

**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-20-SOI-0033

CFDA No: 12.630

Statutory Authority: 10 USC 2358

Program Title: Development and Validation of Reservoir and Riverine Water Quality Models

Announcement Type: Initial announcement

Issue Date: 4 June 2020

Statement of Interest/Qualifications Due Date: 3 July 2020, 1 PM CDT

Full Application Package Due Date, if Invited: 7 August 2020, 1PM CDT

Estimated Award Ceiling: \$350,000 for FY20

Estimated Total Program Funding: \$990,000

Expected Number of Awards: The government intends to issue 1 award from this announcement.

Section I: Funding Opportunity Description

Background:

The transport of nutrients from watersheds to aquatic resources (streams and rivers, lakes and reservoirs, and coastal zones) directly influences their environmental quality and ecosystem. While this is a natural process, excessive inputs from anthropogenic sources (e.g., intensive agriculture) can exceed the assimilative capacity and resilience of aquatic ecosystems. The result is accelerated rates of eutrophication and destabilized ecological communities susceptible to the establishment of invasive species or to changes in food web structure, loss of valuable habitat, threats to human health, and reduced economic and societal benefits.

Brief Description of Anticipated Work:

To evaluate the impacts of excessive eutrophication and to develop alternatives to mitigate these impacts, ERDC is developing multi-dimensional reservoir and riverine modeling systems that link reservoir hydrodynamics and operations, riverine hydraulics, and water quality kinetics. This includes basic and applied research to advance the state of the art of the CE-QUAL-W2 water quality model (water quality algorithms, reservoir operations, and data input/output) and ERDC water quality modules (the Nutrient, Temperature, Contaminant, and Mercury Simulation Modules (NSM, TSM, CSM, MSM)).

In addition to model development, ERDC is continuing to support the Columbia River Systems Operation (CRSO) Environmental Impact Statement (EIS) and Columbia River Treaty (CRT) study. Both projects are evaluating and comparing a range of water management alternatives. These studies will identify measures to avoid, minimize, and mitigate impacts associated with the system operations and configuration, where feasible. The level of analyses to compare trade-offs and mitigation requires development and assessment of models and methods for effects on resources, such as water quality (temperature, nutrients, and Total Dissolved Gas (TDG)), fish, and flood risk, hydropower, irrigation, and navigation. Mitigation measures accompanying each alternative will also be evaluated for effectiveness, impacts, and environmental compliance coverage.

Objective 1: Develop and apply new water quality models.

Objective 2: Perform water quality studies and Environmental Impact Statements for promotion of healthy watersheds. Disseminate project's findings, to include presentations at conferences, public meetings, as well as the preparation and submission of peer-review science journal articles.

Objective 3: Read and synthesize other modeling approaches from journal papers to arrive at additional analytical methods that may be valuable in water quality modeling.

Methods: In collaboration with ERDC-EL, investigators will use all available resources and contacts to achieve the stated objectives. Investigators will coordinate frequently with the ERDC-EL at decision points for all objectives to ensure ongoing coordination, communication, and execution of the projects. As planning progresses, identification of potential new technologies that could be suitable for model development and application will be done in close coordination with the ERDC-EL which will be co-led by ERDC-EL staff.

Requirements: Success applicants should have expert knowledge in water quality model development, validation, and application. Specific knowledge and experience is required with the source code of the CE-QUAL-W2 model. In addition, they should have experience working with groups in the development of an EIS.

Public Benefit: There is a critical need for developing multi-dimensional reservoir and riverine modeling systems that fully integrate reservoir system hydrodynamics and operations, riverine hydraulics, and water quality kinetics as well as applying these modeling systems to evaluate environmental impacts of excessive eutrophication. Studies performed using these modeling systems will identify measures to avoid, minimize, allowing alternative system operations and configuration to be identified that can mitigate impacts. The proposed research will assess benefits and potential impacts to riverine and reservoir ecosystems and identify actions that will enhance the sustainability and resiliency of these systems.

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 to provide water quality

modeling software development, application, and expertise. The estimated level of funding for FY20 is approximately \$350K. Additional funds of \$320K/year for 2 additional years may be available, providing the potential funding of \$990K 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 \$320K/year in subsequent years of this project; however, total funding will not exceed \$990K over the life of this cooperative agreement.

Government Involvement:

The ERDC will work with the selected investigator in modeling system design, selecting field sites, and collecting data associated with model validation. ERDC will work closely with the selected investigator to provide the necessary resources (source code and data) to complete water quality modeling feature development.

Section III: Eligibility Information

1. Eligible Applicants – This opportunity is restricted to non-federal partners of the Pacific Northwest Region 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, 601-634-4679,
Chelsea.M.Whitten@usace.army.mil

2. Statement of Interest/Qualifications shall be submitted NO LATER THAN 3 July 2020, 1PM 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, 601-634-4679,
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. 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 7 August 2020, 1PM CDT

4. Submission Instructions

Applications may be submitted by mail, 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 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

Chelsea Whitten, Grants Officer
US Army Corps of Engineers, Engineer Research and Development Center
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Vicksburg, MS 39180-6199
Chelsea.M.Whitten@usace.army.mil
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