

WORK ORDER/PURCHASE ORDER

Contract 18-7432-CZ "Professional Services Library – Coastal Engineering Category"

Contract Expiration Date: March 9, 2025

This Work Order is for professional Engineering Services for work known as:

Project Name: Collier County Beaches and Inlets Annual Monitoring for 2025

Project No: 90536.1

The work is specified in the proposal dated September 6, which is attached hereto and made a part of this Work Order. In accordance with Terms and Conditions of the Agreement referenced above, this Work Order/Purchase Order is assigned to: Humiston & Moore Engineers, P.A.

Scope of Work: As detailed in the attached proposal and the following:

- * Task 1a Collier Beach Data Collection
- * Task 1b Collier Beach Initial & Final Monitoring Report
- * Task 2a Wiggins Pass Data Collection
- * Task 2b Wiggins Pass Initial & Final Monitoring Report
- * Task 3a Doctors Pass Data Collection
- * Task 3b Doctors Pass Initial & Final Monitoring Report
- * Task 4a South Marco Beach Data Collection
- * Task 4b South Marco Beach Initial & Final Report
- * Task 5 2025 Aerial Image Book

Schedule of Work: Complete work within 270 days from the date of the Notice to Proceed which is accompanying this Work Order. The Consultant agrees that any Work Order that extends beyond the expiration date of Agreement # 18-7432-CZ will survive and remain subject to the terms and conditions of that Agreement until the completion or termination of this Work Order.

Compensation: In accordance with the Agreement referenced above, the County will compensate the Firm in accordance with following method(s): Negotiated Lump Sum (NLS) Lump Sum Plus Reimbursable Costs (LS+RC) Time & Material (T&M) (established hourly rate – Schedule A) Cost Plus Fixed Fee (CPFF), as provided in the attached proposal.

Task 1a	\$ 37,960.00 (LS)
Task 1b	\$ 26,528.00 (T&M)
Task 2a	\$ 32,515.00 (LS)
Task 2b	\$ 12,688.00 (T&M)
Task 3a	\$ 12,850.00 (LS)
Task 3b	\$ 9,318.00 (T&M)
Task 4a	\$ 15,530.00 (LS)
Task 4b	\$ 7,605.00 (T&M)
Task 5	\$ 3,603.00 (T&M)



TOTAL FEE \$ 158,597.00

PREPARED BY: MillerAndrew Digitally signed by MillerAndrew
Date: 2024.09.25 14:36:43
-04'00' _____ Date _____
 Andrew Miller, Manager


APPROVED BY: Johnssen_b Digitally signed by Johnssen_b
Date: 2024.09.30
14:42:26 -04'00' _____ Date _____
 Beth Johnssen, Division Director

APPROVED BY: ScottTrinity Digitally signed by ScottTrinity
Date: 2024.11.04 10:12:46
-05'00' _____ Date _____
 Trinity Scott, Department Head

By the signature below, the Firm (including employees, officers and/or agents) certifies, and hereby discloses, that, to the best of their knowledge and belief, all relevant facts concerning past, present, or currently planned interest or activity (financial, contractual, organizational, or otherwise) which relates to the proposed work; and bear on whether the Firm has a potential conflict have been fully disclosed.

Additionally, the Firm agrees to notify the Procurement Director, in writing within 48 hours of learning of any actual or potential conflict of interest that arises during the Work Order and/or project duration.

ACCEPTED BY: Humiston & Moore Engineers

 _____ Date 10/01/2024 _____
 Brett Moore, President

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IN WITNESS WHEREOF, the parties hereto, have each, respectively, by an authorized person or agent, have executed this Work Order on the date and year first written below.

ATTEST:

, Clerk of Courts


BOARD OF COUNTY COMMISSIONERS
COLLIER COUNTY, FLORIDA

By: _____


By: _____
, Chairman

Dated: _____
(SEAL)

Humiston & Moore Engineers



First Witness

By: 

Signature

Matthew Goddard

↑Type/print witness name↑

Brett D. Moore, President

↑Type/print signature and title↑



Second Witness

Kathleen M. Martin

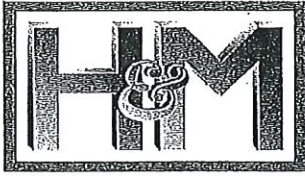
↑Type/print witness name↑

Approved as to Form and Legality:

Assistant County Attorney

Print Name





**HUMISTON
& MOORE
ENGINEERS**

COASTAL
ENGINEERING DESIGN
AND PERMITTING

5679 STRAND COURT
NAPLES, FLORIDA 34110
FAX: 239 594 2025
PHONE: 239 594 2021

September 6, 2024
(Proposal valid for 120 days.)

Andrew Miller, Principal Project Manager
Coastal Zone Management (CZM)
Collier County Government
2685 South Horseshoe Drive Unit 103
Naples, FL 34104

**Re: Proposal for Collier County Beaches and Inlets Annual Monitoring for 2025
Collier County Contract 18-7432-CZ; HM File No 29-018.2025 Beach-Monitor**

Dear Andy:

Enclosed is a proposal for the Collier County Beaches, Wiggins Pass Inlet, Doctors Pass Inlet, South Marco Beach, monitoring reports (includes survey) for 2025. The completion date for all work is estimated to be 270 days from the date of the Notice to Proceed. Rectified aerial images acquired for 2025, provided by the Collier County Property Appraiser's Office, are to be submitted to the Department of Environmental Protection (DEP) by Humiston and Moore Engineers (HM) as part of the work described below for all projects and an aerial image book provided to CZM in pdf format for online posting.

The monitoring for Doctor Pass Erosion Control Structures and Central Marco Island Regrade Projects is complete. These items are not included in the scope of work for the 2025 monitoring.

The dates shown reflect an anticipated date for the survey and report. These anticipated dates are dependent upon the authorization date, release of the rectified aerial images, and other unforeseen conditions such as weather.

Task 1 Collier Beach- Initial and Final Monitoring Report

Conduct the annual monitoring survey for Collier Beach Nourishment Project consistent with the monitoring plan approved by the DEP. This scope of work consists of DEP monuments R-17 to R-84 and R-58A. (Note: R-17 to R-22 will be surveyed as part of Task 2.)

- Survey is scheduled to be completed by January 31, 2025 pending unforeseen conditions such as poor weather conditions.
- An initial monitoring summary of the analysis will be submitted to CZM 30 days after the completion of the survey.
- A Final Monitoring Report will be submitted to DEP & CZM 90 days after the completion of the survey.

The initial monitoring summary includes beach profiles, shoreline and volume change from the previous monitoring survey, as well as from the most recent nourishment project, beach width and comparison to the *Design Standard*. The Final Monitoring Report will include the same

information contained in the initial monitoring summary as well as other information in compliance with the DEP physical monitoring requirements and applicable recommendations.

Task 1a. Sub Total Data Collection Budget (SDI)	\$ 37,960 LS
Task 1b Initial and Final Monitoring Report (H&M).....	\$ 26,528 TM
Total Task 1 Subtotal (SDI + H&M).....	\$ 64,488

Deliverable: An electronic copy of the Initial Monitoring Report and Final Monitoring Report.

Task 2 Wiggins Pass – Initial and Final Monitoring Report

Conduct the annual monitoring survey for the Wiggins Pass Navigation Channel Expansion and Maintenance Dredging Project consistent with the monitoring plan approved by DEP. This scope of work consists of FDEP monuments R-10 to R-22 including half monuments, the MHWL from R-17 NE for a minimum of 1500 feet. Stations -2+00 to 15+00 (from R-15 to R-18.5) and the navigation channel with grid lines 100 feet apart (C-3 thru C-34, CN-35 thru CN37).

- Survey is scheduled to be completed by February 28, 2025 pending unforeseen conditions such as poor weather conditions.
- An initial monitoring summary of the analysis will be submitted to CZM 30 days after the completion of the survey.
- A Final Monitoring Report will be submitted to CZM and DEP 90 days after the completion of the survey.

The initial monitoring summary includes inlet and beach profiles, shoreline and volume change from the previous monitoring survey and previous dredging project, beach width and comparison to the *Design Standard* if applicable. The Final Monitoring Report will include the same information contained in the initial monitoring summary as well as other information in compliance with the DEP physical monitoring requirements and applicable recommendations.

Task 2a. Sub Total Data Collection Budget (SDI)	\$ 32,515 LS
Task 2b Initial and Final Monitoring Report (H&M).....	\$ 12,688 TM
Total Task 2 Subtotal (SDI + H&M).....	\$ 45,203

Deliverable: An electronic copy of the Initial Monitoring Report and Final Monitoring Report.

Task 3 Doctors Pass – Initial and Final Monitoring Report

Conduct the annual monitoring survey for Doctors Pass Maintenance Dredging Project consistent with the monitoring plan approved by the DEP. This scope of work consists of 77 Dredge Template Profiles.

- Survey is scheduled to be completed by February 28, 2025 pending unforeseen conditions such as poor weather conditions.
- An initial monitoring summary of the analysis will be submitted to CZM 30 days after the completion of the survey.
- A Final Monitoring Report will be submitted to CZM and DEP 90 days after the completion of the survey.



The initial monitoring summary includes inlet profiles, volume change from the previous monitoring survey and previous dredging project. The Final Monitoring Report will include the same information contained in the initial monitoring summary as well as other information in compliance with the DEP physical monitoring requirements and applicable recommendations.

Task 3a. Sub Total Data Collection Budget (SDI)\$ 12,850 LS
 Task 3b Initial and Final Monitoring Report (H&M).....\$ 9,318 TM
Total Task 3 Subtotal (SDI + H&M).....\$ 22,168

Deliverable: An electronic copy of the Initial Monitoring Report and Final Monitoring Report.

Task 4 South Marco Beach - Initial and Final Monitoring Report

Conduct the annual monitoring survey for the South Marco Beach Nourishment Project consistent with the monitoring plan approved by the DEP. This scope of work consists of DEP monuments R-139 to R-148, G-1 thru G-5, and K-1 thru K-2. This survey scope does include the Caxambas Pass borrow area.

- Survey is scheduled to be completed by March 31, 2025 pending unforeseen conditions such as poor weather conditions.
- An initial shoreline/volume change summary will be submitted to CZM 30 days after the completion of the survey.
- A Final Monitoring Report will be submitted to CZM and DEP 90 days after the completion of the survey.

Task 4a. Sub Total Data Collection Budget (SDI)\$ 15,530 LS
 Task 4b Initial and Final Report (H&M)\$ 7,605 TM
Total Task 5 Subtotal (SDI + H&M).....\$ 23,135

Deliverable: An electronic copy of the Final Monitoring Report.

Task 5 2025 Aerial Image Book

Prepare an updated aerial image book for the Collier County Beaches ranging from DEP reference monument R-1 south to R-89 and from Hideaway Beach reference monument H-16 including the entrance to Collier Bay south to DEP reference monument R-148 including Caxambas Pass. The monument locations will be overlaid along with the names of existing structures as noted in the 2024 book. The rectified images will be the latest available from the County Appraiser's Office. The ECL, latest MHWL, and vegetation line will be shown along with the distance from each to the 2003 Baseline.

Task 5. Aerial Image Book (H&M).....\$ 3,603 TM

Deliverable: One electronic copy of the final Aerial Image Book.

Total (SDI + H&M)\$ 158,597 Tasks 1 thru 5



Tasks will be billed on a time and materials basis, unless otherwise noted. The budgets for these tasks may therefore be considered as not-to-exceed amounts with the understanding that in the event regulatory requirements or requests from County staff result in Additional Services exceeding the estimated budget amounts, a budget amendment will be requested.

Please call if you have any questions.

Sincerely yours,

HUMISTON & MOORE ENGINEERS

A handwritten signature in black ink, appearing to read "Brett D. Moore", with a long horizontal flourish extending to the right.

Brett D. Moore, P.E.
President

Collier County Beaches and Inlets Annual Monitoring 2024 Contract 18-7432-CZ
Project No. 90536

Task 1 Collier Beach - Initial & Final Monitoring Report							
Task 1a Data collection-SDI							37,960.00
							37,960.00 (LS)
Task 1b Final Report				HM (T&M)			
			RATE/UNIT	HOURS/QTY	COST	MARKUP	AMOUNT
PRN2	Principal		231	20			4,620.00
SDS	Engineer		130	80			10,400.00
SIN	Scientist/Geologist		115	40			4,600.00
SRT	Senior Technician		103	30			3,090.00
TEC	Technician		83	46			3,818.00
							26,528.00 (TM)
Total:							64,488.00
Task 2 Wiggins Pass - Initial & Final Monitoring Report							
Task 2a Data collect SDI (LS)							32,515.00
							32,515.00 (LS)
Task 2b Final Report				HM (T&M)			
			RATE/UNIT	HOURS/QTY	COST	MARKUP	AMOUNT
PRN2	Principal		231	8			1,848.00
SDS	Engineer		130	40			5,200.00
SIN	Scientist/Geologist		115	20			2,300.00
SRT	Senior Technician		103	21			2,163.00
CAD	Cadd Technician		107	11			1,177.00
							12,688.00 (TM)
TOTAL							45,203.00
Task 3 Doctors Pass - Initial & Final Monitoring Report							
3a Data Collection SDI (LS)							12,850.00
							<u>12,850.00</u> (LS)
3b Final Report				HM (T&M)			
			RATE/UNIT	HOURS/QTY	COST	MARKUP	AMOUNT
PRN2	Principal		231	8			1,848.00
SDS	Engineer		130	53.5			6,955.00
SRT	Senior Technician		103	5			515.00
							9,318.00 (TM)
TOTAL							22,168.00
Task 4 South Marco Final Monitoring Report							
4a Data Collection SDI (LS)							15,530.00
							<u>15,530.00</u> (LS)
4b Final Report				HM (T&M)			
			RATE/UNIT	HOURS/QTY	COST	MARKUP	AMOUNT
PRN2	Principal		231	9			2,079.00
SDS	Engineer		130	33			4,290.00
SRT	Senior Technician		103	12			1,236.00
							<u>7,605.00</u> (TM)
Total:							23,135.00
Task 5 2024 Aerial Image Book							
				HM (T&M)			
			RATE/UNIT	HOURS/QTY	COST	MARKUP	AMOUNT
PRN2	Principal		231	3			693.00
SDS	Engineer		130	16			2,080.00
TEC	Technician		83	10			830.00
							<u>3,603.00</u> (TM)

Total: 158,597.00





Sea Diversified, Inc.

160 Congress Park Drive, #114
Delray Beach, Florida 33445
Phone: 561-243-4920
www.seadiversified.com

August 23, 2024

Mr. Steve Foge, P.E.
Humiston & Moore Engineers
5679 Strand Court, Suite 110
Naples, Florida 34110

*Sent via electronic mail 08/23/2024
(SF@HumistonandMoore.com)*

**Re: Proposal / Agreement for Professional Services
Collier County 2025 Physical Monitoring Survey
Collier Beach, Wiggins Pass, Doctors Pass & Central Marco
Collier County, Florida
Sea Diversified P.N. 23-3041**

Dear Mr. Foge:

In accordance with your request, Sea Diversified, Inc. (SDI) is pleased to submit the following proposal for professional services. The scope of work shall include bathymetric data collection and onshore/offshore beach profile surveys along Collier Beach, South Marco Island, Wiggins Pass and Doctors Pass. In accordance with your summary of scope provided on August 22, 2024, the 2025 monitoring survey effort shall encompass the following:

- Task One: Collier Beach & Offshore Profiles**
 - Beach profiles at R23 to R84 (62 profiles) and R58A, totaling 63 profiles
- Task Two: Wiggins Pass Bathymetry and Beach Profiles**
 - Beach profiles at R-10 to R-22, including intermediate profiles (R-10.5, R-11.5, R-12.5, R-13.5, R-14.5, R-15.5, R-17.5, R-18.5, R-19.5, R-20.5, R-21.5), totaling 24 transects
 - MHWL from R-17 to the NE 1,500 feet on the south side of the inlet
 - Entrance channel, Stations -2+00 to 15+00 (R-15 to R-18.5), totaling 18 transects
 - Internal channels C-3 to C-34, CN-35, CN-36 and CN-37, totaling 35 transects
- Task Three: Doctors Pass Bathymetry - All inlet stations (77 transects)**
- Task Four: South Marco Island Beach & Offshore Profiles with Borrow Area**
Beach profiles at U-139 to R-148, G-1 to G-5, and K-1 to K-2, totaling 17 profiles
Note: Borrow area survey to match scope of survey by SDI in 2022

General:

SDI shall provide supervision, field / office support staff and equipment to perform the scope of work described, herewith. All work shall be conducted to the highest level of industry standards and under the responsible charge of a Professional Surveyor and Mapper registered in the State of Florida. All work shall meet or exceed the Standards of Practice (Standards) set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes, and in compliance with the Florida Department of Environmental Protection (FDEP) Bureau of Beaches and Coastal Systems Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100 (Updated October 2014). If time permits, deviations from the scope of work shall be addressed via formal approved addendum to the executed Agreement for Professional Services.

Horizontal and Vertical Data:

Horizontal Datum: Feet, relative to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983 (NAD83)
Vertical Datum: Feet, relative to the North American Vertical Datum of 1988 (NAVD88)





Horizontal / Vertical Control Verification

SDI will verify the horizontal and vertical position of all found and used monuments for the survey. Horizontal and vertical positions will be verified via Real-Time Kinematic GPS procedures. In the event vertical obstructions prohibit the use of GPS, conventional methodologies will be employed.

Temporary control points (TBM's) will be set in the event a monument cannot be readily found. As practical, the TBM will be set at the reference monument location. If the specified location is not practical, the TBM will be set at a more suitable location either landward or seaward along the specified profile azimuth. H&M shall be notified of any missing monuments and shall be provided with the horizontal and vertical position of all TBM's.

Onshore Profile Data Collection - Topographic

Onshore profile data collection shall extend from the FDEP profile control monument seaward to approximate wading depth or as required to overlap the offshore profile data a minimum distance of fifty (50) feet. Profile data collection shall extend landward to the seawalls or fifty (50) feet landward of the five-foot (+5.0') NAVD88 contour line and shall include location of the seaward vegetation line.

In the event there is a physical barrier on line between the beach and the monument, every reasonable attempt shall be made to extend the survey beyond the barrier to the reference monument position. It is understood that certain physical barriers may be considered impassible such as large buildings, private residences with difficult access, waterbodies, mangroves or other heavy vegetation requiring line clearing. At the discretion of the surveyor, data collection will be terminated at the first physical barrier if deemed impassible using practical means of extending the survey landward. Profiles terminated due to impassible barriers will be noted in the field books.

Profile data will be collected using either conventional differential leveling or Real-time Kinematic Differential Global Positioning techniques. Data points will be collected at a maximum interval of twenty-five (25) feet and at all grade breaks (exceeding one-foot) and material changes along the profile. In the event the profile control monument is located more than three hundred (300) feet landward of the vegetation line, data points shall be extended to intervals of one hundred (100) feet from two hundred (200) feet landward of the approximate vegetation line to the monument location. The reference monument shall be recorded as range 0.0 along the profile with positive ranges extending seaward of the monument and negative ranges extending landward of the monument.

Offshore Profile Data Collection - Bathymetric

Bathymetric profile data shall be collected as close to high tide as practical and shall extend landward to a depth that overlaps the onshore portion of the survey a minimum distance of fifty (50) feet. Bathymetric profile data collection shall extend seaward to the negative thirteen (-13) feet NGVD29 contour (approximately -14.5' NAVD88). Bathymetric data collection shall occur as close to the time of the onshore topographic survey as practical, which shall not exceed seven (7) days of time difference between the two (2) survey events. Maximum wave height during the course of bathymetric data collection shall be three (3) feet.

Bathymetric data shall be collected using an automated hydrographic system comprised of a survey launch equipped with a marine grade sounder, differential global positioning system and computer-based navigation / data collection system, and when deemed necessary may be interfaced with a DMS-05 Motion Sensor System. The motion sensor will be employed as necessary to reduce the effects of vessel heave, pitch and roll during the course of data collection. The sounder shall be calibrated via bar checks prior to the start of the survey. Prior to the start of the survey a tide staff or gauge will be established in proximity to the project for recording water



levels during the course of the data collection activities. The tide staff or gauge will be set relative to published control in the vicinity of the project.

Digital Ground Photography

During the course of field data collection, digital photographs shall be taken at approximate mid-beach along each profile line. Three (3) photographs shall be captured, one each shore-parallel north and south of the profile and one towards the monument location. An additional photograph of the monument or TBM shall be taken with sufficient clarity to read the monument stamping. Digital images shall be provided to H&M in .jpg format at a minimum 640 x 480 resolution.

Data Processing and Final Deliverables

Upon completion of field survey activities, data will be edited and reduced to the project datum and translated to an x,y,z, ASCII format for submittal to H&M. H&M will be provided the following deliverables:

1. Survey report certified by a Professional Surveyor and Mapper.
2. Description of all monuments and TBM's used for the survey, including identification, stamping, coordinates, elevations and profile azimuths. Control description shall be provided in both hardcopy and digital formats (ASCII and Excel), as applicable.
3. Bathymetric data and / or profile data in ASCII x,y,z format
4. Digital photographs in .jpg format with appropriate labeling
5. Metadata files

Cost Breakdown:

Task One:	\$ 37,960.00
Task Two:	\$ 32,515.00
Task Three:	\$ 12,850.00
Task Four:	\$ <u>15,530.00</u>
Total:	\$ 98,855.00

Should you have questions or require additional information please do not hesitate to contact us at your convenience. We appreciate this opportunity to assist you with this project and look forward to hearing from you soon.

Best Regards,

William T. Sadler Jr., P.E., P.S.M.
 President, Sea Diversified, Inc.

Approved this _____ day of _____, 2024

 Mr. Steve Foge, P.E. or Authorized
 Humiston & Moore Engineers Representative



* * * * *

SCHEDULE B-ATTACHMENT 1
RATE SCHEDULE

Title	Hourly Rate
Principal	\$231
Senior Project Manager	\$203
Project Manager	\$160
Senior Engineer	\$177
Engineer	\$130
Senior Inspector	\$126
Inspector	\$93
Senior Planner	\$150
Planner	\$120
Senior Designer	\$140
Designer	\$105
Environmental Specialist	\$120
Senior Environmental Specialist	\$167
Scientist/Geologist	\$115
Senior Scientist/Geologist	\$153
Marine Biologist/Hydrogeologist	\$120
Senior Marine Biologist/Hydrogeologist	\$145
Senior GIS Specialist	\$155
GIS Specialist	\$115
Clerical/Administrative	\$73
Senior Technician	\$103
Technician	\$83
Surveyor and Mapper	\$125
CADD Technician	\$107
Survey Crew - 2 man	\$145
Survey Crew - 3 man	\$180
Survey Crew - 4 man	\$215
Senior Architect	\$160
Architect	\$125

The above hourly rates are applicable to Time and Materials task(s) only. The above list may not be all inclusive. Hourly rates for additional categories required to provide particular project services shall be mutually agreed upon by the County and firm, in writing, on a project by project basis, as needed, and will be set forth in the Work Order agreed upon by the parties.

Grant Funded: The above rates are for purposes of providing estimate(s), as required by the grantor agency.

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