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January 19, 2023

Eric Charest
Natural Resources Manager
Indian River County Public Works Coastal Division
1801 27th Street, Vero Beach, FL 32960

**Subject: Indian River County, FL
Sector 5 – 2018029 – Work Order #11
Year 3 Post-Construction Environmental Monitoring**

Dear Eric:

This proposal outlines a scope of work for Aptim Environmental & Infrastructure, LLC (APTIM), to provide professional services to Indian River County (the County) in support of the Sector 5 Beach and Dune Restoration Project. The scope of work described herein is to support the County with the following:

1. To conduct the Year 3 Post-Construction Nearshore Hardbottom Biological Monitoring

The tasks to perform this work are listed below and described on the following pages. A breakdown of the hours and expenses to develop the cost is attached. The scope and fee were developed following the provisions of the Professional Services Agreement between Indian River County and APTIM, dated April 3, 2018, to provide engineering and biological support services in support of the Sector 5 Beach and Dune Restoration Project (RFQ#2018029).

Task 1: Year 3 Post-Construction Nearshore Hardbottom Biological Monitoring

The Sector 5 Year 3 Post-Construction nearshore hardbottom biological monitoring will be managed and conducted by APTIM with the assistance of APTIM's approved subconsultant, Coastal Protection Engineering LLC (CPE). APTIM and CPE will meet with the County on a weekly basis to provide a status report of the monitoring.

The Biological Monitoring Plan developed for the Sector 5 project during permitting requires post-construction biological monitoring of the hardbottom resources adjacent to the project area to monitor for potential secondary impacts. The scope for this task is based on the FDEP-approved Biological Monitoring Plan (FDEP Permit No. 0363427-001-JC and Mod. No. 0363427-002-JC). The post-construction nearshore hardbottom monitoring shall include:

- 1) Hardbottom edge mapping
- 2) Monitoring permanent transects

Task 1: Scope of Work

- 1) Hardbottom Edge Mapping:

APTIM shall map the position of the nearshore hardbottom edge for the entire Sector 5 project area, including

1000 feet north (updrift) and 2000 feet south (downdrift) of the project area (R-69.5 to R-87) for a length of approximately 3.6 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 border. The purpose of the survey is to provide a comparison for pre- and all subsequent post-construction edge delineations.

2) Monitoring Permanent Transects:

Twenty (20) transects were established along the length of project influence, which includes 1000 feet north (updrift) and 2000 feet south (downdrift). This includes nine (9) biological monitoring transects and eleven (11) sediment only transects. All transects were established perpendicular to the shoreline and extend from the nearshore hardbottom edge to a maximum distance of 50 meters seaward. APTIM will conduct the Year 3 Post-Construction biological survey of the hardbottom using quadrat assessments, sediment measurements and video/photo documentation as detailed in the Biological Monitoring Plan.

Up to nine (9) 0.5-m² quadrats will be sampled along each transect to quantify the benthic community. Sediment data will be collected using line-intercept and 1-m interval sediment depth measurements, and video documentation will also be collected for the length of each transect. It is anticipated that the effort to delineate the hardbottom edge and monitor the transects will take up to nine (9) field days based on previous monitoring events.

The data will be compiled and incorporated into a GIS database and in situ data will be entered into an Access database. Time to complete data entry, reduction, analyses, and report production is included in the cost estimate to address the data management and reporting requirements for those 9 days of field operations.

Task 1: Deliverable

Raw data will be provided to FDEP and the County within 45 days of completion of the survey. This includes 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 and 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 recent, clear aerial photographs (in digital format).

A Year 3 Post-Construction biological monitoring report will be generated for submittal to the County and regulatory agencies.

Task 1: Schedule

The Year 3 Post-Construction monitoring event will take place during summer 2023. Raw data from field operations will be submitted to the County and FDEP within 45 days and the monitoring report will be submitted within 90 days of completion of the survey.

Task 1: Cost

The lump sum cost for this task is \$93,129.12.

Summary

The total lump sum cost to perform the proposed work described herein for Sector 5 – 2018029 – Work Order #11 is \$93,129.12. Please refer to Exhibit 1, attached to the end of this proposal, for a summary of the costs and labor hours of each Task. APTIM will proceed with the tasks upon receipt of a signed work order from Indian River County.

Thank you for the opportunity to serve Indian River County. We look forward to continuing to provide expert professional services to the County. Please do not hesitate to call if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Katy Brown'.

Katy Brown
Lead Marine Biologist
Aptim Environmental & Infrastructure, LLC

cc: Nicole S. Sharp, P.E., APTIM
Stacy Buck, CPE
Debra Neese, APTIM

A handwritten signature in blue ink that reads 'Nicole S. Sharp'.

Authorized Corporate Signature

Nicole S. Sharp, P.E.

Printed Name

Coastal Restoration & Modeling Program Manager
Title

EXHIBIT 1

**Indian River County, Florida
Sector 5 - 2018029 - Work Order #11
Year 3 Post-Construction Nearshore Hardbottom Biological Monitoring**

Summary of Cost by Task

Task Number	Task Name	Labor	Equipment	Materials	Mobilization	Subcontractors	Total
Task 1	Year 3 Post-Construction Nearshore Hardbottom Biological Monitoring	\$ 47,372.00	\$ 15,382.30	\$ 1,425.00	\$ 3,508.00	\$ 25,441.82	\$ 93,129.12
Totals =		\$ 47,372.00	\$ 15,382.30	\$ 1,425.00	\$ 3,508.00	\$ 25,441.82	\$ 93,129.12

**Indian River County, Florida
Sector 5 - 2018029 - Work Order #11
Year 3 Post-Construction Nearshore Hardbottom Biological Monitoring**

Summary of Labor Hours and Cost

Labor Title	Labor Bill Rate	Year 3 Post-Construction Nearshore Hardbottom Biological 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
Sr. Coastal Engineer	\$ 165.00	18	\$ 2,970.00
Senior Marine Biologist	\$ 135.00	-	\$ -
Marine Biologist II	\$ 95.00	350	\$ 33,250.00
Senior CAD Operator	\$ 140.00	1	\$ 140.00
GIS Operator	\$ 105.00	8	\$ 840.00
Boat Captain	\$ 80.00	112	\$ 8,960.00
Bookkeeper	\$ 80.00	2	\$ 160.00
Clerical	\$ 71.00	2	\$ 142.00
Subcontractors	-	-	\$ 25,441.82
Equipment	-	-	\$ 15,382.30
Materials	-	-	\$ 1,425.00
Mobilization/Other ODCs	-	-	\$ 3,508.00
TOTAL	-	498	\$ 93,129.12