

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-0025

CFDA No: 12.630

Statutory Authority: 10 USC 2358

Project Title: Data Anomaly Detection and Sediment Yield Estimation
in the US Army Corps of Engineers' Reservoir Sedimentation
Information (RSI) Database.

Announcement Type: Initial announcement

Issue Date: 22 June 2020

Statement of Interest/Qualifications Due Date: 21 July 2020, 1PM
CDT.

Full Application Package Due Date, if Invited: 24 August 2020, 1PM
CDT.

Estimated Award Ceiling: \$40,000

Estimated Total Program Funding: \$40,000

Expected Number of Awards: 1

Section I: Funding Opportunity Description

Background:

The U.S. Army Corps of Engineers has developed the Reservoir Sedimentation Information (RSI) system to help USACE evaluate sediment aggregation trends, reservoir life expectancy and reservoir vulnerabilities due to climate variability. Currently, the RSI system houses primarily elevation-capacity data and elevation- surface area data. The database is continually being expanded with additional metadata fields and basic trend analysis for the future storage losses in the reservoirs due to sedimentation.

USACE intends to provide public access to these data in future, and therefore requires to develop a robust review methodology that examines these data from more than 400 reservoirs for the erroneous data based on past trends and other pertinent and relevant physical variables.

Brief Description of Anticipated Work:

The primary objective is to develop a method to identify erroneous data within the RSI system. Ideally, the investigator(s) will utilize machine learning algorithms to identify anomalies within the dataset. A secondary goal of the study is to use the RSI data, with supplementary data from other available data sources, to develop a machine-learning approach to estimate sedimentation rates. Research tasks should include: identifying appropriate supplemental data from other data sources; 2) identify any patterns and trends in the RSI data; 3) develop a machine-learning method to identify anomalies within the RSI data based on the composite dataset; and 4) develop a machine-learning method for estimating reservoir sedimentation rates.

Public Benefit:

The RSI database is intended to be a public resource to allow other federal and non-federal reservoir management agencies, academic institutions, and private consultants to examine present and future conditions at the USACE (and eventually other federal agencies) reservoirs are expected. Every effort would be made to identify erroneous sedimentation data in the database. An impartial review using technical robust methodology, data quality assessment, and data quality attribution will significantly increase confidence in these data by the end users.

It is expected that the methodology developed will apply to any database with similar data structure. USACE, other Fed and State agencies, academic institutions are all developing 'big data' review algorithms to check large volumes of data quickly. This project should provide a great example that could be expanded and modified in the future for other data. A summary report of the data review method, results, and algorithms for yield estimation will be released to the public.

Section II: Award Information

Responses to this Request for Statements of Interest will be used to identify potential investigators for this study to be sponsored by the Omaha District and the Engineer Research and Development Center to provide review and data quality assessment of and sediment yield estimates from the USACE Reservoir Sedimentation Information (RSI) database. The estimated level of funding for FY20 is approximately \$40,000 to the successful Recipient/Awardee.

Government Involvement:

USACE will provide data support in the form of access to the RSI database and other relevant available data by the selected SME's in the area of reservoir sedimentation. USACE will develop and provide agency's internal workshops on the data review methodology and reservoir sedimentation metrics results for the training of the agency's other SMEs in conjunction with the selected university Principal Investigator (PI).

Section III: Eligibility Information

1. Eligible Applicants – This opportunity is restricted to non-federal partners of the Great Rivers 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 21 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 24 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
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