

WORK ORDER NUMBER 2018006-4

SECTOR 3 (WABASSO BEACH) BEACH AND DUNE RESTORATION PROJECT

2018 PRE-CONSTRUCTION BIOLOGICAL MONITORING


This Work Order Number 2018006-4 is entered into as of this ____ day of _____, 2018 pursuant to that certain Contract Agreement relating to Engineering and Biological support services for Sector 3 (Wabasso Beach) 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 Aptim Environmental & Infrastructure, Inc. ("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
Aptim Environmental & Infrastructure, Inc.

BOARD OF COUNTY COMMISSIONERS
OF INDIAN RIVER COUNTY

By: 
Thomas P. Pierro, P.E., D.CE

By: _____
Bob Solari, Chairman

Title: Director of Operations

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

Date: 11/26/2018

By: _____
(Seal) Deputy Clerk

Approved: _____
Jason E. Brown, County Administrator

Approved as to form and legal sufficiency: _____
William K. DeBaal, Deputy County Attorney



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November 2, 2018 (revised from October 31, 2018)

Mr. James Gray, Jr.
Indian River County Public Works - Director of Natural Resources
1801 27th St, Building A
Vero Beach, FL 32960

**Subject: Indian River County, FL
Sector 3 – 2018006 – Work Order #4
Pre-Construction Biological Monitoring**

Dear James:

This proposal outlines a scope of work for Aptim Environmental & Infrastructure, Inc. (APTIM) to provide professional services to Indian River County (the County) in support of pre-construction biological monitoring efforts required for the Indian River County Sector 3 Beach and Dune Renourishment Project. The Biological Monitoring Plan developed for the Sector 3 project during permitting will require pre- and post-construction biological monitoring adjacent to the project area to monitor for potential secondary impacts to nearshore natural hardbottom. This task addresses the scope of work to complete the pre-construction biological monitoring, and is based on early coordination with FDEP and the FDEP Standard Operating Procedures (SOP) for Nearshore Monitoring of Beach Nourishment Projects (FDEP, 2016). The pre-construction biological monitoring proposed herein includes hardbottom edge mapping and establishment and monitoring of permanent crossshore transects. If additional or expanded tasks are identified by the regulatory agencies during the permitting process, APTIM will notify the County, and a mutually-agreeable change order or additional Work Order will be executed.

The costs associated with this work order were developed following the provisions of the Professional Services Agreement between Indian River County and APTIM, dated January 9, 2018, to provide engineering and biological support services for the Sector 3 (Wabasso Beach) Beach and Dune Renourishment Project (RFQ#2018006).

Scope of Work

- **Hardbottom Edge Mapping:**

APTIM shall map the position of the nearshore hardbottom edge for the entire Sector 3 project area, including 1000 feet north (updrift) and 3000 feet south (downdrift) of the project area (R-20 to R-55) for a length of approximately 7.3 miles. A buoy with a Differential Global Positioning System (DGPS) antenna linked to a topside laptop computer running HYPACK navigational software will be towed by divers to record the position of the nearshore hardbottom edge. The divers will follow the inshore contour of the most prominent hardbottom-sand interface. The purpose of the survey is to provide a baseline for comparison with post-construction hardbottom edge delineations.

- **Installing and Monitoring Permanent Transects:**

Thirty (30) permanent transects will be established along the length of project influence, which includes 1000 feet north (updrift) and 3000 feet south (downdrift). This includes nineteen (19) biological monitoring transects spaced approximately 2000 feet apart and eleven (11) sediment-only transects located in areas where the ETOF comes

closest to the hardbottom. All transects will run perpendicular to the shoreline and extend from the landward hardbottom edge to a distance of 50 meters seaward. Stainless steel rods will be used to permanently mark the transects to facilitate repeatability for post-construction monitoring.

Following transect establishment, a biological survey will be conducted to document the pre-construction condition of the hardbottom using the following methods:

- Quadrat Assessments: Up to nine (9) 0.5-m² quadrats sampled along each transect to quantify the benthic community.
- Sediment Measurements: Collected using line-intercept and 1-m interval sediment depth measurements.
- Video/Photo Documentation: Collected for the length of each transect.

It is anticipated that up to 17 days of field operations is required to delineate the hardbottom edge, install permanent transects and monitor the transects. The collected pre-construction data will be compiled and incorporated into an interactive GIS database and the quadrat data will be entered into an Access database. Data entry, reduction, archiving, and analysis time is included in the cost estimate to address the data management and reporting requirements for the field operations.

Deliverable

Raw data will be provided to FDEP and the County including a PDF of the scanned datasheets, excel spreadsheets with quadrat data, interval sediment depth measurements and line-intercept data, shapefiles of the hardbottom edge survey, video/photo documentation. Additionally, APTIM will provide a map of the project area and adjacent hardbottom resources with the hardbottom edge delineation and monitoring transects overlaid onto the most recent aerial photography (in digital format). A report is not proposed for the pre-construction monitoring survey. APTIM will also provide information or assistance to County staff, as needed or requested.

Schedule

The pre-construction monitoring event will take place during the summer (May – September) prior to project construction. Raw data from field operations will be submitted to the County and FDEP within 45 days of completion of the survey.

Cost

The lump sum cost for this task is \$150,613.60.

Summary

The total lump sum cost to perform the proposed work described herein for Sector 3 – 2018006 – Work Order #4 is \$150,613.60. The following page includes a summary of the costs and labor hours of each Task. Thank you for the opportunity to serve Indian River County. As always, please do not hesitate to call if you have any questions.

Sincerely,



William Reilly, P.E.
Project Manager | Senior Coastal Engineer
Aptim Environmental & Infrastructure, Inc.

cc: Thomas Pierro, P.E., D.CE, APTIM
Stacy Buck, APTIM
Debbie Neese, APTIM



Approved for use via email
dated 10/30/2018

Authorized Corporate Signature

Thomas P. Pierro, P.E., D.CE

Printed Name

Director of Operations

Title



SPM REVISION: 2018 - REV 18.3
 PROJECT NUMBER: 1602002913

Indian River County, FL
 Sector 3 - 2018006 - Work Order #4
 Pre-Construction Biological Monitoring

Summary of Cost by Task

Task Number	Task Name	Labor	Subcontractors	Equipment	Materials	Mobilization/ Travel	Totals
Task 1	Sector 3 Pre-Con Bio Monitoring	\$ 113,162.00	\$ -	\$ 21,246.60	\$ 4,965.00	\$ 11,240.00	\$ 150,613.60
Totals =		\$ 113,162.00	\$ -	\$ 21,246.60	\$ 4,965.00	\$ 11,240.00	\$ 150,613.60

Submitted By: William Reilly
 Submitted To: Indian River County, FL
 Submission Date: 11/02/18

Summary of Labor Hours and Cost

Labor Title	Labor Bill Rate	Sector 3 Pre-Con Bio Monitoring	
		Task 1	
		Labor Hours	Cost
Principal Engineer/Sr Proj Mngr	\$ 250.00	1	\$ 250.00
Sr Coastal Engineer/Proj Mngr	\$ 165.00	4	\$ 660.00
Senior Marine Biologist	\$ 135.00	246	\$ 33,210.00
Marine Biologist II	\$ 95.00	640	\$ 60,800.00
Senior CAD Operator	\$ 140.00	1	\$ 140.00
GIS Operator	\$ 105.00	8	\$ 840.00
Boat Captain	\$ 80.00	212	\$ 16,960.00
Bookkeeper	\$ 80.00	2	\$ 160.00
Clerical	\$ 71.00	2	\$ 142.00
Equipment	-	-	\$ 21,246.60
Materials	-	-	\$ 4,965.00
Mobilization/Travel	-	-	\$ 11,240.00
TOTAL	-	1,116	\$ 150,613.60

Submitted By: William Reilly
 Submitted To: Indian River County, FL
 Submission Date: 11/02/18