



## EXHIBIT 1

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Quintin Bergman, M.S.  
Sea Turtle Environmental Specialist  
Indian River County Public Works Coastal Division  
1801 27th Street, Vero Beach, FL 32960

**Subject: Indian River County, FL  
Sector 3 – 2018006 – Work Order #9  
2021 Environmental Monitoring**

Dear Quintin:

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 3 Beach and Dune Renourishment Project. The scope of work described herein is to support the County with the following items:

1. To conduct the 2021 Nearshore Hardbottom Biological Monitoring
2. To conduct the 2021 Post-Construction Sea Turtle 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 January 9, 2018, to provide engineering and biological support services for the Sector 3 (Wabasso Beach) Beach and Dune Renourishment Project (RFQ#2018006).

### **1. Task 1: Pre-Construction Nearshore Hardbottom Biological Monitoring**

The Sector 3 2021 nearshore hardbottom biological monitoring will be managed and conducted by APTIM, and conducted by APTIM's approved subconsultant, Coastal Engineering Protection LLC (CPE).

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. The scope for this task is based on the FDEP-approved Biological Monitoring Plan (0285993-009-JC). The nearshore hardbottom monitoring shall include:

- Hardbottom edge mapping
- 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 3 project area, including 1000 feet north (updrift) and 3000 feet south (downdrift) of the project area (R-19 to R-58) 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.

## 2) Installing and Monitoring Permanent Transects:

Thirty (38) permanent transects will be established along the length of project influence, which includes 1000 feet north (updrift) and 3000 feet south (downdrift). This includes twenty-four (24) biological monitoring transects and fourteen (14) sediment-only transects. 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:

- 1) Quadrat Assessments: Up to nine (9) 0.5-m<sup>2</sup> quadrats sampled along each transect to quantify the benthic community.
- 2) Sediment Measurements: Collected using line-intercept and 1-m interval sediment depth measurements.
- 3) Video/Photo Documentation: Collected for the length of each transect.

It is anticipated that up to 20 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.

### Task 1: 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.

### Task 1: 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.

### Task 1: Cost

The lump sum cost for this task is \$183,539.43.

## **2. Task 2: Immediate Post-Construction Sea Turtle and Shorebird Monitoring**

The Sector 3 immediate post-construction sea turtle and shorebird monitoring will be managed and coordinated by APTIM, and conducted by APTIM's approved subconsultant, Ecological Associates, Inc. (EAI).

### Task 2: Scope of Work

APTIM will oversee the scope of work proposed by EAI and provide the necessary administrative coordination to the County. The 2021 sea turtle monitoring effort along the approximate 3.7 mile shoreline within the Sector 3 Project Area addresses permit-required post-construction sea turtle and shorebird monitoring. The monitoring will comply with all applicable conditions set forth in the regulatory permits and related authorizations for the project. EAI has provided the enclosed proposal and cost breakdown for sea turtle monitoring tasks, which are summarized as follows:

1. Mobilization
2. Project Management
3. Daily Sea Turtle Monitoring and Data Management
4. Nest Marking and Monitoring
5. Nesting Shorebird Monitoring
6. Post-Construction Compaction Monitoring and Escarpment Surveys
7. Lighting Surveys
8. Reporting

### Task 2: Deliverable

EAI will submit a nesting season summary report within 90 days of completion of all monitoring activities. Additionally, an Excel spreadsheet summarizing all nesting activity and reproductive success will be prepared and submitted electronically to JCP Compliance and FWC.

### Task 2: Schedule

The sea turtle monitoring will commence in February 2021.

### Task 2: Cost

The lump sum cost for this task is \$135,279.08.

### Summary

The total lump sum cost to perform the proposed work described herein for Sector 3 – 2018006 – Work Order #9 is \$318,818.51. 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,

*Katy Brown*

Katy Brown  
Lead Marine Biologist  
Aptim Environmental & Infrastructure, LLC

cc: Nicole S. Sharp, P.E., APTIM  
Thomas Pierro, P.E., D.CE, CPE  
Stacy Buck, CPE  
Debra Neese, APTIM

A handwritten signature in blue ink, appearing to read 'Beau Suthard', written over a horizontal line.

Authorized Corporate Signature

Beau Suthard, P.G.

Printed Name

Program Director

Title

**Indian River County, Florida**  
**Sector 3 - 2018006 - Work Order #9**  
**2021 Nearshore Hardbottom Biological Monitoring and Sea Turtle Monitoring**

**Summary of Cost by Task**

Task Number	Task Name	Labor	Equipment	Materials	Mobilization	Subcontractors	Total
Task 1	Pre-Construction Nearshore Hardbottom Biological Monitoring	\$ 96,512.00	\$36,304.20	\$ 4,665.00	\$ 10,996.00	\$ 35,062.23	\$ 183,539.43
Task 2	Immediate Post-Construction Sea Turtle & Shorebird Monitoring	\$ 2,280.00				\$ 132,999.08	\$ 135,279.08
<b>Totals =</b>		<b>\$ 98,792.00</b>	<b>\$36,304.20</b>	<b>\$ 4,665.00</b>	<b>\$ 10,996.00</b>	<b>\$ 168,061.31</b>	<b>\$ 318,818.51</b>

**Indian River County, Florida**  
**Sector 3 - 2018006 - Work Order #9**  
**2021 Nearshore Hardbottom Biological Monitoring and Sea Turtle Monitoring**

**Summary of Labor Hours and Cost**

Labor Title	Labor Bill Rate	Pre-Con Nearshore Hardbottom Biological Monitoring		I-Post Sea Turtle & Shorebird Monitoring		Totals	
		Task 1		Task 2		Labor Hours	Cost
		Labor Hours	Cost	Labor Hours	Cost		
Principal Engineer/Sr Proj Mngr	\$ 250.00	1	\$ 250.00		\$ -	1	\$ 250.00
Sr Coastal Engineer/Proj Mngr	\$ 165.00	4	\$ 660.00	4	\$ 660.00	8	\$ 1,320.00
Coastal Engineer I	\$ 105.00		\$ -		\$ -	-	\$ -
Senior Marine Biologist	\$ 135.00	-	\$ -	12	\$ 1,620.00	12	\$ 1,620.00
Marine Biologist II	\$ 95.00	784	\$ 74,480.00		\$ -	784	\$ 74,480.00
Senior CAD Operator	\$ 140.00	1	\$ 140.00		\$ -	1	\$ 140.00
GIS Operator	\$ 105.00	8	\$ 840.00		\$ -	8	\$ 840.00
Boat Captain	\$ 80.00	248	\$ 19,840.00		\$ -	248	\$ 19,840.00
Bookkeeper	\$ 80.00	2	\$ 160.00		\$ -	2	\$ 160.00
Clerical	\$ 71.00	2	\$ 142.00		\$ -	2	\$ 142.00
Subcontractors	-	-	\$ 35,062.23	-	\$ 132,999.08	-	\$ 168,061.31
Equipment	-	-	\$ 36,304.20	-	\$ -	-	\$ 36,304.20
Materials	-	-	\$ 4,665.00	-	\$ -	-	\$ 4,665.00
Mobilization/Other ODCs	-	-	\$ 10,996.00	-	\$ -	-	\$ 10,996.00
<b>TOTAL</b>	-	<b>1,050</b>	<b>\$ 183,539.43</b>	<b>16</b>	<b>\$ 135,279.08</b>	<b>1,066</b>	<b>\$ 318,818.51</b>