016. LOIs received after that date and time will not be accepted. Letters of Intent (LOI) must be submitted to the program manager by emailing a pdf or word document to Erica.h.ombres@noaa.gov with the title RVA-OA17 LOI_PIslastname. We anticipate that feedback from the LOIs will be sent November 23rd 2016. Full proposals are due no later than 5:00 PM Eastern Standard Time January 13th 2017. We anticipate that a review of full proposals will be completed during Spring 2017, and funding should begin during September 2017 for most approved projects. September 1, 2017, should be used as the proposed start date on proposals. Applicants should be notified of their status within 3 months of the closing date. All proposals must be submitted in accordance with the requirements listed above in section IV. B. Failure to follow these requirements will result in proposals being returned to the submitter.

Applications submitted through Grants.gov APPLY will be accompanied by a date and time receipt indication on them. If an applicant does not have Internet access, hard copy proposals will be accepted and date and time stamped when they are received. Applications received after the deadline will not be reviewed.

E. Intergovernmental Review

Applications under this program are not subject to Executive Order 12372, "Intergovernmental Review of Federal Programs."

F. Funding Restrictions

Funding beyond the first year will be dependent upon satisfactory performance and the continued availability of funds.

G. Other Submission Requirements

Letters of Intent (LOI) must be submitted to the program manager by emailing a pdf or word document to Erica.h.ombres@noaa.gov with the title RVA-OA17 LOI_PIslastname.

Completed application packages (including required Federal forms) should be submitted to www.grants.gov. If an applicant does not have Internet access or cannot submit through www.grants.gov, hard copy LOIs and proposals will be accepted and date and time stamped when they are received. Mail hardcopy proposals to: Erica Ombres 1315 East West Highway SSMC3 Rm 10354 Silver Spring MD 20910. LOIs received after the due date will not be reviewed. A full proposal that did not submit a LOI will not be considered and will be returned to the proposer without review. Applications received after the deadline will not be reviewed.

V. Application Review Information

A. Evaluation Criteria

1.Importance/Relevance and Applicability of Proposal to the Program Goals (40%)

This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, federal, regional, state, or local activities. This criterion ascertains whether the proposal demonstrates a comprehensive understanding of the issue, and clearly articulates and addresses at least one management or stakeholder need. This criterion ascertains whether the proposal identifies and clearly articulates how planned outputs will be used within the context of the described management need.

2.Technical/Scientific Merit (30%)

This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, whether there are clear project goals and objectives, whether the approach is appropriate for the problem being addressed, integrates the end user(s), and is likely to produce the planned outputs. Regional Vulnerability Assessment and Data Synthesis proposals must identify and demonstrate access to appropriate data sources for the planned analyses.

3.Overall Qualification of Applicant/s (10%)

This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. For the OAP Program, this includes: whether the applicant/s possesses the appropriate expertise and experience for the proposed technical methods and end user integration.

4. Outreach, Education and Potential Impact (15%)

This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. This criterion also assesses the potential impact of the project. All outputs should be feasible and likely to lead to the identified outcomes.

5. Project Costs (5%)

This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time-frame.

B. Review and Selection Process

Once a full application has been received by NOAA, an initial administrative review is conducted to determine compliance with requirements and completeness of the application.

All applications will be evaluated and scored individually in accordance with the assigned weights of the above evaluation criteria 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 on a scale of one to five, where scores represent respectively: Excellent (5), Very Good (4), Good (3), Fair (2), Poor (1).

The peer panel will comprise 5 to 8 individuals, with each individual having expertise in a separate area, so that the panel, as a whole, covers a range of scientific expertise. The panel will have access to all mail reviews of proposals and will use the mail review in discussion and evaluation of the entire slate of proposals. All proposals will be evaluated and scored individually. The peer panel shall rate the proposals using the evaluation criteria and scores provided above and used by the mail reviewers. The individual peer panelists' scores shall be averaged for each application and presented to the Program Manager. 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 panel nor participate in discussion of the merits of the applications. 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) determine the total duration of funding for each application; and (c) determine the amount of funds available for each application subject to the availability of fiscal year funds. Awards may not necessarily be made in rank order. 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.

Recommendations for funding are forwarded from the OAP Program Manager to the Selecting Official, the Director of OAP, for the final funding decision. In making the recommendations, the Program Manager, will propose awarding 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.

Investigators may be asked to modify objectives, work plans or budgets, and provide supplemental information required by the agency prior to the award. 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.

C. Selection Factors

Based on the panel review scores and other selection factors, the designated Selecting Official will provide a listing of proposals in rank order along with a justification for their recommendations for proposals to fund to the OAP Director. The OAP Director may justify proposals 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. 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.

D. Anticipated Announcement and Award Dates

Subject to the availability of funds, review of proposals will occur during the spring of 2017, and funding is expected to begin during September of 2017 for most approved projects. September 1, 2017, is to be used as the proposed start date on proposals, unless otherwise directed by the NOAA Program Officer.

VI. Award Administration Information

A. Award Notices

Successful applicants may be asked to modify objectives, work plans, or budgets prior to final approval of an award. The exact amount of funds to be awarded, the final scope of activities, the project duration, and specific NOAA cooperative involvement with the activities of each project will be determined in pre-award negotiations among the applicant, the NOAA Grants Office, and NOAA program staff.

Successful applicants will receive notification that the application has been recommended for funding to the NOAA Grants Management Division. This notification is not an authorization to begin performance of the project. Official notification of funding, signed by the NOAA grants Officer, is the authorizing document that allows the project to begin. Notification will be issued to the Authorizing Official and the PI of the project either electronically or in hard copy. Unsuccessful applicants will be notified that their proposals were not selected for recommendation.

B. Administrative and National Policy Requirements

THE FEDERAL FUNDING ACCOUNTABILITY AND TRANSPARENCY ACT OF 2006 - The Federal Funding Accountability and Transparency Act of 2006 includes a requirement for awardees of applicable Federal grants to report information about first-tier subawards 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 Subaward Reporting System (FSRS) available at www.FSRS.gov on all subawards over \$25,000.

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.

UNPAID OR DELINQUENT TAX LIABILITY - When applicable under appropriations law, NOAA will provide certain applicants a form to be completed by the applicant's authorized representative making a certification regarding Federally-assessed unpaid or delinquent tax liability or recent felony criminal convictions under any Federal law. If a form is provided, an award may not be issued until it is returned and accepted by NOAA.

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.

REVIEW OF RISK - After applications are proposed for funding by the selecting official, the Grants Office will perform administration reviews. 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 the Federal Awardee Performance and Integrity Information System (FAPIIS) about any information included in the system about their organization for consideration by the awarding agency.

DATA SHARING PLAN (up to two pages) - 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.

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--TOC.pdf>, and the Council on Environmental Quality implementation regulations, http://ceq.eh.doe.gov/nepa/regs/ceq/toc_ceq.htm 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 of 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. The 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.

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:

Lamar Revis, Grants Officer
NOAA Grants Management Division
1325 East West Highway, 9th Floor
Silver Spring, MD 20910
lamar.revis@noaa.gov

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) 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.

C. Reporting

All financial and progress reports shall be submitted electronically through the Grants Online system. Reports are to be submitted to the NOAA Program Officer. Financial and Performance reports are due annually.

VII. Agency Contacts

For more information contact Dr. Erica Ombres, Program Manager, Ocean Acidification Program, 1315 East-West Highway, Rm 10354, Silver Spring, MD 20910; email:

Erica.h.ombres@noaa.gov; tel: (301) 734- 1072

VIII. Other Information

None