

**WORK ORDER NUMBER 3**  
**PROJECT NAME: Jungle Trail Shoreline Stabilization**

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This Work Order Number 3 is entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, pursuant to that certain Continuing Contract Agreement for Environmental and Biological Support Services, dated October 10<sup>th</sup>, 2017, (referred to as the "Agreement"), by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida ("COUNTY") and Environmental Science Associates, ("Consultant").

The COUNTY has selected the Consultant to perform the Environmental and Biological Support Services set forth on Exhibit A (Scope of Work), attached to this Work Order and made part hereof by this reference. The Environmental and Biological Support Services will be performed by the Consultant for a Lump Sum fee of \$ 53,228. The Consultant will perform the Environmental and Biological Support Services within the timeframe more particularly set forth in Exhibit A, 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 1.4 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:**

Environmental Science Associates

**BOARD OF COUNTY COMMISSIONERS  
OF INDIAN RIVER COUNTY**

**By:** \_\_\_\_\_

**By:** \_\_\_\_\_

**Title:** Program Manager

**Peter D. O'Bryan, Chairman**

**BCC Approved Date:** \_\_\_\_\_

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

**By:** \_\_\_\_\_

**Deputy Clerk**

**Approved:** \_\_\_\_\_

**Jason E. Brown, County Administrator**

**Approved as to form and legal sufficiency:** \_\_\_\_\_

**William K. DeBaal, Deputy County  
Attorney**



**Scope of Services**  
**Jungle Trail Shoreline Stabilization**  
**for**  
**Indian River County**  
**RFQ 2017053 – Continuing Contract Agreement for Environmental and Biological**  
**Support Services**  
**March 22, 2018**

## **Background**

In 2006, Indian River County repaired approximately 950 feet of shoreline along the right-of-way of Jungle Trail immediately north of Sea Oaks Boulevard. This repaired section has performed well, but 500 linear feet south of Sea Oaks Boulevard is now in need of repair. The shoreline has been impacted by Hurricanes Matthew and Irma and also boat wakes from the nearby Intracoastal Waterway. The County would like to implement a similar stabilization project along the newly impacted Jungle Trail roadway.

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## **SCOPE-OF-WORK**

### **Task 1 - Data Collection & Coordination**

ESA staff will continue to work with the County to acquire historical data including topographic & bathymetric survey data (or LiDAR), water quality data, aerials, oyster and seagrass maps. ESA staff will conduct a submerged aquatic vegetation (SAV) survey and document the species and condition of the seagrass and shoreline vegetation.

ESA proposes to use Morgan & Eklund to collect topographic and limited bathymetric survey data in the immediate project area. M&E will prepare a topographic survey that meets the Minimum Technical Standards as set forth in Chapter 61G17-6, Florida Administrative Code pursuant to Section 472.027 Florida Statutes. M&E will establish a minimum of 2 site benchmarks and reference their location upon the prepared drawing. The horizontal datum (coordinates) will be referenced to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983/90 (NAD 83/90). The vertical datum (elevations) will be referenced to the North American Vertical Datum of 1988 (NAVD 88) and will be tied to published horizontal and vertical control points throughout the project area.

The consultant will obtain topographic and limited bathymetric survey data (to wading depth) at 50 foot transects along the east shoreline of the Indian River south of Sea Oaks Boulevard as depicted on Figure 1 (see attached). The locations and elevations of any significant shoreline features will be collected using Real-Time Kinematic GPS or electronic total station. The existing top and toe elevations as well as grade break features will be delineated as well as locating the mean high water line throughout the project area. The limited bathymetric survey will detail the rock placed at the toe of slope of the living shoreline, and extend 25-50 feet waterward to wading depth. M&E will locate large (>8" dbh) native trees or tree drip-edge for tightly packed tree

groupings.

M&E will prepare and deliver 3 hard copies and 1 electronic output file of the survey for our use. The output of the electronic file is to be prepared for AutoCAD Version 2016 \*.dwg file or newer. A comma delineated ASCII file of the coordinates identifying Point #, Northing, Easting, Elevation, Description should accompany the CAD file. The plan view drawings showing easements, elevations and contours over an aerial background. Cross-sections will be created indicating existing grade and existing structures.

**Deliverables:** Project database files and figures (AutoCAD Civil 3D, xml, GIS, PDF) will be provided to the County

### **Task 2 – Pre-Application Meeting(s)**

While data collection is underway, ESA and County staff will schedule pre-application meetings with the U.S. Army Corps of Engineers (USACE) and the Florida Department of Environmental Protection (FDEP) Central District to discuss the regulatory requirements for permitting and constructing project elements. ESA staff will prepare figures, drawings and/or PowerPoint presentations and schedule conference calls with the regulatory agencies for the pre-application meeting(s). The proposed approach is to discuss completing this work under the Hurricane Irma Emergency Final Order OGC No. 17-0989, which would potentially help to fast-track the project. ESA will also investigate whether the original permits could be modified to include the south reach repairs.

**Deliverables:** Project planning documents and meeting minutes.

### **Task 3 – Shoreline Stabilization Design & Engineering**

Following the data collection efforts, the project design and engineering tasks will be completed. The survey data collected in Task 1 will be used to develop shoreline stabilization design alternatives. ESA will perform engineering calculations in accordance with the Coastal Engineering Manual (CEM)/Shore Protection Manual (SPM) to determine proper rock size, revetment configuration and layer structure. Florida Department of Transportation Standards and County Roadway Specifications will be used to rebuild the roadway shoulder. Volume calculations will be performed to determine quantities for permitting and bidding purposes. A planting plan will be developed, identifying the species, elevations and spacing of proposed vegetation.

A meeting will be held with the County and project stakeholders to discuss the options and select the preferred design alternative. Drawings will be prepared showing the survey data and proposed stabilization in plan and cross section view that indicate existing and proposed grades; existing and proposed structures; and existing structures to be rehabilitated. All drawings will be to scale and details pertaining to shoreline stabilization construction will be provided. Staging areas and access points will be delineated on the drawings. These drawings and calculations will provide the basis for the engineer's cost estimate.

Two (2) draft copies of the plan set (standard 24" x 36" size) and a digital file will be provided for review. This scope is based on one (1) round of comments the County.

#### **Task 4 – Permit Application**

ESA shall investigate whether the original permit can be modified; or if this project would be exempt under the EFO. If these aren't feasible, then ESA will prepare a State-wide Environmental Resource Permit (SWERP) application and submit a draft copy for County to review. The permit application will also include supporting documents including signed and sealed design plans, signed and sealed topographic & bathymetric survey and permit figures. Upon approval, ESA will require signatures from the County as owner and applicant. ESA will submit the permit electronically to the Florida Department of Environmental Protection (FDEP) and the U.S. Army Corps of Engineers (USACE). ESA will provide payment of the permit fees through the electronic system to the FDEP at the time of permit application submittal with reimbursement by the County. ESA has prepared for one round of requests for additional information (RAI) from the regulatory agencies. If additional RAIs are issued, ESA will discuss the level of effort required to respond to the agencies with the County.

#### **Task 5 – Final Design, Specifications & Bidding Documents**

Final Design Plans and Specifications will be prepared including conditions from the FDEP and USACE permits. Final Design Plans will be 24" x 36" in size, include detail drawings and will serve as the basis for the contract drawings in the final package sent to prospective bidders, by the County. Drawings will include the bathymetric and topographic survey, contour charts, cross-sections, project staging areas and the construction access corridor(s). ESA shall prepare technical specifications to support the final plan set including geotextile material performance criteria, rock density and placement requirements.

Submittals will be provided to the County for review and comment. ESA shall revise any changes promptly and shall furnish the final drawings copies suitable for distribution to prospective bidders.

ESA will coordinate with the County with the development of the Contract Documents and make a recommendation of award. Final cost estimates will be provided as well as a bid form, which will include a detailed estimate of the quantities and work to be performed. Components of the Contract Documents that will be provided include the following:

- Construction Plan Set
- Technical Specifications
- Appendix Information (Permits, aerial photography, and any other relevant information).

The County will coordinate the bid advertisement with ESA to determine an appropriate date for a Pre-Bid Meeting. ESA will prepare for and attend the meeting, and answer prospective Contractor inquiries or transcribe Contractor inquiries for subsequent research and respond to all meeting attendees as appropriate.

During the bidding period, ESA shall communicate frequently with County staff regarding receipt of prospective Contractor written inquiries seeking interpretation of the Contract Documents. Should ESA and the County receive such information within the stipulated time in advance of the

advertised bid opening date, we will assist the County with preparation of bid addenda as appropriate by providing technical response to items. Such items include changes that may be warranted to the contract drawings, technical and supplemental general conditions or other construction-related issues as appropriate.

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Budget Estimate

Task 1: Data Collection & Coordination.....	\$ 9,309.00
Task 2: Permit Coordination.....	\$ 5,770.00
Task 3: Shoreline Stabilization Design & Engineering.....	\$ 15,565.00
Task 4: Permit Application.....	\$ 8,960.00
<u>Task 5: Final Design, Specifications &amp; Bidding Documents.....</u>	<u>\$ 13,524.00</u>
TOTAL: .....	\$ 53,228.00

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ASSUMPTIONS:

- If the field work occurs outside seagrass growing season, the SAV reconnaissance survey will be conducted on a presence/absence basis, re-survey may be required by regulatory agencies during the growing season.
- Permit fees will be reimbursed as pass through expenses, cost to be determined during pre-application meetings with the agencies.