

NOTICE OF INTENT TO AWARD

This Funding Announcement is not a request for applications. This announcement is to provide public notice of the Bureau of Reclamation's intention to fund the following project activities without full and open competition.

ABSTRACT	
Funding Announcement	R12AC80883
Project Title	Predicting the Interactions between Flow, Sediment and Riparian Vegetation
Recipient	The University of New Mexico
Principal Investigator / Program Manager	Dr. Mark Stone
Anticipated Federal Amount	\$54,774.00
Cost Share	\$0
Total Anticipated Award Amount	\$54,774.00
New Award or Continuation?	New
Anticipated Period of Performance	June 1, 2012 – June 30, 2013
Award Instrument	Cooperative Agreement
Statutory Authority	Omnibus Public Lands Management Act of 2009, Section 9504, Public Law 111-11, (b) RESEARCH AGREEMENTS.
CFDA # and Title	15.560
Single Source Justification Criteria Cited	4- Unique Qualifications
Reclamation Point of Contact	Michelle Maher mmaher@usbr.gov

OVERVIEW

The strategic challenge for the future is to ensure adequate quantity and quality of water to meet human and ecological needs in the face of growing competition among domestic, industrial/commercial, agricultural and environmental uses. To address water resource problems likely to emerge in the next 10 to 15 years, decision makers at all levels of government will need to make informed choices among often conflicting and uncertain alternative actions. These choices are best made with the full benefit of research and analysis.

This project is the result of a collaborative proposal developed by BOR, UNM, DRI and ESI researches to the 2010 Reclamation Science and Technology Program; taking advantage of the complementary capabilities of these researches and institutions. The research will add capacity for modeling the complex interactions between, flow, sediment, and riparian vegetation by building upon the extensive experiences of the research team.

This award will provide the University of New Mexico the capability to develop a module of vegetation hydraulics using currently cutting-edge approaches. The study will incorporate influences of stream flow on plant sizes, flexibility and density for integrating UNM algorithms for dynamic hydraulic roughness.

RECIPIENT INVOLVEMENT

The Recipient shall be responsible for carrying out the Scope of Work in accordance with the terms and conditions stated herein. The Recipient shall adhere to Federal, state, and local laws, regulations, and codes, as applicable, and shall obtain all required approvals and permits. If applicable, the Recipient shall also coordinate and obtain approvals from site owners and operators.

The work described here is one component of a multi-institutional effort. The overall project includes six tasks including: (1) development of a module of vegetation hydraulics; (2) testing of established growth and mortality modules against field data (3) incorporation of vegetation recruitment routines into SRH-2D.

1. Method Development

- UNM will work toward development the method for vegetation hydraulic simulation based on existing studies and previous DRI and UNM efforts in this area.

2. Code Development

- UNM and Reclamation researchers to develop the code for vegetation hydraulic simulation using the method provided in the previous task.

3. Incorporate New Module into SRH-2D Model

- UNM researchers will work to integrate the vegetation hydraulics code into the Reclamation model SRH-2D. DRI will provide in-kind support for the code interfacing.
- UNM will take the lead to improve the vegetation bending routines to account for vegetation characteristics.

RECLAMATION INVOLVEMENT

Substantial involvement on the part Reclamation is anticipated for the successful completion of the objectives to be funded by this award. In particular, Reclamation will be responsible for the following:

The funded research has six major tasks, which will be carried out with operations from all researchers, but with a lead researcher for each task. Three of the tasks will be led by BOR.

Reclamation will provide the following substantial involvement on the project:

1. Collaborate and participate with DRI, UNM, and SEI in the design and management of the project.
2. Provide model source code and technical guidance for developing improved algorithms for modeling floodplain roughness.
3. Provide technical peer review and expert consultation on project activities, results, and products on an ongoing basis and at key project milestone points.
4. Collaborate on model testing and verification including help with site selection, obtaining data, and analysis of results.
5. Co-author journal manuscripts resulting from this work.
6. Disseminate the final model through Reclamation's website.

SINGLE-SOURCE JUSTIFICATION

DEPARTMENT OF THE INTERIOR SINGLE SOURCE POLICY REQUIREMENTS

Department of the Interior Policy (505 DM 2) requires a written justification which explains why competition is not practicable for each single-source award. The justification must address one or more of the following criteria as well as discussion of the program legislative history, unique capabilities of the proposed recipient, and cost-sharing contribution offered by the proposed recipient, as applicable.

In order for an assistance award to be made without competition, the award must satisfy one or more of the following criteria:

- (1) Unsolicited Proposal – The proposed award is the result of an unsolicited assistance application which represents a unique or innovative idea, method, or approach which is not the subject of a current or planned contract or assistance award, but which is deemed advantageous to the program objectives;
- (2) Continuation – The activity to be funded is necessary to the satisfactory completion of, or is a continuation of an activity presently being funded, and for which competition would have a significant adverse effect on the continuity or completion of the activity;
- (3) Legislative intent – The language in the applicable authorizing legislation or legislative history clearly indicates Congress' intent to restrict the award to a particular recipient of purpose;
- (4) Unique Qualifications – The applicant is uniquely qualified to perform the activity based upon a variety of demonstrable factors such as location, property ownership, voluntary support capacity, cost-sharing ability if applicable, technical expertise, or other such unique qualifications;

(5) Emergencies – Program/award where there is insufficient time available (due to a compelling and unusual urgency, or substantial danger to health or safety) for adequate competitive procedures to be followed.

Reclamation did not solicit full and open competition for this award based the following criteria:

(4) UNIQUE QUALIFICATIONS

Single Source Justification Description:

For the past five years UNM has collaborated with Reclamation and the other researchers involved with this project on research targeted at the interactions between flow, sediment and riparian vegetation in the western United States streams. Through this work Dr. Mark Stone of the University of New Mexico has developed expertise on the topic while also developing numerical techniques for describing the relevant processes. This expertise is demonstrated through Dr. Stone's record of peer-reviewed publications and presentations at professional meetings. This proposed work will incorporate Dr. Stone's techniques into the publicly available river modeling codes developed by Reclamation. Thus this researcher has unique expertise relevant to the project.

STATUTORY AUTHORITY

Omnibus Public Land Management Act of 2009 (P.L. 111-11), Subtitle F-Secure Water, Sec 9504 (b), Research Agreements

Sec 9504

(b) Research Agreements-

(1) **AUTHORITY OF SECRETARY-** The Secretary may enter into 1 or more agreements with any university, nonprofit research institution, or organization with water or power delivery authority to fund any research activity that is designed--

(A) to conserve water resources;

(B) to increase the efficiency of the use of water resources; or

(C) to enhance the management of water resources, including increasing the use of renewable energy in the management and delivery of water.

(2) **TERMS AND CONDITIONS OF SECRETARY-**

(A) **IN GENERAL-** An agreement entered into between the Secretary and any university, institution, or organization described in paragraph (1) shall be subject to such terms and conditions as the Secretary determines to be appropriate.

(B) **AVAILABILITY-** The agreements under this subsection shall be available to all Reclamation projects and programs that may benefit from project-specific or programmatic cooperative research and development.