



**STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY**

**SCOPE OF SERVICES
FOR**

**ENGINEERING AND DESIGN PHASE OF LARGE SCALE MARSH
CREATION AND RIDGE RESTORATION PROJECTS**

1.0 INTRODUCTION

The Coastal Protection and Restoration Authority (CPRA) is seeking qualified firms to provide project management and engineering and design services for multiple large scale marsh creation and ridge restoration projects throughout south central and southeast Louisiana. CPRA is proposing implementation of these projects through the Natural Resource Damage Assessment (NRDA) restoration planning effort identified as long-term restoration features to restore for damages caused by the *Deepwater Horizon* oil spill. These projects are identified in Louisiana's Comprehensive Master Plan for a Sustainable Coast (2012 State Master Plan) approved by the Louisiana State Legislature in May 2012. **It is the intent of the agency to make multiple awards from this solicitation.**

Projects will consist of inland marsh creation via hydraulically dredged sediment from multiple potential borrow sources, including inshore, riverine and offshore. Projects may also include design for mechanical excavation for ridge restoration and shoreline protection. Tasks pertinent to this RSIQ include, but are not limited to the following: project management; project initiation and planning; compilation, review and analysis of existing data; topographic and hydrographic surveys; geotechnical investigations; numerical wave modeling; water quality analysis; environmental investigations; permit development; and bid document development. CPRA reserves the right to modify or identify additional tasks during the contract negotiation phase and/or the design phase of the project.

2.0 GENERAL BACKGROUND, DESCRIPTION, AND LOCATION

Projects will be located in the Pontchartrain, Barataria and Terrebonne Basins of Louisiana. These areas are suffering from land loss and habitat shift due to oiling from the *Deepwater Horizon* oil spill, hydrologic alteration, sediment deprivation, subsidence, and saltwater intrusion. The objectives of these projects are to reestablish and nourish inland marsh and ridge habitat by hydraulically and mechanically dredging material from riverine, inshore and offshore borrow sources. Typical project size will average over 1,200 acres of constructed marsh and ridge habitat. Marsh creation and ridge restoration will increase habitat areas and help improve storm buffering ability as a part of the multiple lines of defense protecting geographically and socially vulnerable communities.

3.0 MINIMUM REQUIREMENTS

Due to the complex requirements for the design and implementation of these projects, it will be a requirement for the Contracting Party to employ specialized personnel on the project delivery team. The following provides a partial list of the minimal position requirements for the project delivery team, either

through direct employment or outsourced subContracting Party. Additional staff positions will likely be required and will be dictated by the specifics of projects selected. Proposers should consider the general requirements of project types listed in this RSIQ and utilize their professional judgment and experience on additional staff requirements.

- 3.1 Project Manager** with at least ten (10) years of relevant experience in project management and whom will be responsible for delivering the project per the planned and agreed upon scope of work, budget, and schedule, and serve as the main line of communication and point of contact with the CPRA Project Manager. The Project Manager must have demonstrated experience of successfully utilizing scheduling and cost tracking techniques on projects of a related nature and of a similar scale that resulted in timely and cost effective project implementation.
- 3.2 Professional Engineer**, licensed as a Professional Civil Engineer by the Louisiana Professional Engineering and Land Surveying Board. The Project Design Engineer shall have at least five (5) years of experience in the design and construction of sediment dredging, pipeline conveyance marsh fill placement, earthen containment dikes, shoreline protection, ridge restoration, and numerical modeling of coastal processes in coastal Louisiana. The Project Design Engineer shall be employed by the Prime Contracting Party and be fully responsible for the design of the project with technical assistance from the other project team members.
- 3.3 Geotechnical Engineer**, licensed as a Professional Civil Engineer by the Louisiana Professional Engineering and Land Surveying Board with a Master's Degree in Civil Engineering from an ABET-accredited engineering program. The Project Geotechnical Engineer shall have at least five (5) years of experience in the design of inland marsh creation and shoreline protection projects in coastal Louisiana.
- 3.4 Professional Surveyor**, licensed as a Professional Surveyor by the Louisiana Professional Engineering and Land Surveying Board, and certified by the United States Hydrographic Certification Program. The Project Surveyor shall have at least five (5) years of experience in performing land, hydrographic and geophysical surveys in coastal Louisiana.
- 3.5 Project Scientist** with U.S. Army Corps of Engineers, New Orleans District, Section 10/404 permitting experience to provide environmental science, science, or specialist consulting services. The Project Scientist must provide specific examples with timelines regarding submittal of applications, response to information requests, and receipt of permits in a timely manner from DNR and USACE for complex construction projects. Experience with U.S. Fish and Wildlife Service, NOAA-National Marine Fisheries, and Louisiana Department of Wildlife and Fisheries regarding threatened and endangered species, as well as Wetland Value Assessment determinations is highly preferred.
- 3.6 Archeologist**, who meets the Archaeologist Qualifications as published in the Louisiana Register dated April 20, 1994, and has completed the course on Section 106 of the National Historic Preservation Act offered by the Advisory Council, or its equivalent training.

4.0 SCOPE OF WORK

These general scope requirements are applicable to the design and implementation of marsh creation and ridge restoration projects as specified in this advertisement. Detailed work plans specific to awarded projects will be negotiated between the contracting party and CPRA.

4.1 Project Management

The Contracting Party will be responsible for providing overall project management including but not limited to developing and maintaining budget and schedule, scoping the work of all sub-consultants and administration of their tasks, maintaining accurate project data, maintaining and providing project records in a record management system, providing itemized task schedules in a P6 format and conducting and documenting project meetings. Major emphasis will be placed on communication and coordination with the CPRA Project Manager to ensure timely project execution.

4.2 Project Initiation and Planning

The Contracting Party will gain an understanding of the intended outcome of the project based on the NRDA proposal and application, the State Master Plan, and a review of previous work completed under CPRA expectations. The Contracting Party will proceed with project initiation steps inclusive of the project team including: compiling Project Vision, Project Definition, Team Charter, and Project Delivery Planning. Please reference Enclosure 5, Project Initiation and Planning for additional information.

4.3 Project Design

The Contracting Party shall review the following tasks for the development of all the engineering and design deliverables specified in Section 4.5. These tasks should be used as a guide for the development of the scope, schedule and budget for the work. All tasks shall be optimized to meet the overall project schedule.

4.3.1 Phase 1 - Data Collection

4.3.1.1 Existing Data Compilation

The Contracting Party shall compile all existing data (modeling, geotechnical, geophysical, surveying, land ownership, etc.) from studies, reports, permits, and projects located within one (1) mile of all features of this project. The Contracting Party shall analyze this information and determine what additional data collection is necessary to design and permit the project. All information in this phase shall be included in the Project Design Phase 1 - Existing Data Compendium.

4.3.1.2 Surveying

The Contracting Party shall perform all topographic, bathymetric, geophysical, magnetometer, and boundary surveys necessary to design and permit the project. This work shall include, but not be limited to the following subtasks:

- 4.3.1.2.1 Layout and material quantities of all project features including borrow area(s), marsh creation area(s), conveyance corridors(s), shoreline protection features, and ridge restoration features;
- 4.3.1.2.2 Coordination with the CPRA Legal Division on land ownership, servitudes, etc;
- 4.3.1.2.3 Establishment of survey monuments and temporary bench marks, if necessary;
- 4.3.1.2.4 Location and identification of ALL existing infrastructure, anomalies, and archeological discoveries;

All information in this section shall be compiled into the Project Design Phase 1 – Surveys.

4.3.1.3 Borrow Area Environmental Investigation

The Contracting Party shall obtain and analyze a sufficient quantity of samples in and around the proposed borrow area(s) in order to delineate existing foraging habitat and benthic prey organisms for all threatened and endangered species. The investigation should be of a sufficient level to design and permit the project. The Contracting Party shall also develop numerical models of the borrow area(s) to assess regional hydrodynamics and impacts to dissolved oxygen and wave climate as necessary. All information in this section shall be compiled into the Project Design Phase 1 - Borrow Area Environmental Investigation.

4.3.1.4 Geotechnical Investigation

The Contracting Party shall perform a geotechnical investigation of the borrow area(s), marsh creation area(s), earthen containment dikes and plugs, structural containment, shoreline protection features, and ridge restoration features.

The results of all field exploration (borings, cone penetrometer tests, etc.) and laboratory testing shall be included in the Project Geotechnical Data Report. The results of all geotechnical engineering analyses and design (settlement, slope stability, etc.) shall be included in the Project Design Phase 1 - Geotechnical Investigation.

4.3.2 Phase 2 - Preliminary Design

The Contracting Party shall develop a Project Design Phase 2 - Preliminary Design Compendium after the completion of data collection, engineering analyses (including any necessary alternatives analyses of project features), and preliminary design. The project shall be designed for a twenty (20) year design life. This package shall include a preliminary design report, design calculations, plans (complying with CPRA CADD standards), specifications and cost estimate. The Contracting Party shall also present a summary of the preliminary project design package to CPRA during this time period.

4.3.3 Phase 3 - Final Design

The Contracting Party shall develop a Project Design Phase 3 – Final Design Compendium after the incorporation of all other project elements (feature investigations, permitting, land rights, etc.) into the final design of the project. This package shall include a final design report and bid package (plans, specifications and cost estimate). All deliverables shall be sealed by the Project Design Engineer. The Contracting Party shall also present a summary of the final project design package to CPRA during this time period.

4.3.4 Phase 4 – Bid Support

CPRA will be responsible for the public advertisement and award of the bids for this project. The Contracting Party shall provide technical support during the bid process by performing the pre-bid presentation and job-site visit, developing all addendums, and assisting with bid evaluations. Construction administration will be performed under a separate contract.

4.4 Permit Application Development

The Contracting Party will be tasked to assist in development of a complete Joint Coastal Use Permit application for work within the Louisiana Coastal Zone package, including all aspects and features of the project. *CPRA or a third party contractor will be responsible for NEPA analysis and compliance documentation.* The Contracting Party shall be responsible for coordinating and providing data for all the necessary compliance documentation to CPRA or a third party contractor. The Contracting Party shall indicate in the design any buffers for avoidance of areas of sensitive areas, including cultural resources. The Contracting Party shall provide assistance in preparing and submitting a Coastal Use Permit, and a Clean Water Act Section 10/404 Permit. Permit applications will be submitted at the preliminary engineering (30%) design stage.

4.5 Deliverables

The Contracting Party shall submit the following to CPRA:

- 4.5.1 Section 4.3 Reports and Specifications - Two (2) bound copies of all reports on 8.5"x11" paper and one digital copy using MS Word.
- 4.5.2 Section 4.3 Plan Sets - Two (2) bound drawings on 11"x17" paper and one digital copy using AutoCADD 2016.
- 4.5.3 Section 4.3 Other data and models – One (1) digital copy of all input and output files using the original software.