# COST SHARING AGREEMENT
# FOR
# PLANNING ASSISTANCE BETWEEN
# THE U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
# AND
# THE GALVESTON PARK BOARD OF TRUSTEES

THIS AGREEMENT, entered into this 14th day of November, 2012 by and between the United States of America (hereinafter called the "Government"), represented by the Contracting Officer executing this Agreement, and the **Galveston Park Board of Trustees** (hereinafter called the "**Sponsor**").

WITNESSETH, that

**WHEREAS,** the Congress has authorized the Corps of Engineers in Section 22 of the Water Resources Development Act of 1974 (Public Law 93-251) as amended to assist the States in the preparation of comprehensive plans for the development, utilization and conservation of water and related land resources; and,

**WHEREAS,** Section 319 of the Water Resources Development Act of 1990 (Public Law 101-640) authorized the Government to collect from non-Federal entities fees for the purpose of recovering fifty (50) percent of the cost of the program; and,

**WHEREAS**, the Sponsor has reviewed the State's comprehensive water plans and identified the need for the planning assistance as described in a Statement of Work: **Galveston Island Sand Management Plan,** incorporated into this agreement; and

**WHEREAS,** the Sponsor has the authority and capability to furnish the cooperation hereinafter set forth and is willing to participate in study cost-sharing and financing in accordance with the terms of this agreement;

**NOW THEREFORE**, the parties agree as follows:

1. The Government, using funds contributed by the Sponsor and appropriated by the Congress, shall expeditiously prosecute and complete the Study, estimate to be completed within twelve (12) months, substantially in compliance with the Statement of Work attached as Appendix A and in conformity with applicable Federal laws and regulations and mutually acceptable standards of engineering practice.

2. The Government and the Sponsor shall contribute in cash, fifty (50) percent, respectively, of all study costs, the total cost of which is currently estimated to be **$200,000.00**, as specified in the cost estimate attached as Appendix B. The Sponsor agrees to provide a cashier or certified check in the amount of **$100,000.00** which shall be made payable to FAO, USAED, (Galveston District), prior to any work being performed under this Agreement.

3. No Federal funds may be used to meet the local Sponsor's share of study costs under this Agreement unless the expenditure of such funds is expressly authorized by statute as verified by the granting agency.

4. Before any Party to the Agreement may bring suit in any court concerning any issue relating to this Agreement, such Party must first seek in good faith to resolve the issue through negotiation or another form of nonbinding alternate dispute resolution mutually acceptable to the Parties.

5. In the event that any one or more of the provisions of this Agreement is found to be invalid, illegal, or unenforceable, by a court of competent jurisdiction, the validity of the remaining provisions shall not in any way be affected or impaired and shall continue in effect until the Agreement is completed.

6. This Agreement shall become effective upon the signature of both Parties.

ATTEST:

Ninfa Cedillo

Ms. Ninfa Cedillo, Secretary to the Park Board Date

**For the Sponsor:**

Craig K Brown

Dr. Craig Brown, Date

Chairman, Galveston Park Board of Trustees
Title

**For the U.S. Army Corp of Engineers**

14 Nov 2012

Colonel Christopher Sallese Date

Galveston District Commander, District Engineer
Title

# Statement of Work for "GALVESTON ISLAND SAND MANAGEMENT PLAN"

## 1.0 Purpose.

The Galveston District (SWG) has been engaged by the Galveston Park Board of Trustees (Park Board) through the Planning Assistance to States program to develop a sand management plan for Galveston Island. This Statement of Work (SOW) is to provide Engineer Research and Development Center (ERDC) support to SWG to help develop the long term management plan for the Park Board managed areas of Galveston Island. Currently sand is placed on Galveston Island beaches at a cost as high as $40/CY, with no clear plan for long term sustainability. To help develop a long term plan to manage sands and beaches, state of the art modeling and analysis techniques will be applied in collaboration with Park Board staff and others to develop and rank science based solutions improving use of the limited sand sources available. Project documents and other project deliverables would be used to seek grant funds to augment existing funding, support construction, and further investigate potential solutions.

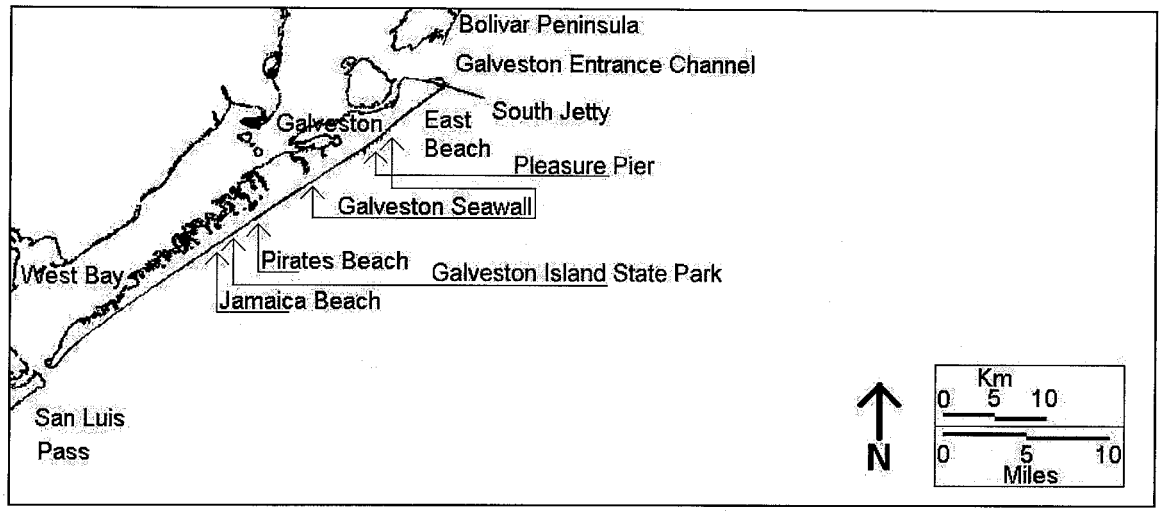


**Figure 1. Map of Galveston Island.**

## 2.0 Background

### 2.1 General Requirement

The Galveston Park Board of Trustees is initiating a planning process that developed from a concept originated with the Beach Maintenance Advisory Committee that will ultimately lead to development of a comprehensive and sustainable long term science based sand management strategy, establishing a holistic approach to the management of sediment on Galveston Island. The Park Board is partnering with SWG and ERDC to implement this planning process. Previously, engineers and researchers at ERDC completed the development of numerical modeling projects specifically tailored for Galveston Island as part of the Sabine Pass to



CKB

Galveston Bay Shoreline Erosion Feasibility Study and as such, have a significant database of information relative to the Galveston coastal zone.

### 2.2 Project History and Proposed Method

This study will build on previous work including the first Sabine to Galveston Shoreline Erosion Feasibility Study, Bureau of Economic Geology studies, previous beach nourishment designs, etc. In addition to previous work conducted, ongoing studies in support of the revived Sabine to Galveston Feasibility Study, Regional Sediment Management (RSM), Monitoring Completed Navigations Projects (MCNP), Coastal and Inlets Research Program (CIRP), and the Dredging, Operations, and Environmental Research (DOER) Program will be leveraged to help complete analyses discussed in this SOW.

SWG maintains the navigation channel and jetties at the Galveston Entrance through annual dredging contracts. Previous SWG/ERDC studies have demonstrated that sediment eroded from Galveston beaches is deposited in the navigation channel, where it is dredged and placed offshore. This study will attempt to identify opportunities to engage RSM principles; reducing dredging requirements and stopping or reducing beach erosion. Both beneficial use of sediments in the channel and methods to reduce transport of beach sediments to the channel will be investigated. A separate proposal has been submitted to the RSM program to help apply work conducted through this study to further reduce SWG dredging requirements.

This study will result in a recommended plan of actions the Park Board should execute in order to better manage sands on Galveston Island to help reduce the long term cost of beach maintenance. To achieve this goal, the following general process will be applied:

1. Identify current and future Park Board needs, plans, and constraints
2. Understand physical processes: update existing models and sediment budgets, develop limited new models, evaluate dredging and other opportunities
3. Develop potential solutions/actions: within the framework developed above, identify solutions/actions that meet the stated needs
4. Understand how potential solutions/actions perform: evaluate modified physical processes, cost, political, and social impacts
5. Rank potential solutions: meet with Park Board and other sponsors to discuss potential solutions
6. Formalize and document the plan

Because sand management on Galveston Island is intricately related to the local economy, proposed solutions will likely be contentious. Therefore, Park Board involvement in development of solutions is critical to long term success. Park Board and other invited local and state agencies will help determine the social, economic, and political impact of selected solutions/actions; ERDC will quantify the physical impacts of each.



CKB

### 2.3 Project POCs

**Galveston Park Board of Trustees POC:**
Name: Kelly de Schaun (Executive Director)
Phone number: 409-797-5000
Email: kdeschaun@galvestonparkboard.org
Mailing address: 601 Tremont St., 1st Floor
Galveston TX 77550

**SWG Primary/Technical POC:**
Name: Robert Van Hook (SWG)
Phone number: 409-766-3024
Email: Robert.C.Vanhook@usace.army.mil
Mailing address: 2000 Fort Point Rd.
Galveston TX 77550

**SWG Financial POC:**
Name: Karyn DelRio
Phone number: 409-766-3155
Email: Karyn.J.DelRio2@usace.army.mil
Mailing address: 2000 Fort Point Rd.
Galveston TX 77550

**ERDC Technical POC:**
Name: Rob Thomas, P.E.
Phone number: 409-766-3179
Email: Robert.C.Thomas-iii@usace.army.mil
Mailing address: 2000 Fort Point Rd.
Galveston TX 77550

**ERDC Financial POC:**
Name: Cheryl Hines
Phone number: 601-634-2500
Email: Cheryl.H.Hines@usace.army.mil
Mailing address: 3909 Halls Ferry Rd.
Vicksburg MS 39180

### 2.4 Project Delivery Team.

Team members that will execute the SOW will be Rob Thomas, Dave King, Ashley Frey, Andy Morang and Robert Van Hook.

### 3.0 Objectives.

This study consists of the following objectives:

1. Identify Park Board needs over the next 50 years
2. Describe physical processes
3. Develop potential solutions/actions
4. Develop a 50 year plan to meet Park Board needs
    a. Ranked solutions



C.K.B.

b. Focused on leveraged opportunities

## 4.0 Scope of Work.

### Task 1: Data Gathering/Site Visit

This task will begin by gathering data, models, and previous work including the GENESIS model and sediment budget developed during earlier phases of the Sabine to Galveston Shoreline Erosion Feasibility Study and recent RSM study. A site visit will be conducted on Galveston Island with Park Board Staff and any other partners identified by the Park Board. After the site visit, a team meeting will be held at Park Board or SWG offices. The meeting is intended to transfer Park Board knowledge regarding current management practices, clarify individual roles and responsibilities, and help guide the outcome of the sand management plan.

### Task 2: Coastal Processes Analysis

Existing models and sediment budgets will be updated to enable the following tasks. The previously developed GENESIS model will be updated to assess shoreline change, longshore transport, and to evaluate structural solutions. The Coastal Modeling System (CMS) model developed for the MCNP project will be refined to help evaluate structures and potential benefits related to navigation channel dredging. The sediment budget, using the Sediment Budget Analysis System (SBAS), developed during the FY12 RSM project will be updated to include more recent shoreline change and dredging information. The sediment budget is an efficient means to visualize sediment transport and will be applied to help identify potential solutions. This task will result in a detailed understanding of coastal processes from the west end of Galveston east to the south jetty. A planned FY13 RSM project will help to extend the analysis to include the Galveston Entrance Channel.

### Task 3: Develop Potential Solutions/Actions

Potential solutions/actions will be developed based on the detailed understanding of coastal processes developed in Task 2. A team meeting will be held in Park Board or SWG offices to present the results of Task 2 and discuss potential solutions. The team meeting will result in a tentatively selected set of options ranked in order of urgency and desirability.

### Task 4: Analyze Selected Solutions/Actions

Selected solutions/actions will be analyzed to quantify performance and inform development of the sand management plan. Numerical models, analytical methods, and sediment budgets developed or updated in Task 2 will be applied to help quantify projected performance of each selected structural or mechanical solution. Some recommendations may be based on management of beach use or maintenance, rather than moving sand or building structures; those types of solutions will be analyzed based on industry standards, common Texas practice, or Park Board expertise.

### Task 5: Develop Sand Management Plan

Results of analysis in Task 4 will be compared to Park Board needs identified in Task 1 to determine which sediment management actions should be pursued in which order. The Sand Management Plan (Plan) will consist of a report documenting Park Board goals and how sand will be managed to meet those goals. Recommended solutions will be documented in



CKB

sufficient detail to enable design. However, structural design, plans, specifications, and costs estimates will not be included in the Plan. Relative costs will be identified for all recommendations, with greater detail provided for the first recommended action. Details of the technical analyses will be included in appendices to the Plan or separate reports. A final team meeting to discuss the Plan will be held in the Park Board or SWG offices.

**Task 6: Management and Oversight**
A Galveston District Representative will assist in the study with management and oversight of all deliverables.

## 5.0 USACE Costs.

Costs are shown in Table 1.

**Table 1. Estimated USACE Costs.**

| | Cost |
|---|---|
| **Task 1: Data Gathering/Site Visit** | **$19,500.00** |
| **Task 2: Coastal Processes Analysis** | **$55,000.00** |
| **Task 3: Develop Potential Solutions/Actions** | **$11,500.00** |
| **Task 4: Analyze Selected Solutions/Actions** | **$53,500.00** |
| **Task 5: Develop Sand Management Plan** | **$35,500.00** |
| **Task 6: Management and Oversight** | **$25,000.00** |
| **Total** | **$200,000.00** |

**Basis**

1. Travel for up to 2 personnel from ERDC to Galveston is included for a total of 3 meetings.
2. Park Board or SWG will host the meetings.
3. No new data collection is included.
4. Schedule is based on integral involvement of Park Board staff as noted in this SOW.

## 6.0 Schedule

- The site visit will be conducted within 90 calendar days of ERDC-CHL receipt of funds.
- The meeting to discuss potential solutions/actions will be held within 180 calendar days of ERDC-CHL receipt of funds.
- The Draft Sediment Management Plan will be provided within 365 calendar days of ERDC-CHL receipt of funds.

**7.0 Deliverables.** Deliverables are described below. All deliverables will be in electronic format only. Presentations will be conducted using PowerPoint.

- Site visit meeting notes in memo format.
- Presentation documenting technical analyses
- Meeting notes in memo format.
- Sand Management Plan in Technical Report format.



CKB

The Sand Management Plan will be delivered in word and PDF in the ERDC Technical Report or other appropriate format.

**8.0 Sponsor's Responsibilities.**

- Identify known past and current sediment management practices.
- Coordinate site visit and project meetings.
- Determine and document acceptability of selected alternatives in a conceptual format. (i.e. which ones will make the most impact on Park Board concerns after the impact to physical processes is known)
- Review draft reports/memos.
- Participate in the project meetings.

**9.0 Progress Reporting.** Monthly progress reports will be made via email. Reports will list work complete, outstanding action items, and upcoming deadlines.

**10.0 Technology/Focus Area.** Navigation, Flood and Coastal Storm Damage Reduction

**11.0 Security.** There are no Security limitations on this work.



ckb