

**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-0030

CFDA No: 12.630

Statutory Authority: 10 USC 4001

Program Title: Modeling acoustic fields using Open FOAM to determine fish deterrence

Announcement Type: Initial announcement

Issue Date: 22 June 2022

Statement of Interest/Qualifications Due Date: 22 July 2022 by 1200 noon CST

Full Application Package Due Date, if Invited: 22 August 2022 by 1200 noon CST

Estimated Award Ceiling: \$140,000 for 2022

Estimated Total Program Funding (optional): \$100,000 each year for an additional 2 years is anticipated; a total of \$340,000 over 3 years is expected.

Expected Number of Awards: The Government expects to issue 1 award from this announcement.

Section I: Funding Opportunity Description

Background:

Non-physical barriers are being developed for stopping the spread of invasive species in waterways around the country. These barriers rely on a behavioral response. Acoustics and electricity are increasing in use at a variety of locations. All the locations are aquatic and often located near infrastructure such as locks and dams. One of the primary tools at these sites is OpenFOAM, the open source multi-physics solver. Practitioners use this code to compute free surface hydraulics and infer biological response. However, the ability to model acoustic fields or electric fields is lacking.

Brief Description of Anticipated Work:

This project will involve close collaboration with the successful offeror and the U.S. Army Corps of Engineers (USACE). This project will involve adding the ability to model acoustic fields and potentially electric fields within the OpenFOAM framework while still computing hydraulic variables. The resulting data set will include the flow field, sound field, and electrical field as appropriate. A field site with supporting geometry and sound data will be provided by the USACE. The successful offeror will also be responsible for processing acoustic data as appropriate.

Public Benefit:

This study will help ensure the preservation and protection of numerous threatened & endangered (T&E) fish species by reducing spread of invasive species. Invasive species cause significant economic and ecological damage to invaded water bodies. Better tools to design effective deterrence system will enhance commercial waterways transport and increase ecological value.

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 an OpenFOAM modules to simulate acoustic and electrical fields in aquatic environments. The estimated level of funding for FY22 is approximately \$140,000. Additional funds of \$100,000/year for 3 years may be available, providing the potential funding of \$340,000 over 3 years to the successful Recipient/Awardee.

Government Involvement:

ERDC researchers will work cooperatively with the investigator to develop data needs, provide data for the OpenFOAM, and will help make decisions on analytical methods and findings. An ERDC representative will be available for meetings with the investigator whenever necessary. Opportunities for student training at ERDC facilities exist. ERDC personnel will also be available to assist with all aspects of the research.

Section III: Eligibility Information

1. Eligible Applicants – This opportunity is restricted to non-federal partners of the Chesapeake Watershed 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: Kisha.M.Craig@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 Kisha M. Craig, 601-634-5397;
Kisha.M.Craig@usace.army.mil

2. Statement of Interest/Qualifications shall be submitted NO LATER THAN 22 July 2022.

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 Kisha M. Craig, 601-634-5397;
Kisha.M.Craig@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 22 August 2022

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 Kisha.M.Craig@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

Kisha M. Craig, Grants Specialist
US Army Corps of Engineers, Engineer Research and Development Center
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