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-0027
CFDA No: 12.630
Statutory Authority: 10 USC 2358
Project Title: Update the Standard Assessment Methodology (SAM) Model
Announcement Type: Initial announcement
Issue Date: 4 June 2020
Statement of Interest/Qualifications Due Date: 3 July 2020 by 1PM CDT.
Full Application Package Due Date, if invited: 31 July 2020 by 1PM CDT.
Estimated Award Ceiling: $1,100,000.00.
Estimated Total Program Funding: $2,200,000.00 (Base funding is estimated to be $1,100,000. Additional funds of $1,100,000 may be available if chosen to develop the green sturgeon model.)
Expected Number of Awards: 1 award

Section I: Funding Opportunity Description

Background:

The Sacramento District of the U.S. Army Corps of Engineers (hereafter 'Sacramento District' or 'USACE') works with non-federal sponsors to ensure the levee system along the Sacramento and American Rivers and their tributaries provides adequate flood protection to the Sacramento metropolitan region. The National Marine Fisheries Service (NMFS) is responsible for protecting listed aquatic species in this watershed. The Sacramento District currently utilizes the Standard Assessment Methodology (SAM) model for evaluating effects of the Sacramento River Bank Protection Project (SRBPP) The current version is incapable of providing the level and specificity and nuance required by NMFS in evaluations of potential effects of levee improvement work on protected habitats. Riparian habitat provides recreational opportunities and contributes to quality of life benefits for the general public. Loss of functioning riparian habitat is a key cause of many of the negative short- and long-term impacts of the SRBPP to listed salmonid species protected under the Endangered Species Act. The following three threatened and endangered salmonid species are found in the project area and their protection under Section 7 of the Act is entrusted to the NMFS:

- Sacramento River Winter-run Chinook (SRWRC) – an endangered evolutionarily significant unit (ESU) of *Oncorhynchus tshawytscha*;
- Central Valley Spring-run Chinook (CVSRC) – a threatened ESU of *O. tshawytscha*;
- California Central Valley Steelhead (CCVS) – a threatened distinct population segment (DPS) of *O. mykiss*.

Vegetation in proximity to streams and rivers is a key component of functioning riparian habitats. Intact riparian habitat is essential to fish growth, survival, and productivity, due to its ability to:

- Shade channels maintaining cooler water temperatures and retaining dissolved oxygen levels.
- Provide overhead cover and refuge for juvenile salmonids to reduce predation.
- Reduce velocities along channel margins preferred by newly emerged fry and yearling salmonids.
- Contribute small organic matter (e.g., leaves, twigs, grasses) and insects to channels, and support primary and secondary production.
- Provide trees that fall into channels and influence river geomorphology, creating complex habitats, including pools, riffles, debris collections, backwater, and off-channel habitat that are necessary to fish for cover, holding, foraging, spawning, rearing, and protection from predators.
- Reduce flood flow velocities and create micro-currents that provide fish near-channel holding areas to rest and maintain their position in a stream reach during flooding.
- Increase the input of aquatic invertebrates into the system by providing metabolic energy, colonization sites, and velocity refuge.

Intact riparian habitat may provide additional benefits for fish not enumerated above. The SRBPP levee work often involves removal of riparian habitat and instream woody materials, degrading habitat attributes and leading to a likely reduction of food for protected aquatic species, potentially adversely affecting the growth and survival of juvenile salmon and steelhead in the project area.

SAM was initially developed not only to assess impacts to salmonid species, but also delta smelt (*Hypomesus transpacificus*), both of which are listed as threatened under the ESA.

Brief Description of Anticipated Work

The proposed agreement will have two primary objectives: 1) to collaboratively develop a revised SAM habitat model for salmonids (green sturgeon optional) in the Sacramento River Basin, and 2) to ensure certification of the new SAM model as an effective tool for assessing the impacts of bank protection projects and related habitat mitigation on fish habitat in the Sacramento River Basin. The revised SAM habitat model will be designed to accommodate additional environmental parameters identified through recent monitoring activities. The model should be sufficiently robust to allow evaluation of a broad range of resource management activities and flexible enough to add new species criteria and permit integration with other models / components for a comprehensive ecosystem analysis.

Specific tasks include management of habitat model design and implementation, coordination with USACE and other agencies to write a model development plan and to oversee model development, technical support through the certification process, and training to prepare USACE personnel and others. An optional task to develop a model to assess effects on green sturgeon habitat may also be sought.

Public Benefit:

The goal of the project is to conduct research to develop and produce a publicly available habitat model (software) for evaluating the effects of improvements to levee structures and related habitat mitigation measures on salmonids and other species in the Sacramento River Basin. The university provides training and education to natural resource management students. This effort will offer students at the selected university a broader understanding of collaborative ecosystem modeling from the perspectives of the action agency at work in the aquatic environment (USACE) and the regulatory agency tasked with protecting listed fish species and their habitats (NMFS). The new habitat model will support a broader framework for public understanding of fish habitat requirements while managing natural resources and other infrastructure. The new habitat model may be used as a component for other species-specific life cycle models, riparian habitat management, and population simulation models.

The new habitat model software would be made available to the public through publication in report(s), journal article(s), and/or software repositories (example GitHub). Publication of the updated SAM software supports future development of ecosystem models by university researchers and resource management agencies for other river systems and fish species.

The new habitat model software will be publicly available for other federal, state, regional, and non-governmental organizations to support their analyses for restoration or regulatory purposes, and other public stakeholders to assess the effects of their resource management activities. USACE manages levee protection in the Sacramento River and its tributaries, while the NMFS is responsible for protecting endangered anadromous fish species in the same area.

Section II: Award Information

Responses to this Request for Statements of Interest will be used to identify potential awardees for studies to be sponsored by the Sacramento District and overseen by ERDC, the Engineer Research and Development Center to provide computer modeling research

and development (R&D) expertise to revise the SAM model for evaluating habitat effects. The level of funding for this effort is estimated to be approximately $1,100,000. Additional funds of approximately $1,100,000 may be available if chosen to research and develop the green sturgeon model over the life of the cooperative agreement. Estimated total base award and all options are estimated to be $2,200,000.

Government Involvement:

USACE and NMFS staff (federal staff) shall participate with the awardee in designing and reviewing the conceptual ecosystem model (CEM) diagram as the scientific foundation for developing the new SAM model. Federal staff shall contribute ideas to and review the model development plan (MDP), the Model Design Document (MDD) through regularly scheduled conference calls and/or meetings. Federal staff shall participate in model testing and validation, leading to model certification.

USACE will provide the awardee with the current version of the Standard Assessment Methodology (SAM) Model, including all user documentation and relevant reports. USACE will provide the awardee with previously collected data and existing reports relevant to this effort.

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: 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
3.

   Based on a review of the Statements of Interest received, one or more candidates will be invited to move to Phase II which is to prepare a full study proposal. Statements will be evaluated based on the candidate'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 31 July 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 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), a panel of qualified agency personnel will conduct an impartial review and evaluation of proposals. 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 order of 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

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Engineer Research and Development Center
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