

**WORK ORDER NUMBER 2023051-6**

**SECTOR 4 HURRICANES IAN AND NICOLE  
POST-CONSTRUCTION MONITORING YEAR 1**

This Work Order Number 2023051-6 is entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 2026 pursuant to that certain Engineering and Biological Support Services Contract for Sector 4 Agreement for Professional Services entered into as of August 29, 2023 (“Agreement”), by and 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 1. The CONSULTANT will perform the professional services within the timeframe more particularly set forth in Exhibit 1, 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: \_\_\_\_\_

By: \_\_\_\_\_  
Deryl Loar, Chairman

Title: \_\_\_\_\_

Attest: Ryan L. Butler, Clerk of Court and  
Comptroller

Date: \_\_\_\_\_

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

Approved:

By: \_\_\_\_\_  
John Titkanich, Jr., County Administrator

Approved as to form and legal sufficiency:

By: \_\_\_\_\_  
Jennifer W. Shuler, County Attorney

**Exhibit 1 - Scope of Work**  
**Sector 4 Dune Restoration Project**  
**Post-Construction Monitoring – Year 1**

**Introduction:** In March 2025, Indian River County (COUNTY) completed the Sector 4 Dune Restoration (Project) consistent with the “*Indian River County Beach Preservation Plan Update*”, adopted by the COUNTY in June 2020. The Project limits extend from Florida Department of Environmental Protection (FDEP) Reference Monument R-55 (about ¾ mile south of the Turtle Trail Beach Access) to just south of R-70 (near Mariner Beach Lane north of the County’s Tracking Station Beachfront Park). The FDEP and U.S. Army Corps of Engineers (USACE) permits include conditions that require the COUNTY (as PERMITTEE) to perform annual monitoring of the project area starting the year following construction – as identified in the U.S. Fish and Wildlife Service (USFWS) “Revised Statewide Programmatic Biological Opinion” (SPBO) dated March 13, 2015. This Work Order is to provide for Year 1 post-construction physical and biological monitoring services in support of the Project as required by the FDEP and USACE permits. The work under this Work Order is proposed to be performed by Coastal Technology Corporation (COASTAL TECH) with environmental support services by Ecological Associates, Inc. (EAI) - as described below:

**Task 1 – Survey & Report:** As required by FDEP Specific Condition 28 and the FDEP approved Physical Monitoring Plan dated October 12, 2023:

- The COUNTY will provide the Post-Construction beach profile survey following the completion of the construction of the Project and the 2026 summer survey data.
- COASTAL TECH will:
  - review the 2025 Post-Construction and 2026 summer beach profile survey for compliance with the Physical Monitoring Plan;
  - conduct an analysis of the following:
    - patterns, trends, or changes between annual surveys and for cumulative changes over time,
    - the erosion and accretion volumetric change rates and shoreline changes between the pre- and post-construction survey, with assessment of the volume of fill remaining within the Project area, and
    - adjustment of the beach fill via alongshore and cross- shore fill movement – including outside of the Project fill area.
  - prepare an “Engineering Report” summarizing results of the analysis, and
  - submit the Engineering Report to FDEP upon COUNTY review and approval.

**Task 2 – Sea Turtle Monitoring:** Per FDEP Specific Conditions 14 and 16 and SPBO “Measure” A11 and A13, COASTAL TECH will subcontract with EAI to perform Task 3 monitoring for potential impacts to nesting sea turtles. COASTAL TECH will oversee the scope of work proposed by EAI and provide the necessary administrative coordination to the COUNTY. To monitor nesting sea turtles, beginning on March 1, 2026, EAI will:

- conduct daily morning sea turtle nesting surveys (either on foot or using ATVs) of the Project Area and a Reference Area (a nearby beach with similar characteristics that is outside of the influence of the Project) - within 30 minutes of sunrise through November 11, 2026, or until 15 days without a crawl in the Project or Reference Areas, whichever is earlier;
- request a waiver from the USFWS and FWC to discontinue daily sea turtle monitoring if there is a fifteen-day period where no crawls are documented in the Project or Reference Areas; if USFWS and FWC permission is granted, EAI will then perform surveys three days per week to monitor marked nests;
- interpret emergences (turtle crawls) apparent from the previous night to determine which species of turtle came ashore and whether it nested;
- denote for each apparent crawl:
  - the approximate geographic location (sub-meter GPS coordinates),
  - as being above or below the previous high tide line,
  - whether nesting or and non-nesting emergences (false crawls) - with each false crawl assigned to one of the following categories denoting the stage at which the nesting attempt was abandoned: no digging, abandoned body pit, or abandoned egg cavity, and
  - any obstacles encountered by turtles during their crawls;
- document (using FWC’s electronic Marine Turtle Hatchling Disorientation Incident Report Form) any observed evidence of hatchling misorientation or disorientation from either marked or unmarked nests – including, as based on track evaluations, an estimate of the number of hatchlings disoriented and observable light sources potentially responsible for the disorientation identified – with documentation forwarded by email to COASTAL TECH and the COUNTY so appropriate remedial action may be taken by the COUNTY;
- respond to the stranding of sick, injured, and dead sea turtles within the survey area by:
  - examining the animals, and if alive, transporting the animals to state approved care facilities, and
  - completing and submitting a standard Sea Turtle Stranding and Salvage data form to FWC in accordance with established FWC guidelines;
- mark (using a series of stakes and surveyor’s tape) a representative sample of nests in the Project and Reference Areas for determination of nest fate and reproductive success (not to exceed 750 nests total) via:
  - monitoring throughout the nest incubation period to determine nest fate (e.g., hatched, washed out, depredated, vandalized, etc.). After an appropriate incubation period, and
  - excavation of the nest in accordance with the FWC Handbook, to determine reproductive success as hatching and emerging.
- prepare a Nesting Season Summary Report summarizing methods, numbers of sea turtle emergences by species, nest fates of all marked nests, and reproductive success of evaluated nests, and an assessment of project performance on sea turtle nesting and reproductive success, including interpretive analyses and graphic representations – with an Excel spreadsheet summarizing all nesting activity and reproductive success within the Project and Reference Areas; and

- submit the Nesting Season Summary Report to FWC – following COASTAL TECH and COUNTY acceptance of the Report.

To monitor potential escarpments that may affect nesting sea turtles - beginning within 30 days prior to March 1, 2026 through October 31, 2026 – EAI will perform scarp surveys in accordance with permit requirements on a weekly basis within the Project Area. EAI will:

- document for each observed scarp:
  - the location (sub-meter GPS coordinates and relative to R-monuments), of both the northern and southern terminus of each observed scarp,
  - average scarp height – assigned to one of three categories (0 to 2 feet, 2 to 4 feet, and 4 feet or higher),
- prepare a tabular and/or graphic format report summarizing the location, approximate length, height category, maximum height, and percentage of beach with scarps
- notify COASTAL TECH and the COUNTY of any persistent scarps based on permit definition within the Project Area that may interfere with sea turtle nesting.

COASTAL TECH in coordination with the COUNTY will notify FWC of the presence of scarps as required by the permits. The COUNTY will provide for any FWC required remediation measures.

### **General**

The total lump sum cost to perform the proposed work described herein for Work Order 2023051-6 is \$264,179.01. Please refer to the Exhibit 1, attached to this proposal, for a summary of the costs and labor hours of each Task. COASTAL TECH will proceed with the tasks upon receipt of a signed work order from Indian River COUNTY (unless stated otherwise in the schedule). It is noted that some aspects of this Work Order are dependent upon outside party performance and are outside the control of COASTAL TECH and the COUNTY. As such, schedule included herein is provided as an estimate. We will confer with the COUNTY in the event that deviations from the scope, schedule, or budget arise due to unforeseen issues or circumstances.

**Indian River County**  
**Sector 4 Dune Restoration Project**  
**Post-Construction Monitoring Services - Year 1**  
**Exhibit 1 - Estimated Fees and Schedule**

Notice to Proceed  
 March 1, 2026

January 26, 2026

COASTAL TECH					
Principal Engineer	Senior Coast. Engineer	Engineer II	Perm. Spec. / CADD	Total Fees	Fees
\$240	\$220	\$125	\$105		

Start	Finish	Days	Task Description	Principal Engineer		Senior Coast. Engineer		Engineer II		Perm. Spec. / CADD		Total Fees		Direct Costs		5% Subconsultant Management Fee	Line Total	Subtask Total	Task Total
				Amount	Description	Amount	Description	Amount	Description	Amount	Description	Amount	Description	Amount	Description				
			<b>Post-Construction Monitoring Services - Year 1</b>																<b>\$264,179.01</b>
1-Jul-26	29-Sep-26	90	<b>Task 1 - Survey &amp; Report</b>																
			Review 2026 Beach Profile Survey Provided by the County			1		2		\$430							\$430.00		
			Conduct Analysis of Post-Construction Beach Conditions	2		10		20		80							\$13,580.00		
			Prepare Engineering Report	8		10		60		\$11,620							\$11,620.00		
1-Mar-26	31-Oct-26	244	<b>Task 2 - Sea Turtle Monitoring</b>																
			Daily Post-Construction Nesting Surveys (March 1 to October 31)			4		8		\$1,880	\$137,527.02	EAI	\$6,876.35			\$146,283.37			
			Nest Marking, Hatching Success, and Interpretation (up to 750 marked nests)			4		8		\$1,880	\$71,017.50	EAI	\$3,550.88			\$76,448.38			
			Weekly Escarpment Monitoring and Documentation (up to 35 weeks)			4		8		\$1,880	\$5,115.25	EAI	\$255.76			\$7,251.01			
			Nesting Summary Report			2		6		\$1,190	\$7,025.00	EAI	\$351.25			\$8,566.25			
<b>Total Hours:</b>				10	35	110	82	237											
<b>Total Fees:</b>				\$2,400	\$7,700	\$13,750	\$8,610	\$32,460	\$220,684.77				\$11,034.24	\$264,179.01	\$264,179.01	\$264,179.01			\$264,179.01



Mr. Tem Fontaine  
Vice President  
Coastal Tech Corporation  
3625 20<sup>th</sup> Street  
Vero beach, Florida 32960

January 27, 2026

Dear Mr. Fontaine:

Ecological Associates, Inc. (EAI) is pleased to submit its revised Scope of Work and Cost Proposal for providing professional environmental services in support of Indian River County's Sector 4 Dune Restoration Project. This proposal addresses post-construction sea turtle permit-compliance monitoring along approximately 2.9 miles of beach during the 2026 nesting season, along with a suitable reference area, as described in the Scope of Work presented below. This monitoring will comply with all applicable conditions set forth in the regulatory permits and related authorizations issued for the project.

## **SCOPE OF WORK**

This scope of work was developed based on conditions and requirements set forth in standard regulatory permits and the following documents:

- Florida Department of Environmental Protection (FDEP) Joint Coastal Permit (JCP) No. 0441083-001-JC
- U.S. Fish and Wildlife Service (USFWS) Revised Statewide Programmatic Biological Opinion (BO) dated March 13, 2015

### **Task 1: Mobilization**

All equipment, staff, and schedules will be prepared prior to project commencement. The Project Area extends approximately 2.9 miles from FDEP Range Monument R-55 to R-70. The Reference Area, approximately 3.0 miles south of the Project and outside of the influence of the project, lies between R-86 and R-96. Survey zone boundaries, consistent with those established by Indian River County under its Habitat Conservation Plan, will be marked, and project-specific data sheets and a database will be created.

## **Task 2: Project Management**

An EAI project manager will oversee all fieldwork and data management operations and consult Coastal Tech on permit requirements, as necessary. A project schedule, as well as field survey schedules, will be created and maintained throughout the life of the project. All equipment and supplies necessary to successfully implement this Scope of Work are available.

## **Task 3: Daily Sea Turtle Monitoring and Data Management (FDEP Specific Condition 11)**

Beginning on March 1, 2026, EAI will conduct daily morning sea turtle nesting surveys of the Project and Reference Areas. Surveys will continue through November 11, 2026, or until 15 days without a crawl in the Project Area, whichever is earlier. If there is a fifteen-day period where no crawls are documented in the Project Area, EAI will request a waiver from the USFWS and FWC to discontinue daily monitoring. If permission is granted, EAI will then perform surveys three days per week to monitor marked nests.

Surveys will commence within 30 minutes of sunrise. Monitoring will be performed by EAI staff either on foot or using ATVs. All emergences (turtle crawls) apparent from the previous night will be interpreted to determine which species of turtle came ashore and whether it nested. Crawls will be denoted as being above or below the previous high tide line. The approximate geographic location of each crawl will be determined by GPS. In addition to segregating crawls into nesting and non-nesting emergences (false crawls), each false crawl will be assigned to one of the following categories denoting the stage at which the nesting attempt was abandoned: no digging, abandoned body pit, or abandoned egg cavity. Any obstacles encountered by turtles during their crawls will be documented.

**Disorientation Reporting.** During the course of daily monitoring, any evidence of hatchling misorientation or disorientation from either marked or unmarked nests will be documented using FWC's electronic Marine Turtle Hatchling Disorientation Incident Report Form. Based on track evaluations, an estimate of the number of hatchlings disoriented will be recorded and light sources potentially responsible for the disorientation identified. Information concerning each incident will be forwarded by email to Indian River County on a weekly basis so appropriate remedial action may be taken.

**Stranding and Salvage.** A requirement of FWC sea turtle permit holders conducting nesting surveys is to respond to the stranding of sick, injured, and dead sea turtles within their survey area. These animals are examined, and if alive, transported to state-approved care facilities. A standard Sea Turtle Stranding and Salvage data form will be completed and submitted for each stranded animal encountered by EAI. This information will be transmitted to FWC in accordance with established guidelines.

**State and Federal Authorizations.** All sea turtle monitoring and related activities will be performed under FWC Marine Turtle Permit #261 issued by FWC to EAI Director of Operations, Niki Desjardin. All persons engaged in monitoring performed by EAI for the Sector 4 Dune Restoration Project will be listed on the permit.

All data will be subject to rigorous QA/QC protocols and stored in EAI's project-specific database. Monthly summary reports will be furnished to Coastal Tech. These reports will tabulate the dates and times of monitoring, names of monitoring personnel, numbers of sea turtle emergences by species, and numbers of nests marked and evaluated for reproductive success, as applicable. Monthly reports will be submitted to Coastal Tech by the last day of the month following delivery of services (e.g., March report due no later than April 30), or as otherwise mutually agreed upon.

#### **Task 4: Nest Marking and Monitoring (FDEP Specific Condition 11)**

A representative sample of nests in the Project and Reference Areas will be marked for determination of nest fate and reproductive success (not to exceed 750 nests total). Nests will be marked using a series of stakes and surveyor's tape. These nests will be monitored throughout their incubation period to determine nest fate (e.g., hatched, washed out, depredated, vandalized, etc.). After an appropriate incubation period, and in accordance with the FWC Handbook, nests will be excavated to determine reproductive success. Two measures of reproductive success will be calculated: hatching success (the percentage of eggs in the nest that hatch) and emerging success (the percentage of eggs in the nest that produce hatchlings which successfully escape from the nest).

#### **Task 5: Post-Construction Escarpment Surveys (FDEP Specific Condition 14)**

Beginning on March 1, 2026, escarpment (scarp) surveys will be conducted on a weekly basis within the Sector 4 Project Area through October 31, 2026. In accordance with FWC protocol, scarps are functionally defined as an abrupt change in beach slope (greater than 45°) at least 18 inches in height that persists for a distance of 100 feet or more. The location of both the northern and southern terminus of each scarp will be recorded by GPS and average scarp height assigned to one of three categories (0 to 2 feet, 2 to 4 feet, and 4 feet or higher). Additionally, the maximum height of each scarp will be measured. The location (relative to R-monuments), approximate length, height category, maximum height, and percentage of beach scarped will be presented in tabular and/or graphic format for reporting purposes.

EAI will notify Coastal Tech of any persistent scarps within the Project Area that may interfere with sea turtle nesting. Coastal Tech shall be responsible for notifying FDEP of the presence of those scarps and for coordinating any remediation measures, if required. *Any services required of EAI during scarp consultation and leveling will be charged separately on a time and materials basis.*

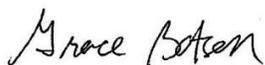
**Tasks 6a-6b: Reporting (FDEP Specific Condition 16)**

1. **Nesting Season Summary:** A report summarizing methods, numbers of sea turtle emergences by species, nest fates of all marked nests, and reproductive success of evaluated nests, and an assessment of project performance on sea turtle nesting and reproductive success, including interpretive analyses and graphic representations, will be prepared and submitted to Coastal Tech within 90 days of the completion of all monitoring activities.
2. **Summary Spreadsheet of Sea Turtle Nesting Activity:** At the end of the 2026 nesting season, a permit-required Excel spreadsheet summarizing all nesting activity and reproductive success within the Project and Reference Areas will be prepared and submitted electronically to Coastal Tech /Indian River County, JCP Compliance, and FWC.

EAI will submit its monthly billings for the services described above to Coastal Tech in accordance with the fees and schedules set forth in Attachment A. No deposit or advance mobilization fees are required.

Ecological Associates, Inc. appreciates the opportunity to be of continued service to Coastal Tech. Should you have any questions regarding the enclosed Scope of Work or associated costs, I can be reached at (772) 334-3729.

Sincerely,



Grace Botson  
Senior Project Manager

c: Niki Desjardin/Director of Operations  
Joseph Scarola/Senior Scientist

ATTACHMENT A  
ECOLOGICAL ASSOCIATES, INC.  
3552 NE CANDICE AVE.  
JENSEN BEACH, FL 34957

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**REVISED COST PROPOSAL – January 27, 2026**

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**PROJECT NAME:** Sector 4 Post-Construction Sea Turtle – 2026  
(Project No. 26-5572)

**CLIENT:** Mr. Tem Fontaine  
Vice President  
Coastal Tech Corporation  
3625 20<sup>th</sup> Street  
Vero beach, Florida 32960  
Phone: (772) 562-8580      Email: [tfontaine@coastaltechcorp.com](mailto:tfontaine@coastaltechcorp.com)

**PROJECT DESCRIPTION:** Post-construction sea turtle and ancillary professional services in support of the Sector 4 Dune Restoration Project, as described in EAI's Scope of Work dated January 27, 2026.

**PROJECT DURATION:** February 2026 – March 2027.

**PROJECT COSTS:** All services will be provided at the fixed rates specified below (*except where noted*), inclusive of all time and materials required to perform the Scope of Work. In some cases, costs are estimates based on best available information.

<b>Task</b>	<b>Description</b>	<b>Cost</b>
1	Mobilization	\$2,440.00
2	Project management	\$10,530.00
3	Daily sea turtle monitoring and data management ( <i>Daily rate; estimate 271 days at \$459.62 per day</i> )	\$124,557.02
4	Nest marking and monitoring and determination of nest fate and reproductive success ( <i>Per nest rate; not to exceed 750 nests at \$94.69 per nest</i> )	\$71,017.50
5	Weekly escarpment surveys and reporting ( <i>Weekly rate; not to exceed 35 weeks at \$146.15 per week</i> )	\$5,115.25
<b>6a</b>	Final interpretive report	\$6,460.00
<b>6b</b>	FWC nourishment reporting Excel spreadsheet	\$565.00
<b>TOTAL (not to exceed)</b>		<b><u>\$220,684.77</u></b>

**BILLING:** Charges for services will be billed at the end of each quarter during which services are provided. A description of all services rendered will accompany each billing.

**PRICES FIRM:** The prices quoted above are offered for a period of 30 days. Once an agreement is entered into with EAI for the services described herein, costs will remain fixed through project completion.

**TERMS:** 30 days from receipt of invoice.

**EARLY TERMINATION:** EAI's services may be terminated at any time by providing seven (7) days written notice. There is no penalty for early termination. Only charges accrued to the effective date of termination will be assessed.

**LATE PAYMENT:** Invoices shall be considered **PAST DUE** if payment is not received by EAI within 30 calendar days of the invoice date. Any unpaid balances for other than disputed charges will draw interest at the rate of one and one-half percent (1½ %) per month commencing 30 days after the date of invoice.

**DISPUTED CHARGES:** EAI shall be notified in writing of any disputed amount within 10 calendar days after receipt of invoice; otherwise, all invoice charges will be considered acceptable and correct.

**ENTITLEMENT:** EAI is entitled to all reasonable costs, including attorney's fees, associated with the collection of past due charges.