

Geospatial Modeling Grant

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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: Geospatial Modeling Grant

Announcement Type: Initial

Funding Opportunity Number: NOAA-NOS-NGS-2023-2007815

Federal Assistance Listings Number: 11.400, Geodetic Surveys and Services (Applications of the National Geodetic Ref System)

Dates: Letters of Intent (LOIs) must be received no later than 11:59 PM EST on March 22, 2023. Full proposals must be received no later than 11:59PM EST on April 24, 2023.

Funding Opportunity Description: The purpose of this notice is for the National Geodetic Survey to solicit grant proposals from eligible organizations to implement activities that modernize and improve the National Spatial Reference System (NSRS) and advance the science of geodesy in the United States. NOAA encourages proposals submitted in response to this announcement to include student collaboration and education. The program priorities under this grant program include; 1) Research and develop new methodologies for defining and applications for working with the NSRS; 2) develop and evaluate tools, models, and guidelines to access, analyze, and manipulate geodetic data; 3) enhance infrastructure of geodetic control, coastal remote sensing data, survey measurements, and other physical datasets that comprise the NSRS; 4) support education, capacity building, and technology transfer for the future of geodesy; 5) coordinate through partnerships with local, state, and regional users (e.g. state and local governments, universities, and/or the public sector).

NOAA encourages applicants and awardees to support the principles of diversity and inclusion when writing their proposals and performing their work. Diversity is defined as a collection of individual attributes that together help organizations achieve objectives. Inclusion is defined as a culture that connects each employee to the organization. Promoting diversity and inclusion inspires creativity, productivity, and vitality in the geospatial community.

This competition is open to all States and Territories within the United States. Eligible funding applicants for this competition are institutions of higher education, state, local and Indian tribal governments. Federal agencies are not eligible to apply for funding under this notice. All awards are subject to the availability of funds.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

The National Geodetic Survey (NGS) is a program office within the National Ocean Service (NOS) that provides the authoritative coordinate system for all positioning activities in the Nation. Known as the National Spatial Reference System (NSRS), NGS' authoritative coordinate system defines latitude, longitude, height, gravity, and shoreline information, which supports a wide range of important activities, including mapping, charting, navigation, transportation, infrastructure, flood risk determination, national security, and scientific and environmental observations. NGS also develops industry guidelines, specifications, and standards and provides training for surveyors, mapping professionals, scientists and other users of the NSRS.

NGS is currently modernizing the NSRS to improve its accuracy, accessibility, and alignment throughout the US and territories. To improve the NSRS, NGS will replace all three North American Datum of 1983 (NAD 83) frames and all vertical datums, including the North American Vertical Datum of 1988 (NAVD 88), with four new terrestrial reference frames and a geopotential datum. The new reference frames and datum will rely primarily on Global Navigation Satellite Systems (GNSS), such as the Global Positioning System (GPS), a gravimetric geoid model resulting from our Gravity for the Redefinition of the American Vertical Datum (GRAV-D) Program, as well as a suite of online tools to access, analyze, and manipulate geospatial data.

The primary objective of this funding opportunity is to modernize and improve the NSRS and address emerging research problems in the field of geodesy. This funding opportunity solicits projects that will implement National Spatial Reference System Modernization objectives and conduct research to improve the accuracy, accessibility, and alignment of geospatial data. Funded projects will directly support the following objectives within the NGS Strategic Plan https://geodesy.noaa.gov/web/about_ngo/info/documents/ngs-strategic-plan-2019-2023.pdf:

Objective 2-1: Define and provide access to four geocentric, time-dependent, terrestrial reference frames (TRFs) by year 2022. (note: NGS has postponed the release of the modernized NSRS until 2025)

Objective 2-2: Define and provide access to a geocentric, time-dependent, geopotential

datum by year 2022 (note: NGS has postponed the release of the modernized NSRS until 2025)

Objective 2-3: Increase our ability to efficiently and accurately solicit, accept, process, store, report, and reprocess all survey data. Accomplish this while maintaining the standards of quality expected by external users.

Objective 2-4: Continually increase the use of commercially available software, the usefulness of all NGS products and services, and the interoperability of NGS software with commercial software.

Objective 2-5: Continually improve the efficiency and accuracy of geospatial data-collection methodologies.

Objective 3-3: Annually increase the number of collaborations between NGS and universities as a means of solving research problems and addressing other NGS mission needs over the next three years.

Please consider NGS's policy documents - known as the "Blueprint" documents for the Modernized NSRS - which outline technical decisions about replacing NAD 83 and NAVD 88 and address how geospatial professionals can expect to work within the newly-modernized NSRS when NAD 83 and NAVD 88 are replaced.

<https://geodesy.noaa.gov/datums/newdatums/policy.shtml>

Please also consider the “National Research and Development Plan for Positioning Navigation, and Timing Resilience developed by the National Science and Technology Council” -

https://www.whitehouse.gov/wp-content/uploads/2021/08/Position_Navigation_Timing_RD_Plan-August-2021.pdf

The secondary objective of this funding opportunity is to support a Geodesy Community of Practice in collaboration with federal and nonfederal stakeholders to address the nationwide deficiency of geodesists and improve the coordination and use of geospatial data. Applicants are encouraged to partner and collaborate across organizations and stakeholder groups, including students, to maximize public awareness and education. This funding opportunity solicits projects that will address challenges and opportunities recognized by the National Geospatial Advisory Committee (NGAC) Resolution on Geodesy.

<https://www.fgdc.gov/ngac/meetings/december-2022/ngac-geodesy-resolution-12-7-2022-v1.pdf>

In addition, this funding opportunity solicits projects that raise awareness and educate users of the NSRS through regional meetings, presentations, and attendance at geospatial conferences. Applicants are encouraged to submit proposals that address emerging needs in underserved and vulnerable populations. Funded projects will directly support the following objectives within the NGS Strategic Plan

https://geodesy.noaa.gov/web/about_ngo/info/documents/ngs-strategic-plan-2019-2023.pdf:

Objective 3-2: Improve stakeholder engagement, improve NGS response mechanisms, and increase the number of stakeholder communities we directly educate or with whom we engage.

Objective 3-4: Annually increase stakeholder engagement through the Regional Advisor Program, with a combination of advice, outreach, education, and training.

Objective 3-5: Maintain and continue to develop the online educational portfolio, and ensure the existing material is updated at least every five years.

Objective 4-1: Annually increase the scientific and technical knowledge, as well as the capabilities, of NGS' workforce.

Funded projects will directly support the following objectives within the NOAA Strategic Plan (https://www.noaa.gov/sites/default/files/2022-06/NOAA_FY2226_Strategic_Plan.pdf):

Provide Science-Based Use-Inspired Decision Support Tools (NOAA's Climate-Ready Nation Goal - Objective 1.1.3)

Improve Environmental Predictions and Projections (NOAA's Climate-Ready Nation Goal - Objective 1.2)

Advance Cutting-Edge Integrated Research to Operations (NOAA's Climate-Ready Nation Goal - Objective 1.3.3)

Bolster Authoritative Data and Information Stewardship (NOAA's Climate-Ready Nation Goal - Objective 1.4)

Enhance Comprehensive Observations and Monitoring Systems (NOAA's Build a Climate-Ready Nation Goal - Objective 1.5)

Diversify NOAA STEM Fields and Enhance Partnership with Minority-Serving Institutions (NOAA's Equity Goal - Objective 2.1.3)

Support Underserved and Vulnerable Communities (NOAA's Equity Goal - Objective 2.2)

Advance NOAA's Contribution to a Safe and Efficient Marine Transportation System (NOAA's Accelerate Growth In An Information-Based Blue Economy Goal - Objective 3.2.4)

Improve Resilience of Coastal Communities and Economies (NOAA's Accelerate Growth In An Information-Based Blue Economy Goal - Objective 3.3)

B. Program Priorities

Applicants must have a demonstrated history in the use of geospatial data, for example the collection, storage, research, analysis, and/or overall management of geospatial data. The program priorities under this grant program include; 1) Research and develop new methodologies for defining and applications for working with the NSRS; 2) develop and evaluate tools, models, and guidelines to access, analyze, and manipulate geodetic data; 3) enhance infrastructure of geodetic control, coastal remote sensing data, survey measurements, and other physical datasets that comprise the NSRS; 4) support education, capacity building, and technology transfer for the future of geodesy; 5) coordinate through partnerships with local, state, and regional users (e.g. state and local governments, universities, and/or the public sector).

Successful applicants shall be associated with one or more of the following activities:

1.) Research and develop new methodologies for defining and applications for working with the NSRS:

- a.) Investigate new applications of geodetic data, including but not limited to, connected vehicle technologies, precision agriculture, locality-based environment observations, and Geospatial Information Systems
 - b.) Investigate new methodologies and technologies that would improve the accuracy and performance of both the production and research versions of the NSRS, including next generation positioning systems (e.g. quantum technologies, etc)
 - c.) Investigate methodologies for modeling intra-frame deformation
 - d.) Investigate the use of Interferometric Synthetic Aperture Radar (InSAR) technologies to evaluate vertical and horizontal land motion deformation at continental and local scales, for example investigating the relationship between land motion and site movement at Continuously Operating Reference Stations (CORS)
 - e.) Develop new commercial or scientific uses for data from the NOAA CORS Network
 - f.) Develop new data analysis strategies that leverage multiple GNSS signals and constellations
 - g.) Investigate Gravity Recovery and Climate Experiment (GRACE) and GRACE Follow-On (GRACE FO) data to understand time variations in Earth's gravity field and vertical land motion caused by varying amounts of water mass stored on land as well as ongoing isostatic adjustment to Pleistocene ice loss
 - h.) Studies that integrate space and terrestrial geodetic data to mitigate error sources, including GRACE/GRACE-FO, InSAR, GNSS, Satellite Laser Ranging (SLR), Very-long-baseline interferometry (VLBI), tide gauges, and altimetry
 - i.) Investigate Artificial Intelligence (AI) and Machine Learning (ML) techniques for improving orbit prediction, quality assurance of CORS operations, etc.
 - j.) Investigate new techniques to characterize plate boundary deformation in the Pacific Ocean
- 2.) Develop and evaluate tools, models, and guidelines to access, analyze, and manipulate geodetic data:

- a.) Increase the service delivery of geodetic products and deliverables to the public
 - b.) Perform research and demonstration projects to test the performance of geospatial tools and their workflow that are required to address datum issues at the regional level
 - c.) Develop and evaluate models and/or tools for geospatial data manipulation and analysis in response to usability
 - d.) Evaluate the reliability and performance of the NGS tools/models for different geographic regions
 - e.) Develop and evaluate Precise Point Positioning (PPP) methodologies
 - f.) Develop and evaluate models to maintain an Intra-frame deformation model (IFDM)
 - g.) Enhance the performance of M-PAGES and OPUS software
 - h.) Develop and evaluate models and algorithms to improve the process and accuracy of GNSS absolute antenna calibration
- 3.) Enhance infrastructure of geodetic control, coastal remote sensing data, survey measurements, and other physical datasets that comprise the NSRS:
- a.) Expand or upgrade Continuously Operating Reference Stations (CORS) as needed to support local needs, in consideration of the NGS Guidelines for New and Existing CORS
 - b.) Co-locate CORS with National Water Level Observation Network (NWLON) stations, and investigate new survey technologies (e.g. GNSS-Reflectometry)
 - c.) Perform geodetic surveys (GNSS, gravity, leveling, etc.) to enhance the NSRS
 - d.) Investigate field and engineering methodologies to improve the performance and accuracy of geodetic observations and use
 - e.) Operate and maintain a Real Time Network of GNSS stations aligned with the NSRS

4.) Support education, capacity building, and technology transfer for the future of geodesy:

a.) Educate and train students in the science of geodesy, with a special emphasis on following diversity and inclusion principles

b.) Develop curriculum and/programs to support the science of geodesy and produce geodesists, and consider exporting to other languages (e.g. Spanish) to assist in capacity development

c.) Hold forums and meetings in states/regions to educate users and solicit input regarding requirements for data, products, and services to support geospatial modeling

d.) Participate in forums held by NOAA and other partners, as well as local, regional, and national conferences to expand understanding of the importance of accurate and reliable data, models, and tools

e.) Prepare education and outreach materials to advance the science of geodesy in the U.S.

f.) Develop workshops to instruct surveyors and interested users in best practices for geodetic surveying

5.) Coordinate through partnerships with local, state, and regional users (e.g. state, local, and tribal governments, universities, and/or the public sector):

a.) Collaborate within a region to prepare for the NSRS Modernization

b.) Work with local users to investigate new uses and applications of geospatial data products

C. Program Authority

Statutory authority for this program is derived from the Coast and Geodetic Survey Act, codified at 33 U.S.C. 883a and the Hydrographic Services Improvement Act, codified in 33

U.S.C. 892.

II. Award Information

A. Funding Availability

In FY 2023, approximately \$4,000,000 will be available to award. The anticipated annual federal funding amount per award will be between \$500,000 to \$2,000,000, with performance periods ranging from two to five years. The minimum annual federal funding amount is \$500,000. Proposals less than this amount will not be reviewed. The maximum annual federal funding amount will be \$2,000,000, and the maximum amount of federal funding for a five-year award is \$10,000,000. Each award will be made for one year with supplemental awards up to five years cumulatively. The anticipated number of awards is two to ten. All awards, initial and supplemental, are subject to availability of funds and quality of received proposals.

Proposals not funded in the current fiscal period may be considered for funding in another fiscal period without NOAA repeating the competitive process outlined in this announcement. Funding in subsequent fiscal years encompassing the proposed period of performance is subject to the availability of funding.

The lead applicant on any proposal will be responsible for ensuring that allocated funds are used for the purposes of, and in a manner consistent with, this program, including any funds awarded to an eligible sub-awardee.

There is no guarantee that funds will be available for this federal funding opportunity or that any proposal will be selected for funding. If an applicant incurs any costs prior to receiving an award agreement signed by an authorized NOAA official, the applicant does so at their own risk of not being selected and these costs not being included in a subsequent award. Direct costs of proposal preparation shall not be included within the project application budget. In addition, NOAA and DOC will not be responsible for project costs if this program fails to receive funding. Recipients and subrecipients are subject to all federal laws and agency policies, regulations, and procedures applicable to federal financial assistance awards.

B. Project/Award Period

This is a multi-year funding opportunity. Applicants shall request funding for a two to five year project period. Anticipated start date, if found meritorious, generally will be six months

after receipt by NOAA, but shall not start earlier than October 1, 2023. The amount of available funding for subsequent budget periods beyond the first year is dependent upon the availability of funds, satisfactory progress by the grantee and the Program Office's determination that continued funding is in the best interest of the government.

C. Type of Funding Instrument

Applications must be written as a Cooperative Agreement, and the proposal must clearly identify this funding instrument in the proposal abstract and cover sheet.

Successful applicants will enter into a grant or cooperative agreement with NOAA's National Geodetic Survey (NGS) as described under the terms of this document. Federal Cooperative Agreements are different from traditional grants in that they allow for substantial federal involvement in the planning and implementation of funded projects. Substantial involvement on the part of NOAA may include the collaboration and participation of NOAA program officers and other NGS staff in project development, planning and implementation; technical monitoring of award activities; and coordination of funded projects with other NOAA-funded efforts as needed. Applications that propose substantial federal government involvement may suggest anticipated federal roles and responsibilities in their proposals. Successful applicants will formalize the specific roles of the federal agency as a Special Award Condition (SAC) during the negotiation process.

III. Eligibility Information

A. Eligible Applicants

Eligible funding applicants for this competition are institutions of higher education, state, local and Indian tribal governments. Eligible funding applicants may submit a maximum of two applications. Applicants are encouraged to coordinate with partners to achieve program priorities, including sub-recipient and contractual relationships. Federal agencies or institutions and foreign governments may not be the primary recipient of awards under this announcement, but are encouraged to partner with eligible applicants when appropriate. If federal agencies are collaborators, applicants are expected to provide detail on the planned level of federal engagement in the application. Examples may include, but are not limited to, partnership services, serving in a review capacity, or participating in priority task teams, working groups, or leadership teams.

DOC/NOAA supports cultural and gender diversity and encourages women and minority individuals and groups to participate in proposals submitted to this program. 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 historically underserved areas. DOC/NOAA encourages applications involving any of the above institutions to apply.

B. Cost Sharing or Matching Requirement

There is no requirement for cost sharing or matching

C. Other Criteria that Affect Eligibility

None

IV. Application and Submission Information

A. Address to Request Application Package

The standard SF-424 application package is available online at <https://www.grants.gov/>. If an applicant does not have Internet access, application packages can be requested from:

Colin Becker
NOAA's National Geodetic Survey (N/NGS)
1315 East-West Highway
Silver Spring, Maryland 20910; or
Phone: 240-687-9961
E-mail: ngs.grants@noaa.gov

B. Content and Form of Application

Applicants shall submit a complete standard NOAA financial assistance application package in accordance with the guidelines in this document. Applications that do not follow the Letter of Intent (LOI) and proposal application requirements stated in this announcement will not be considered for review. Letters of intent (LOI) shall be sent via email to ngs.grants@noaa.gov.

Prior to submitting a full proposal, applicants are required to submit a LOI. An applicant cannot submit a full application unless it has submitted an LOI. The LOI must be no more than two pages in length, using a 12-point font and one-inch margins, and it must include the name(s) of the Principal Investigators PI(s) and their home institution(s). The LOI must

contain a brief description of the intended project. The LOI must include a brief budget which summarizes how resources will be allocated [e.g., salaries, computing and communications, equipment (provide justification), indirect charges, and travel].

Each LOI will be reviewed, following the criteria specified below in Section V.A. of this notice. All applicants will be notified whether a full proposal is encouraged or discouraged based on the review of their LOI. Even though a full proposal may be discouraged, an applicant will not be precluded from submitting a full proposal. All PIs will receive a short synthesis of the factors that led to the recommendation regarding their own reviewed LOI(s).

The LOI shall include the following information on a cover page:

- a) Identification of NOAA's National Geodetic Survey as the target of the LOI
- b) Project title
- c) Names and affiliation of the lead principal investigators (PI) with contact information. NOAA will communicate with the lead PI on the status of their LOI.
- d) Names and affiliation for the principal investigator and all co-PIs
- e) Identify the following aspects of the project, including 1) the region and specific communities where the project will take place, 2) the professional or technical network that will be leveraged or created, and 3) identification of the programmatic priority(ies) applicable to the project
- f) Funding type (cooperative agreement)
- g) Proposed project start and end dates
- h) Funding request by year (as appropriate)

The body of the LOI shall be no more than 2 pages, single-spaced, 12-point font, and must include the following components:

- a) Statement of Purpose: state the intent, goal, and outcome of proposed work
- b) Project Description: briefly describe the proposed project and activities, ensuring to highlight and describe the 1) professional or technical network that will be leveraged or created, 2) partnerships and existing federal, state, territorial and/or local activities or programs that will be leveraged or integrated 3) public engagement and outreach activities and project outcomes and 4) the intended benefits to the region and local community
- c) Budget summary: provide an overview of funding requested and brief details on how funds will be used

The following Federal forms from the SF-424 Form Family shall be included in the application package, as applicable (no page limit with forms and related mandatory federal form information). Please note that these federal forms must be filled out in a Grants.gov Workspace.:

i. Application for Federal Assistance: Form SF-424.

Applicants requesting Federal funding under this program must submit a copy of SF-424, "Application for Federal Assistance." If the applicant submits a hard copy of the final application, the SF-424 must be signed and dated by the organization's authorized representative and used as the cover page for the final application. An electronic signature and date stamp will automatically be included on SF-424 forms submitted via Grants.gov.

ii. Budget Information for Non-construction Programs: Form SF-424A.

Applicants are required to submit a SF-424A Budget Form to summarize the budget for the proposed scope of work. The first column of Sections A and B shows the federal funds requested, while the second column of Sections A and B shows the non-federal matching funds provided for the project. Total award funding is shown in the final column of Section B. Non-federal funding is broken out by source in Section C. Forecasted cash needs in Section D should be inclusive of all funding for multi-year projects. Federal and non-federal funds should be expended at a similar rate throughout the course of the project. Section E may be left blank. Section F summarizes the direct charges in line 21 and lists the indirect charges requested; please show the rate used in line 22. Multi-year awards will have out year funds shown in Section E. Please note that completion of the SF-424A form as described above represents NOAA's preference and may not be consistent with the instructions that accompany the SF-424A form. All budget figures should match the funding requested on the application cover sheet and correspond with the descriptions contained in the project and budget narratives. Each proposed sub-award of \$25,000 or more shall be accompanied by a separate SF-424A form to fully document the proposed sub-award budget.

iii. Assurances for Non-construction Programs: Form SF-424B

v. Certification Regarding Lobbying: Form CD-511

vii. Disclosure of Lobbying Activities: Form SF-LLL (if applicable)

NOTE: When applying for a Multi-Year award (2 to 5 years), the non-federal entity must submit a line item budget (SF-424A) and corresponding budget narrative for each of the funding periods anticipated.

Full Proposal: The Project Description (proposal) must not exceed 10 pages (single-spaced, 12-point font and exclusive of appendices). The 10-page limit does not include the proposal title page, a table of contents, the data management plan, and the project summary referenced below under item two (2), nor any appendices. Appendices should be limited to materials that directly support the main body of the proposal (e.g., detailed budget information, negotiated indirect cost rate agreement, environmental compliance information, support letters, resumes, references, lists of data sources, and maps) and shall not exceed 50 pages in length. In addition to an overall budget, a SF-424A must be submitted for each year of the proposal. Applicants must also provide a separate budget (SF-424A) and budget narrative for each sub-award over \$25,000. SF-424As and negotiated indirect cost rate agreements will not be included in the page count of the proposal or appendices.

All funding application packages must contain the following components:

1. Title Page
 - a) Project title
 - b) Proposed project period (start and end dates)
 - c) Type of project (i.e., grant or cooperative agreement)
 - d) Recipient name (must match registered name in Sam.gov)
 - e) Recipient Unique Entity Identifier number (must match applicant information in SAM.Gov)
 - f) Principal and other investigators (names, organization, and contact information)
 - g) Financial representative (names, organization, and contact information)
 - h) Authorized Representative (name, organization, and contact information)
 - i) Requested funding by year (as appropriate)
2. Project Summary

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

- a) Project Name/Title
- b) Primary Contact (name, address, phone, email)
- c) Recipient Institution
- d) Other Investigators (name, affiliated institution or agency)

- e) Brief Project Summary including activities, objectives, milestones, performance measures, and intended benefits
- f) Partners

NOTE: The Point of Contact listed on the application, SF-424, should be the same individual identified as the Primary Contact in the Project Summary.

3. Project Description

All project proposals must include the following sections:

- a) Goals and Objectives

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

- b) Background

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

- c) Audience

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

- d) Approach

Provide a work plan that: identifies specific tasks to be accomplished; explains the technical approach (including quality assurance) needed to accomplish the tasks; identifies the roles of partners and cooperators; and identifies potential obstacles to successful completion of the goals and objectives. Describe how users are involved in the planning and design process. The work plan must clearly address data management requirements, and the steps to be taken

to achieve efficient and effective data access and archive that is compliant with federal regulations. If the project includes federal partners, the roles and responsibilities of the federal partners must be clearly identified.

e) Benefits

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

f) Activity and Milestone Schedule

Proposals must identify schedules for all proposed project activities, accomplishments, products, and key outcomes. In addition, performance measures must be included in the application as a way to measure progress of the project activities and deliverables.

4. Budget Narrative and Justification

In order to allow reviewers to evaluate the appropriateness of all costs, applications shall include a detailed budget narrative and justification of costs broken out by individual tasks. The budget narrative submitted with the final application shall match the dollar amounts included on all required forms and clearly link to the project narrative. Please explain each calculation and provide a narrative justification to explain expenditures for each budget category. The budget narrative shall describe, by category of expenditure, the total funding needed to accomplish the objectives described in the project narrative for the entire award period. Please explain how categorical costs are derived in sufficient detail to enable reviewers to determine if costs are 'allowable and reasonable' according to the cost principles referenced in 2 CFR 200, Subpart E. Budget narrative categories shall correspond to the standard object class categories listed in Section B of the SF-424A. For additional details, please review the Grants Management Division's budget guidance provided at: <https://geodesy.noaa.gov/grant-opportunities/grants-guidance.shtml>

Applicants shall include detailed budget information regarding all known contracts and sub-awards over \$25,000, and indicate the basis for the cost and price estimates in the narrative. Applicants shall describe activities to occur or products or services to be obtained and indicate the applicability or necessity of each to the project. Each contract and/or sub-award

over \$25,000 shall include form SF-424A. Detailed budget information includes:

- a) Name of identified qualified sub recipient or contractor, affiliation, contact information, and method of selection. For “to be determined,” describe plans for selection. Information must include the name and location (city, state, and Congressional district) of the entity receiving the funds and the location of the primary place of performance under the contract or sub-award.).
- b) Period of Performance. Include the dates for the performance period. If it involves a number of tasks, include the performance period for each task.
- c) Scope of Work. List and describe the specific activities or tasks to be performed.
- d) Criteria for Measuring Accountability. Include an itemized line item breakdown as well as total contract/award amount. If applicable, include any indirect costs paid under the contract/award and the indirect cost rate used.
- e) Itemized Budget. Include categories used in the program budget for subrecipients or cost-based contractors. If applicable, include any direct cost paid under the sub-award or contract and the indirect cost rate used.

All sub-awards and contracts must be made consistent with the requirements of 2 CFR 200.331-200.333 for sub-awards, and 200.317-200.327 for procurements.

For any equipment, a description of the item and associated costs or price is required, including a description of how it will be used in the project. Note that equipment is defined as tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the non-federal entity for financial statement purposes, or \$5,000. See 2 CFR 200.1 Equipment and 2 CFR 200.313.

The cost or price, purpose, and method of selection for identified and planned acquisition contracts shall be thoroughly justified in the Budget Narrative. Describe products or services to be obtained and indicate the applicability or necessity of each to the project. Procurements are subject to policies described in 2 CFR 200.317 - .327. For “to be determined,” describe plans for selection.

The budget narrative shall also provide, to the extent possible, detailed information on travel, including costs, a description of anticipated travel, destinations, the number of travelers, and

a justification of how the requested travel is directly relevant to the successful completion of the project. If actual trip details are unknown, applicants shall state the basis for the proposed travel charges. If a foreign air carrier is anticipated to be used for any portion of travel, prior approval is required under the DOC Financial Assistance Standard Terms and Conditions, Section G.05.d., <https://www.commerce.gov/sites/default/files/2021-04/Department%20of%20Commerce%20Grants%20%20Cooperative%20Agreements%20Manual%20%2820%20April%202021%29.pdf>, and therefore, such travel should be included in the proposal to avoid having to request prior approval after the project starts.

Refer to item 11 below in Section VI B regarding treatment of Indirect Costs in the Budget Narrative.

5. Appendices

Appendices should be limited to materials that directly support the main body of the proposal (e.g. resumes, references, lists of relevant work products or reports, detailed methodologies, data sources, detailed budget narrative, environmental compliance information, letters of collaboration, letters of support, lists of data sources, and maps) and shall not exceed 50 pages in length. Applicants should number the pages in their proposal and any appendices.

As a standard practice, NOAA requires that resumes for Principal Investigators (PIs) of competitive awards be on file and maintained in the grants processing system used by the Department of Commerce, Grants Online. Recipients of any award (competitive or non-competitive) are required to designate PIs in Grants Online within 30 days of receiving award offers.

a) National Environmental Policy Act (NEPA)

See section VI. B-6 for additional NEPA requirements

Applicants are required to answer the questions indicated in this Notice of Funding Opportunity. Applicants shall answer the NEPA questions to the best of their ability with as much detail as possible. If the applicant does not answer all of the questions indicated in the Notice of Funding Opportunity, the application will be considered incomplete. Responses to NEPA questions shall be included in the application appendices.

After the application is submitted, NOAA may require additional information to fulfill NEPA and other compliance requirements. If NOAA determines that an environmental assessment is required, applicants may also be requested to assist in drafting the assessment.

The NEPA questions below have been specifically selected for this funding opportunity from the “Environmental Compliance Questionnaire for National Oceanic and Atmospheric Administration Federal Financial Assistance Applicants” (located at: <https://www.noaa.gov/nepa>). Applicants need only respond to the questions listed below. Some of the questions may overlap with material provided in other parts of the application. This overlap occurs because the answers to the questionnaire are provided to NOAA staff who do not review the other parts of the application. If appropriate, the applicant may copy the information from other parts of the application and paste it into the answers to the questionnaire. Some questions have a "yes" or "no" response. If the response is "no" the applicant does not need to elaborate on their answer. If the response is "yes" the applicant must elaborate on their answer.

Required NEPA questions are as follows:

1. Describe the proposed activity, including:
 - Explain the purpose, objectives, and goals; and
 - Explain whether the proposed activity would occur in different locations and/or have multiple phases.
 - Explain who would lead the project and degree of supervision of participants in the project.
2. Is the proposed activity a continuation or part of an ongoing activity? If yes, then:
 - Describe any changes to the proposed activity since it was initiated, including progress toward achieving the project’s initial objectives/goals; and
 - Provide any additional information, previous environmental review documents, and/or reports from previous years.
3. Describe the proposed activity location, including, if available and appropriate, geographic coordinates (latitude, longitude in DD MM.MMM), river mile markers, etc. for all distinct phases of the proposed activity.
4. Provide maps and graphics of the proposed location, if available (at a scale that clearly shows site location(s) relative to the surrounding area and nearby features).

5. Is the location of the proposed activity in a previously undisturbed area? If yes, then explain if the proposed activity would degrade or disturb the previously undisturbed area.

6. Are there pre-existing or ongoing uses at the location of the proposed activity? If yes, then describe and explain the previous or ongoing uses at the location of the proposed activity or, if not known, describe how previous or ongoing uses will be determined.

7. Describe the characteristics of the location of the proposed activity:

- Indicate degree to which the location has been disturbed. Examples include highly developed, light development, active harbor use, public beach, open space, etc.
- Indicate whether the area is a unique geographic area of notable recreational, ecological, scientific, cultural, historical, scenic, economic, or aesthetic importance;
- Identify ESA-listed and/or MMPA species that may occur and overlap with the proposed activity;
- Describe any anticipated changes over time to the natural landscape and/or viewshed that would result from the proposed activity;
- List any ecologically significant or critical (e.g., spawning, nursery, or foraging grounds) areas in the location of the proposed activity, including areas that are normally inundated by water (wetlands including permanent or temporary wetlands) or other aquatic habitat or areas within the 100-year flood plain;
- List any designated Essential Fish Habitat and Habitat Areas of Particular Concern designated under the Magnuson-Stevens Fishery Conservation and Management Act;
- List any critical habitat areas for Endangered Species Act-listed species;
- List any marine protected areas including national marine sanctuaries and national marine monuments in the location of the proposed activity;
- List any National Wildlife Refuge areas, wild or scenic rivers, wetlands, or prime/unique farmland in the location of the proposed activity;
- List any properties listed or eligible for listing on the National Register of Historic Places, National Historic Landmarks, or National Monuments; and
- List any religious or cultural sites of any federally recognized Indian Tribes or Native Hawaiian organizations in the proposed activity area.

8. Specify the proposed start date and duration of the proposed activity for all distinct phases of the project.

9. Provide proposed activity schedules for all distinct phases of the proposed project including:

- Implementation dates of major elements of the proposed activity;
- Frequency of activities within the proposed activity schedule (e.g. once per week, 10 days per month, daily); and
- Deployment and recovery schedules of equipment or structures that would be temporarily or permanently placed in the environment.

10. Is this proposed activity funded in any way by another Federal or state agency? If yes, then:

- Identify the Federal or state agency; and
- Include information on whether an environmental assessment or environmental impact statement was completed or is in the process of being completed for the proposed activity.

11. List all other interested or affected Federal, state, and local agencies, Native American tribes or Native Hawaiian organizations, non-governmental organizations, and private individuals that may potentially be interested and/or affected by the action.

12. Are there any minority or low-income communities located in the area of the proposed activity? If yes, then describe how the minority or low-income communities might be affected by the proposed activity.

13. Are Federal, state, or local permits, authorizations, waivers, determinations, or consultations required in order for the proposed activity to begin? If yes, then:

- List and provide the status of all required Federal, state, or local permits, authorizations, waivers, determinations, conditions, and consultations, as applicable; and
- Provide copies of all required Federal, state, or local permits, authorizations, waivers, or determinations that you have secured.

Paperwork Reduction Act Statement: Public reporting burden for this collection of NEPA information is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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

Control Number is 0648-0538, which expires on November 30, 2024.

Detailed information on NOAA compliance with NEPA can be found at the following NOAA NEPA websites: <http://www.nepa.noaa.gov/> including NOAA Administrative Order 216-6 for NEPA, <https://www.noaa.gov/organization/administration/nao-216-6a>

b) Data Management

Refer to Section VI for Data Management Plan requirements and guidance.

c) Resumes

Provide resumes of the Principal Investigator for the project and other key personnel critical to the success of the project. Ensure that resumes address qualifications relevant to conducting the proposed work. Please limit resumes to a maximum of two pages for each key investigator.

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

Any applicant awarded in response to this Announcement will be required to use the System for Award Management (SAM), which may be accessed online at <https://sam.gov/SAM/>. Applicants should allow a minimum of two weeks to complete the SAM registration; registration is required only once but must be periodically renewed. On April 4, 2022, the federal government began using a new Unique Entity Identifier (UEI) number provided by SAM. Your organization's Employer Identification Number (EIN) will be needed to receive a UEI, which is provided by SAM. If your entity is already registered in SAM.gov, your new UEI has already been assigned and is viewable in SAM.gov. This includes inactive registrations.

Each applicant is required to: (1) be registered in SAM before submitting its proposal, which takes an average of 7-10 business days after entering all information into SAM and requires the applicant's Employer Identification Number; (2) provide a valid Unique Entity Identifier UEI in its proposal; and (3) continue to maintain an active SAM registration with current information at all times during which it has an active federal award or a proposal or plan under consideration by a federal awarding agency. SAM registration must be revalidated and renewed every 12 months.

Applicants are advised to complete SAM registration or renewal well in advance of the full proposal deadline. For SAM registration visit <https://sam.gov/content/entity-registration>

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

D. Submission Dates and Times

Applications that do not follow the Letter of Intent (LOI) and full application requirements stated in this announcement will not be considered for review.

Applicants are required to submit a Letter of Intent (LOI) prior to submitting a full application. LOIs must be received no later than 11:59 PM (EST) on March 22, 2023. LOIs submitted after this time will not be reviewed or considered. LOIs shall be sent to the Federal Program Officer, Colin Becker, via email at ngs.grants@noaa.gov.

Full applications must be received by <https://www.grants.gov/>, postmarked, or provided to a delivery service no later than 11:59 PM (EST) on April 24, 2023. Use of U.S. mail or another delivery service must be documented with a receipt. No facsimile or electronic mail applications will be accepted. Please note: Validation or rejection of your application by Grants.gov may take up to two business days after submission. Please consider this process in developing your submission timeline. Applications received after this time will not be reviewed or considered.

E. Intergovernmental Review

Funding applications submitted under this competition are subject to Executive Order (EO) 12372, "Intergovernmental Review of Federal Programs." It is the state agency's responsibility to contact their state's Single Point of Contact (SPOC) to find out about and comply with the state's process under EO 12372. To assist the applicant, the names and addresses of the SPOCs are listed on the Office of Management and Budget's website: <https://www.whitehouse.gov/wp-content/uploads/2020/04/SPOC-4-13-20.pdf>

F. Funding Restrictions

This funding opportunity does not support deprecated software products and services.

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

G. Other Submission Requirements

Letters of intent (LOI) shall be sent to the Federal Program Officer, Colin Becker, via email at ngs.grants@noaa.gov. Insert "FY 2023 Geospatial Modeling Program Letter of Intent" as the subject line of the email. If you do not have internet access, a hard copy LOI must be submitted via mail to the attention of Colin Becker, NOAA's National Geodetic Survey

(N/NGS) 1315 East West Highway, Silver Spring, Maryland, 20910.

The standard NOAA funding application package is available at www.grants.gov (Grants.gov) by searching the Funding Opportunity Number or the Federal Assistance Listings Number (11.400). Application packages, including all letters of collaboration, shall be submitted through the “Apply” function on Grants.gov. The Grants.gov site contains directions for submitting an application. Applicants must register with Grants.gov before any application materials can be submitted. To use Grants.gov, applicants must have a Unique Identity Identifier and be registered in the SAM.gov, which requires periodic renewals. Refer to Section IV.C. for details on receiving a unique identity identifier number and registering with SAM.gov.

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

If an applicant submits multiple electronic versions of the proposal, the applicant must advise the federal agency of the tracking number that should be withdrawn. Applicants shall not electronically submit packages with files embedded within files as any such files may not be reviewed or factored into the merit review process.

ATTN: Colin Becker
NOAA’s National Geodetic Survey (N/NGS)
1315 East-West Highway
Silver Spring, Maryland 20910

V. Application Review Information

A. Evaluation Criteria

1. Importance and/or relevance and applicability of proposed project to the program goals (30 percent): This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, Federal, regional, state, or local activities. Proposals will be evaluated on how well the proposed project will achieve the program objectives and

priorities provided in Section I. Questions relevant to this criterion include: Does this project modernize and improve the NSRS? Does this project address emerging research problems in the field of geodesy? Does this project support a Geodesy Community of Practice to address the nationwide deficiency of geodesists? Does this project improve the coordination and use of geospatial data? Does this project support diversity, equity, inclusion, and climate justice and that include underserved and highly vulnerable members of the community?

2. Technical and scientific merit (25 percent): This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. Questions relevant to this criterion include: Is the approach appropriate for the stated goals and objectives? Are the project goals and objectives achievable within the proposed time-frame? Does the proposed approach incorporate current guidance, scientific, and/or technical advancements in the design and implementation of the proposed work?

3. Overall qualifications of the funding applicants (20 percent): This criterion ascertains whether the funding applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. Questions relevant to this criterion include: Does the proposal demonstrate local, regional and/or institutional support for the project? Are the investigators qualified and is the organizational framework appropriate to conduct a project of the nature and scope proposed? Are investigators from other agencies and institutions included on the project to capitalize on available expertise? Are students included in the project?

4. Project costs (15 percent): This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time-frame. Questions relevant to this criterion include: Does the proposal demonstrate that the budget is commensurate with project needs? Are costs reasonable? Is the cost effectiveness of the project optimized through strategic partnerships?

5. Outreach, Education, and Data Management (10 percent): This criterion assesses whether the project provides a focused and effective education and outreach strategy to modernize and improve the National Spatial Reference System (NSRS) and advance the science of geodesy in the United States. Questions relevant to this criterion include: Does the proposal include a plan to solicit input from the target user community regarding desired project outcomes? Does the activity generated by the proposal result in a positive impact on the user community? This criterion will also assess whether the proposal includes a Data Management Plan, including descriptions of the types of environmental data and information created during the project; the tentative date by which data will be shared; the standards to be

used for data/metadata format and content; policies addressing data stewardship and preservation; procedures for providing access, sharing, and security; and prior experience in publishing such data.

B. Review and Selection Process

Letter of Intent (LOI)

Prior to submitting a full proposal, applicants are required to submit a LOI. Each LOI will be reviewed, following the criteria specified in section V.A. All applicants will be notified whether a full proposal is encouraged or discouraged based on the review of their LOI. Even though a full proposal may be discouraged, an applicant will not be precluded from submitting a full proposal. All PIs will receive a short synthesis of the factors that led to the recommendation regarding their own reviewed LOI(s).

Full Applications:

After the application period has closed, an initial administrative screening is conducted of received applications to ensure that they meet the following minimum requirements:

1. The application was received by the deadline date (see IV.D. Submission Dates and Times);
2. The application was submitted by an eligible applicant (see III.A. Eligibility Information);
3. The application addresses the program priorities (see I.B. Program Priorities);
4. The application includes required content (see IV.B. Content and Form of Application);
5. The application meets the minimum annual federal funding requirements (II.A. Funding Availability).

Applications and LOIs that do not meet the stated requirements and deadlines for submission will be rejected without further consideration. NOAA, in its sole discretion, may continue the review process for applications with non-substantive issues that may be easily rectified or cured.

All proposals meeting these requirements will then be evaluated and individually ranked in accordance with the assigned weights of the above evaluation criteria by at least three independent peer reviewers. The merit reviewer's ratings are used to produce a rank order of the proposals. Appropriate mechanisms will be established to avoid conflicts of interest during the proposal merit review process. The Selecting Official will award in the rank order unless proposals are justified to be selected out of rank order based upon one or more of the selection factors provided in the next paragraph. The Selecting Official or designee may negotiate the funding level of the proposal. The Selecting Official will make the final

recommendation for award to the Grants Officer, who is authorized to obligate the funds and execute the award.

Please note that not all activities submitted under a single proposal may be deemed appropriate for funding, and the Selecting Official may recommend alternate activities as appropriate or only partial funding, based on the selection factors and the merit and/or panel review written evaluations. For a proposal to be selected for funding, the applicant may be asked to modify objectives and activities, work plans, and budgets, and to provide supplemental information required by the agency prior to the award. This may result in submission of a revised application before final funding decisions are made. The exact amount of funds to be awarded, the final scope of activities, the project duration, specific NOAA cooperative involvement with activities of each project, and other relevant application details will be determined in pre-award negotiations among the applicant, NOAA GMD, and NGS officials. Applicants should also note that modifications to projects may be necessary as a result of NOAA's efforts to comply with NEPA and other legislation.

C. Selection Factors

The merit review ratings shall provide a rank order to the Selecting Official. The Selecting Official shall recommend applications for funding to the Grants Officer according to rank order unless the proposal is justified to be selected out of rank order based upon one or more of the following factors:

1. Availability of funding
2. Balance/distribution of funds:
 - a. By type of partners
 - b. Geographically
 - c. By research areas
 - d. By type of institutions
 - e. By Project Types
3. Program priorities and policy factors
4. Partnerships with/participation of targeted groups
5. Applicant's prior award performance
6. Duplication of other projects funded or considered for funding by NOAA/federal agencies

7. Adequacy of information necessary for NOAA staff to make a NEPA determination and draft necessary documentation before recommendations for funding are made to the Grants Officer.

For these reasons, awards may not necessarily be made to the highest-scored applications.

D. Anticipated Announcement and Award Dates

The review of applications will occur April - May 2023, and the start date for successful awards should be October 1, 2023, November 1, 2023, or December 1, 2023.

VI. Award Administration Information

A. Award Notices

Applications recommended for funding by the Selecting Official will be forwarded to the NOAA Grants Management Division (GMD) by the Program Office. The applicant will be notified by the program office by email that their application was recommended for funding and remains under consideration. The applicant should be aware that the notification by the program office is not the official award notice and funding is not assured. Official notification happens only when the applicant receives an award notice from the Grants Officer electronically.

The official notice of award is the Commerce Form 450 (CD-450), Financial Assistance Award, issued by the NOAA Grants Officer Electronically through NOAA's electronic grants management system, Grants Online.

Risk Review: After applications are proposed for funding by the Selecting Official, the Grants Office will perform administration reviews. These may include assessments of the financial stability of an applicant and the quality of the applicant's management systems, history of performance, and the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities. Special conditions that address any risks determined to exist may be applied. Applicants may submit comments to the Federal Awardee Performance and Integrity Information System (FAPIIS) about any information included in the system about their organization for consideration by the awarding agency. 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 made by the NOAA Grants Officer.

In addition, award documents provided by NOAA may contain specific award conditions as necessary, such as a limitation on the use of funds for activities that have outstanding environmental compliance requirements which may lead to modification of the project's scope of work. These specific award conditions may also include other compliance requirements for the award and will be applied on a case-by-case basis. Applicants are strongly encouraged to review award documents carefully before accepting a Federal award to ensure they are fully aware of the relevant terms that have been placed on the award.

B. Administrative and National Policy Requirements

PRE-AWARD NOTICE

The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of December 30, 2014 (79 FR 78390) are applicable to this solicitation. Refer to https://www.osec.doc.gov/oam/grants_management/policy/default%20p2.htm

UNIFORM ADMINISTRATIVE REQUIREMENTS

Uniform Administrative Requirements, Cost Principles, and Audit Requirements at 2 C.F.R. 200, implemented by the Department of Commerce at 2 C.F.R. 1327.101, apply to awards in this program. Refer to <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200>

DOC TERMS AND CONDITIONS

Successful applicants who accept a NOAA award under this solicitation will be bound by Department of Commerce Financial Assistance Standard Terms and Conditions. This document will be provided in the award package in NOAA's Grants Online system at <https://www.commerce.gov/sites/default/files/2021-04/Department%20of%20Commerce%20Grants%20%20Cooperative%20Agreements%20Manual%20%2820%20April%202021%29.pdf>

RESEARCH TERMS AND CONDITIONS

For awards designated on the CD-450 as Research, the Commerce Terms, and the Federal-wide Research Terms and Conditions (Research Terms) as implemented by the Department of Commerce, currently, at <https://www.nsf.gov/awards/managing/rtc.jsp>, both apply to the award. The Commerce Terms and the Research Terms are generally intended to harmonize with each other; however, where the Commerce Terms and the Research Terms differ in a Research award, the Research Terms prevail, unless otherwise indicated in a specific award condition.

BUREAU TERMS AND CONDITIONS.

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

LIMITATION OF LIABILITY

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

UNPAID OR DELINQUENT TAX LIABILITY

When applicable under Federal appropriations law, an authorized representative of the selected applicant(s) may be required to provide certain pre-award certifications regarding federal felony and federal criminal tax convictions, unpaid federal tax assessments, and delinquent federal tax returns.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or proposals which are seeking NOAA federal funding opportunities. Detailed information on NOAA compliance with NEPA can be found at the following NOAA NEPA website: <http://www.nepa.noaa.gov/>, including our NOAA Administrative Order 216-6 for NEPA, http://www.nepa.noaa.gov/NAO216_6.pdf, and the Council on Environmental Quality implementation regulations, http://energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf. Consequently, as part of an applicant's package, and under their description of their program activities, applicants are required to provide detailed information on the activities to be conducted, locations, sites, species and habitat to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use and disposal of hazardous or toxic chemicals, introduction of non-indigenous species, impacts to endangered and threatened species, aquaculture projects, and impacts to coral reef systems).

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

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. 200.206. These may include assessments of the financial stability of an applicant and the quality of the applicant's management systems, history of performance, and the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities. Special conditions that address any risks determined to exist may be applied. Applicants may submit comments to the Federal Awardee Performance and Integrity Information System (FAPIIS) about any information included in the system about their organization for consideration by the awarding agency.

DATA MANAGEMENT PLAN

(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. The contents of the Data Management Plan (or absence thereof), and past performance regarding such plans, will be considered as part of proposal review. A typical plan should include descriptions of the types of environmental data and information expected to be created during the course of the project; the tentative date by

which data will be shared; the standards to be used for data/metadata format and content; methods for providing data access; approximate total volume of data to be collected; and prior experience in making such data accessible. The costs of data preparation, accessibility, or archiving may be included in the proposal budget unless otherwise stated in the Guidance. Accepted submission of data to the NOAA National Centers for Environmental Information (NCEI) is one way to satisfy data sharing requirements; however, NCEI is not obligated to accept all submissions and may charge a fee, particularly for large or unusual datasets.

(3.) NOAA may, at its own discretion, make publicly visible the Data Management Plan from funded proposals, or use information from the Data Management Plan to produce a formal metadata record and include that metadata in a Catalog to indicate the pending availability of new data.

(4.) Proposal submitters are hereby advised that the final pre-publication manuscripts of scholarly articles produced entirely or primarily with NOAA funding will be required to be submitted to NOAA Institutional Repository after acceptance, and no later than upon publication. Such manuscripts shall be made publicly available by NOAA one year after publication by the journal.

Data Management Plan Guidance

Responsible NOAA Official for questions regarding this guidance and for verifying accessibility of data produced by funding recipients:

Name: Colin Becker

Title: Federal Program Officer

Affiliation or facility: NOAA – National Geodetic Survey

E-mail address: ngs.grants@noaa.gov

Phone number: 240-687-9961

Data Accessibility: The NOAA Program requires that public access to grant-produced data be enabled as follows:

- An existing publicly accessible online data server – or equivalent – at the funded institution is to be used to host these data (describe in proposal).

OR

- Funding recipients will establish their own data hosting capability (describe in proposal).

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.

Resources: Proposals are permitted to include the costs of data sharing or archiving in their budgets.

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 NOAA funding program.

INDIRECT COST RATE

If an applicant has not previously established an indirect cost rate with a Federal agency they may choose to negotiate a rate with the Department of Commerce or use the de minimis indirect cost rate of 10% of MTDC (as allowable under 2 C.F.R. §200.414). The negotiation and approval of a rate is subject to the procedures required by NOAA and the Department of Commerce Standard Terms and Conditions. The NOAA contact for indirect or facilities and administrative costs is: Raishan Adams, Grants Officer, NOAA Grants Management Division, 1325 East West Highway, 9th Floor, Silver Spring, MD 20910, or raishan.adams@noaa.gov.

MINORITY SERVING INSTITUTIONS

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

FREEDOM OF INFORMATION ACT (FOIA)

Department of Commerce regulations implementing the Freedom of Information Act (FOIA), 5 U.S.C. Sec. 552, are found at 15 C.F.R. Part 4, Public Information. These regulations set forth rules for the Department regarding making requested materials, information, and records publicly available under the FOIA. Applications submitted in response to this Notice of Funding Opportunity may be subject to requests for release under the Act. In the event that an application contains information or data that the applicant deems to be confidential commercial information that should be exempt from disclosure under FOIA, that information should be identified, bracketed, and marked as Privileged, Confidential, Commercial or Financial Information. In accordance with 15 CFR § 4.9, the Department of Commerce will protect from disclosure confidential business information contained in financial assistance applications and other documentation provided by applicants to the extent permitted by law.

NOAA SEXUAL ASSAULT AND SEXUAL HARASSMENT PREVENTION AND RESPONSE POLICY

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

NOAA expects all financial assistance recipients to establish and maintain clear and

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

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

SCIENCE INTEGRITY

1. Maintaining Integrity. The non-Federal entity shall maintain the scientific integrity of research performed pursuant to this grant or financial assistance award including the prevention, detection, and remediation of any allegations regarding the violation of scientific integrity or scientific and research misconduct, and the conduct of inquiries, investigations, and adjudications of allegations of violations of scientific integrity or scientific and research misconduct. All the requirements of this provision flow down to subrecipients. 2. Peer Review. The peer review of the results of scientific activities under a NOAA grant, financial assistance award or cooperative agreement shall be accomplished to ensure consistency with NOAA standards on quality, relevance, scientific integrity, reproducibility, transparency, and performance. NOAA will ensure that peer review of "influential scientific information" or "highly influential scientific assessments" is conducted in accordance with the Office of Management and Budget (OMB) Final Information Quality Bulletin for Peer Review and NOAA policies on peer review, such as the Information Quality Guidelines. 3. In performing or presenting the results of scientific activities under the NOAA grant, financial assistance award, or cooperative agreement and in responding to allegations regarding the violation of scientific integrity or scientific and research misconduct, the non-Federal entity and all subrecipients shall comply with the provisions herein and NOAA Administrative Order (NAO) 202-735D, Scientific Integrity, and its Procedural Handbook, including any amendments thereto. That Order can be found at <http://nrc.noaa.gov/ScientificIntegrityCommons.aspx>. 4. Primary Responsibility. The non-Federal entity shall have the primary responsibility to prevent, detect, and investigate allegations of a violation of scientific integrity or scientific and research misconduct. Unless otherwise instructed by the grants officer, the non-Federal entity shall promptly conduct an initial inquiry into any allegation of such misconduct and may rely on its internal policies and procedures, as appropriate, to do so. 5. By executing this grant, financial assistance award, or cooperative agreement the non-Federal entity provides its assurance that it has established an administrative process for performing an inquiry, investigating, and reporting allegations of a violation of scientific integrity or scientific and research misconduct; and

that it will comply with its own administrative process for performing an inquiry, investigation, and reporting of such misconduct. 6. The non-Federal entity shall insert this provision in all sub-awards at all tiers under this grant, financial assistance award, or cooperative agreement.

REVIEWS AND EVALUATION

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

REQUIRED USE OF AMERICAN IRON, STEEL, MANUFACTURED PRODUCTS, AND CONSTRUCTION MATERIALS

If applicable, and pursuant to the Infrastructure Investment and Jobs Act (“IIJA”), Pub.L. No. 117-58, which includes the Build American, Buy American (BABA) Act, Pub. L. No. 117-58, §§ 70901-52 and OMB M-22-11, recipients of an award of Federal financial assistance from the Department of Commerce (DOC) are hereby notified that none of the funds provided under this award may be used for a project for infrastructure unless: 1) all iron and steel used in the project are produced in the United States—this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States; 2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established

under applicable law or regulation; and 3) all construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States. The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

WAIVERS

When necessary, recipients may apply for, and DOC may grant, a waiver from these requirements. DOC will notify the recipient for information on the process for requesting a waiver from these requirements. 1) When DOC has made a determination that one of the following exceptions applies, the awarding official may waive the application of the domestic content procurement preference in any case in which DOC determines that: a. applying the domestic content procurement preference would be inconsistent with the public interest; b. the types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or c. the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent. A request to waive the application of the domestic content procurement preference must be in writing. DOC will provide instructions on the format, contents, and supporting materials required for any waiver request. Waiver requests are subject to public comment periods of no less than 15 days and must be reviewed by the Made in America Office. There may be instances where an award qualifies, in whole or in part, for an existing waiver described at whitehouse.gov/omb/management/made-in-america.

DEFINITIONS

“Construction materials” includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of: non-ferrous metals; plastic and polymer-based products (including polyvinyl chloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); lumber; or drywall. “Domestic content procurement preference” means all iron and steel used in the project are produced in the United States; the manufactured products used in the project are produced in the United States; or the construction materials used in the project are produced in the United States. “Infrastructure”

includes, at a minimum, the structures, facilities, and equipment for, in the United States, roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property. Infrastructure includes facilities that generate, transport, and distribute energy. "Project" means the construction, alteration, maintenance, or repair of infrastructure in the United States. -- 1 Excludes cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives. 2 IIA, § 70917(c)(1).

C. Reporting

In accordance with 2 CFR 200.328-9 and the terms and conditions of the award, financial reports are to be submitted semiannually and performance (technical) reports are to be submitted semiannually. Reports are submitted electronically through NOAA's Grants Online system. A comprehensive final report is due 120 days after the award expiration date. In their final progress report, applicants will be asked to (a) clearly state the resulting overall impact of their project; and (b) certify that "Final financial reports have been submitted to NOAA's GMD and a final funding draw-down has been made through the Automated Standard Application for Payments (ASAP)."

If equipment or tangible personal property is purchased with grant funds, applicants shall submit an inventory to the extent required by the Office of Management and Budget Uniform Guidance set out at 2 C.F.R. Part 200.313. As necessary, SF-428 forms may be attached as an appendix to the final progress report or submitted directly to the NOAA program officer.

Recipients must inventory tangible property at least once every two years and at award closeout. As necessary, SF-428 forms may be attached as an appendix to progress reports or submitted directly to the NOAA program officer.

Recipients must submit reports at least annually and at award closeout on the status of real property in which the federal government retains an interest, unless the federal interest in the real property extends 15 years or more. As necessary, SF-429 forms may be attached as an appendix to progress reports or submitted directly to the NOAA program officer.

The program office recommends that if the equipment is no longer needed, recipients are encouraged to request disposition instructions for equipment approximately 150 days before the project period ends to allow sufficient time to have equipment disposition requests addressed before a project ends. Equipment disposition instructions typically require that recipients "Submit Additional Closeout Documents" as an award action request in Grants Online. NOAA will provide instructions for disposition in accordance with OMB requirements.

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 sub-awards and executive compensation under Federal assistance awards issued. All awardees of applicable grants and cooperative agreements are required to report to the Federal Sub-award Reporting System (FSRS) available at www.FSRS.gov on all sub-awards over \$25,000. See 2 CFR 170 at http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title02/2cfr170_main_02.tpl.

VII. Agency Contacts

For administrative or technical questions, contact Colin Becker, phone at 240-687-9961, or via e-mail at ngs.grants@noaa.gov.

VIII. Other Information

N/A