

**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-0022

CFDA No: 12.630

Statutory Authority: 10 USC 2358

Program Title: Assessing the Role of Risk Science and Risk Transfer in Engineering With Nature® (EWN) Solutions and Advancing Research to Address Gaps and Opportunities.

Announcement Type: Initial announcement

Issue Date: 16 June 2021

Statement of Interest/Qualifications Due Date: 16 July 2021 11:30 AM CT

Full Application Package Due Date, if Invited: 11 August 2021

Estimated Award Ceiling: \$200,000.

Estimated Total Program Funding (optional): \$200,000 total over 2 years; \$200,000 for base and an additional 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. There are many common interests and opportunities between risk science and EWN that could lead to innovative approaches that improve resilience for people and nature. The risk industry already has played a role in advancing Natural and Nature-Based Features (NNBF), for example, in advancing risk models and the assessment of the role of wetlands during extreme events such as Hurricane Sandy and in collaboratively developing the science, tools and models necessary to offer a first of its kind “insurance for nature” (i.e., the MesoAmerican Reef).

Risk and uncertainty modelers do not normally provide analysis of the risk reduction benefits of NNBF. However, many of the industry-leading coastal flood risk models could capture some of the most critical flood reduction aspects and other resiliency benefits of EWN projects. These analyses are not yet standard practice and entail real costs in terms of new modelling and analysis. This project will engage work with this sector focused on calculating risk and uncertainty, and it will evaluate data and conduct research to advance the analyses that could be done with models when evaluating use of NNBF by the risk and uncertainty modelers.

Risk models play a critical role in determining the feasibility and acceptability of risk reduction measures such as NNBF; however, NNBF are rarely included directly in such tools and models because of gaps in science and research. More research is needed to use risk transfer models more widely to help align environmental and risk management goals while also creating opportunities for public and private investment in nature-based projects.

The goals of this project are 1) To assess how nature is (or is not) included in models that consider risk and uncertainty, 2) To analyze and identify research gaps and opportunities for alignment in activities, work, and products between the risk models and NNBF and 3) To develop key findings and make recommendations based on the research for how to address the gaps and realize the opportunities. For example two key research areas where significant progress could be made include: (i) advancing the use of natural & nature-based feature (NNBF) data within risk modeling; and (ii) developing risk transfer models that explicitly include NNBF risk reduction measures.

Brief Description of Anticipated Work:

The key goals of this project are to

- Assess the present role of NNBF in risk models and risk transfer models with a focus on the risk analysis and evaluation.
- Identify gaps in risk science and associated models that limit the incorporation of NNBF.
- Identify opportunities for (mutually) beneficial alignment in science and the risk and uncertainty models in order expand the incorporation of NNBF.
- Make recommendations on how to address the gaps and realize the opportunities.

Required Work Objectives: The following objectives are required for this CESU-funded project:

Objective 1: Collection of Best Available Information, Literature/Existing Data Review, Research, and Data Analysis.

The selected team will work with USACE to collect best available data, perform literature/data review and conduct research/analysis focused on assessing how NNBF is presently used in risk models. The collaborator may propose a myriad of ways to explore how to access data, review, and analyze it. Research topics will include at least: (i) assessing the use of existing nature-based data within risk and uncertainty modeling; and (ii) if and how risk reduction and risk transfer models explicitly include nature-based risk reduction measures. Research focused on current practice of risk modeling will consider value of including risk reduction benefits of NNBF. Research will explore ways to incorporate flood protection benefits derived from habitats such as wetlands and reefs. With respect to research into financial solutions that include nature-based solutions, the selected team will identify opportunities where insurance and

insurance-linked investments in NNBF construction/placement and other habitat restoration efforts could yield greatest returns on investment. Identifying examples and developing case studies that document the coupling of insurance measures and ecosystem-derived, flood-risk reduction benefits is an anticipated outcome of this work. Identifying methods for creation of a resilience insurance solution for disaster risk management, which combines risk transfer and risk reduction, is also of interest.

As part of technology transfer to the Public, the selected team will work with EWN Leadership Team to develop an EWN seminar and/or workshop that describes the research and work inherent to this objective.

A successful application would likely include investigators with knowledge in a broad array of disciplines including, but not limited to risk and decision science, modeling, ecology, ecosystem restoration, financing of NNBF, risk analysis, coastal engineering, coastal science and policy, ecosystem service valuation, and NNBF adaptation and management. Additionally, experience should include, but not be limited to the following: Engineering With Nature®; development, design, and implementation of nature-based strategies in coastal and/or riverine settings; ecological monitoring and modeling of coastal restoration projects; incorporating human-use benefits into infrastructure projects; quantifying financial benefits derived from coastal restoration; and/or modeling of coastal and estuarine systems.

Public Benefit:

A fundamental goal of EWN is to enable more sustainable delivery of economic, social, environmental, and financial benefits associated with water resources infrastructure. For example, marshes and reefs provide flood protection benefits that can lead to tangible cost savings during high impact storms. These benefits and costs could be included in the tools used by underwriters to, for example, reduce insurance premiums. Introducing EWN techniques, practices and/or infrastructure that limits/reduces damage can also produce a range of other benefits, such as cost savings or financial opportunities, while also creating important social benefits like recreation, educational opportunities, and community resilience. 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. In turn, applicable systems are more resilient to issues like flooding, habitat degradation, and sea level rise. This project will offer additional insight with respect to: (1) Including NNBF in risk models; and (2) Including NNBF in Innovative Insurance Solutions (e.g., reef and wetland insurance).

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 to conduct research that is focused on advancing the use of natural & nature-based feature (NNBF) science and data (i) In risk industry models ; and (ii) in risk reduction and risk transfer. The estimated level of funding for FY21 is approximately \$200,000. Additional funds of \$200,000 per year for 1 additional year may be available, providing the potential funding of \$400,000 over 2 years to the successful Recipient/Awardee.

Government Involvement:

USACE EWN Leadership and ERDC researchers will work collaboratively with the selected team to achieve the elements of the previously described objective. Activities include, but are not limited to research that includes determination of best EWN project data to include in the literature review and analysis, strategic data gathering methods, deciding workshop topics; 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.

Section III: Eligibility Information

1. Eligible Applicants – This opportunity is restricted to non-federal partners of the Californian 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: Amanda.Andrews@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 Amanda Andrews, 601-634-5249;
Amanda.Andrews@usace.army.mil

2. Statement of Interest/Qualifications shall be submitted NO LATER THAN 16 July 2021 11:30 AM 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.

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 Amanda Andrews, 601-634-5249;
Amanda.Andrews@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 chose 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.
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 11 August 2021 11:30 AM CT.

4. Submission Instructions

Applications may be submitted by 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 Amanda.Andrews@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 an 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

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