REQUEST FOR STATEMENTS OF INTEREST
GULF COAST CESU
NUMBER W912HZ-16-SOI-0011
PROJECT TO BE INITIATED IN 2016

Project Title: Numerical Modeling to Determine the Capacity of Vegetated Shorelines (“Living Shorelines”) to Reduce Coastal Erosion, Inundation, and Winds with consideration of Long-term Change in Sea Level

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 is to provide research, evaluation, and authorship services in evaluating the capacity of vegetated coastal shores, “Living Shorelines,” to reduce typical and extreme coastal erosion, inundation, and winds. The estimated level of funding for FY16 is approximately $50,000. Additional funds, yet to be budgeted for 3 additional years at $50,000 per year, may be available for follow on research and documenting results for a potential total of $200,000 over 4 years.

Background:
The USACE is in the process of evaluating the capacity of Natural and Nature-Based Features (NNBF) to reduce risk of coastal storm damage. Vegetated shores are a type of NNBF believed to reduce chronic erosion and provide some reduction in storm-induced wave erosion, inundation, and wind. Living shorelines are also expected to readily adapt to rising sea level and naturally continue a similar level of risk reduction. However, the capacity of vegetated shorelines in providing these services is largely anecdotal and maintenance requirements are unknown. A quantitative, unbiased study of these features is needed to determine their potential capacity in terms of reducing low-intensity coastal storm damages; defining the threshold coastal storm parameters for which living shorelines are ineffective; determining the conditions under which living shoreline are damaged and will not recover; determining their capacity to keep pace with rising sea level, and the rate of relative sea level change at which they are not able to cope; and applying this knowledge to develop fragility, damage, and recovery profiles for living shorelines.

Public Benefit:
These results will benefit the public by providing technical guidelines for the use of living shorelines for improved / cost-effective protection of public, private and corporate coastal properties and other resources from excessive storms. In addition, living shorelines will also offer opportunities for enhanced, preserved, and restored habitat function for native plants and animals that provide increased recreational and sport usage by the public.
Brief Description of Anticipated Work:

**Objective 1**: Evaluate and provide a brief synopsis of state-of-knowledge on the capacity of living shorelines to reduce coastal erosion, inundation, winds, and keep pace with relative sea level rise.

**Objective 2**: Calibrate and validate a numerical model for living shoreline response. Demonstrate proof-of-validation for representative living shorelines.

**Objective 3**: Evaluate the validated model to determine the capacity of living shorelines to reduce low-intensity coastal storm damages. Compare living shoreline risk reduction to that provided by traditional armoring. Determine the threshold storm conditions at which living shorelines are ineffective.

**Objective 4**: Determine the damage threshold at which living shorelines are unable to naturally recover.

**Objective 5**: Determine the rate of natural recovery for living shorelines.

**Objective 6**: Take the lead role in preparing a summary report from the findings of the research and investigations.

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

Option Year Tasks:
Objectives 3-6 will be addressed as necessary in option years (in significantly greater detail and analysis based on findings of the Base Period), using additional state-of-the-art methods and modeling techniques.

Vendor Requirements:
Vendor must be a non-federal partner of the Gulf Coast CESU Unit willing to accept the currently approved indirect cost rate of 17.5%.

Government Participation:
The university researcher(s) will work in close coordination with the ERDC technical lead who will provide technical assistance as appropriate in determining parameters, tools and methods for the study. The ERDC will review reports and offer technical advice and opinion on the research/investigation findings. The USACE will also facilitate and participate in coordination efforts and meetings either in person or by webinar. The ERDC 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: ------
(Maximum length: 2 pages, single-spaced 12 pt. font).
1. Name, Organization and Contact Information
2. Brief Statement of Qualifications (including):
Review of Statements Received: Based on a review of the Statements of Interest received, an investigator or investigators will be invited 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. 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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U.S. Army Engineer Research and Development Center (ERDC)
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 on the CESU website for 10 working days.