FY21 Effects of Sea Level Rise (ESLR)

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NOTICE OF FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

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

Funding Opportunity Title: FY21 Effects of Sea Level Rise (ESLR)

Announcement Type: Initial

Funding Opportunity Number: NOAA-NOS-NCCOS-2021-2006594

Catalog of Federal Domestic Assistance (CFDA) Number: 11.478, Center for Sponsored Coastal Ocean Research - Coastal Ocean Program

Dates: The required letters of intent (LOI) sent by e-mail to nccos.grant.awards@noaa.gov and must be received by 11:59 p.m. Eastern Time on October 16, 2020.

Responses to LOIs should be expected by October 30, 2020.

Full applications must be received and validated by Grants.gov by 11:59 p.m. Eastern Time on January 7, 2021.

An informational webinar on this opportunity will be offered approximately two weeks from the date of publication and will be recorded. Information on the date/time and a recording of the webinar after the event occurs, can be found via https://coastalscience.noaa.gov/research/coastal-change/ecological-effects-sea-level-rise-program.

Submissions received after the deadline will not be considered.

Investigators are advised to submit full applications well in advance of the deadline as a precaution against unanticipated delays. Applicants must register with Grants.gov before submitting application materials. When developing your submission timeline, keep in mind the following information regarding application submission on Grants.gov:

1. Grants.gov requires applicants to complete a free annual registration process in the electronic System for Award Management (SAM), which may take between three and five business days or as long as several weeks to process as described in Section IV.G. of this Announcement.

2. If you submit a full 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 NCCOS Grants Administrator (see section VII for contact information) as soon as possible and no later than a week before the due date to assess whether alternative arrangements can be made.

Funding Opportunity Description: The purpose of this document is to advise the public that NOAA/NOS/National Centers for Coastal Ocean Science (NCCOS)/Competitive Research Program (CRP) [formerly Center for Sponsored Coastal Ocean Research (CSCOR)/Coastal Ocean Program (COP)], is soliciting proposals for the Effects of Sea Level Rise Program (ESLR). The program name was shortened in 2020, and was formerly known as the Ecological Effects of Sea Level Rise Program (EESLR). This solicitation is to improve adaptation and planning in response to regional and local effects of sea level rise and coastal inundation through targeted research on key technologies, natural and nature-based infrastructure, physical and biological processes, and model evaluation. The overall goal of the ESLR Program is to facilitate informed adaptation planning and coastal management decisions through a multidisciplinary research program that results in integrated models of dynamic physical and biological processes capable of evaluating vulnerability and resilience under multiple SLR, inundation, and management scenarios. Funding is contingent upon the availability of Fiscal Year 2021 Federal appropriations. It is anticipated that projects funded under this announcement will have a September 1, 2021 or September 1, 2022 start date.

Total funding for this research:

There are two distinct focal areas for this solicitation that will compete separately, 1) Coastal Resilience and 2) Surface Transportation Resilience.

It is anticipated that approximately $1,200,000 may be available in Fiscal Year 2021 for the first year for some projects in each focus area, while an additional $1,200,000 could be available in Fiscal Year 2022 for the first year for additional projects selected from this opportunity.

Approximately 2-4 projects of 2-4 years in duration are expected to be funded under the Coastal Resilience focus area at a level of approximately $200,000 to $400,000 per year per proposal, with a total budget (across all years) that is less than $1,600,000 for the Coastal Resilience focus area.

Approximately 2-4 projects of 2-4 years in duration are expected to be funded under the Surface Transportation Resilience focus area at a level of approximately $200,000 to $500,000 per year per proposal with a total budget (across all years) that is less than $2,000,000 for the Surface

Transportation Resilience focus area.

Electronic Access: Background information about the ESLR Program, including additional information on this Announcement, details on the timing of an informational webinar, and eventually a recording of the webinar can be found at https://coastalscience.noaa.gov/research/coastal-change/ecological-effects-sea-level-rise-program.

The required LOI should be sent by e-mail to nccos.grant.awards@noaa.gov. Full proposals will not be considered if a LOI was not submitted.

Full proposals should be submitted through Grants.gov, http://www.grants.gov. Sign up to receive any potential amendments to this Announcement via www.grants.gov.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

Organization Background and Strategy:

The Competitive Research Program (CRP), part of the National Oceanic and Atmospheric Administration (NOAA) National Centers for Coastal Ocean Science (NCCOS), develops and improves predictive capabilities for managing the Nation's use of its coastal resources through competitive research programs. NCCOS/CRP also supports efforts to translate the results of its research investments, and those of others, into accessible and useful information for coastal managers, planners, infrastructure engineers, lawmakers, and the public to help balance the needs of economic growth with those of conserving the resources of our Nation's oceans, coasts, and Great Lakes.

NCCOS/CRP provides a focal point for regional ecosystem-scale, multidisciplinary coastal ocean research within NOAA. Together with partners in NOAA and other organizations responsible for coastal resources, NCCOS/CRP advances the scientific understanding needed to protect coastal resources and ensure their viability for future generations. This increased understanding of the ocean, coasts, and Great Lakes directly benefits the management of U.S. coastal and ocean resources, and helps NOAA, other Federal agencies, and state, tribal, and local governments achieve their stewardship responsibilities.

A key objective of NCCOS/CRP research is the production of user-driven information that will enable resource managers to assess alternative management and policy strategies to restore degraded ecosystems and protect healthy ones. Research supported is outcome-oriented towards predictions, as well as increased scientific understanding that will provide managers and the public with sound scientific information for making decisions in support of societal objectives. Articulation of outcome-based management goals is required in proposals (see Section IV.B.) and recipients must report progress toward achieving outcome-based goals annually.

Responding to the growing problem of SLR and coastal flooding impacts:

Rising sea level represents a significant threat to coastal ecosystems, communities and infrastructure through land loss, altered habitats, and increased vulnerability to coastal storms, nuisance flooding, and wave actions such as wave run-up, wave forces, wave induced buoyancy, and erosion. Trends in increasing coastal sea level have been well

documented and are expected to accelerate in the coming decades (Sweet et al. 2018, USGCRP, 2018). While global consequences of SLR provide a sobering assessment for possible coastal conditions in the future, significant variability in the rates of SLR and response of ecosystem types and impacts at the regional and local level exists. The actual impact from a given sea level in a region varies substantially given the shoreline geomorphology, development and human response (e.g., beach nourishment, setbacks) to changes. Damages and economic losses could be reduced with improved knowledge on the potential impacts of SLR and coastal flooding as well as options for mitigation and adaptation (Council on Climate Preparedness and Resilience 2016).

In recognition of the need to facilitate increased coastal resiliency and improve adaptation and mitigation capabilities, numerous informational reports and tools have been produced to provide guidance to scientists, managers, and communities. The ESLR Program aims to contribute to this information delivering effective information to guide policy, land management decisions, and infrastructure design. However, where appropriate (e.g., NOAA 2020, USGCRP, 2018, etc.), projects should build on existing information sources used by the end-user community before developing new outputs including tools and interactive applications.

Effects of Sea Level Rise Program:

Providing the scientific foundation for coastal decision making, particularly related to SLR and coastal flooding, is a high priority need identified by NOAA. To address this need, NCCOS's ESLR Program has sought to develop a suite of science information and products required to assess coastal vulnerability and solutions to SLR and inundation. Application of these tools allows for improved coastal planning, management, mitigation, and ecosystem restoration in response to SLR and inundation. The ESLR Program was initiated in 2005 in North Carolina to examine ecosystem impacts in a collaboration with state and local managers that resulted in the development of mapping and modeling tools. The ESLR Program shifted to the northern Gulf of Mexico in 2010, with an emphasis on a collaborative research approach to develop dynamic models of coastal change and improved abilities to examine SLR impacts to storm surge. In 2015, the ESLR Program initiated a suite of projects in support of the NOAA Sentinel Site Program that focused on advancing capacity and capabilities required to improve long-term regional and local ecosystem predictions of SLR and coastal inundation effects. These projects occurred in West Hawai'i, North Carolina, and San Francisco Bay (CA). In 2016, three additional projects were supported that reflect a new focus of the ESLR Program on the use of Natural and Nature-based Features (NNBF) for coastal protection and ecosystem services. These three projects occurred in Southern California and the Gulf of Mexico. In 2019, a funding opportunity led to six

additional awards of three years in length beginning in FY2020 and two additional awards beginning in FY2021. These awards support work around the country and have a similar focus on determining the potential for implementing Natural and Nature-based Features (NNBF) for coastal protection and ecosystem services across many different coastal habitat types. A description of these 8 projects and a detailed explanation of all past and current projects can be found at: https://coastalscience.noaa.gov/research/coastal-change/ecological-effects-sea-level-rise-program.

Natural and Nature based Features for Mitigation:

The use of NNBF has gained traction as a means to enhance coastal resilience and mitigate the potential impacts of extreme events, SLR and inundation to coastal communities, while offering non-protective societal and ecosystem benefits (Sutton-Grier 2015; Bridges et al. 2018; Webb et al. 2019). NNBF refer to a spectrum of features from natural coastal ecosystems to nature-based features that utilize a combination of natural and human engineered features to create a 'hybrid' shoreline (Sutton-Grier 2015). Specifically, NCCOS/CRP defines NNBF as:

- Natural features are existing ecosystems including coastal marshes and wetlands, dune and beach systems, oyster and coral reefs, forests, coastal rivers and floodplains, and barrier islands that provide multiple benefits to communities, such as storm protection through wave attenuation or flood storage capacity and enhanced water services and security.

- Nature-based features (or green/grey infrastructure) are engineered systems where natural features are built or combined with hard or structural engineering approaches (i.e., conventional traditional, or grey approaches) to create a hybrid system such as in a living shoreline or dune with a buried sea wall.

Unlike hardened structures (e.g., bulkheads and groins), NNBF are often living features that can adapt to changing conditions and may become more stable over time, while providing multiple ecological and socio-economic benefits to coastal communities and ecosystems (Sutton-Grier et al. 2015, Bridges et al. 2018, Webb et al. 2019). In recent years, there has been considerable effort among multiple levels of government, non-governmental organizations, scientists, and private interests to advance the use of NNBF (World Bank 2017, Pinson and White 2017). While there is a growing scientific literature quantifying the benefits of NNBF in reducing wave energy, mitigating erosion, and reducing flooding, further quantification of their current and long-term capabilities and performance under a broad range of conditions is needed to improve decision-making on where and how to

implement NNBF. Examples of identified research gaps include:

- the ability of NNBF to enhance coastal resilience (or performance) during extreme and chronic events and how these benefits vary with coastal landscape variables such as topography, or bathymetry;

- long-term performance of NNBF under various scenarios of changes in sea level, precipitation patterns, and temperature.

- a quantitative understanding of the biophysical, socioeconomic and behavioral factors that influence NNBF production functions (e.g., influence of sedimentation and water flows, performance and protective benefits of natural systems, combined hybrid approaches, and sources of non-linearity in ecosystem function);

- ecosystem service valuations to facilitate consistent, standardized monetary and non-monetary valuation of NNBF including benefits, co-benefits and trade-offs of NNBF versus other coastal protection approaches; and,

- development of best practices on construction or restoration of NNBF to enhance coastal resilience.

B. Program Priorities

NCCOS/CRP is soliciting proposals to evaluate and quantify the ability of NNBF approaches to mitigate the effects of SLR and inundation (storm surge, nuisance flooding, and/or wave actions) in two focal areas, Coastal Resilience and Surface Transportation Resilience. Although the term SLR is used instead of relative sea level rise (SLR, i.e., localized) in this document, it is expected that relative sea level rise rates will be used that are scientifically supported and selected with support from the end-users for the region of interest. Coastal resilience focuses broadly on mitigating impacts on coastal ecosystems, communities, and infrastructure (excluding a principle focus on surface transportation infrastructure); while Transportation Resilience focuses specifically on mitigating impacts to surface transportation infrastructure (i.e., road, public transportation, and rail). The impacts should be explored through integrated field research and advancement of predictive modeling applications. These efforts should focus on the advancement and application of dynamic models of physical and biologic processes with that of SLR and/or coastal inundation effects to evaluate the use of NNBF in mitigation and adaptation solutions. Though all proposals in the Coastal Resilience focus area must consider NNBF approaches, successful proposals should address at least two the following the ESLR Program research priorities:

- Quantify the vulnerability of coastal communities, infrastructure, and ecosystems due to SLR and inundation, based on shoreline condition through the advancement of existing predictive approaches, field-based studies and/or dynamic models;

- Quantify the social, economic, and/or ecological benefits that natural and nature-based features provide for communities, infrastructure, and ecosystems in comparison to grey protective infrastructure with respect to the risk of inundation under future SLR;

- Predict the effects of SLR and inundation on ecosystems, and/or communities and infrastructure under varying risk management strategies to inform technical and policy actions that increase long term coastal resilience.

All three of the following priorities, with two optional sub-priorities, should be addressed in the Transportation Resilience focus area:

- Quantify the vulnerability of surface transportation systems to SLR and inundation, based on shoreline condition through advancing existing predictive approaches and dynamic models that could include field based studies (required). NCCOS/CRP specifically seeks to fund at least one proposal that will include a focus on both the following two sub-priorities:

  * Enhance hydrodynamic model resolution to allow for localized and regional surface infrastructure vulnerability assessments (optional), and;

  * Quantify the relationship between inundation and surface transportation asset deterioration (optional).

- Quantify the social, economic, and/or ecological benefits that NNBF provide for communities, infrastructure, and ecosystems in comparison to conventional (i.e., grey) protective infrastructure with respect to the risk of inundation under future SLR (required); and,

- Predict the effects of SLR and inundation on surface transportation infrastructure under varying risk mitigation and management strategies, including-protective benefits of the NNBF scenarios, in order to inform technical and policy actions that increase long term transportation infrastructure resilience (required).

For both focal areas, proposals incorporating predictive or scenario-based model application should focus on the advancement of existing modeling platforms and/or community

modeling systems used by NOAA and relevant partners (some found below in expectations for each focus area). Advancements could include dynamic model integration or downscaling, enhanced parameterization, improved uncertainty estimates, and/or module development required to assess and evaluate possible approaches to mitigate inundation. Application of existing approaches to novel application is also encouraged when appropriate. Proposed new or novel modeling approaches of any type require significant justification and explicit end-user demand for funding consideration. Shoreline condition includes: geomorphic setting, health of the natural systems, and anthropogenic additions made to the study area. Ecosystem service assessments of NNBF must explicitly include coastal protection benefits provided by the feature. Community benefits could also include reducing the risk posed by coastal flooding and storms to lives, coastal economies, emergency services, and quality of life including variables associated with recreational opportunities and open space. However, studies that solely consider benefits and/or ecosystem services that do not directly relate to SLR and/or coastal flood protection will not be considered. The most effective ecosystem service proposals will address both protective and non-protective aspects of NNBF. Regional evaluations of suites of NNBF approaches are preferred over a local focus.

The ESLR Program is open to all coastal regions of the United States. To the extent possible, proposals should build on existing research (e.g., prior projects through state resources, non-governmental organizations, the ESLR Program, the NOAA Coastal and Ocean Climate Applications program, U.S. Geological Survey, Integrated Ocean Observing System, U.S. Army Corps of Engineers, and/or Sea Grant). Leveraging of data and capabilities associated with National Estuarine Research Reserves (NERR), National Wildlife Refuge, and other protected areas are encouraged.

Additional Guidance for Surface Transportation Resilience focus area

For the Surface Transportation Resilience focus area, projects should be designed to enable transportation professionals to consider nature-based solutions for protecting transportation infrastructure as part of a broader portfolio, or system, of resilience measures. Substantial advancements in guidance on the consideration of natural systems for transportation planning have occurred over the last decade, especially for coastal highways (Webb et al. 2019). Surface transportation infrastructure includes roads and rail that represent key infrastructure critical for the safe movement of people and goods on land. This focus area explicitly targets surface transportation and projects that focus generally across all types of transportation infrastructure should be considered in the Coastal Resilience focus area. Feedback on this aspect may be provided following submission of the LOI. Projects are expected to be regional and/or highly transferable and need to directly inform decision

making at the system planning level and/or project specific level. Preference will be given to transferable approaches relevant to larger scales that can inform system level planning or multiple transportation projects.

There are two technical advancements of specific interest from the Surface Transportation Resilience focus area: advancements in coastal model resolution, and improvements to the understanding of the relationship between inundation and transportation asset deterioration. Addressing these technical components is not required, though priority may be given to proposals that demonstrate a contribution to these areas with the expectation that some awards selected will address these challenges. More detailed descriptions of the desired technical advancements follow:

Coastal Model Resolution

Models often lack resolution to properly render transportation infrastructure elevations and local topography in the model environment which is important to reliably predict if a road or other transportation infrastructure surface will become inundated, and how mitigation actions affect inundation. Computational power has greatly increased and numerical modeling has advanced substantially, offering the opportunity to greatly increase model resolution over local-regional scales. It remains important for approaches to focus regionally or demonstrate high transferability. A model grid size will not be mandated in this award, though a resolution capable of rendering the infrastructure and an array of mitigation options must be considered. Using nested approaches, wherein a higher resolution mesh may be nested within a larger mesh (grid) to provide the resolution needed for the area of interest, is acceptable. Whatever resolution is described in the proposal should be defended.

Predicting Asset Deterioration

While existing literature describes the damage mechanisms to pavements due to coastal flooding (e.g., loss of subgrade from wave attack, weir flow damage, delamination, failure of subgrade due to prolonged inundation; FHWA 2008, chapter 8 “Over washing”, FHWA 2017), transportation agencies need the ability to estimate the extent, timing, frequency, and costs of future coastal flooding on roadways in order to assess the cost effectiveness of management strategies.

The extent of road damage from a given flood event (high tide flooding or storm surge) depends on a number of factors related to the flood event, such as flow velocities, wave forces, length of time of inundation, depth of inundation, and frequency. The extent of road damage also depends on various factors related to the roadway, such as the type of soil,

subgrade structure, pavement type, and exposure to traffic loads during or soon after inundation. Transportation agencies would benefit from scenario forecasting that predicts damages to assets and costs incurred based on various combinations of these factors.

Projects should focus on developing the methodology for creating asset deterioration curves and quantifying the benefits of nature based solutions rather than testing novel engineered pavement designs or subgrade (foundation). However, pavement deterioration should be specific to pavement type, which includes differences in structural pavement designs and subgrade types.

Expectations for Management Engagement

In both focus areas, scientific outputs that support decision making that leads to increased coastal resilience is valued equally with the advancement of high level basic science, as designated by an equal scoring percentage for the evaluation criteria for Importance and Relevance and Technical/Scientific Merit (Section V). Together these represent 70% of the scoring criteria. Proposals should apply a highly integrated and collaborative management-science approach and outline a continuous engagement process with relevant end-users that clearly defines management linkages and drivers. The management linkages could include, but are not limited to: end-users serving on the project team, pre-project meetings, annual workshops, training on application of information or tools, and inclusion of selected managers on coordination calls where local knowledge and natural resource management issues can help guide study objectives and methods. Successful proposals will work with relevant regional partners to ensure the study outlines management relevant objectives at the proposal stage. We encourage the inclusion of a Management Transition Advisory Group (MTAG), composed of prospective end-users of the research project outputs, and/or a dedicated principle investigator focused on coordinating end-user engagement, though these are not required. The team should leverage existing groups to avoid overburdening end-users if appropriate, before creating a new MTAG.

Expectations for each focus area include:

For the Coastal Resilience subcomponent, Examples of possible results and outcomes of the ESLR Program applied and/or enhanced capabilities could include:

1. Advanced predictive approaches that are designed in collaboration with end-users to enable coastal managers/planners the ability to better evaluate the short- and long-term vulnerability of ecosystems, communities and infrastructure to SLR and inundation (Note that vulnerability assessments alone are not sufficient outputs);

2. Models and information that will assist in evaluating the regional implications of policy options and the design, construction and adaptive management of restoration and/or NNBF projects to mitigate inundation effects, in comparison to conventional (grey) flood mitigation approaches;

3. Improved knowledge of the effectiveness, services, and sustainability of NNBF under varying scenarios of application, inundation, and/or SLR;

4. Enhanced capabilities for quantifying changes in locally valued ecosystem services associated with anticipated impacts from SLR and coastal inundation in conjunction with NNBF approaches, including recreational benefits;

5. Guidance and strategies for regional transition and application of integrated NNBF features and/or metrics for objective evaluation of performance.

Proposals should clearly demonstrate the value added of the proposed work, partnerships, and, where possible, leverage related regional efforts (e.g., NOAA Coastal Resilience Grants and/or state/local initiatives). Finally, linkages to topically relevant partners with a known interest in the ESLR Program products are encouraged. These include, but are not limited to the following:

- Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance (HMA)

  - FEMA's HMA includes three funding programs for flood risk reduction activities: Hazard Mitigation Grant Program, Flood Mitigation Assistance program, and the Building Resilient Infrastructure and Communities program. States, Territories, Tribes, and local communities may apply for HMA funding if they have a FEMA-approved Hazard Mitigation Plan. These groups could apply to receive support to plan for or build NNBF based projects, and would benefit from information to inform cost benefit analyses. See https://www.fema.gov/benefit-cost-analysis for more information.

  - FEMA's Public Assistance (PA) grant program provides funds to assist communities responding to and recovering from declared disasters. PA provides funding for permanently restoring community infrastructure, and for hazard mitigation measures to minimize future loss to damaged facilities through PA 406 Hazard Mitigation. https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit

- United States Army Corps of Engineers (USACE)

  - Regional USACE Districts represent important partners that perform restoration and other important land management activities (e.g., dredging). Science that informs these activities is a priority for NOAA.

  - NOAA has partnered with the USACE's Engineering With Nature (EWN®) initiative to advance research and implementation of NNBF for coastal protection. NOAA and USACE have held a series of workshops and symposiums in 2016 - 2019 to identify research needs and opportunities for collaboration. Additional information on these workshops can be found at https://ewn.el.erdc.dren.mil/nnbf-resources.html, while overall information on the Engineering With Nature initiative can be found at https://ewn.el.erdc.dren.mil/.

- National Fish and Wildlife Foundation (NFWF)

  - NOAA and NFWF partner to provide grant funding through the National Coastal Resilience Fund (NCRF) to plan for, design, and implement natural and nature based solutions to protect coastal communities while also enhancing habitats for fish and wildlife. The NCRF supports innovative projects that seek to re-shape our thinking on how to best protect communities through habitat restoration, by using novel approaches to address these challenges. NFWF seeks to incorporate adaptation to the projected future conditions of each investment. Program information can be found here https://www.nfwf.org/programs/national-coastal-resilience-fund.

For the Transportation Resilience focus area, it is expected that individuals who develop, design, build, and/or manage transportation infrastructure will be part of the project team. Examples include transportation planners, engineers, and environmental specialists at state departments of transportation, local transportation agencies, and metropolitan planning organizations. Additional individuals and a broader array of end-users may contribute to the project through pre-project meetings, annual workshops, training on application of tools, and inclusion of selected managers on coordination calls where local knowledge and natural resource management issues can help guide study objectives and methods. Successful proposals will work with relevant regional partners to ensure the study outlines management relevant objectives at the proposal stage. We encourage the inclusion of a MTAG, and/or a dedicated principal investigator focused on coordinating end-user engagement. Examples of possible results and outcomes of the ESLR Program applied and/or enhanced capabilities could include:

1. Advanced predictive approaches that are designed in collaboration with end-users to enable transportation planners and engineers to better evaluate the short- and long-term vulnerability of transportation systems to SLR and inundation (Note that vulnerability assessments alone are not sufficient outputs);

2. Advanced predictive approaches of pavement deterioration due to inundation from relative sea level rise, nuisance flooding, wave actions, and storm events that allow for evaluation of mitigation options;

3. Improved knowledge of the flood mitigation effectiveness, non-protective ecosystem services, and sustainability of NNBF for transportation infrastructure under varying scenarios of application, inundation, and/or SLR;

4. Models and information that will assist in evaluating the regional implications of the design, construction and adaptive management of restoration and/or NNBF projects to mitigate SLR and inundation effects on transportation infrastructure;

5. Guidance and strategies for system planning and application of integrated NNBF features and/or metrics for objective evaluation of project-performance.

6. Guidance on options for mitigating flood vulnerability due to tidal restrictions from transportation infrastructure (e.g., bridges and culverts).

7. Analysis of the potential for NNBF to reduce transportation system vulnerability to SLR and flooding in a particular metropolitan area or geographic region. The analysis would feed into a statewide or metropolitan long range transportation plan or asset management plan. Long range transportation plans are 20 year plans that analyze long term trends and transportation needs. Asset management plans analyze risks and strategies to improve or preserve the condition of the assets and the performance of the system. Both plans are required for receiving federal surface transportation funds. Incorporating nature-based solutions into the long range transportation planning process and asset management plans enables systematic consideration across a region or state and allows for identification of opportunities at an early stage, maximizing opportunities for deployment. It also allows for larger projects that are part of a regional network, which increases both flood risk mitigation and ecological benefits, and can reduce costs. The analysis can pre-identify locations where particular nature-based solutions may be appropriate given existing natural resources, transportation vulnerabilities, and ecological priorities.

8. Study of a specific transportation corridor and NNBF designs that could reduce

flooding impacts. This analysis would feed into decisions on maintenance, rehabilitation or rebuilding of particular road segments or other transportation assets. For instance, for a particular stretch of roadway that is experiencing increasingly disruptive “high tide” or “nuisance” flooding, researchers could analyze the effectiveness for mitigating road flooding by NNBF alone or in combination with raising the roadway or moving it inland. This analysis could then be used in developing construction bid documents for planned rehabilitation of the roadway that could include NNBF flood risk mitigation as part of the road project.

Please note that mitigation options must include NNBF.

Proposals should clearly demonstrate the value added of the proposed work, partnerships, and, where possible, leverage related regional efforts (i.e., FHWA 2014, FHWA 2017, FHWA 2019, FHWA 2020). This could include prior work conducted by the transportation community, including the Transportation Research Board (TRB), University Transportation Centers (UTCs), the US Department of Transportation, and State and local transportation agencies. For instance, the FHWA-funded resilience pilots conducted by State departments of transportation (DOTs) and metropolitan planning organizations (MPOs) provide a helpful starting point and practitioner contacts.

Finally, NOAA encourages applicants to propose products that are relevant to local, state, and federal agencies with a known interest in the ESLR Program products. These include, but are not limited to the following:

- Federal Highway Administration (FHWA)

    - Highways represent one of the stronger opportunities for mitigation support for natural and nature based protective features, as roads are large, are expensive to replace and require varying solutions for protection. FHWA released an implementation guide to assist transportation professionals in considering NNBF to mitigate coastal flood risks to roads. FHWA also funded pilot analyses of NNBF potential for protecting vulnerable segments of highways and sponsored four regional peer exchanges with coastal managers, transportation practitioners, and academics. See https://www.fhwa.dot.gov/environment/sustainability/resilience/ongoing_and_current_research/green_infrastructure/index.cfm for more information.

- State Transportation and Natural Resources Departments

    - Individuals at DOTs will be important collaborators for this topic area, to ensure

information is developed and delivered in a format that has the potential to inform asset management plans and future projects. See https://www.fhwa.dot.gov/about/webstate.cfm for state DOT information.

- United States Army Corps of Engineers (USACE) Regional Districts

  - USACE districts support flood risk mitigation analyses under the Continuing Authorities Program and have the authority to endorse restoration and infrastructure construction projects for support with construction funds.

- Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance (HMA)

  - See above Coastal Resilience Section for details.

All NOAA environmental data developed through this announcement shall adhere to the guidelines documented in NOAA Administrative Order 212-15 (http://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_212/212-15.html). Proposals must include a data management plan that considers how to provide data as soon as it is feasible to the public (see Data Reporting Requirements in Section VI. C.).

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C. Program Authority

16 U.S.C. § 1456c; Public Law 102-567, § 201(c), Coastal Ocean Program.

II. Award Information

A. Funding Availability

It is anticipated that approximately $1,200,000 may be available in Fiscal Year 2021 for the first year for some projects in each focus area, while an additional $1,200,000 could become available in Fiscal Year 2022 for the first year for additional projects selected from this opportunity.

Approximately 2-4 projects of 2-4 years in duration are expected to be funded under the Coastal Resilience focus area at a level of approximately $200,000 to $400,000 per year per proposal, with a total budget (across all years) that is less than $1,600,000 for the Coastal Resilience focus area.

Approximately 2-4 projects of 2-4 years in duration are expected to be funded under the Transportation Resilience focus area at a level of approximately $200,000 to $500,000 per year per proposal with a total budget (across all years) that is less than $2,000,000 for the Transportation Resilience focus area.

B. Project/Award Period

Full applications may cover a project/award period of 2-4 years.

Awards may be funded incrementally, generally on an annual basis, but once awarded, those awards will not compete for funding in subsequent years. This multi-year funding is often appropriate for projects to be funded for two to four years. Once approved, full applications

are not required for the continuation out years. While applicants are not required to divide Federal assistance project activities into annual increments based on appropriations law, this approach may be constructive given the possibility that funding may not be available in subsequent years.

Funding for each year's activity is contingent upon the availability of appropriations, 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, NCCOS/CRP Program Managers will analyze financial statements and progress reports for each continuing award, and will have dialogue with the PIs and Authorized Representatives of the recipient institutions to discuss research progress and expected time lines for the remaining award period. If NOAA experiences budget fluctuations 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 or increases based on the overall funds available.

Regardless of the budget for any given fiscal year, NCCOS/CRP 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 applicable to 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. This means that the recipient can expect substantial agency collaboration, participation, or intervention in project performance. Substantial involvement exists when: responsibility for the management, control, direction, or performance of the project is shared by the assisting agency and the recipient; or the assisting agency has the right to intervene (including interruption or modification) in the conduct or performance of project activities. "Substantial involvement” will be coordinated and communicated by NCCOS/CRP Program Managers, and can include collaboration and participation by NOAA (but see section III.A.5-6), as well

as NCCOS/CRP 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 Cooperative Institute (CI), https://ci.noaa.gov/ it is allowed to submit applications that reference the CI by attaching a cover letter to the application stating its desire to have the application associated with the CI. This letter should specify the name of the CI, the CI cooperative agreement number, and the NOAA-approved research theme and task that applies to the proposal. The application will use the Facilities & Administrative (F&A, or indirect cost) rate associated with the main CI agreement. If the application is selected for funding, NOAA will notify the university that a separate award will be issued with its own award number. However, the award will include two Special Award Conditions (SACs): (1) the existing University/NOAA Memorandum Of Agreement (MOA) would be incorporated by reference into the terms of the competitive award, and (2) any performance report(s) for the competitive project must follow the timetable of the funding program and be submitted directly to the funding program.

Report(s) will be copied to the CI's administrator when due, to be attached to the main cooperative agreement progress report as an appendix. This will allow the CI to coordinate all the projects submitted through the CI, since the terms of these awards will specify that this is a CI project via the MOA.

If the non-Federal applicant is at an institution that has a NOAA approved Cooperative Ecosystem Studies Unit (CESU), http://www.cesu.psu.edu/, and meets the criteria described below for using that status, they may include a cover letter with their application stating their desire to have the application associated with that CESU. This letter should specify the name of the CESU. Of the 17 CESUs across the nation, NOAA is a member of 10: 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. The following criteria must be met for NOAA to use the established partnerships with CESUs:

1. The proposed project must fit within the objectives of the National CESU Network Program, which are to provide research, technical assistance, and education to Federal land management, environmental, and research agencies and their partners in biological, physical, social, cultural, or engineering disciplines needed to address natural and cultural resource management issues at multiple scales and in an ecosystem context.

2. The proposed project must fit the intent of the CESU’s existing cooperative and joint

agreement, which means (1) the research partnership will carry out or stimulate an activity (e.g., data, products, or services) for a public purpose, and (2) NOAA will be significantly involved in the work.

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 should contact the NCCOS Grants Administrator (refer to Section VII for contact information) to discuss how to structure budgets and prepare required documentation. PLEASE NOTE: Before non-NOAA Federal applicants may be funded, they must demonstrate that they have applicable legal authority for an inter-agency transfer of funds.

Support may be solely through NCCOS/CRP or partnered with other Federal offices and agencies. Unfunded proposals may be shared with other NOAA offices or other Federal Agencies for the purposes of collaboration and eliminating duplication.

The intra- and inter-agency transfers of funds are not Federal assistance (grants or cooperative agreements), and the policies described in this Announcement applicable to Federal assistance awards do not apply to Federal entities receiving intra- and inter-agency transfers of funds. In the agreements implemented in these situations, NOAA will be substantially involved in the projects in a manner similar to the cooperative agreements with non-federal parties. Contact the NCCOS Grants Administrator for more information (refer to Section VII).

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, U.S. Territories, and for-profit organizations. Federal agencies that possess the statutory authority to receive transfers of funds are eligible to submit applications for intra- or inter-agency funds transfers through this competition. Department of Commerce (DOC)/NOAA supports cultural and gender diversity and encourages women and minority individuals and groups to submit applications its programs. 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 must be employees of an eligible entity listed above; and applications must be submitted through that entity. Non-Federal researchers should comply with their institutional requirements for application submission.

(2) Non-Federal researchers affiliated with NOAA-University Cooperative/Joint Institutes will be funded through cooperative agreements.

(3) Foreign researchers must apply as subawards or contracts through an eligible U.S. entity.

(4) Federal applicants are eligible to submit applications for intra- or inter-agency funds transfers through this competition. 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.

(5) An eligible U.S. entity may propose Federal agency researchers as funded or unfunded collaborators. If Federal agency researchers are proposed as funded collaborators, the applicant should present the collaborator's funding request in the application in the same way documentation is provided for a subrecipient for purposes of project evaluation, even though intra- or inter-agency funding transfers will generally be used if the project is selected.

(6) NCCOS researchers may apply through an eligible U.S. entity as funded or unfunded collaborators, but cannot be the lead PI on the application. NOAA federal salaries will not be paid.

B. Cost Sharing or Matching Requirement

None

C. Other Criteria that Affect Eligibility

Letters of intent are required.

Each application must substantially comply with the 15 elements listed under Section IV.V(c) Content and Form of Application, Required Elements, (1) - (15), or it will be

returned to sender without further consideration. A checklist with the required and requested application elements can be found in Section VIII.

IV. Application and Submission Information

A. Address to Request Application Package

Proposal materials are available at http://www.grants.gov as part of the electronic proposal package. Please contact the NCCOS Grants Administrator should you have an issue accessing the materials (see section VII).

B. Content and Form of Application

A. Application Package

Proposal materials are available at http://www.grants.gov as part of the electronic proposal package. Please contact the NCCOS Grants Administrator shouldyou have an issue accessing the materials (see section VII).

B. Content and Form of Application

(a) Letter of Intent (LOI)

Submission of a LOI within the timeframe specified in section D below is required before submission of a full proposal. Proposals submitted without a prior timely LOI submission will not be considered. 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 competitive 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. The LOI should provide a concise description of the proposed work and its relevance to the ESLR Program. The LOI should be no more than two pages (front only) in length, single spaced in 12-point font with 1-inch margins and should include in order the components listed below. If all these components are not included, the LOI may not be considered.

a) Tentative project title.

b) Program Name (ESLR 2021) and Focus Area (Coastal Resilience or Transportation Resilience).

c) Name phone number, email address and institution of all Principal Investigators and specification of which individual is the Lead Principal Investigator

d) Approximate cost of the project.

e) Statement of the problem and its management relevance.

f) Brief summary of work to be completed, methodology to be used and the plan for transition results to management application.

CRP Program Managers will review each LOI to determine whether it is responsive to the Program's goals, as advertised in this notice. Letters or emails to encourage or discourage a full application are scheduled to be sent out two weeks after the LOI due date.

Late LOIs will not be considered and any associated full applications will not be considered.

(b) Example Application

A sample application package and other guidance can be found under “Information for Applicants” located on the NCCOS website at: https://coastalscience.noaa.gov/about/funding-opportunities/application-forms/.

(c) Collaborative Proposals

If more than one institution is collaborating in a project awarded funds, the lead institution will be the only institution to directly receive funds from NOAA and will be responsible for distributing funds to the partner institutions with the exception of Federal agency partners. Federal agencies will be funded with either intra- or inter-agency agreements initiated by NCCOS. Only one full proposal per project must be submitted via grants.gov. Collaborating institutions expected to receive funds must be budgeted as subawards or contracts in the submitted proposal and provide the lead institution with their documents for submission by the lead. Unfunded collaborators may also participate.

(d) Required Elements

Each application must substantially comply with the following 15 elements to be forwarded for merit review. The Summary, Title Page, Abstract, Project Description, References, Biographical Sketch, and Budget Narrative must be single spaced in 12-point font with one-inch margins. The Collaborators List must be an Excel spreadsheet. The 15 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, starting with the acronym and focus area: ESLR 2021 Transportation Resilience or ESLR 2021 Coastal Resilience, and the PI's name and affiliation, complete address, phone and email information. If this proposal is a resubmission from a previous NCCOS competition, indicate that information 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 (with and without ship funds), and budget period. It should be written in the third person. 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 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.

(4) Project Description. The description of the proposed project must include three narrative sections: the Proposed Research, its Application to Management, and a Data Management Plan. The proposal shall not exceed more than 15 pages for the description of the Proposed Research and Application to Management and two pages for the Data Management Plan. These three sections must include the information as described below

a. Proposed Research

The Proposed Research narrative section 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; including if the proposal is applying to the Coastal Resilience or Surface Transportation Resilience focus area

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 PI(s);

iii. Discussing how the proposed project lends value to the program goals; and

iv. Identifying the function of each PI. The Lead PI will be responsible for communicating with the NCCOS/CRP Program Manager on all pertinent verbal or written information.

b. Application to Management

The Applications to Management Narrative should establish the connection to relevant resource management needs by explicitly identifying the end-user group(s) including the proposed mechanism for establishing the connections to relevant resource management needs by identifying the frequency and method of the interaction with end-users, and evidence of the linkage between the scientific questions and management needs. The narrative should provide the management justification for the research by:

i) Articulating the coordination with one or more end-users.

ii) Discussing the expected significance of the project to management priorities and needs. Specific management targets, with proposed outputs and outcomes, should describe how this project will improve management capabilities. For the transportation resilience focus area, particular attention should be given to demonstrating a collaborative approach for engaging with State DOT's and other transportation management professionals. Outputs are defined as products (e.g. publications and models) or activities that lead to outcomes (changes in management knowledge or action). Definitions and examples of outputs and outcomes can be accessed at: https://coastalscience.noaa.gov/about/funding-opportunities/outputs-and-outcomes/. The timeline for achieving outcomes should be included in the Milestone Chart (below).

iii) 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.

iv) Describing the structure, size, and activities of the MTAG, particularly by including a plan for how the MTAG will provide advice to the investigators. An existing group could serve as the MTAG. At least some members of the MTAG must be named and letters included in the proposal indicating that they have agreed to serve on the MTAG; these letters do not count against the page limits. A description in the letter of how the project

could inform future decision making is helpful.

c. Data Management Plan

Proposals must provide 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. PIs that propose to collaborate with data centers or networks, except the National Center for Environmental Information, are advised to obtain letters of commitment that affirm the collaboration. Where possible, all PIs are strongly encouraged to use existing data centers and data portals to archive and disseminate their data. 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 in Section VI.C.

[Note: If the proposal is a resubmission from a previous competition, any concerns identified with the Project Description in the previous review process and provided to the applicant(s) should be addressed in the resubmitted proposal.]

(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 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 Project Description.

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

(7) Biographical sketch. All PIs and co-PIs must provide summaries of up to two pages that include the following:

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

(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 PIs and co-PIs. Continuing grants must also be included. A current and pending support form is available on the NCCOS web site for your use:

https://coastalscience.noaa.gov/about/application-forms.You should respond to this element whether or not you have any current and/or pending support, i.e., 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 addressing coastal vulnerability research – If any PI or co- PI identified on the project has received Federal funding in the past five years for sea level rise impacts and coastal vulnerability to storm surge and nuisance flooding 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. This section should not exceed two pages (in total, NOT per investigator) in addition to the Project Description.

The following information on accomplishments should 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.

When applicable, this information will be considered by reviewers in the evaluation of overall qualifications of applicants. You should respond to this element even if the applicant has no accomplishments from prior Federal support on sea level rise impacts and coastal vulnerability to storm surge and nuisance flooding research by stating “no prior Federal research on coastal vulnerability to sea level rise or coastal flooding.”

(11) Budget Narrative. In order to allow reviewers to fully evaluate the appropriateness of costs, all applications must include a detailed budget narrative to support all proposed budget categories for each fiscal year. For additional budget guidance refer to:

https://www.ago.noaa.gov/grants/docs/gmd_budget_narrative_guidance_-_05-24-2017_final.pdf

Any ship time needs must be clearly identified in the proposed budget. The applicant is responsible for requesting ship time through appropriate channels and for meeting all requirements to ensure the availability of requested ship time.

If any NOAA personnel will be present during ship operations, vessel safety clearances must be obtained through the NOAA Office of Marine and Aviation Operations (OMAO) in advance of the cruise. Required information and procedures are detailed in a Charter Vessel Acquisition and Safety NOAA Administrative Order which can be accessed via the OMAO website at http://www.omao.noaa.gov/learn/headquarters/safety-environmental-compliance/vessel-chartering-info.

If more than one institution is collaborating in a project awarded funds, the lead institution will be the only institution to directly receive funds from NOAA unless a Federal agency is a funded collaborator. Federal agencies may be funded directly by NOAA. The lead institution is responsible for sending funds to their other subaward institutions. A separate budget narrative is required for each subaward (including Federal collaborators) and must be provided to the lead institution for submission. Signed approval from each identified subaward institution is required. 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.

Applications are permitted to include the costs of project-level data management, including: coordinating, organizing, documenting, formatting, or otherwise preparing datasets for submission to NOAA or non-NOAA data facilities; establishing and maintaining data access tools and services and related metadata; managing non-digital data that are not required to be made publicly accessible, including laboratory notebooks, preliminary analyses, drafts of scientific papers, plans for future research, peer review reports, communications with colleagues, or physical objects, such as laboratory specimens.

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 CD-511 document placeholder without a hard signature because electronic signatures are allowed on documents from the submitting institution.

(13) Standard Form (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.

(14) Standard Form 424A. All applicants are required to provide 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 one on the SF-424A by filling in the fiscal years 1-5 in Section A Budget Summary - Grant Program Function or Activity column. (Note that this revised SF-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 Budget Narrative.

Each subaward should provide a SF-424A listing each year of funding being requested. List total subaward cost under line item 6.h.Other category and contractor costs under line item 6.f. Contractual category on the SF-424A. Signed approval from the institution of each identified subaward and contractor should be provided.

All ship costs belong in the “other” category and are not subject to indirect costs.

(15) List of Collaborators. Provide one list that includes all (U.S. and Foreign) collaborators, advisors, and advisees for each investigator (PI, co-PIs, post-docs, and subawardees), complete with corresponding institutions. This list must include the names of each PI and Co-PI. Submit only one, combined and alphabetized list per application in an Excel spreadsheet using First Name, Last 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.

d) Application Format and Assembly.

Workspace is the standard way for organizations or individuals to apply for Federal grants in

Grants.gov. Workspace allows a grant team to simultaneously access and edit different forms within an application. Plus, the forms can be filled out online or offline—your choice.

Grants.gov Workspace also allows applicants and organizations to tailor their application workflow. Please refer to https://www.grants.gov/web/grants/applicants/workspace-overview.html to determine which of the three approaches your institution should take when completing a Workspace application. This page also contains resources to aid in setting up the workspace and the application submission process.

If you experience submission problems that may result in your application being late, send an e-mail to support@grants.gov and call the Grants.gov help desk (800-518-4726). The NCCOS/CRP Program Manager for this Announcement will use programmatic discretion in accepting applications due to documented electronic submission problems. 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 15 required elements, applicants may provide the following:

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

(2) Letters from unfunded collaborators, verifying their contribution to the project. 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.

Applications containing known subawards must provide an SF424A, Budget Narrative, and Current and Pending Support. 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 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 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 potential adverse impacts on the environment. If applicable, documentation of requests or approvals of environmental permits should be received. If applicable, documentation of requests by the NCCOS/CRP 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 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 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 selected for funding.

Applicants to be recommended for funding will be required to answer relevant questions from the "Environmental Compliance Questionnaire for NOAA Federal Financial Assistance Applicants": https://www.nepa.noaa.gov/docs/NOAA-Grants-Questionnaire-final.pdf. The NCCOS/CRP Program Manager will determine which questions are relevant to each specific proposal. Answers must be provided before the application can be submitted for final funding approval. Refer to Section VI.B. for additional NEPA 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, 31 U.S.C. 6101 note, to the extent applicable, any proposal awarded in response to this Announcement will be required to use 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, as identified in OMB guidance published at 2 CFR Parts 25, which may be accessed at https://go.usa.gov/xPTZg.

Applicants and recipients are required to 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. The Federal awarding agency may not make a Federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time the Federal awarding agency is ready to make a Federal award, the Federal awarding agency 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 applicants.

See Section IV.G. of this Announcement for more information.

D. Submission Dates and Times

1. Letter of Intent

A LOI is required in order to submit a full application. The required LOI must be sent by e-mail to nccos.grant.awards@noaa.gov and must be received by 11:59 p.m. Eastern Time on October 16, 2020.

2. Full Application

Full applications must be received and validated by Grants.gov by 11:59 p.m. Eastern Time on January 7, 2021.

Full applications should be submitted electronically to 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.

Important: All applicants should be aware that adequate time must be factored into applicant schedules for delivery of the application. Applicants are advised that the volume on Grants.gov is currently extremely heavy, and if use of Grants.gov is not feasible, contact the NCCOS Grants Administrator (see Section VII for contact information) as soon as possible and no later than a week before the due date to assess whether alternative arrangements can be made.

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 DOC. The negotiation and approval of such a new rate is subject to the procedures required by NOAA and the DOC Standard Terms and Conditions, Section B.06. 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, Maryland 20910, lamar.revis@noaa.gov.

NCCOS/CRP will not fund start up or operational costs for private business ventures and neither fees nor profits will be considered as allowable costs. Ship costs may not be included in indirect cost calculations unless specified within the indirect cost rate agreement of the institution. NCCOS/CRP will not pay for ship overhead expenses otherwise. If indirect costs are applied, an approved indirect cost agreement or budget revision will be required before an application can be recommended for funding.

G. Other Submission Requirements

Applications previously submitted to NCCOS/CRP Federal Funding Opportunities and not recommended for funding must be revised to address any reviewer or panel concerns before resubmission.

Resubmitted applications that have not been revised to address identified concerns may be returned without review.

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, applicants must have a Dun and Bradstreet Data Universal Number System (DUNS) number and be registered in SAM, and periodic renewals are required. Applicants can receive a DUNS number at no cost by calling the dedicated toll-free DUNS Number request line at 1-866-705-5711 or online at http://fedgov.dnb.com/webform. Allow a minimum of five days to complete the SAM registration. (Note: Your organization’s Employer Identification Number (EIN) will be needed on the application form). An organization's one time registration process may take up to three 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, up to three 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 NOAA 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, generally within two days, when the application has been downloaded by NOAA.

If use of Grants.gov is not feasible, contact the NCCOS Grants Administrator (see Section VII for contact information) as soon as possible and no later than a week before the due date to assess whether alternative arrangements can be made. Please refer to Section IV.D. Submission Dates and Times to help ensure your application is received on time.

V. Application Review Information

A. Evaluation Criteria

1) Importance and/or relevance and applicability of proposed project to the program goals: This ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, Federal, regional, state, or local activities. Does the research address respectively the priorities of Coastal Resilience or Transportation Resilience (Section I.B.)? What is the management relevance of the proposed work? For the purposes of this announcement, the applicant must outline a collaborative approach with end-users and include plans for engaging throughout the project that will ensure applicable project outputs that are likely to be informative for decision making by the end-users. Outline specific information, products, targeted outcomes, and how the timing of the proposed work will ensure relevance of the project outputs to end-user application. (35 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 shared? (35 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). (15 percent)

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

5) Outreach and education: NOAA assesses whether this project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. The applicant may include plans for communicating and disseminating the results of research in ways that are appropriate to inform the public, including specific products, outcomes, and timing of the proposed work that will be used in achieving this goal. For the purposes of this announcement, this criteria should evaluate the contribution of the project towards engaging the public and educating of future scientists. (5 percent)

B. Review and Selection Process

An LOI is required as described in Section IV.B. CRP Program Managers will review each LOI to determine whether it is responsive to the Program's goals, as advertised in this notice. Letters or emails to encourage or discourage a full application are scheduled to be sent out two weeks after the LOI due date.

Subsequently, once NOAA has received a full application by the due date, 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. If used, 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 their 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). Both whole and ½ scores will be acceptable. Reviewers will consider the relative weighting of the evaluation

criteria in providing an overall proposal score.

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 proposals. The peer panel shall rate the proposals using the evaluation criteria and scoring method provided above (and used by the mail reviewers). Individual peer panel reviewers will consider the relative weighting of the evaluation criteria in providing their individual score. The individual peer panelists' scores shall be combined, using one or more methods, 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 any non- Federal reviewer is used, no consensus advice will be given by the independent peer mail review or the review panel.

The NCCOS/CRP 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 NCCOS/CRP 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; 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 NCCOS/CRP Program Manager to the NCCOS/CRP Director for development of the final recommendation to the Selecting Official, the Director of NCCOS or designee, for the final funding recommendation decision. Recommendations will be made using the rank order generated by the peer-review process unless justification is provided to select a proposal out of rank order. Justification must be based on one or more of 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 remove certain costs, combine budgets into a single application, add/subtract expertise or change the lead or subaward 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.

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.

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 to reviewing repositories of government-wide eligibility, qualifications or financial integrity information, the risk assessment conducted by NOAA may consider items such as the financial stability of an applicant, quality of the applicant's management systems, an applicant's history of performance, previous audit reports and audit findings concerning the applicant and the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities. See also "Review of Risk" in Section VI. of this Announcement.

Applicants should be in compliance with the terms of any existing NOAA grants or cooperative agreements and otherwise eligible to receive Federal awards, or make arrangements satisfactory to the NOAA Grants Officer, to be considered for funding under this competition. All reports due should be received and any concerns raised by the agency should be timely addressed in order to receive a new award. Upon review of these factors, if appropriate, specific award conditions that respond to the degree of risk may be applied by the NOAA Grants Officer pursuant to 2 C.F.R. 200.207. 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.

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 NCCOS/CRP for three years in accordance with current retention policies, and then destroyed.

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 NOAA 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 upon receipt. Applicants may be notified of award or declination by September 2021, and applicants should use a start date of September 1, 2021.

VI. Award Administration Information

A. Award Notices

The notice of award is signed by the NOAA Grants Officer and is the authorizing document. It is provided electronically through NOAA's Grants Online system to the appropriate business office of the recipient organization. The award cover page, i.e., CD-450, Financial Assistance Award, is available at http://go.usa.gov/SNMR. The Internet Explorer browser should be used with Grants Online.

B. Administrative and National Policy Requirements

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

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

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

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

3. Department of Commerce Financial Assistance Standard Terms and Conditions

Successful applicants who accept a NOAA award under this solicitation will be bound by DOC Financial Assistance Standard Terms and Conditions. A current version of this document can be found at: https://www.osec.doc.gov/oam/grants_management/policy/ NOAA will also add administrative terms for which a current version is found at http://www.neracoos.org/sites/neracoos.org/files/documents/grants/NOAA%20Financial%20Assistance%20Administrative%20Terms%20%E2%80%93%20December%202017.pdf. In addition, award documents provided by the NOAA Grants Management Division in the Grants Online award package may contain SAC conditions unique to a project, including conditions that may limit the use of funds for activities that have outstanding environmental compliance requirements and/or stating other compliance requirements for the award as applicable.

4. 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. NOAA or the DOC are not responsible for proposal preparation costs. Publication of this Announcement does not oblige NOAA to award any specific project or to obligate any available funds.

5. Unpaid Tax Liability and Recent Felony Conviction Certification

When applicable under appropriations law, NOAA will provide certain applicant organizations 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 by the organization. A copy of this form may be viewed at https://www.osec.doc.gov/oam/grants_management/policy/documents/FAM%202015-01.pdf.

6. The National Environmental Policy Act of 1969 (NEPA)

The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 et seq., as implemented by the Council on Environmental Quality Regulations (40 CFR Parts 1500-1508), requires that Federal agencies include in their decision-making processes appropriate and careful consideration of all environmental effects of proposed actions, analyze potential environmental effects of proposed actions and their alternatives, avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality to the extent practicable. Therefore, NOAA must analyze the potential environmental impacts, as required by the NEPA, for applicant projects or proposals which are seeking NOAA Federal Funding Opportunities to ensure applicant projects or proposals are in compliance with NEPA and. all policies and procedures in NOAA Administrative Order (NAO) 216-6A and the NAO 216-6A Companion Manual and all applicable Federal, state, and local environmental laws, regulations, and Executive Orders aimed at protecting human health, the environment, natural resources, and cultural resources.

Detailed information on NOAA compliance with NEPA can be found at the following NOAA NEPA website: http://www.nepa.noaa.gov/, and in the NAO 216-6A: http://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_216/216-6A.html and the associated companion manual: http://www.nepa.noaa.gov/docs/NOAA-HQ-2016-0145%20NAO%20216-6A%20Companion%20Manual.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 ecosystems). Applicants to be recommended for funding may also be required to answer relevant questions from the "Environmental Compliance Questionnaire for NOAA Federal Financial Assistance Applicants" (OMB Control No. 0648-0538) or other questionnaires to fulfill compliance with NEPA and all other environmental laws, regulations, and Executive Orders aimed at protecting human health, the environment, and natural, and cultural resources. The NCCOS/CRP Program Manager will determine which questions are relevant to each specific proposal. Answers must be provided before the application can be submitted for final funding approval.

In addition to providing specific information for any required impact analyses, applicants may also be requested to assist NOAA in drafting an Environmental Assessment or Environmental Impact Statement, if NOAA determines further NEPA compliance is required. Applicants will also be required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. Failure to do so shall be grounds for not selecting an application. In some cases if additional information is required after an application is selected, funds can be withheld by the NOAA Grants Officer under a SAC 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. See also Section IV.B. of this Announcement.

7. 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 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.

8. Minority Serving Institutions

DOC/NOAA is strongly committed to increasing the participation of Minority Serving

Institutions (MSIs), i.e., Historically Black Colleges and Universities, Hispanic serving institutions, Tribal colleges and universities, Alaskan Native and Native Hawaiian institutions, and institutions that work in underserved communities.

9. Permits

It is the applicant's responsibility to obtain all permits and approvals from Federal, state, and local governments and private landowners where necessary for the proposed work to be conducted. If applicable, documentation of requests or approvals of environmental permits must be received by the NCCOS/CRP Program Manager prior to release of funding. Failure to apply for and obtain Federal, state, and local permits, approvals, or letters of agreement may delay the award of funds if a project is otherwise selected for funding. In some cases if additional permits and approvals are required after an application is selected, funds may be withheld by the NOAA Grants Officer under a SAC requiring the recipient to submit required permits and approvals.

10. Access to Information

Patentable ideas, trade secrets, privileged or confidential commercial or financial information, disclosure of which may harm the proposer, should be included in proposals only when such information is necessary to convey an understanding of the proposed project. Such information should be clearly marked in the proposal or included as a separate statement accompanying the proposal and should be appropriately labeled with a legend such as, “The following is [proprietary or confidential] information that [name of proposing organization] requests not be released to persons outside the Government, except for purposes of review and evaluation.” As an alternative example 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. While NOAA will make every effort to prevent unauthorized access to such material, it is not responsible or in any way liable for the release of such material.

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 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.

A proposal that results in an award will be available to the public on request, except for privileged information or material that is personal, proprietary or otherwise exempt from disclosure under law. Appropriate labeling in the proposal aids identification of what may be specifically exempt. Such information will be withheld from public disclosure to the extent permitted by law, including FOIA. Without assuming any liability for inadvertent disclosure, NOAA will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for merit review of the proposal or as otherwise authorized by law. Portions of proposals resulting in grants that contain descriptions of inventions in which either the Government or the grantee owns a right, title, or interest (including a nonexclusive license) will not normally be made available to the public until a reasonable time has been allowed for filing patent applications. NOAA will notify the grantee of receipt of requests for copies of funded proposals so the grantee may advise NOAA of such inventions described, or other confidential, commercial or proprietary information contained in the proposal.

In addition, applicants are also reminded that under 2 C.F.R. §200.303(e) they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information created or obtained in connection with a DOC financial assistance award. By submitting an application, an applicant (1) agrees to cooperate with DOC and external project and program evaluators and submit required financial and performance information and data in an accurate and timely manner, and (2) acknowledges and understands that information and data contained in applications for financial assistance, as well as, information and data contained in recipient financial, performance and other reports, may be used by the DOC in conducting reviews and evaluations of its financial assistance projects and programs.

Applicants are notified that DOC and other Federal employees, Federal agents and contractors, and/or non-Federal personnel who enter into appropriate confidentiality and nondisclosure agreements may access, review, and evaluate applicant and recipient information and data.

11. Scientific Integrity

NCCOS/CRP adheres to the principles of scientific integrity. This policy can be found at: https://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_202/202-735-D.html.

C. Reporting

All performance (i.e. technical progress) reports shall be submitted electronically through NOAA's Grants Online system unless the recipient does not have electronic access. In that case, performance (technical) reports are to be submitted to the NCCOS/CRP Program Manager. All financial reports shall be submitted in the same manner. All ship time use must be reported by the PI or Chief Scientist on each cruise within the performance reports.

The Federal Funding Accountability and Transparency Act, 31 U.S.C. 6101 note, includes a requirement for awardees of applicable Federal grants to report information about first-tier subawards and executive compensation under Federal assistance awards. All awardees of applicable grants and cooperative agreements are required to report to the Federal Sub-award Reporting System (FSRS) available at https://www.fsrs.gov/ on all sub-awards over $25,000. Refer to 2 CFR Parts 170.

Data Reporting Requirement

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 this Announcement (see Data Management Guidance to Proposal Writers below). 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, and/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.

Data Management Guidance to Proposal Writers

1. For questions regarding data management and implementing this guidance refer to Section VII. for NCCOS Grants Administrator contact information.

2. Data Accessibility: NCCOS/CRP requires that public access to grant- produced data be enabled as follows; Data Management Plans (see Section IV.B.2.) submitted with Proposals should reflect one or more of the option(s) provided by NCCOS/CRP.

Option A: For the majority of oceanographic and ecological data, except those listed below, funding recipients are expected to submit data to the NOAA NCEI for long-term preservation, which will provide public access, archiving, discovery metadata meeting NOAA standards and formats, and a Digital Object Identifier (DOI). NCCOS/CRP has held preliminary consultation with NCEI regarding these pending data.

Option B: For any other data not appropriate for submission to NOAA NCEI, funding recipients are expected to submit data to an appropriate data facility (i.e., National Institutes of Health’s GenBank for genomics data) that preserves data, properly manages archived data to assure their quality, mints DOIs, and makes archived data and related information available to users in a timely and efficient manner. Funding recipients should submit discovery metadata meeting NOAA standards and formats documenting these non-NOAA data archives to the NCCOS/CRP Program Manager (see Section VII.).

Option C: For limited-release data that are limited by law, regulation, policy, security requirements, commercial or international agreements, or valid technical considerations, funding recipients may request permission not to make data publicly accessible from the NCCOS/CRP Program Manager.

3. Technical recommendations: The NOAA Program is not offering specific technical guidance. Proposals are to describe their proposed approach. Use of open-standard formats and methods is encouraged. Definitions of data management terms are included here:

Environmental data are recorded and derived observations and measurements of the physical, chemical, biological, geological, and geophysical properties and conditions of the oceans, atmosphere, space environment, sun, and solid earth, as well as, correlative data such as socio-economic data, related documentation, and metadata. Digital audio or video recordings of environmental phenomena (such as animal sounds or undersea video) are included in this definition. Numerical model outputs are included in this definition, particularly if they are used to support the conclusion of a peer-reviewed publication. Data collected in a laboratory or other controlled environment, such as measurements of animals and chemical processes, are included in this definition.

Sharing data means making data publicly visible and accessible in a timely (see below) manner at no cost (or no more than the cost of reproduction), in a format which is machine-readable and based on open standards, along with metadata necessary to find and properly use the data. Data are to be made available in a form that would permit further analysis or reuse: data must be encoded in a machine-readable format, preferably using existing open-standard formats; data must be sufficiently documented, preferably using open metadata standards, to enable users to independently read and understand the data. Data should undergo quality control (QC) and a description of the QC process and results should be referenced in the metadata.

Machine-readable means the data are stored on a computer in a digital format whose structure is well described and which can be read without the aid of a human. An open-standard format is one which does not require proprietary software to be read. Metadata is documentation that is machine-readable and structured according to an open-standard format and which describes the data so that users can search for, access, read, understand, and use the data. International Organization for Standardization (ISO) EXtensible Markup Language (XML) is an acceptable metadata format.

Timely means no later than publication of a peer-reviewed article based on the data, or two years after the data are collected and verified, or two years after the original end date of the grant (not including any extensions or follow-on funding), whichever is soonest, unless a delay has been authorized by the NCCOS/CRP.

NCCOS/CRP resources for data archiving at NOAA NCEI have already been identified;

proposals should not include such costs. Proposals are permitted to include the costs of additional project-level data management, including: coordinating, organizing, documenting, formatting, or otherwise preparing datasets for submission to NOAA or non-NOAA data facilities; establishing and maintaining data access tools and services and related metadata; managing non-digital data that are not required to be made publicly accessible, including laboratory notebooks, preliminary analyses, drafts of scientific papers, plans for future research, peer review reports, communications with colleagues, or physical objects, such as laboratory specimens.

VII. Agency Contacts

Technical Information: David Kidwell, Director, NCCOS/CRP, 240-533-0286, David.Kidwell@noaa.gov.

Grants Administration Information: Jennifer Hinden, NCCOS, Business Support Branch, 240-533-0197, Jennifer.Hinden@noaa.gov.

VIII. Other Information

Check List for Required and Requested Documents:

(1) SF-424

(2) Summary Title Page

(3) Abstract

(4) Project Description

(5) References

(6) Milestone Chart

(7) Biographical 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 (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)

Indirect Rate Agreement (requested).
If Applicable: Signed Approval from subaward/subcontractor institutes; SFLLL