

**WORK ORDER NUMBER 2018007-1**

**SECTOR 7 (PORPOISE POINT) BEACH AND DUNE RESTORATION PROJECT**

**DESIGN AND PERMITTING SERVICES**

This Work Order Number 2018007-1 is entered into as of this \_\_\_\_ day of \_\_\_\_\_, 2018 pursuant to that certain Contract Agreement relating to Engineering and Biological support services for Sector 7 (Porpoise Point) Beach and Dune Renourishment Project entered into as January 9, 2018 ("Agreement"), between Indian River County, a political subdivision of the State of Florida ("COUNTY") and Coastal Technology Corporation ("CONSULTANT").

The COUNTY has selected the Consultant to perform the professional services set forth on Exhibit 1, attached to this Work Order and made part hereof by this reference. The professional services will be performed by the Consultant for the fee schedule set forth in Exhibit 2, attached to this Work Order and made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit 2, attached to this Work Order and made a part hereof by this reference all in accordance with the terms and provisions set forth in the Agreement. Pursuant to paragraph 1.3 of the Agreement, nothing contained in any Work Order shall conflict with the terms of the Agreement and the terms of the Agreement shall be deemed to be incorporated in each individual Work Order as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this Work Order as of the date first written above.

CONSULTANT  
Coastal Technology Corporation

BOARD OF COUNTY COMMISSIONERS  
OF INDIAN RIVER COUNTY

By: Michael Walther  
Michael Walther, P.E., D.CE

By: \_\_\_\_\_  
Peter D. O'Bryan, Chairman

Title: Vice President

Attest: Jeffrey R. Smith, Clerk of Court and  
Comptroller

Date: February 9, 2018

By: \_\_\_\_\_  
(Seal) Deputy Clerk

Approved:

By: \_\_\_\_\_  
Jason E. Brown, County Administrator

Approved as to form and legal sufficiency:

By: \_\_\_\_\_  
William K. DeBaal, Deputy County Attorney

## **Exhibit 1**

### **Introduction:**

The "*Indian River County Beach Preservation Plan Update*" (*Plan*, dated February 2015) recommends re-nourishment of beaches within Sector 7, which extends from Florida Department of Environmental Protection (FDEP) reference monuments R-97 to R-108 (*Project*). Construction and re-nourishment of the *Project* area is anticipated between November 2019 and May 2020 - outside the sea turtle nesting season. To implement the *Project*, this *Work Order* includes:

- pre-application conferences with state and federal regulatory staff,
- an outreach meeting with residents of the *Project* area,
- updating sand sources,
- preliminary and final design of the *Project*, and
- permit applications and processing.

The following describes the specific work under this *Work Order*:

### **Task 1 – Pre-Application Conferences**

CONSULTANT will meet with COUNTY staff to discuss and identify COUNTY goals and objectives for the *Project*. CONSULTANT will arrange, attend, and chair two pre-application conferences via telephone including COUNTY staff with: (1) Florida Department of Environmental Protection (FDEP) regulatory and project management staff, and (2) U.S. Army Corps of Engineers (USACE) regulatory staff – also inviting federal commenting agencies (NMFS, USF&WS, EPA). In general, the purpose of the pre-application conferences shall be to present the expected scope of the *Project* and identify:

- the *Project* is proposed as a re-nourishment maintenance event that is not anticipated to cause additional impacts to hardbottom above what have already been mitigated by the COUNTY,
- any *Project* issues and means to address these issues,
- requirements for obtainment of permits,
- items required to be submitted for upland mine(s) to be used as a sand source,
- upland sand and offshore sand QC/QA requirements, and
- nearshore hardbottom monitoring requirements (pre- & post-construction).

CONSULTANT will prepare a written summary for each pre-application conference.

### **Task 2 – Public Outreach Meeting**

CONSULTANT will arrange, attend, and chair one meeting with COUNTY staff and beach-front property owners – as arranged through the *South Beach Property Owners Association*. The COUNTY will provide a sample Temporary Construction Easement as a meeting handout for general information. In general, the purpose of the meeting shall be to discuss the Sector 7 *Project* area including:

- the general scope of the *Project*,
- public access,
- the Temporary Construction Easement, and
- construction access and the associated construction costs.

CONSULTANT will prepare a written summary of the meeting.

### Task 3 – Prequalification of Upland Sand Sources

FDEP is expected to require identification of details regarding the potential upland sand sources for FDEP assessment prior to FDEP issuance of a permit for *Project* construction. In general, CONSULTANT will assist the COUNTY with a solicitation to prequalify acceptable and potential upland sand sources to be identified in the permit applications.

CONSULTANT will develop minimum "Geotechnical Standards" for beach fill based upon the *Geotechnical Standards & Requirements* included in the COUNTY's initial Sector 3 Project – updated to reflect:

- existing governing statutes (161 F.S.) and rules (62B-33 & 62B-41 F.A.C.),
- the results of the pre-application meeting held with FDEP under Task 1,
- the expected equilibrated profile of sand fill and associated impacts upon hardbottom,
- compatibility with native beach material characteristics based upon: mean grain size, percent fines, sorting, percent carbonate, and Munsell color (wet/dry).

CONSULTANT will develop "Geotechnical Requirements" for documentation of potential upland sand sources – to be provided by potential upland sand suppliers; such requirements are expected to include:

- documentation of compliance with the updated Geotechnical Standards,
- representative samples of the sand fill proposed to be provided, and
- as available:
  - a topographic survey of the upland sand source site;
  - a sufficient number of core borings to define the sub-surface stratigraphy;
  - sediment characteristics for each in-situ sediment layer including:
    - (a) grain size distribution,
    - (b) percent carbonate,
    - (c) percent silt, and
    - (d) Munsell color (wet/dry);
  - sediment characteristics of proposed processed sand material with a description of the processing methods;
  - an assay of the above - signed and sealed by a Professional Geologist or Engineer;
- the quantity of sand available and capacity of the mine to produce suitable sand, and
- additional information as may be requested by FDEP at the pre-application meeting.

The COUNTY will prepare a Draft Solicitation for prospective suppliers to provide sand for nourishment of COUNTY beaches; the Draft Solicitation shall include COUNTY requirements associated with operation of a sand-mine and/or sand-hauling within County limits, including the Geotechnical Standards and Geotechnical Requirements described above.

The COUNTY will provide the Draft Solicitation to CONSULTANT and meet with CONSULTANT to review and finalize the Solicitation; the COUNTY will incorporate revisions as warranted. The COUNTY shall publish the Solicitation, address questions of prospective suppliers, and receive responses from potential suppliers. The COUNTY shall provide copies of all responses to CONSULTANT, who will assess the proposed sand sources, and recommend sand source suppliers to be pre-qualified for use in construction of the *Project*. The COUNTY will notify the prospective sand source suppliers of the Solicitation results. CONSULTANT will prepare a written summary of the above as an Appendix for the Task 5 - Preliminary *Design Document*.

#### **Task 4 – Offshore Sand Source Evaluation and Delineation**

The COUNTY will provide available information (data, surveys, and reports) regarding the COUNTY's offshore borrow area and Sector 7 native beach characteristics. Based on this information, the CONSULTANT will:

- extract existing data summarizing the offshore borrow area and native beach including:
  - core-logs for the offshore borrow area;
  - granulometric data for sediment samples including: median grain size ( $d_{50}$ ), mean grain size, munsell color, percent silt and percent carbonate content, and
  - cumulative frequency plots for each sediment sample;
- delineate a proposed borrow area for the *Project*;
- develop "composite statistics" and "a cumulative frequency curve of the composite" for the proposed borrow area;
- analyze compatibility of the proposed borrow area and native beach sediments; and
- prepare a written summary of the above as an Appendix for the Task 5 *Preliminary Design Document*.

#### **Task 5 – Preliminary Design**

The COUNTY will provide the CONSULTANT with digital copies of the previous work products produced in support of the initial nourishment of the Sector 7 Project including the Biological Opinion, Permit Sketches, Design Document, Geotechnical Analysis, Environmental Assessment. CONSULTANT will:

- Visit the site to photo-document the existing condition of the beach and dune system and Collect and analyze sand samples (at dune, berm, and lower berm) to evaluate the sediment characteristics of the existing beach at eleven (11) reference-monuments in the *Project* area from R-97 to R-107. The sediment testing (up to 33 samples) will identify the mean grain size, percent fines, sorting, percent carbonate, and Munsell color (wet/dry).
- Evaluate in detail two alternatives for the *Project* including: (a) no additional action and (b) re-nourishment to restore the Sector 7 fill template previously constructed in 2007. For each of alternative, CONSULTANT will assess:
  - potential impacts of the *Project* upon existing environmental resources including but not limited to hardbottom, benthic infauna, state/federally protected species, nesting marine turtles, and shorebirds, and
  - the alternative's ability to fulfill the COUNTY's objectives and design criteria.

For Preliminary Design, CONSULTANT will:

- Use the latest beach profile surveys provided by the COUNTY (expected February 2018), to assess the sand-fill volume requirements needed to restore the fill template;
- Provide an opinion of probable construction costs – employing upland sand sources via truck-haul, and alternately using the COUNTY's offshore borrow area;
- Prepare 8½"by 11" permit sketches (Preliminary Design Drawings) to be submitted to FDEP and the USACE in formal permit applications under Task 8;
- Prepare a *Design Document* that summarizes the results of the preliminary design.

CONSULTANT will meet with the COUNTY to review the sketches and *Design Document*.

### **Task 6 – Final Design**

Upon obtainment of permits under Task 9 or upon request by the COUNTY, CONSULTANT will prepare 24" x 36" Drawings and *Technical Specifications* for the *Project* to allow construction by employing upland sand sources via truck-haul, and alternately using the COUNTY's offshore borrow area – expected to restore the fill template previously permitted by the USACE and FDEP. The COUNTY will prepare *Contract Documents* - expected to be used for bidding and award of a construction contract by the COUNTY; the COUNTY will specifically provide the "front-end" documents and incorporate the Drawings and Technical Specifications into the *Contract Documents* – to be reviewed by CONSULTANT. The COUNTY will provide the Contract Documents prepared for the initial nourishment of the Sector 7 Project and the Renourishment of the Sector 3 Project. CONSULTANT will meet with the COUNTY to review the *Contract Documents*.

### **Task 7 – Supporting Documents**

To support the future permit applications to be prepared under Task 8, CONSULTANT will prepare and submit supporting documents including:

- a) Physical Monitoring Plan,
- b) Sediment Quality Control/Quality Assurance Plan – For Upland Sand Mines,
- c) Sediment Quality Control/Quality Assurance Plan – For Offshore Sand Source,
- d) Turbidity Monitoring Plan – with Justification for a mixing zone variance,
- e) Biological Monitoring Plan – with EAI and CSA review, and
- f) Environmental Assessment described below.

CONSULTANT will review the Construction Easement prepared by the COUNTY. Based on the proposed *Project* design and data available via the COUNTY, CONSULTANT will compile a DRAFT Environmental Assessment (EA) to demonstrate the *Project's* compliance with: the National Environmental Policy Act (NEPA) of 1969, Section 7 of the Endangered Species Act (ESA) of 1973 (as amended), and the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act. CONSULTANT, via subcontracts with EAI and CSA, will assess potential impacts to hardbottom, shorebirds, borrow area benthic infauna, beach infauna, and state/federally protected species. The EA will be based upon available literature and existing data.

### **Task 8 – Permit Applications**

CONSULTANT will prepare and submit applications to (a) FDEP for a Joint Coastal Permit, and (b) the USACE for a Standard Permit as is expected to be required by the USACE per current policies – effective October 1, 2017. Unless otherwise prescribed by the COUNTY, CONSULTANT will be identified and serve as the COUNTY's Agent for the permit process. The applications shall include the following information:

- a) each application form item in FDEP Form 73-500 and USACE "ENG FORM 4345";
- b) permit sketches (Preliminary Design Drawings) prepared under Task 5;
- c) Pre-Application conference report developed under Task 1;
- d) *Design Document* from Task 5;
- e) Supporting Documents – from Task 7;
- f) Items to be provided by the COUNTY including:

- previously issued Sector 7 FDEP permit, USACE permit, and title determination from the FDEP DSL;
- evidence that the COUNTY "has sufficient control and interest in the riparian upland property";
- "A legal property description" of the proposed borrow area and fill area within submerged state lands;
- Topographic and bathymetric survey drawings of the proposed *Project* site(s);
- the latest Sector 7 biological and physical monitoring reports; and
- a copy of the COUNTY's Sea Turtle Lighting Ordinance and description of lighting enforcement actions.

CONSULTANT will review the draft applications with the COUNTY and incorporate revisions as appropriate, prior to submitting the applications to FDEP and USACE.

### **TASK 9 – Permit Processing**

CONSULTANT will request and participate in an Application Review Meeting to be scheduled with FDEP about two weeks after FDEP and USACE receipt of the applications. FDEP and CONSULTANT will invite representatives from the FWC, USFWS, NMFS and USACE to the Application Review Meeting to discuss:

- status of FDEP and USACE permits,
- any data and/or information needed to complete the applications, and
- any required mitigation and corresponding monitoring.

CONSULTANT will make informal contact with FDEP and USACE staff to address staff questions regarding the application and *Project*. CONSULTANT will compile, clarify, and provide existing information as may be requested by FDEP and USACE. CONSULTANT will represent the *Project* before regulatory staff toward obtainment of permits and to negotiate acceptable permit conditions, as may be required by the USACE and FDEP, and as acceptable to the COUNTY. It is expected that the FDEP and USACE will each make two requests for additional information (RAI) and that one teleconference meeting with FDEP and separately with USACE will be required. If acceptable to USACE staff, CONSULTANT will:

- provide a draft of the required USACE Public Notice,
- provide a draft of the USACE letter request to initiate formal consultation with NMFS and the USFWS, and
- draft the USACE Finding of No Significant Impact (FONSI).

CONSULTANT will request and obtain a written "Notice to Proceed" from FDEP. CONSULTANT will assist the COUNTY with requesting publication of the "Notice of Intent to Issue". At least thirty (30) days prior to the requested date of the "Notice to Proceed", CONSULTANT will submit the following information for review and approval by FDEP:

- (a) proof of publication,
- (b) final construction Drawings, and
- (c) resumes of shorebird and turbidity monitors.

It is expected that the above (including design details/analysis) will be sufficient to meet the application requirements. The agencies may require additional surveys, studies, and/or analysis which may be provided by CONSULTANT as needed.

# Indian River County Sector 7 Beach and Dune Restoration Project

Work Order Number 2018007-1

## Exhibit 2

### Estimated Fees and Schedule

February 9, 2018

<b>Notice to Proceed</b> <b>February 23, 2018</b>
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Start	Finish	Days	Task Description	Fees			
				CT-GEC	EAI	CSA	Team
23-Feb-18	9-Mar-18	14	1 - Pre-Application Conferences	\$6,530	\$0	\$2,161	\$8,691
9-Mar-18	8-Apr-18	30	2 - Public Outreach Meeting	\$3,640	\$0	\$0	\$3,640
9-Mar-18	8-May-18	60	3 - Prequalification of Upland Sand Sources	\$7,260	\$0	\$0	\$7,260
23-Feb-18	24-Apr-18	60	4 - Offshore Sand Source Evaluation and Delineation	\$18,047	\$0	\$0	\$18,047
23-Feb-18	7-Jun-18	104	5 - Preliminary Design	\$55,481	\$0	\$0	\$55,481
3-Apr-19	3-May-19	30	6 - Final Design	\$28,430	\$0	\$0	\$28,430
23-Feb-18	24-May-18	90	7 - Supporting Documents	\$31,467	\$5,520	\$8,891	\$45,878
7-Jun-18	7-Jul-18	30	8 - Permit Applications	\$21,674	\$0	\$0	\$21,674
7-Jul-18	3-Apr-19	270	9 - Permit Processing	\$58,458	\$3,450	\$5,426	\$67,334
<b>Total:</b>				<b>\$230,987</b>	<b>\$8,970</b>	<b>\$16,478</b>	<b>\$256,435</b>