



Morgan & Eklund, Inc.
4909 US Highway 1
Vero Beach, Florida 32967

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Fax: 772-388-3165

December 20, 2019

Indian River County
Coastal Engineering Division
Attn: Mr. James Ennis, PE PMP
1801 27th Street
Vero Beach, FL 32960

**RE: 2020 Winter Semi-Annual Indian River County Coastal Monitoring Survey;
Onshore/Offshore Profiles along FDEP Range Lines R-15 to R-119 together with
Sector 7 Project Lines**

Dear Mr. Ennis:

Morgan & Eklund, Inc. is pleased to provide you with the following proposal to furnish professional land and hydrographic survey services for the above referenced project.

Beach profiles will include R-15 through R-119 together with the intermediate lines for Sector 7, a total of 124 beach profile lines. All data collected will be in accordance with the FDEP-approved Physical Monitoring Plan. Morgan & Eklund, Inc. will provide the County with beach profile data in ASCII file format together with AutoCAD drawings signed by the surveyor. The survey will be performed in January/February 2020 with drawings and reports completed in April 2020.

Additionally, the landward occurrence of rock outcroppings will be identified along each profile line.

In accordance with the scope of work as provided, I estimate our costs to be as follows:

**I. Winter 2020 Sector 3 Beach and Dune Restoration Project Monitoring Survey
(R-15 to R-60, 46 Onshore/Offshore Profile Lines)**

A. Establish and verify onshore horizontal/vertical survey control

Chief Surveyor
2 hours @ \$125/hr.....\$ 250.00

Project Surveyor/Manager	
8 hours @ \$95/hr.....	\$ 760.00
Three Man GPS Crew (RTK/GPS)	
12 hours @ \$165/hr.....	\$ 1,980.00
	<u>\$ 2,990.00</u>

B. Upland/onshore profile with RTK/GPS and set hubs on line for nearshore (wading) survey

Senior Survey Computer Technician	
8 hours @ \$85/hr.....	\$ 680.00
Field Operations Supervisor	
12 hours @ \$85/hr.....	\$ 1,020.00
Three Man GPS Crew (RTK/GPS)	
24 hours @ \$165/hr.....	\$ 3,960.00
Polaris Beach Vehicle	
3 days @ \$85/day.....	\$ 255.00
	<u>\$ 5,915.00</u>

C. Wading profiles +3 NAVD88 to -7 NAVD88

Three Man GPS Crew (RTK/GPS)	
24 hours @ \$165/hr.....	\$ 3,960.00
Polaris Beach Vehicle	
3 days @ \$85/day.....	\$ 255.00
	<u>\$ 4,215.00</u>

D. Offshore profiles -5 NAVD88 to -30 NAVD88 (46 lines)

Field Operations Supervisor	
2 hours @ \$85/hr.....	\$ 170.00
Project Surveyor/Manager (Boat Operator)	
24 hours @ \$95/hr.....	\$ 2,280.00
Three Man Survey Crew	
20 hours @ \$125/hr.....	\$ 2,500.00
26' Parker Survey Boat	
2 days @ \$500/day.....	\$ 1,000.00
Trimble DGPS	
2 days @ \$300/day.....	\$ 600.00

Motion Compensator		
2 days @ \$200/day.....	\$	400.00
Digital Fathometer		
2 days @ \$85/day.....	\$	170.00
Hypack Navigation Software & Computer		
2 days @ \$50/day.....	\$	100.00
	\$	<u>7,220.00</u>

E. Data reduction / drafting, FDEP format files and reports (46 lines)

Chief Surveyor		
2 hours @ \$125/hr.....	\$	250.00
Project Surveyor/Manager		
20 hours @ \$95/hr.....	\$	1,900.00
Senior Survey Computer Technician		
32 hours @ \$85/hr.....	\$	<u>2,720.00</u>
	\$	4,870.00
TOTAL I A-E.....	\$	25,210.00

II. Winter 2020 Sector 7 (R-97 to R-108 together with R-99.5, 100.5, 101.25, 101.5, 101.75, 102.25, 102.5, 102.75, 103.25, 103.5, 103.75, 104.25, 104.5, 104.75, 105.25, 105.5, 105.75, 106.5 and 107.5, 31 lines)

A. Establish and verify onshore horizontal/vertical survey control

Chief Surveyor		
1 hour @ \$125/hr.....	\$	125.00
Project Surveyor/Manager		
4 hours @ \$95/hr.....	\$	380.00
Three Man GPS Crew (RTK/GPS)		
8 hours @ \$165/hr.....	\$	<u>1,320.00</u>
	\$	1,825.00

B. Upland/onshore profile with RTK/GPS and set hubs on line for nearshore (wading) survey

Senior Survey Computer Technician		
4 hours @ \$85/hr.....	\$	340.00
Field Operations Supervisor		
6 hours @ \$85/hr.....	\$	510.00

Three Man GPS Crew (RTK/GPS)		
20 hours @ \$165/hr.....	\$	3,300.00
Polaris Beach Vehicle		
2 days @ \$85/day.....	\$	170.00
	\$	<u>4,320.00</u>

C. Wading profiles +3 NAVD88 to -7 NAVD88

Three Man GPS Crew (RTK/GPS)		
20 hours @ \$165/hr.....	\$	3,300.00
Polaris Beach Vehicle		
2 days @ \$85/day.....	\$	170.00
	\$	<u>3,470.00</u>

D. Offshore profiles -5 NAVD88 to -30 NAVD88 (31 lines)

Field Operations Supervisor		
2 hours @ \$85/hr.....	\$	170.00
Project Surveyor/Manager (Boat Operator)		
12 hours @ \$95/hr.....	\$	1,140.00
Three Man Survey Crew		
12 hours @ \$125/hr.....	\$	1,500.00
26' Parker Survey Boat		
1 day @ \$500/day	\$	500.00
Trimble DGPS		
1 day @ \$300/day	\$	300.00
Motion Compensator		
1 day @ \$200/day	\$	200.00
Digital Fathometer		
1 day @ \$85/day	\$	85.00
Hypack Navigation Software & Computer		
1 day @ \$50/day	\$	50.00
	\$	<u>3,945.00</u>

E. Data reduction / drafting, FDEP format files and reports (31 lines)

Chief Surveyor		
2 hours @ \$125/hr.....	\$	250.00

Project Surveyor/Manager	
16 hours @ \$95/hr.....	\$ 1,520.00
Senior Survey Computer Technician	
20 hours @ \$85/hr.....	\$ 1,700.00
	\$ 3,470.00
TOTAL II A-E.....	\$ 17,030.00

III. Winter 2020 Countywide Beach Monitoring (R-61 to R-96 and R-109 to R-119, 47 lines)

A. Establish and verify onshore horizontal/vertical survey control

Chief Surveyor	
2 hours @ \$125/hr.....	\$ 250.00
Project Surveyor/Manager	
8 hours @ \$95/hr.....	\$ 760.00
Three Man GPS Crew (RTK/GPS)	
12 hours @ \$165/hr.....	\$ 1,980.00
	\$ 2,990.00

B. Upland/onshore profile with RTK/GPS and set hubs on line for nearshore (wading) survey

Senior Survey Computer Technician	
8 hours @ \$85/hr.....	\$ 680.00
Field Operations Supervisor	
12 hours @ \$85/hr.....	\$ 1,020.00
Three Man GPS Crew (RTK/GPS)	
28 hours @ \$165/hr.....	\$ 4,620.00
Polaris Beach Vehicle	
3 days @ \$85/day.....	\$ 255.00
	\$ 6,575.00

C. Wading profiles +3 NAVD88 to -7 NAVD88

Three Man GPS Crew (RTK/GPS)	
24 hours @ \$165/hr.....	\$ 3,960.00
Polaris Beach Vehicle	
3 days @ \$85/day.....	\$ 255.00
	\$ 4,215.00

D. Offshore profiles -5 NAVD88 to -30 NAVD88 (47 lines)

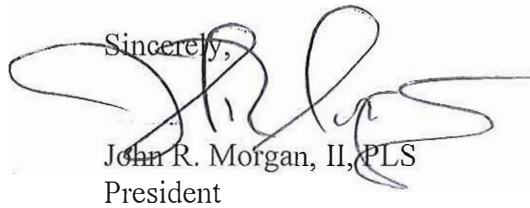
Field Operations Supervisor 2 hours @ \$85/hr.....	\$ 170.00
Project Surveyor/Manager (Boat Operator) 24 hours @ \$95/hr.....	\$ 2,280.00
Three Man Survey Crew 20 hours @ \$125/hr.....	\$ 2,500.00
26' Parker Survey Boat 2 days @ \$500/day.....	\$ 1,000.00
Trimble DGPS 2 days @ \$300/day.....	\$ 600.00
Motion Compensator 2 days @ \$200/day.....	\$ 400.00
Digital Fathometer 2 days @ \$85/day.....	\$ 170.00
Hypack Navigation Software & Computer 2 days @ \$50/day.....	\$ 100.00
	\$ 7,220.00

E. Data reduction / drafting, FDEP format files and reports (47 lines)

Chief Surveyor 2 hours @ \$125/hr.....	\$ 250.00
Project Surveyor/Manager 20 hours @ \$95/hr.....	\$ 1,900.00
Senior Survey Computer Technician 32 hours @ \$85/hr.....	\$ 2,720.00
	4,870.00
TOTAL III A-E.....	\$ 25,870.00

Not to Exceed Total Cost I-III\$ 68,110.00

As always, Morgan & Eklund, Inc. is looking forward to working with you and Indian River County on this project.

Sincerely,

John R. Morgan, II, PLS
President

JRM:dmc

Billing: project will be invoiced upon completion of each task