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 Rd
Vicksburg, MS 39180-6199

Funding Opportunity No: W81EWF-22-SOI-0033

CFDA No: 12.630

Statutory Authority: 10 USC 4001

Program Title: Effects of Sediment Release from Water Injection Dredging on Downstream Freshwater Ecology in Kansas

Announcement Type: Initial announcement

Issue Date: 23 June 2022

Statement of Interest/Qualifications Due Date: 25 July 2022 @ 1300 central time

Full Application Package Due Date, if Invited: 18 August 2022 @ 1300 central time

Estimated Award Ceiling: $77,000.00

Estimated Total Program Funding (optional): $183,000.00

Expected Number of Awards: The Government expects to issue a single award from this announcement.

Section I: Funding Opportunity Description

Background:

The construction of dams interrupts the continuity of sediment transportation through river basins, resulting in problems such as, decreased reservoir storage, flood risk management, and navigation capacity. As of 2012, loss of water storage capacity from sedimentation in 20 large federal reservoirs in Kansas ranged from 2% to 43% (see Juracek 2015; The Aging of America's Reservoirs: In-Reservoir and Downstream Physical Changes and Habitat Implications). Downstream habitat changes also result from sediment deprivation (e.g., channel incision, changes in bedform, loss of lateral connectivity, unnaturally clear water). Sediment management actions at aging reservoirs (e.g., hydro injection dredging, flushing, hydrosuction) may drive ecological effects in downstream river systems (e.g., changes in biodiversity, water quality, habitat quality) that are not well-known. Research is needed to understand and document the potential effects of releasing sediment from reservoirs to downstream ecosystems.

The USACE Kansas City District (NWK) is conducting a Water Injection Dredging (WID) pilot project at Tuttle Creek Lake, Kansas that will potentially begin as soon as Summer 2023.This will be the first time Water Injection Dredging has been conducted in a reservoir anywhere in the world. Water Injection Dredging uses water jets designed to disaggregate, hydraulically lift, and entrain bed material into a density current. Factors such as, settling velocity, bed slope, bed roughness, relative densities of sediment and water column, and total jet water discharge influence the distance over which a density current will be transported. Ideally, sediment is transported in the density currents to reservoir outlets and sediment is passed to downstream the ecosystem in order to restore reservoir pool capacities.

The main objective of the WID pilot project is to test, collect, analyze and document data related to the WID technology. Environmental data will be collected inside the reservoir and downstream to evaluate the potential effects of moving the sediment inside the reservoir and changing the sediment regime downstream of the reservoir. The data collected will help future feasibility studies at Tuttle Creek Lake, and will also be used to validate empirical or numerical models and other tools that could be used to assess WID at other lakes.

This Funding Opportunity Announcement seeks researchers with the expertise needed to assess potential ecological benefits or impacts of releasing sediment downstream of Tuttle Creek Lake. Applicants should have knowledge in monitoring and analysis of data in freshwater ecology, aquatic biology, water quality, behavioral ecology or other related fields.

Brief Description of Anticipated Work:

There is a growing need for information, experimental designs, and tools to assess the ecological impacts or benefits of sediment management actions. The Tuttle Creek Lake WID pilot project provides an opportunity to study and document the potential effects of releasing sediment as a management action in restoring aging reservoir multi-purpose

capacity. The successful applicant would be collaborating with USACE-ERDC researchers to meet the following objectives:
1. Develop an appropriate monitoring protocol and experimental design to study aquatic organism communities and environmental parameters affected by sediment releases
2. Monitor the river basins affected by the releases (e.g., Big Blue River and Kansas River) before, during, and after WID operational releases
3. Evaluate data through statistical analyses and modeling approaches
4. Document and share findings through peer-reviewed publications and presentations

Public Benefit:
This project will provide critical knowledge needed to inform planning and decision-making in water resource management for the benefit of the public. Sediment release relates to flood risk management (e.g., maintenance of pool volume), water availability (e.g., restoring water storage capacity), water quality, coastal sustainability (e.g., maintenance of downstream marshes), navigation, hydropower generation, aesthetics and recreation, and asset management (e.g., extending reservoir life). In addition, sediment release relates to ecosystem restoration as unnaturally clear waters may benefit from restoring natural sediment regimes. Addressing knowledge gaps in effects of sediment release is crucial for providing solutions to the aging reservoir challenges.

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 to study and document the potential effects of releasing sediment. The estimated level of funding for FY22 is approximately $77,000. Additional funds of $72,000 for a second additional year, and $34,000 for a third year may be available, providing the potential funding of $183,000 over 3 years to the successful Recipient/Awardee.

Government Involvement:

ERDC researchers will work cooperatively with the selected researchers and the USACE Kansas City District WID project team to identify existing relevant literature, develop monitoring protocols and experimental designs, evaluate data as it comes, adjust monitoring if needed, and publishing findings. ERDC and USACE may also participate in field data collection and collaborate in workshops or presentations to obtain and share project information. ERDC and USACE Kansa City District staff may also facilitate and lead meetings between the selected researchers and project stakeholders. ERDC researchers and the selected researchers are expected to collaborate in writing, editing, and review of reports and/or peer-reviewed journal articles that document research outcomes.

Section III: Eligibility Information

1. Eligible Applicants – This opportunity is restricted to non-federal partners of the Great Plains 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: phoebe.v.fuller@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 Specialist, phone number; phoebe.v.fuller@usace.army.mil

2. Statement of Interest/Qualifications shall be submitted NO LATER THAN 25 July 2022 @ 1300 central time.

    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 Specialist, phone number; 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 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 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.

3. Application package shall be submitted NO LATER THAN 18 August 2022 @ 1300 central time.

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 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.

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

Phoebe Fuller, Grants Specialist

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