Request for Statements of Interest
Funding Opportunity Announcement

Federal Awarding Agency:
U.S. Army Corps of Engineers,
Engineer Research and Development Center
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Funding Opportunity No: W81EWF-21-SOI-0016
CFDA No: 12.630
Statutory Authority: 10 USC 2358
Program Title: Design and Deployment of Engineering With Nature® (EWN) Solutions for Western Resilience.
Announcement Type: Initial announcement
Issue Date: 17 April 2021
Statement of Interest/Qualifications Due Date: 16 May 2021; 1700 CDT
Full Application Package Due Date, if Invited: 18 June 2021; 1700 CDT
Estimated Award Ceiling: $1,500,000.
Estimated Total Program Funding (optional): $4,500,000 total over 3 years; $1,500,000 for base and each option year.
Expected Number of Awards: The government will issue only 1 award from this announcement.

Section I: Funding Opportunity Description

Background:

Engineering With Nature® (EWN) is the intentional alignment of natural and engineering processes to efficiently and sustainably deliver economic, environmental and social benefits through collaborative processes. In turn, sustainable development of water resources infrastructure is supported by solutions that beneficially integrate engineering and natural systems. With recent advances in the fields of engineering and ecology, there is an opportunity to combine these fields of practice into a single collaborative and cost-effective approach for infrastructure development and environmental management. For more information, please visit: www.engineeringwithnature.org.

Aging conventional infrastructure was built decades ago and may not able to withstand current and predicted future climate conditions. Moreover, weather oscillations are becoming more extreme, further challenging existing infrastructure integrity. EWN innovations offers the potential to enhance resiliency to these weather extremes. Further, coordination of natural and existing conventional infrastructure may allow us to "game the extremes" in cost effective ways and deliver water security more equitably. A national scale cost-benefit analysis of directed restoration of wetlands, forests, shrublands, aquifers, riparian areas and swamps does not exist. This project will deliver data for advancing resilience in western regions of the US.

This project will establish a multi-sector and interdisciplinary collaboration between EWN and an academic institution in the Colorado Plateau. This collaboration will leverage resources to identify research opportunities and pursue actions necessary for experimenting with EWN principles and practice in current/future projects and related activities. Major elements include but are not limited to: (1) development of decision-ready models that advance EWN and deployment of natural infrastructure; (2) identification and deployment of EWN techniques for improved land use practices and water management, (3) scaling of natural infrastructure and EWN practices through various methodologies; (4) educational and outreach opportunities for the public; and (5) a communication platform that results in the timely delivery of informational products and/or engagements across the EWN network. Example products originating and subsequently disseminated from a communication platform include: workshops/symposia, news articles, videos, documentaries, graphics, reporting of case studies, technical notes, journal articles, etc.

Brief Description of Anticipated Work:

Required Work Objectives: The following objectives are required for this CESU-funded project, which is to better understand the design and deployment of EWN solutions for western resilience. Year one (1) will establish the initial structure of the project and includes tasks that support the following objectives. If funded, year two (2) and year (3) would continue to expand major elements of the project and build a diverse portfolio of collaborative EWN projects and engagements.

Objective 1: Development of decision-ready models that advance EWN and the deployment/use of natural infrastructure. This objective prioritizes and subsequently builds a suite of diverse, collaborative R&D projects that expands current research efforts within EWN portfolio. For example, projects pursued may be focused on advancing the development of models and decision analyses for assessing the costs and benefits associated with the deployment of natural infrastructure to balance water supplies and improve flood control. Research that focuses on increasing storage and flood protection in a) wetlands, swamps and associated riparia, b) overdrawn aquifers, and c) on farmlands and forests on public and private lands is also encouraged. The breadth of projects is strengthened by the caliber of multi-disciplinary researchers that integrate capabilities, resources, and expertise to target very deliberative endpoints that advance EWN research. During the first year, it is anticipated that researchers associated with USACE and the selected team will initiate 3-5 R&D EWN projects, which ultimately lead to expanded technology transfer opportunities.

Objective 2: Identification and Proposed Use of EWN Techniques and Natural Infrastructure to Facilitate Improvements to Land Use and Water Management. Water is in high demand in the southwestern US. As such, it is imperative that new methods be identified to conserve, equitably distribute, and improve the quality of water. Innovative approaches to land use and associated practices in water management are important factors that should be considered in achieving these

previously described outcomes. Research within this objective will explore use of innovative EWN approaches on a basin scale and identify opportunities for deploying natural infrastructure in a way that results in environmental and social benefits across a variety of land uses – central to these EWN approaches is the goal of improving water management/security (i.e., conservation, equitable distribution and water quality improvements). Moreover, research activities will focus on the identification and analysis of cost-effective natural infrastructure with assessments for how this infrastructure could be distributed to deliver value to historically under-represented communities. Finally, this objective seeks to establish research projects that integrate a diverse number of collaborators, in addition to the core participants (i.e., members of the successful team and USACE's EWN researchers). It is expected that 2 to 3 projects would be identified and actively pursued in the first year.

Objective 3: Launch and Operate EWN Communication Platform for Enhanced Public Communication. A successful communication platform will result in the timely delivery of informational products and/or engagements across the EWN network. This objective seeks to optimize and integrate the collaborators' proven methods of delivering products and/or successful engagements that advance EWN strategic outcomes for the public benefit. Example products include, but are not limited to: workshops, symposia, news articles, videos, documentaries, graphics, reporting of case studies, technical notes, journal articles, etc. The selected team will work with EWN leadership and researchers to prepare most (if not all) of the referenced products. During the first year, it is expected that a minimum of 2 workshops/symposia, 1 video, 2 or 3 tech notes and 2 journal articles will be produced through a highly successful collaboration. The products derived from this collaboration are expected to generate EWN educational and public outreach opportunities.

A successful application would likely include a team of investigators with knowledge in a broad array of disciplines including, but not limited to hydrology and hydraulics; multi-objective optimization; flood mitigation; water supply planning; reservoir operations; watershed, flood, and sediment transport modeling; decision support tools; forest fires, and forest management. Additionally, experience should include, but not be limited to the following: Engineering With Nature®; development, design, and implementation of nature-based strategies and best management practices; erosion and reservoir infilling, modeling of restoration projects; incorporating human-use benefits into infrastructure projects; quantifying benefits derived from restoration projects; and modeling of riverine and reservoir systems.

Public Benefit:

A fundamental goal of EWN is to enable more sustainable delivery of economic, social, and environmental benefits associated with water resources infrastructure. For example, the natural infrastructure portfolio of the Western US Sunbelt includes aquifers, riparian buffers and wetlands, forests, rangelands, and even farmland. Research activities would likely focus on building storage and flood protection in a) wetlands, swamps and associated riparia, b) overdrawn aquifers, and c) on farmlands and forests that exist on public and private lands. This storage will be dynamically connected to existing built infrastructure through real time weather forecast data. Introducing EWN techniques, practices and/or infrastructure that limits/reduces damage can also produce a range of other benefits, such as habitat for wildlife. Moreover, important social benefits, including recreation, educational opportunities, and community resilience, are also possible when projects are designed and operated so that people can interact with the project. An EWN objective is to centralize capabilities and assets to focus on community resilience and the prioritization of nature infrastructure strategies. As such, collaborations are maximized, efficiencies created, and greater opportunities emerge to integrate natural and conventional infrastructure.

Section II: Award Information

Responses to this Request for Statements of Interest will be used to identify potential investigators for studies to be sponsored by the Engineer Research and Development Center for EWN for western resilience.

The estimated level of funding for FY21 is approximately $1,500,000. Additional funds of $1,500,000 per year for 2 additional years may be available, providing the potential funding of $4,500,000 over 3 years to the successful Recipient/Awardee. Depending on findings in the early years of this effort, funding needs may increase above the anticipated $1,500,000 per year in subsequent years of this project; however, total funding will not exceed $4,500,000 over the life of this cooperative agreement.

Government Involvement:

USACE EWN Leadership and ERDC researchers will work collaboratively with the selected team to achieve the elements of the previously described objectives. Activities include, but are not limited to: research that includes field work/measurements, modeling, lab work, and corresponding data analysis, interpretation, reporting, etc.; co-teaching courses, workshops, seminars; hosting students and faculty at ERDC labs and USACE field projects for sabbaticals and/or long-term training opportunities; and co-authoring news articles, videos, documentaries, graphics, technical notes, journal articles, etc. The selected team(s) of investigators are expected to actively participate with ERDC researchers in the delivery of all outcomes described in each of the Objectives.

Section III: Eligibility Information

1. Eligible Applicants – This opportunity is restricted to non-federal partners of the Colorado Plateau Cooperative Ecosystems Studies Unit (CESU).

2. Cost Sharing – This action will be 100% funded by USACE.

Section IV: Application and Submission Information – Two Phase Process

Phase I: Submission of a Statement of Interest/Qualifications.

1. Materials Requested for Statement of Interest/Qualifications:
   a. Please provide the following via e-mail attachment to: chelsea.m.whitten@usace.army.mil (Maximum length: 2 pages, single-spaced 12 pt. font).

      1. Name, Organization and Contact Information

      2. 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 Chelsea Whitten; 601-634-4279; chelsea.m.whitten@usace.army.mil

2. Statement of Interest/Qualifications shall be submitted NO LATER THAN 16 May 2021; 1700 CDT

   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.

Phase II: Submission of a complete application package to include a full technical proposal including budget, if invited.

1. Address to Request Application Package

The complete funding opportunity announcement, application forms, and instructions are available for download at Grants.gov.

The administrative point of contact is Chelsea Whitten; 601-634-4279; chelsea.m.whitten@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 cost element breakdowns in sufficient detail so that a reasonableness determination can be made. The SF 424 Research & Related Budget Form can be used as a guide but is required if you choose to utilize the subaward budget form. 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. Subaward budget form can also be used as a guide.
    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.

3. Application package shall be submitted NO LATER THAN 18 June 2021; 1700 CDT.

4. Submission Instructions

Applications may be submitted e-mail or Grants.gov. 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 chelsea.m.whitten@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.

Section V: Application Review Information

1. **Peer or Scientific Review Criteria:** In accordance with DoDGARs 22.315(c), an impartial peer review will be conducted. Subject to funding availability, all proposals will be reviewed using the criteria listed below (technical and cost/price). All proposals will be evaluated under the following two criteria which are of descending importance.

    a. **Technical (items i. and ii. are of equal importance):**
        i. Technical merits of proposed R&D.
        ii. Potential relationship of proposed R&D to DoD missions.

    b. **Cost/Price:** Overall realism of the proposed costs will be evaluated.

2. **Review and Selection Process**

a. **Categories:** 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.

b. No other criteria will be used.

c. Prior to award of a potentially successful offer, the Grants Officer will make a determination regarding price reasonableness.

Section VI: Award Administration Information

1. Award Notices
Written notice of award will be given in conjunction with issuance of a cooperative agreement signed by a Grants Officer. The cooperative agreement will contain the effective date of the agreement, the period of performance, funding information, and all terms and conditions. The recipient is required to sign and return the document before work under the agreement commences. **Work described in this announcement SHALL NOT begin without prior authorization from a Grants Officer.**

2. Administrative Requirements

The cooperative agreement issued as a result of this announcement is subject to the administrative requirements in 2 CFR Subtitle A; 2 CFR Subtitle B, Ch. XI, Part 1103; and 32 CFR Subchapter C, except Parts 32 and 33.

3. Reporting
   See 2 CFR Sections 200.327 for financial reporting requirements,
   200.328 for performance reporting requirements, and 200.329 for real property reporting requirements.

Section VII: Agency Contact

Chelsea Whitten, Grants Officer
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