

PROJECT ANNOUNCEMENT

**US Army Corps of Engineers (USACE)
Engineer Research and Development Center (ERDC)**

Title: Scalable and Replicable Watershed Resilience Evaluation

Announcement Type: Initial Announcement

Funding Opportunity Number: W81EWF-24-SOI-0030

Assistance Listing Number: 12.630

Date Issued: 30 May 2024

Key Dates: Phase I announcement will be open to receive statements of interest continuously until 2:00pm Central Time (CT), 31 June 2024, at which point all statements of interest must be received.

If invited to Phase II, full proposal applications will be due at 2:00pm Central Time (CT), 31 July 2024.

Estimated Award Ceiling: \$215,000

Estimated Total Program Funding: \$965,000 total over 4 years; with \$215,000 for base year, \$250,000 for option year 1, \$300,000 for option year 2, and \$200,000 for option year 4.

Agency Contact: Phoebe Fuller (phoebe.v.fuller@usace.army.mil)

I. Program Description

A. Short Description of Funding Opportunity

ERDC seeks applications for methodology and tools for a regional critical infrastructure resilience evaluation that includes an examination of interdependencies across multiple communities in the watersheds of the Savannah River Basin. Methodologically, the analyses should focus on assessing critical functions for multiple communities and quantifying resilience through recovery and adaptation in a threat-agnostic manner. The goal is to improve ways communities can adapt in periods of crisis at watershed and regional scales.

B. Background

Resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events. Improving resilience through improving watershed/community resiliency in the face of environmental, natural, economic, and social disruptions is proving to be paramount to achieving long-term stability for the US.

USACE/ERDC have been working on developing methods and tools for resilience quantification in complex systems, including watershed resilience. Recent frameworks for resilience implementation (e.g., CISA's Infrastructure Resilience Planning Framework (IRPF), OSTP's Grand Resilience Pathways, other national and international resilience – related tools) need to be adjusted to communities across the US that experience emergencies from flooding, coastal storm damage and all-hazards. While this project is targeting the Southeast Region and the Savannah River Basin, the focus is on building resilience across the Nation, including within low-capacity communities, through development of a Scalable and Replicable Watershed Resilience Evaluation.

C. Program Description/Objective:

The objective of this program is to develop replicable, customizable processes, along with methods and tools to measure resilience and conduct resilience assessments across communities in a watershed scalable to the application across the Nation. Reconciling community needs and methodological gaps should result in methodological advancement. An understanding of the interdependencies of individual projects to achieve critical functions in support of watershed objectives is of paramount importance. This work will address specific threat scenarios acting on individual vulnerabilities of specific communities and multiple compounding threats acting at watershed-wide scale. This work will interface with and possibly be combined with efforts being developed by ERDC as a part of technology transfer to others to customize and use. This project will include the delivery of products in a form that may be included in a playbook for watershed jurisdictions to customize and replicate.

Objective 1:

Develop methodological toolbox for resilience quantification and decision support for watershed-level mitigation efforts.

For this objective, ERDC will conduct field-campaigns to collect data on critical functions that are applicable to watershed-level mitigation efforts. The recipient/awardee will use the supplied

data in analyses to identify interdependencies and vulnerabilities for development of a methodological toolbox for resilience quantification and decision support for water-shed level mitigation efforts. For consistency, the assessment should coincide with existing ERDC published work in resilience and, as such, should focus on the Resilience Matrix, an organizing framework on three phases of resilience (absorb, recover, adapt) against three domains of resilience (physical, information, social).

Activities associated with Objective 1 will include the following: (i) process to identify and prioritize the critical infrastructure in local community and watershed levels; (ii) an analysis of the most vulnerable critical infrastructure to all forms of threats (primary focus in the Savannah River Basin); (iii) an assessment of the supply and demand of critical functions supported by the highest priority infrastructure in the watershed; (iv) replicable process to conduct an analysis of interdependencies across primary functions and infrastructure in the basin; (v) methods and tools to conduct a consequence assessment of critical functions at the local and watershed level; (vi) a screening tool to visualize vulnerabilities on potential failures of critical infrastructure; (vii) process to apply screening tool applications in a collaborative setting between public and private stakeholders.

Objective 2: Support the development of collaborative approaches to build a shared vision of resilience, scalable to all levels of a watershed.

This objective will advance research activities focused on the development of decision support tools to connect local priorities with challenges across the watershed for scalable watershed resilience. Similar to Objective 1, ERDC will collect data and provide the data to the recipient/awardee use in complex analyses. The analyses will result in a deliverable that describes the methods and tools needed to prioritize decisions in the watershed in a way that will enhance resilience.

Activities associated with Objective 2 will include the following: (i) methods for identification of objectives and priorities in the watershed; (ii) assessment of priorities across the watershed to identify potential areas of conflict and synergy in the basin; (iii) methods to help communities identify and leverage government resources; (iv) process to generate and articulate scenarios for collaborative decision-making decision support tools; (v) development of serious gaming ‘sim city like’ applications to run scenarios against potential resilience strategy alternatives. .

D. Public Benefit

The public benefit of the work completed in this Scalable and Replicable Watershed Resilience Evaluation improves the awareness, access, and capabilities of all communities, including low-capacity communities that typically lack resources and capability. These benefits support initiatives to strengthen communities via improved resilience capacity, i.e. the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events. Improvements to community resilience can also benefit watershed and coastal infrastructures, providing far-reaching benefits to the public over large geographic regions.

E. Authorization: 10 USC 4001

F. Legal Requirements

Each Cooperative Agreement awarded under this announcement will be governed by 2 CFR 200, “Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards”, 2 CFR 1100 Subchapter D—Administrative Requirements Terms and Conditions for Cost-Type Grants and Cooperative Agreements to Nonprofit and Governmental Entities and the DoD research general terms and conditions located at <https://www.nre.navy.mil/work-with-us/manage-your-award/manage-grant-award/grants-terms-conditions>.

G. Program-Specific Requirements

Successful applicants should have experience in risk and resilience assessment and management. Prior experience with resilience research, especially with application of resilience at regional scales and resilience quantification is essential.

Program objectives should be executed through a series of stand-alone tasks, each of which will result in a deliverable (e.g., peer reviewed publication, white paper, software tool). Monthly collaboration meetings and progress reports are required for each objective. Data develop in the project should be sharable with USACE in easily accessible formats.

At the conclusion of the period of performance, a report of the watershed scale resilience assessment is required. The report will include recommendations for a repeatable process of the assessment approach developed for this effort that could be transferred to the Public for nation-wide implementation.

II. Federal Award Information

The following information applies to awards issued under this announcement:

- This is a new program
- The Government anticipates 1 Federal award from this announcement, but reserves the right to award more or less
- The total amount of funding expected to be awarded through this announcement is \$215,000 for Year 1.
- The expected amount of funding for each award is \$215,000 for Year 1, \$250,000 for optional Year 2, \$300,000 for optional Year 3, and \$200,000 for optional Year 4.
- Award(s) from this announcement will be Cooperative Agreement(s)
- The anticipated period of performance is 48 months.
- Applications for renewal or supplementation of existing projects are eligible to compete with applications for new Federal awards
- The government reserves the right to accept only portions of an application and to negotiate with potential awardees
- ERDC researchers will participate in this project by conducting field-campaigns to collect data that will be applicable to the resilience measurements and assessments conducted by the recipient/awardee . ERDC researchers will also participate in monthly collaboration

meetings to troubleshoot and brainstorm the best use of the data in these highly complex, multivariate analyses. Through these collaboration meetings, ERDC and the recipient/awardee will co-develop a methodological toolbox for resilience quantification and decision support for watershed-level mitigation.

III. Eligibility Information

A. Eligible Applicants

This opportunity is restricted to non-federal partners of the Piedmont-South Atlantic Cooperative Ecosystems Studies Unit (CESU).

Disclosures of current and pending support made in this application may render an applicant ineligible for funding. Prior to award and throughout the period of performance, ERDC may continue to request updated continuing and pending support information, which will be reviewed and may result in discontinuation of funding.

Religious organizations are entitled to compete on equal footing with secular organizations for Federal financial assistance as described in E.O. 13798, “Promoting Free Speech and Religious Liberty.”

B. Cost Sharing or Matching

This action will be 100% funded by USACE.

C. Conflict of Interest

a) General Requirement for Disclosure

You and your organization must disclose any potential or actual scientific or nonscientific conflict of interest(s) to us. You must also disclose any potential or actual conflict(s) of interest for any identified sub recipient you include in your application. We may have to ask you more questions if we need more information.

At our discretion, we may ask you for a conflict-of-interest mitigation plan after you submit your application. Your plan is subject to our approval.

b) Scientific Conflict of Interest

Scientific collaborations on research and development projects are generally the result of close collaboration prior to the submission of applications for support. Accordingly, these collaborations should be considered when considering potential conflicts of interest. The potential conflict is mitigated by the disclosure of these collaborations, and the list of current and pending support you provide for senior and key researchers. Therefore, you must include in your list of current and

pending support all collaborators, even if they did not formally provide support.

D. Other

a) Licensure or Certification

You must include the Acknowledgment of Support and Disclaimer on all materials created or produced under our awards. This language may be found in the Terms and Conditions included in the award documents.

E. Certifications, representations, and assurances

1. To apply for grants and other funding opportunities the applicant entity must have an active registration in the System for Award Management (SAM). Applications will not be accepted through Grants.gov or other methods unless the entity is registered in SAM. Registration in SAM now includes the acceptance of Certifications and Assurances. See <https://www.grants.gov/web/grants/grantors/grantor-standard-language.html> for details on how to register in SAM, and Grants.gov
2. The Federal Assistance Certifications Report is an attestation that the entity will abide by the requirements of the various laws and regulations; therefore, as applicable, you are still required to submit any documentation, including the SF-LLL Disclosure of Lobbying Activities (if award value exceeds \$100,000.00), and, if applicable, informing DoD of unpaid delinquent tax liability or a felony conviction under any Federal law.
3. Certification Regarding Disclosure of Funding Sources. By checking "I Agree" on the SF 424 (R&R) block 17 you agree to abide by the following statement: "By signing this application, I certify the proposing entity is in compliance with Section 223(a) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 which requires that: (a) the PI and other key personnel certify that the current and pending support provided on the proposal is current, accurate and complete; (B) agree to update such disclosure at the request of the agency prior to the award of support and at any subsequent time the agency determines appropriate during the term of the award; and (c) the PI and other key personnel have been made aware of the requirements under Section 223(a)(1) of this Act. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. code, Title 218, Section 1001)."

IV. Application and Submission Information (2 Phase Process)

A. Phase I: Submission of Statement of Interest (SOI)

1. Materials Requested for Statement of Interest/Qualifications:

- a. Please provide the following via e-mail attachment to: Phoebe Fuller (phoebe.v.fuller@usace.army.mil)
(Maximum length: 2 pages, single-spaced 12 pt. font).

i. Name, Organization and Contact Information

ii. Brief Statement of Qualifications (including):

- Biographical Sketch,
- Relevant past projects and clients with brief descriptions of these projects,
- Staff, faculty or students available to work on this project and their areas of expertise,
- Any brief description of capabilities to successfully complete the project you may wish to add (e.g. equipment, laboratory facilities, greenhouse facilities, field facilities, etc.).

Note: A proposed budget is NOT requested at this time.

The administrative point of contact is Phoebe Fuller (phoebe.v.fuller@usace.army.mil).

2. ERDC will only accept SOIs submitted on or before 31 June 2024, 2:00pm Central Time (CT).

Based on a review of the Statements of Interest received, an investigator or investigators will be invited to move to Phase II which is to prepare a full study proposal. Statements will be evaluated based on the investigator's specific experience and capabilities in areas related to the study requirements.

B. Phase II (if invited): Submission of Full Application Package

1. Address to Request Application Package

The complete funding opportunity announcement, application forms, and instructions are available for download at [Grants.gov](https://www.grants.gov).

The administrative point of contact is Phoebe Fuller (phoebe.v.fuller@usace.army.mil).

2. Content and Form of Application Submission

All mandatory forms and any applicable optional forms must be completed in accordance with the instructions on the forms and the additional instructions below.

- a. SF 424 R&R - Application for Federal Assistance
- b. Full Technical Proposal – Discussion of the nature and scope of the research and technical approach. Additional information on prior work in this area,

descriptions of available equipment, data and facilities, and resumes of personnel who will be participating in this effort should also be included.

- c. Cost Proposal/Budget – Clear, concise, and accurate cost proposals reflect the offeror’s financial plan for accomplishing the effort contained in the technical proposal. As part of its cost proposal, the offeror shall submit a full budget in sufficient detail so that a reasonableness determination can be made. A recommended template will be included in the invitation to Phase II. The SF 424 Research & Related Budget Form can be used as a guide but is required if the sub-recipient uses it. The cost breakdown should include the following, if applicable:

1. Direct Labor: Direct labor should be detailed by level of effort (i.e. numbers of hours, etc.) of each labor category and the applicable labor rate. The source of labor rates shall be identified and verified. If rates are estimated, please provide the historical based used and clearly identify all escalation applied to derive the proposed rates.
2. Fringe Benefit Rates: The source of fringe benefit rate shall be identified and verified.
3. Travel: Travel costs must include a purpose and breakdown per trip to include destination, number of travelers, and duration.
4. Materials/Equipment: List all material/equipment items by type and kind with associated costs and advise if the costs are based on vendor quotes and/or engineering estimates; provide copies of vendor quotes and/or catalog pricing data.
5. Subrecipient costs: Submit all subrecipient proposals and analyses. Provide the method of selection used to determine the subrecipient.
6. Tuition: Provide details and verification for any tuition amounts proposed.
7. Indirect Costs: Currently the negotiated indirect rate for awards through the CESU is 17.5%.
8. Any other proposed costs: The source should be identified and verified.

- d. R&R Senior/Key Person Profile

1. Biographical Sketch

2. Disclosure of Current and Pending Support:

- i. A list of all current projects the individual is working on, in addition to any future support the individual has applied to receive, regardless of the source.
- ii. Title and objectives of the other research projects.
- iii. The percentage per year to be devoted to the other projects.
- iv. The total amount of support the individual is receiving in connection to each of the other research projects or will receive if other applications are awarded.
- v. Name and address of the agencies and/or other parties supporting the other research projects.
- vi. Period of performance for the other research projects.

e. SF-LLL Disclosure of Lobbying Activities (if award value exceeds \$100,000.00)

f. Data Management Plan:

A data management plan is a document that describes which data generated through the course of the proposed research will be shared and preserved, how it will be done, or explains why data sharing or preservation is not possible or scientifically appropriate, or why the costs of sharing or preservation are incommensurate with the value of doing so. See also: DoD Instruction 3200.12.

<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/320012p.pdf?ver=2019-04-30-073122-220>

Data management plans are generally 2 pages in length, and must include the following considerations:

- (1) The types of data, software, and other materials to be produced.
- (2) How the data will be acquired.
- (3) Time and location of data acquisition, if scientifically pertinent.
- (4) How the data will be processed.
- (5) The file formats and the naming conventions that will be used.
- (6) A description of the quality assurance and quality control measures during collection, analysis, and processing.
- (7) A description of dataset origin when existing data resources are used.
- (8) A description of the standards to be used for data and metadata format and content.
- (9) Appropriate timeframe for preservation.
- (10) The plan may consider the balance between the relative value of data preservation and other factors such as the associated cost and administrative burden. The plan will provide a justification for such decisions.

3. ERDC will only accept full application packages submitted on or before 31 July 2024, 2:00pm Central Time (CT).

4. Submission Instructions

Choose **ONE** of the following submission methods:

a. E-mail:

Format all documents to print on Letter (8 ½ x 11”) paper. E-mail proposal to Phoebe Fuller (phoebe.v.fuller@usace.army.mil).

b. Grants.gov: <https://www.grants.gov/>:

Applicants are not required to submit proposals through Grants.gov. However, if applications are submitted via the internet, applicants are responsible for ensuring that their Grants.gov proposal submission is received in its entirety.

All applicants choosing to use Grants.gov to submit proposals must be registered and have

and account with Grants.gov. It may take up to three weeks to complete Grants.gov registration. For more information on registration, go to <https://www.grants.gov/web/grants/applicants.html>.

Organizations must have a Unique Entity Identifier (UEI) and active System for Award Management (SAM) registration to apply for Federal financial assistance.

C. Application Withdrawal:

An applicant may withdraw an application at any time before award by written notice via email. Notice of withdrawal shall be sent to the agency point of contact identified in this announcement, and are effective upon receipt.

D. Funding Restrictions

Per 2 CFR § 200.216, funds may not be used to procure telecommunications equipment or video surveillance services or equipment produced by

- Huawei Technologies Company,
- ZTE Corporation Hytera Communications Corporation,
- Hangzhou Hikvision Digital Technology Company,
- Dahua Technology Company
- any subsidiary or affiliate of such entities

Funds from an award may not be used to attain fee or profit.

V. Application Review Information

A. Selection Criteria

Applications will be evaluated using the following criteria, listed in descending order of importance:

- Technical merits of the proposed research and development; and
- Potential relationship of the proposed research and development to Department of Defense missions
- Prior experience in resilience research
- Integration of community values in developing resilience methodology and application processes

B. Review and Selection Process:

Each application will be reviewed based on the selection criteria above rather than against other applications submitted under this Announcement.

Based on the Peer or Scientific Review, proposals will be categorized as Selectable or Not Selectable (see definitions below). The selection of the source for award will be based on the Peer or Scientific Review, as well as importance to agency programs and funding availability.

- i. **Selectable:** Proposals are recommended for acceptance if sufficient funding is available.
- ii. **Not Selectable:** Even if sufficient funding existed, the proposal should not be funded.

Note: The Government reserves the right to award some, all, or none of proposals. When the Government elects to award only a part of a proposal, the selected part may be categorized as Selectable, though the proposal as a whole may not merit such a categorization.

In addition to the technical/program review, the DoD performs a budget review and a risk review as directed by 2 CFR 200.206, including a review of the Federal Awardee Performance and Integrity Information System (FAPIIS). Applicants may review information in FAPIIS and comment on any information entered into that system. Comments made by applicants will be taken into account in addition to other information in considering applicants' integrity, business ethics, and record of performance.

VI. Federal Award Administration Information

The notification e-mail regarding a selection is not authorization to commit or expend DoD funds. A DoD grants officer is the only person authorized to obligate and approve the use of federal funds. This authorization is in the form of a signed Notice of Award. Applicants whose applications are recommended will be contacted by a DoD grants officer to discuss any additional information required for award. This may include representations and certifications, revised budgets or budget explanations, or other information as applicable to the proposed award. The award start date will be determined at this time.

VII. Reporting Requirements

The terms and conditions of the award will provide the specifics on how to submit the reports and any required sections for those reports.

In accordance with 2 CFR 200.328 (Financial Reporting) and 2 CFR 200.329 (Program Performance)

Report	Requirements/Form	Frequency	Means of Submission
ERDC Progress Report		Monthly	E-mail
Research Performance Progress Reports (Interim and Final)	OMB Control Number: 0704-0527	Annually	E-mail
Financial Report	SF 425	Bi-annually	E-mail
Payment Report	SF 270	Monthly	E-mail
Closeout Report		Once	E-mail

Awardees will need to comply with the reporting requirements in 2 CFR 170: Reporting Subaward and Executive Compensation Information.

The terms and conditions of the award will provide the specifics on how to submit the reports and any required sections for those reports.

VIII. Federal Contacts

Questions should be directed to:

Phoebe Fuller
Grants Specialist
Phoebe.v.fuller@usace.army.mil

Tim Black
Grants Officer
Timothy.d.black@usace.army.mil

Questions regarding Grants.gov should be directed to: the toll-free number 1-800-518-4726 and email at support@grants.gov.

IX. Other Information

The Federal government is not obligated to make any Federal award as a result of the announcement. Only grants officers can bind the Federal government to the expenditure of fund.

Applicants are advised to monitor Grants.gov for potential amendments to this Notice of Funding Opportunity. You can also elect to be automatically notified by Grants.gov whenever there is a change to the opportunity.

Applications must not include any information that has been identified as classified national security information under authorities established in Executive Order 12958, Classified National Security Information.