

**REQUEST FOR STATEMENTS OF INTEREST
NUMBER W912HZ-19-SOI-0015
PROJECT TO BE INITIATED IN 2019**

Project Title: USCRP Research Topic 12: Quantitative Model for Optimizing Coastal Community Systems Performance

Responses to this Request for Statements of Interest will be used to identify potential investigators for studies to be sponsored by the U.S. Army of Engineer (USACE) Engineer Research and Development Center (ERDC) Coastal and Hydraulics Laboratory (CHL). The intent of this request is to seek researchers interested in developing a quantitative systems model that incorporates community perspectives, data, and future environmental and coastal infrastructure conditions so that potential future alternatives can be tested and optimized for coastal communities. The systems model developed from this research should facilitate community input to and examination of alternatives, given anticipated changes in community values and priorities, physical infrastructure, and coastal forcing over years to multiple decades. Estimated award amounts for individual proposals of \$50,000 to \$500,000 may be accepted. Multiple awards may be funded. Possibly no awards will be made if the submitted proposals do not meet the objectives outlined in this RSOI.

Background:

The U.S. Coastal Research Program (USCRP) is a partnership of the coastal research community to coordinate Federal activities, strengthen academic programs, and build a strong workforce. Three primary research needs identified by the USCRP's nearshore coastal community are to improve understanding of: 1) long-term coastal evolution due to natural and anthropogenic processes; 2) extreme events, including flooding, erosion, and the subsequent recovery; and 3) the physical, biological and chemical processes impacting human and ecosystem health. As identified by the USCRPs plan, the USCRP addresses societal needs along the coast through a coordinated effort backed by researchers from Federal agencies, academia, industry, and non-governmental organizations. Awards will be made with the intent of assisting academic institutions in funding coastal and nearshore processes graduate students to address critical research needs within the coastal community, advancing the state of knowledge, and building the future U.S. workforce.

Public Purpose and Benefit:

These results will benefit the public by providing a method that can evaluate the impacts of a range of potential future conditions on the coastal system response over years to multiple decades. The method will allow the community to evaluate how their priorities (e.g., economics, ecosystem habitat, tourism, community safety, privacy, etc.) may be impacted by future human and coastal scenarios (e.g., sea level change, building evacuation routes, building habitat in bay areas for ecotourism, adding seawalls or dunes, etc.) as a function of coastal system response.

Brief Description of Anticipated Work:

This research is envisioned as a 2-year study with two main objectives as outlined below.

Objective 1: In order to achieve the main objective of this study of developing a quantitative system model for optimizing coastal community systems performance, the researcher should first summarize the present state-of-knowledge for methods and experiences in optimizing coastal system response and then develop a conceptual approach to developing a coastal systems optimization tool. Products from this objective will include: a journal article that documents the state-of-knowledge; and a Fact Sheet that succinctly synthesizes these findings (2-4 pages).

Objective 2: Using open-source methods and/or models, integrate best practices to develop a methodology for systems optimization for a coastal community. In conjunction with coastal practitioners, test, revise, and validate the method for at least 2 coastal communities with differing priorities and coastal settings. From these studies, document the recommended methodology, outcomes and recommendations for use by other coastal communities in the final report or journal article.

Annual products from this work will include Community Fact Sheets (2-4 pages each) that summarize advancements each year; and an annual contribution to the USCRP Quarterly Bulletin (1/2- 1 page for each article). Journal articles that are co-authored with a practitioner are anticipated as part of both objectives and at the conclusion of the study. If numerical models are utilized in the study, open-source modeling systems are preferred so that all coastal researchers can benefit from advancements.

Base Period Tasks:

Objectives 1-2 will be addressed in the base period work effort and summarized in the summary report for this period.

Government Participation:

The university researcher(s) will work in close coordination with the USACE and USCRP staff who will provide technical assistance in reviewing progress, draft documentation, and study approaches. As needed, the USACE and USCRP staff will assist researchers to access site-specific data for the case studies to include topographic, bathymetric, wave, water level, and storm history information. The USACE and USCRP team will ultimately incorporate the research and documentation by the researcher(s) into a technical report.

Materials Requested for Statement of Interest/Qualifications:

Please provide the following via e-mail attachment to: -----Robyn.D.Wells@usace.army.mil (Maximum length: 2 pages, single-spaced 12 pt. font).

1. Name, Organization and Contact Information
2. Brief Statement of Qualifications (including):
 - a. Biographical Sketch,

- b. Relevant past projects and clients with brief descriptions of these projects,
- c. Staff, faculty or students available to work on this project and their areas of expertise,
- d. 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.

Review of Statements Received: Based on a review of the Statements of Interest (SOI) received, an investigator or investigators will be invited to prepare a full study proposal. Statements will be evaluated based on the specific experience and capabilities of the investigator(s) in areas related to the study requirements. Additionally, the evaluation method and selection criteria for research and development awards must be: (1) the technical merits of the proposed research and development; and (2) potential relationship of the proposed research and development to the Department of Defense missions.

Please send responses or direct questions to:

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ERDC Contracting Office (ECO)
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Timeline for Review of Statements of Interest: Review of Statements of Interest will begin after the SOI has been posted to all units on the CESU website for 10 working days.