

**ADDITIONAL MATERIAL
REGULAR MEETING**

AUGUST 25, 2022

**SUBMITTED AT THE REQUEST OF
OFFICE OF THE COUNTY ATTORNEY**

Item 35 on County Commission Agenda of August 25, 2022 by Office of the County Attorney

Motion Statement Revisions:

MOTION TO APPROVE First Amendment to the Agreement between Broward County and Olsen Associates, Inc. for coastal engineering consultant services for the Segment III Shore Protection Project (RFP No. T2112588P1) in substantially the form attached (Exhibit 1), providing for post-construction reporting and monitoring for beach renourishment along Segment III and Federal reauthorization of the Project, increasing the maximum total agreement ~~lump-sum~~ compensation by an additional \$4,577,350, from a total of ~~\$2,729,385~~ **\$2,896,685.24** to a total of ~~\$7,306,735~~ **\$7,474,035.24**, and authorize the Director of Purchasing to approve nonmaterial changes that do not further increase the total cost to the County, subject to review for legal sufficiency by the Office of the County Attorney; and authorize the Mayor and Clerk to execute the final form of the amendment. (Commission District 6)

Summary Explanation/Background Revision at last sentence of first full paragraph on p. 2 of the Agenda Report:

Accordingly, the current amendment provides post-construction services (physical and biological monitoring) required for the Segment III beach renourishment project, with a maximum increase in contract amount not to exceed \$4,577,350 for a total amended contract amount of ~~\$7,306,735~~ **\$7,474,035.24**.

Fiscal Impact/Cost Summary Revisions:

The Amendment increases the maximum overall cost of Consultant Services for the project by an additional \$4,577,350, from a total of ~~\$2,729,385~~ **\$2,896,685.24** to a total of ~~\$7,306,735~~ **\$7,474,035.24**. These funds are budgeted within the Department's capital budget. Costs for services incurred by the County and delivered under this First Amendment are subject to partial reimbursement by the Federal Government and the State of Florida.



**FIRST AMENDMENT TO AGREEMENT BETWEEN BROWARD COUNTY AND
OLSEN ASSOCIATES, INC., FOR COASTAL ENGINEERING CONSULTANT SERVICES
FOR SEGMENT III SHORE PROTECTION
(RFP # T2112588P1)**

This First Amendment ("First Amendment") is entered into by and between Broward County, a political subdivision of the State of Florida ("County"), and Olsen Associates, Inc., a Florida corporation ("Consultant") (collectively referred to as the "Parties").

RECITALS

A. The Parties entered into the Agreement Between Broward County and Olsen Associates, Inc., for Coastal Engineering Consultant Services for Segment III Shore Protection, dated June 12, 2018 (the "Agreement"), for Consultant to provide coastal engineering services.

B. The Agreement anticipated four (4) phases of coastal engineering and professional design services and included the services for Phase I found in Exhibit A of the Agreement. Those phases were: i) engineering, design, and permitting; ii) pre-construction services; iii) construction services; and iv) post-construction services. Due to the United States Army Corps of Engineers conducting pre-construction services (Phase II) and construction services (Phase III) of the Segment III Shore Protection project, this First Amendment provides for the necessary Phase IV post-construction services by Consultant.

C. Section 3.3 of Agreement provides that the "additional negotiations and amendments to this Agreement will be required to include the services for subsequent phases or for additional services."

D. The Parties now desire to amend the Agreement to add Exhibit A-1 - Scope of Services to delineate Consultant's services for Phase IV post-construction physical and environmental monitoring, regulatory permit compliance activities, future Federal project reauthorization, and associated funding. For the avoidance of doubt, Exhibit A - Scope of Services, shall remain in full force and effect as Consultant has not completed all of the Phase I tasks and phases outlined therein.

Now, therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. The above Recitals are true and correct and are incorporated herein by reference. All capitalized terms not expressly defined within this First Amendment shall retain the meaning ascribed to such terms in the Agreement.
2. Amendments to the Agreement made pursuant to this First Amendment are indicated herein by use of i) strikethroughs to indicate deletions and bold/underlining to indicate additions, or ii) by reference to deletion, addition, or replacement of prior Agreement provisions. Except as

modified herein, all remaining terms and conditions of the Agreement shall remain in full force and effect.

3. Section 1.8 of the Agreement is amended as follows:

1.8 **Project**: The coastal engineering consultant services for Segment III Shore Protection as described in Article 3 and ~~Exhibit A—Scope of Services~~ **Exhibits A and A-1 - Scope of Services**, including all necessary, incidental, and related activities and services required by the Scope of Services and contemplated in Consultant's level of effort.

4. Section 3.1 of the Agreement is amended as follows:

3.1 Consultant's services shall consist of the tasks and phases set forth in ~~Exhibit A~~ **Exhibits A and A-1**, attached hereto and made a part hereof, and shall include ~~civil, structural, mechanical, and electrical engineering, architectural~~ **coastal engineering** services, and other professional design services, as applicable for the Project. Consultant shall provide all services as set forth in ~~Exhibit A~~ **Exhibits A and A-1** including all necessary, incidental, and related activities and services required by the Scope of Services and contemplated in Consultant's level of effort.

5. Section 3.3 of the Agreement is amended as follows:

3.3 ~~Exhibit A~~ **Exhibits A and A-1** provides an overall description of the Project and details the services for the first **and fourth** Phases of the Project. Additional negotiations and amendments to this Agreement will be required to include the services for **any** subsequent phases or for additional services. County and Consultant may negotiate additional scopes of services, compensation, time of performance, and other related matters for future phases of the Project. If County and Consultant cannot contractually agree, County shall have the right to immediately terminate negotiations at no cost to County and procure services for subsequent Project phases from another source.

6. Section 4.1 of the Agreement is amended as follows:

4.1 Consultant shall perform the services in ~~Exhibit A~~ **Exhibits A and A-1** within the time periods generally described in ~~Exhibit A~~ **Exhibits A and A-1**. The Agreement term shall commence on the date of the first Notice to Proceed, and shall continue until substantial completion of the Scope of Services or earlier if terminated pursuant to Article 10.

7. Section 4.2 of the Agreement is amended as follows:

4.2 Prior to beginning the performance of any services under this Agreement, Consultant must receive a Notice to Proceed. Consultant must also receive a Notice to Proceed from the Contract Administrator prior to beginning the performance of services

in any subsequent phases of this Agreement. Prior to granting approval for Consultant to proceed to a subsequent phase, the Contract Administrator may, at his or her sole option, require Consultant to submit the itemized deliverables and documents identified in ~~Exhibit A~~ **Exhibits A and A-1** for the Contract Administrator's review.

8. Section 5.1.1 of the Agreement is amended as follows:

5.1.1 **Lump Sum Compensation.** Except as stated in the paragraph immediately below, Compensation to Consultant for the performance of all Phase I **and Phase IV** services identified in ~~Exhibit A~~ **Exhibits A and A-1** is payable on a "Lump Sum" basis, and as otherwise required by this Agreement, shall be not more than a total lump sum of Two Million Seven Hundred Twenty-Nine Thousand Three Hundred Eighty-Five and Twenty-Four Hundredths Dollars (\$2,729,385.24) **for Phase I Services in Exhibit A and Three Million Five Hundred Ninety-Four Thousand Nine Hundred Fifty and No Hundredths Dollars (\$3,594,950.00) for Phase IV Services in Exhibit A-1, inclusive of all Optional Services, Services noted as "Authorization Withheld," and Reimbursable Expenses.**

Maximum Amount Not-To-Exceed Compensation. For Services identified in Exhibit A-1 as payable on a "Maximum Amount Not-To-Exceed" basis (shown as "NTE" therein, and other than Reimbursable Expenses), compensation to Consultant shall be based upon the Salary Costs as described in Section 5.2, up to a maximum not-to-exceed amount of One Hundred Thousand and No Hundredths Dollars (\$100,000.00).

9. Section 5.1.2 of the Agreement is amended as follows:

5.1.2 **Optional Services.** County has established an amount of One Hundred Thousand Dollars (\$100,000.00) for potential Optional Services **related to Phase I Services in Exhibit A and Eight Hundred Thousand Dollars (\$800,000.00) for potential Optional Services related to Phase IV Services in Exhibit A-1, each of** which may be utilized pursuant to Article 6. Unused amounts of these Optional Services monies shall be retained by County. A Work Authorization for Optional Services shall specify the method of payment, Maximum Amount Not-To-Exceed, Lump Sum, or combination thereof, applicable to that Work Authorization.

10. Section 5.1.3 of the Agreement is amended as follows:

5.1.3 **Reimbursable Expenses.** County has established a maximum amount not-to-exceed of Sixty-Seven Thousand Three Hundred Dollars (\$67,300) for potential reimbursable expenses **related to Phase I Services in Exhibit A and Eighty-Two Thousand Four Hundred and No Hundredths Dollars (\$82,400.00) for potential reimbursable expenses related to Phase IV Services in Exhibit A-1, each of** which may be utilized pursuant to Section 5.3. Unused amounts of those monies established for reimbursable expenses shall be retained by County.

11. Section 5.1.4 of the Agreement is amended as follows:

5.1.4 Salary Costs. The maximum billing rates payable by County for each of Consultant's employee categories are shown on **Amended** Exhibit B and are further described in Section 5.2.

If, for services designated as payable on a Maximum Amount Not-To-Exceed, Consultant has "lump sum" agreements with any Subconsultant(s), then Consultant shall bill all "lump sum" Subconsultant fees with no "markup." Likewise, Consultant shall bill, with no mark-up, all maximum not to exceed Subconsultant fees using the employee categories for Salary Costs on Exhibit B **or Amended Exhibit B** as defined in Section 5.2 and Reimbursables defined in Section 5.3. All Subconsultant fees shall be billed in the actual amount paid by Consultant.

12. Section 5.1.5 of the Agreement is amended as follows:

5.1.5 Phased Payments. Payments for services, **inclusive of all Lump Sum, Maximum Amount Not-To-Exceed, Optional, and Reimbursable amounts**, shall be paid out pursuant to the Project tasks and phasing specified in ~~Exhibit A~~ **Exhibits A and A-1**. The retainage amount set forth in Section 5.5 shall be applied to the percentage amount for each task.

Project Phase	Fee %	Fee Amount/Phase
Phase I: Engineering, Design and Permitting	100% <u>38.8%</u>	\$2,729,385.24 <u>\$2,896,685.24</u>
Phase II: Pre-Construction Services (To Be Determined in Future Amendments)	0%	\$0
Phase III: Construction Services (To Be Determined in Future Amendments)	0%	\$0
Phase IV: Post-Construction Services (To Be Determined in Future Amendments)	0% <u>61.2%</u>	\$0 <u>\$4,577,350.00</u>
Total Services Fee	100%	\$2,729,385.24 <u>\$7,474,035.24</u>

13. Section 5.2.2 of the Agreement is amended as follows:

5.2.2 Salary Costs for Consultant and Subconsultants as shown in Exhibit B **or Amended Exhibit B** are the Maximum Billing Rates which are provisional, subject to audit of actual costs, and if the audit discloses that the actual costs are less than the costs set forth on Exhibit B **or Amended Exhibit B** for Consultant or any Subconsultant, Consultant shall reimburse County based upon the actual costs determined by the audit.

14. Section 5.2.2 of the Agreement is amended as follows:

6.4 Consultant may, at the Contract Administrator's discretion, be authorized to perform Optional Services as delineated in ~~Exhibit A~~ **Exhibits A and A-1**, Scope of Services, up to the maximum fee amount established for Optional Services under Section 5.1.2. Any Optional Services to be performed by Consultant pursuant to the terms of this Agreement shall first be authorized by the Contract Administrator in writing by a "Work Authorization" in accordance with this article. Prior to issuing a Work Authorization, the Contract Administrator must provide the Office of the County Attorney with the written description of the work to be undertaken as required by Section 6.4.4.1 and must obtain a written concurrence from the Office of the County Attorney that the work proposed to be performed pursuant to the Work Authorization is within the scope of services of this Agreement.

15. Section 5.4 of the Agreement is amended as follows:

5.4 Method of Billing For Lump Sum Compensation. Consultant shall submit billings which are identified by the specific Project number on a monthly basis in a timely manner. These billings shall identify the nature of the work performed, the task(s) and phase of work, and the estimated percent of work accomplished. Billings for each phase shall not exceed the amounts allocated to said phase. Billings shall also indicate the cumulative amount of Subconsultant participation to date. The statement shall show a summary of fees with accrual of the total and credits for portions paid previously. When requested, Consultant shall provide backup for past and current invoices that record hours, salary costs, and expense costs on a task basis, so that total hours and costs by task may be determined.

Method of Billing For Maximum Amount Not-To-Exceed Compensation And Reimbursable Expenses. Consultant shall submit billings that are identified by the specific project number on a monthly basis in a timely manner for all Salary Costs and Reimbursable Expenses attributable to the Project. These billings shall identify the nature of the work performed, the total hours of work performed, and the employee category of the individuals performing same. Billings shall itemize and summarize Reimbursable Expenses by category and identify the personnel incurring the expense and the nature of the work with which such expense was associated. Where prior written approval by Contract Administrator is required for Reimbursable Expenses (or the reimbursement thereof), a copy of said approval shall accompany the billing for such reimbursable. Billings shall also indicate the cumulative amount of CBE participation to date. The statement shall show a summary of Salary Costs and Reimbursable Expenses with accrual of the total and credits for portions paid previously. External Reimbursable Expenses and Subconsultant fees must be documented by copies of invoices or receipts that describe the nature of the expenses and contain a project number or other identifier that clearly indicates the expense is identifiable to the Project. Subsequent addition of the identifier to the invoice or receipt by Consultant is not acceptable except for meals and travel expenses. Internal expenses must be documented by appropriate Consultant's cost accounting forms with a

summary of charges by category. When requested, Consultant shall provide backup for past and current invoices that records hours and Salary Costs by employee category, Reimbursable Expenses by category, and Subconsultant fees on a task basis, so that total hours and costs by task may be determined.

16. Section 9.1 of the Agreement is amended as follows:

9.1 No party to this Agreement may discriminate on the basis of race, color, sex, religion, national origin, disability, age, marital status, political affiliation, sexual orientation, pregnancy, or gender identity and expression in the performance of this Agreement. After award, Consultant shall submit documentation to the Project Manager of its affirmative steps taken which meet the ~~Exhibit F~~ **Exhibit F-1** Federally Funded Contracts Requirements for contracting with small and minority businesses, women's business enterprises and labor surplus area firms.

17. Section 10.18 of the Agreement is amended as follows:

10.18 Third Party Beneficiaries. Neither Consultant nor County intends to **primarily or** directly ~~or substantially~~ benefit a third party by this Agreement. Therefore, the Parties acknowledge that there are no third party beneficiaries to this Agreement and that no third party shall be entitled to assert a right or claim against either of them based upon this Agreement.

18. Section 10.34 of the Agreement is amended as follows:

10.34 Federally Funded Contracts. Consultant certifies and represents that it will comply with the Federally Funded Contracts Requirements attached hereto and incorporated herein as ~~Exhibit F~~ **Exhibit F-1**.

19. Section 10.36.5 is deleted and replaced with Section 10.39, added below.

20. New Sections 5.2.7, 10.38, 10.39, 10.40, 10.41, 10.42 and 10.43 are added to the Agreement as follows (bold/underlining omitted):

5.2.7 Amended Exhibit B is added to reflect rates and a multiplier consistent with Consultant obtaining a FAR audit, and the subconsultant rates for Coastal Eco-Group Inc. have been updated to reflect their current rates and a Safe Harbor election. The Contract Administrator has reviewed Consultant's proposed rates and multiplier as consistent with the certified audit and the subconsultant's updated rates and multiplier. The Contract Administrator recommends Amended Exhibit B for acceptance by the award authority.

10.38 Discriminatory Vendor and Scrutinized Companies List; Countries of Concern. Consultant represents that it has not been placed on the "discriminatory vendor list" as provided in Section 287.134, Florida Statutes, and that it is not a "scrutinized company"

pursuant to Sections 215.473 or 215.4725, Florida Statutes. Consultant represents and certifies that it is not, and for the duration of the Term will not be, ineligible to contract with County on any of the grounds stated in Section 287.135, Florida Statutes. Consultant represents that it is, and for the duration of the Term will remain, in compliance with Section 286.101, Florida Statutes.

10.39 Verification of Employment Eligibility. Consultant represents that Consultant and each Subconsultant have registered with and use the E-Verify system maintained by the United States Department of Homeland Security to verify the work authorization status of all newly hired employees in compliance with the requirements of Section 448.095, Florida Statutes, and that entry into this Agreement will not violate that statute. If Consultant violates this section, County may immediately terminate this Agreement for cause and Consultant shall be liable for all costs incurred by County due to the termination.

10.40 Prohibited Telecommunications Equipment. Consultant represents and certifies that Consultant and all Subconsultants do not use any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, as such terms are used in 48 CFR §§ 52.204-24 through 52.204-26. Consultant represents and certifies that Consultant and all Subconsultants shall not provide or use such covered telecommunications equipment, system, or services during the Term.

10.41 Criminal History Screening Practices. If this Agreement is subject to the requirements of Section 26-125(d) of the Code, Consultant represents and certifies that Consultant will comply with Section 26-125(d) of the Code for the duration of the Term.

10.42 Polystyrene Food Service Articles. Consultant shall not sell or provide for use on County property expanded polystyrene products or food service articles (e.g., Styrofoam), unencapsulated expanded polystyrene products, or single-use plastic straws or stirrers, as set forth in more detail in Section 27.173, Broward County Administrative Code.

10.43 Ownership Disclosure. Unless prohibited by applicable law, by January 1 of each year, Consultant must submit, and cause each of its Subconsultants to submit, an Ownership Disclosure Form (or such other form or information designated by County), available at <https://www.broward.org/econdev/Pages/forms.aspx>, identifying the ownership of the entity and indicating whether the entity is majority-owned by persons fitting specified classifications.

21. The INDEX TO EXHIBITS at page 29 of the Agreement is amended as follows:

INDEX TO EXHIBITS:

Exhibit A Exhibits A and A-1	Scope of Services
Exhibit B and Amended Exhibit B	Maximum Billing Rates

Exhibit B-1	Reimbursables for Direct Non-Salary Expenses
Exhibit C	Schedule of Subconsultants
Exhibit D	Minimum Insurance Requirements
Exhibit E	Work Authorization Form
Exhibit F <u>Exhibit F-1</u>	Federally Funded Contracts Requirements
Exhibit G	Port Security Requirements

22. Exhibit F is deleted, and Exhibit A-1, Amended Exhibit B, and Exhibit F-1, attached, are added to the Agreement.

23. In the event of any conflict or ambiguity between this First Amendment and the Agreement, the Parties agree that this First Amendment shall control. The Agreement, as amended herein by this First Amendment, incorporates and includes all prior negotiations, correspondence, conversations, agreements, and understandings applicable to the matters contained herein, and the Parties agree that there are no commitments, agreements, or understandings concerning the subject matter hereof that are not contained in the Agreement as amended in this First Amendment. Accordingly, the Parties agree that no deviation from the terms hereof shall be predicated upon any prior representations or agreements, whether oral or written.

24. Preparation of this First Amendment has been a joint effort of the Parties and the resulting document shall not, solely as a matter of judicial construction, be construed more severely against one of the Parties than any other.

25. Consultant acknowledges that through the date this First Amendment is executed by Consultant, Consultant has no claims or disputes against County with respect to any of the matters covered by the Agreement.

26. The effective date of this First Amendment shall be the date of complete execution by the Parties.

27. This First Amendment may be executed in counterparts, whether signed physically or electronically, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

(The remainder of this page is blank.)

IN WITNESS WHEREOF, the Parties hereto have made and executed this First Amendment: BROWARD COUNTY through its BOARD OF COUNTY COMMISSIONERS, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the _____ day of _____, 2022, and Olsen Associates, Inc., signing by and through its _____, duly authorized to execute same.

COUNTY

ATTEST:

BROWARD COUNTY, by and through
its Board of County Commissioners

By: _____
Broward County Administrator, as
ex officio Clerk of the Broward County
Board of County Commissioners

By: _____
Mayor
____ day of _____, 20__

Approved as to form by
Andrew J. Meyers
Broward County Attorney
115 South Andrews Avenue, Suite 423
Fort Lauderdale, Florida 33301
Telephone: (954) 357-7600

By _____
Michael C. Owens (Date)
Senior Assistant County Attorney

By _____
Maite Azcoitia (Date)
Deputy County Attorney

MCO/gmb
Segment III Coastal Engineering Agreement First Amendment T2112599P1.docx
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**FIRST AMENDMENT TO AGREEMENT BETWEEN BROWARD COUNTY AND
OLSEN ASSOCIATES, INC., FOR COASTAL ENGINEERING CONSULTANT SERVICES
FOR SEGMENT III SHORE PROTECTION
(RFP # T2112588P1)**

CONSULTANT

By: _____
Authorized Signer

Print Name and Title

_____ day of _____, 20____

WITNESS/ATTEST:

Corporate Secretary or other witness

(CORPORATE SEAL)

EXHIBIT A-1
SCOPE OF CONSULTANT SERVICES FOR THE
BROWARD COUNTY SHORE PROTECTION PROJECT – T2112588P1

Amendment 1: SEGMENT III – POST-CONSTRUCTION and FEDERAL REAUTHORIZATION SUPPORT SERVICES

PREAMBLE: It is the intent of this Amendment to provide for Coastal Engineering Consulting Services to support post-construction physical and environmental monitoring for the 2021-23/24 Broward County Shore Protection Project – Segment III FCCE Post-Irma Reparation Project. This Amendment also provides for services related regulatory permit compliance activities and future Federal project reauthorization activities for the Segment III project.

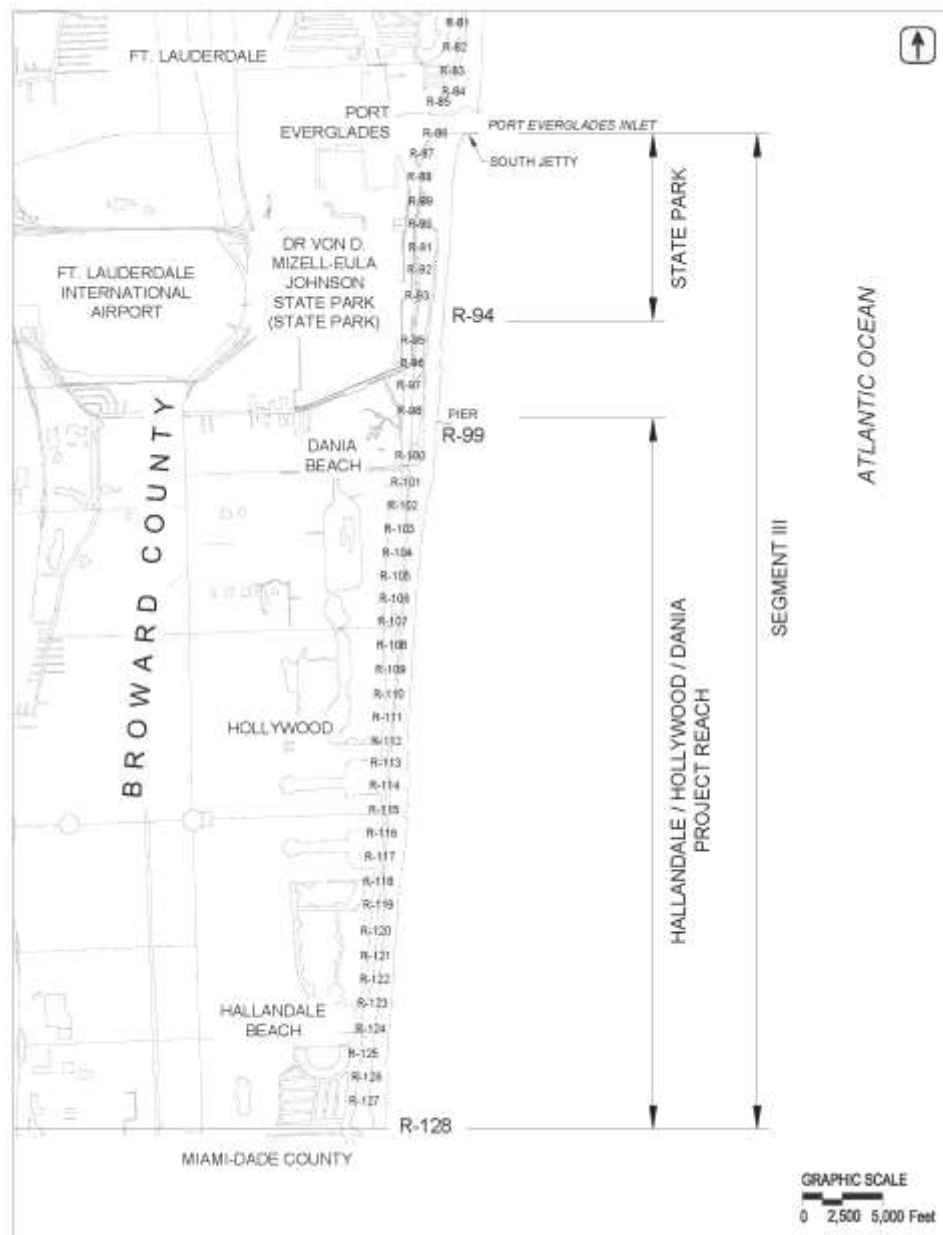


Figure 1: Location of Segment III study and project area.

**SCOPE OF CONSULTANT SERVICES FOR THE
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Amendment 1: SEGMENT III – POST-CONSTRUCTION and FEDERAL REAUTHORIZATION SUPPORT SERVICES

1. POST CONSTRUCTION ENGINEERING REPORT

The CONSULTANT shall prepare a post-construction engineering report which addresses physical aspects of the constructed project. The purpose of the report is to document relevant aspects of the work which will be beneficial in the design, planning, and construction of future renourishment efforts. Items of interest will include documentation of CONTRACTOR fill productivity, weather conditions during execution of the work, factors affecting the CONTRACTOR'S productivity, etc. Additionally, the report will summarize elements of the total cost to construct, permit, and public interest issues occurring during the period of construction and other factors potentially affecting future projects. The CONSULTANT shall access, analyze, and summarize CONTRACTOR related data obtained from daily reports, project specific reporting submittals, internal reports, etc. If appropriate, such databases will be formulated in a graphic format for visual interpretation by the layman. Documentation of spatial variations of fill placement based upon both CONTRACTOR and CONSULTANT surveys will be included.

Deliverable. Deliverables to the COUNTY and FDEP shall be one (1) PDF copy of the report with all attachments suitable for posting online and appropriate electronic sharing. The PDF copy will be provided on electronic media (CD, thumb drive, ftp site, etc.) suitable for distribution as may be necessary. All PDF copies will be ADA compliant.

PHYSICAL MONITORING SERVICES

2. PHYSICAL MONITORING: INTERMEDIATE CONDITION SURVEY

The CONSULTANT shall conduct an intermediate beach profile survey of the Segment III shoreline during the Summer of 2022. The survey will document intermediate conditions as of the summer 2022 suspension of work

The FDEP Beaches, Inlets and Ports Program has provided a set of technical specifications for the collection and submittal of coastal monitoring data (FDEP, 2001). The CONSULTANT shall apply these technical specifications in the planning, collection, processing, and submittal of the physical monitoring data described herein. More specifically, additional guidelines have been established by FDEP for Beach Erosion Control Projects. The physical monitoring described herein meets or exceeds those requirements. The Physical Monitoring Plan includes three (3) basic elements:

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- a. Comprehensive surveys of the beach by a certified Hydrographic Surveyor and Professional Surveyor and Mapper;
- b. Analysis of annual beach changes and development of a cumulative comparative database; and
- c. The formulation of a detailed Annual Report of Findings for consideration by the COUNTY, State and Federal agencies, and the general public.

2.1. Beach Profile Survey

The CONSULTANT shall conduct beach profile surveys along the Segment III shoreline to support the physical monitoring of the constructed project. The schedule and occurrence of the surveys shall follow the approved FDEP Physical Monitoring Plan. The pre-construction survey will be conducted by the USACE Jacksonville District and made available to Broward County. All other required surveys will be conducted by Broward County through this Agreement.

The beach profile surveys shall include all of Segment III from approximately R-85.7 to R-5 in Miami-Dade County, including all established intermediate monuments located south of Port Everglades north jetty. Beach profiles at the primary monuments shall extend approximately 2,000 feet from the control monument or to -30 feet NAVD, whichever is greater. Beach profile surveys at intermediate monuments shall be wading depth only.

As per the requirements listed in the FDEP Beaches, Inlets and Ports Program Monitoring Plan Technical Specifications, the CONSULTANT shall certify the horizontal and vertical position of all found and used monuments. Survey control information to be used shall be provided to and concurred by FDEP before survey work proceeds. The CONSULTANT shall provide all necessary materials and equipment to perform the required work activity. The CONSULTANT shall also supply the supervisory, professional, and technical services personnel required to manage, document, and process all data associated with the acquisition and processing of the survey data.

All required data shall be provided in the following datum: HARN, NAD 83/90 State Plane Coordinates in feet, plus NAVD88 elevations in U.S. survey feet. Alternative datums will be considered, but must be agreed upon by FDEP prior to commencing survey work. All deliverables shall be in accordance with the FDEP Monitoring Plan Technical Specifications 02000.

Deliverable. Deliverables to the COUNTY and FDEP shall include a total of one (1) hardcopies and two (2) digital copies of the following products:

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Amendment 1: SEGMENT III – POST-CONSTRUCTION and FEDERAL REAUTHORIZATION SUPPORT SERVICES

- a. Survey report from the Florida licensed surveyor certifying to the Department that the survey meets the technical standards of Chapter 61G17-6, FAC.
- b. Copies of all checked, standard survey field books, computation and reduction files, and abstracted final positions.
- c. Monument Information Report (Given/Used/Found Report) with regard to monumentation that includes a list of provided, found, and used monuments and TBM identification, stamping, coordinates, elevations, and profile azimuths.
- d. A quality control/quality assurance report detailing a QA/QC procedure and any findings, corrections, and results of that procedure, including cross-sectional plots of each profile and plan view plot of the data with an approximate mean high water (MHW) contour.

Deliverables to the COUNTY and FDEP shall also include two (2) copies of the following digital products:

- a. ACSII file containing raw x, y, z profile data points.
- b. ASCII files containing the profile data processed into the FDEP x, y, z format, if x, y, z data are collected, and the DEP distance and depth format. The FDEP format includes data as well as header records.
- c. ASCII file containing the monument identification, stamping, coordinates and elevations.
- d. Digital copy of cross-section and plan view data plots.
- e. Complete Federally-compliant metadata file including methodology of the data collection and processing procedures used in accordance with standards set forth by the Federal Geographic Data Committee. Metadata shall include all QA/QC procedures utilized to ensure the quality of the data and shall be delivered digitally on CD.
- f. Field books shall be scanned and pages amassed into a PDF document for digital submittal on CD.
- g. Data will be provided to FDEP in NAVD88 datum.

2.2. Analyses/Reporting

Consistent with the approved Physical Monitoring Plan, the CONSULTANT shall prepare an engineering report based upon on-site review of conditions at the time of the beach profile survey and comparison of the pre-and post-construction (when available) surveys. The purpose of the report will be to summarize baseline beach conditions associated with the construction of the Segment III project. The results will serve at the baseline for comparison of future project performance. The report will include includes graphic presentations of cumulative beach volume changes associated with the beach fill project as represented by comparison of the pre- and

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post-construction survey. Volumetric changes at each survey profile and along the Segment III shoreline including the fill limits shall be computed and presented in tabular and graphic forms. Aerial photography (to be provided by the COUNTY) will be utilized to further establish project related baseline conditions. The memo will be submitted approximately 90 days following the beach survey.

Deliverable. Deliverables to the COUNTY for and FDEP shall be one (1) PDF copy of the report with all attachments suitable for posting online and appropriate electronic sharing. The PDF copy will be provided on electronic media (CD, thumb drive, ftp site, etc.) suitable for distribution as may be necessary. All PDF copies will be ADA compliant.

3. PHYSICAL MONITORING: INTERMEDIATE POST-CONSTRUCTION (AUTH. WITHHELD)

The CONSULTANT shall conduct an intermediate beach profile survey of the Segment III shoreline during the Summer of 2023 if all project work is not complete prior to a permit required suspension of work. The survey and analyses shall follow the requirements described in Task 2.0

4. PHYSICAL MONITORING: IMMEDIATE POST-CONSTRUCTION

The CONSULTANT shall conduct the surveys and analyses and provide the deliverable described in Task 2.0. The CONSULTANT shall conduct this survey immediately following completion of project construction.

5. PHYSICAL MONITORING: 1-YEAR POST-CONSTRUCTION

The CONSULTANT shall conduct the surveys and analyses and provide the deliverable described in Task 2.0. The CONSULTANT shall conduct this task one year following completion of the entire Segment III project construction.

6. PHYSICAL MONITORING: 2-YEAR POST-CONSTRUCTION

The CONSULTANT shall conduct the surveys and analyses and provide the deliverable described in Task 2.0. The CONSULTANT shall conduct this task two years following completion of the entire Segment III project construction.

7. PHYSICAL MONITORING: 3-YEAR POST-CONSTRUCTION

The CONSULTANT shall conduct the surveys and analyses and provide the deliverable described in Task 2.0. The CONSULTANT shall conduct this task three years following completion of the entire Segment III project construction.

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8. PHYSICAL MONITORING: 4-YEAR POST-CONSTRUCTION

The CONSULTANT shall conduct the surveys and analyses and provide the deliverable described in Task 2.0. The CONSULTANT shall conduct this task four years following completion of the entire Segment III project construction.

9. PHYSICAL MONITORING: 5-YEAR POST-CONSTRUCTION

The CONSULTANT shall conduct the surveys and analyses and provide the deliverable described in Task 2.0. The CONSULTANT shall conduct this task five years following completion of the entire Segment III project construction.

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ENVIRONMENTAL MONITORING SERVICES

**SEGMENT III – DR. VON D. MIZELL-EULA JOHNSON STATE PARK (PARK) REACH AND
HOLLYWOOD/HALLEDALE/DANIA BEACH (HHD) REACH
FDEP PERMIT NO. 0163435-015-JC & PERMITTED BIOLOGICAL MONITORING PLAN (BMP)
DATED MARCH 9, 2021**

The CONSULTANT, through its qualified SUB-CONSULTANT (CEG), shall monitor nearshore hardbottom habitat seaward of the permitted equilibrium toe of fill (ETOF), as well as north and south of the beach fill template, to assess potential project-related secondary impacts to nearshore hardbottom resulting from the 2021-23 Segment III beach nourishment project. All monitoring shall be conducted in compliance with the permitted BMP dated March 9, 2021.

Construction of the two beach fill reaches, Park and HHD, has been staggered such that their post-construction monitoring timelines will be different. For this reason, this scope of work presents the monitoring tasks relative to each reach. Construction of the Park reach (R-86.7 to R-92) began in November 2021 and continued through May 31, 2022. Construction of the Park reach is expected to resume following the 2022 sea turtle nesting season. Phased construction of the Park reach will require two immediate post-construction surveys: one in Summer 2022 and the second in Summer 2023. Given the along shore length of fill placed in Winter 2021/22, all permanent transects in the Park will be monitored during the Summer 2022 Immediate post-construction survey.

The CONSULTANT shall conduct the nearshore environmental monitoring tasks annually during the summer months (May through September). The 2022 immediate post-construction survey of the Park reach has been funded under a separate contract for marine biological monitoring between the County and Nova Southeastern University (RLI #050797). Data analyses and development of the 2022 immediate post-construction monitoring report for the Park reach, if required, are included in this scope of work.

In total, there are 65 permanent cross-shore transects along the Segment III shoreline: 39 biological transects and 26 sediment transects. The Park reach has 13 permanent transects (7 biological and 6 sediment) and HHD has 52 transects (32 biological and 20 sediment). Maximum transect length in the Park is 150 m while maximum transect length in HHD is 100 m. Along each permanent transect, the CONSULTANT shall apply multiple methods including quadrat-based benthic ecological assessments (biological transects only), line-intercept for sediment, interval sediment depth measurements, and digital video transects.

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Statistical treatment of all monitoring data shall follow the methods described in detail in the BMP and summarized in Task 10.3 below. Each survey involves data collection along permanent cross-shore transects and detailed mapping of the nearshore hardbottom edge by divers. During each survey, the CONSULTANT shall also conduct listed coral species surveys to monitor potential sedimentation impacts at seven (7) permanent stations: one (1) in the Park reach and six (6) along HDD. Diver perimeter mapping surveys of the mitigation reefs from one R-monument north to three R-monuments south of the beach fill placement area shall be conducted at Years 1 and 3 post-construction (Tasks 21 and 22).

10. HARDBOTTOM MONITORING FOR PARK REACH: IMMEDIATE POST-CONSTRUCTION SURVEY 1

The following metrics shall be assessed during the annual post-construction surveys of the Park reach. As described above, the cost of field data collection for the 2022 Immediate post-construction survey of the Park reach is not included in this scope of work.

10.1 Nearshore Hardbottom Edge Mapping

The CONSULTANT shall map the position of the nearshore hardbottom edge between Port Everglades Inlet at R-86.7 south to R-95. The CONSULTANT shall follow the inshore contour of the most prominent hardbottom-sand border. A buoy with a Differential Global Positioning System (DGPS) antenna, linked wirelessly to a topside computer via radio/receiver, shall be towed along this boundary to record the position of the nearshore hardbottom edge. The benthic community along the hardbottom edge shall be documented with high-definition digital video, and coordinates shall be recorded during mapping to georeference the digital video record. The topside computer shall run Trimble Penmap hydrographic software which stores edge data as a line feature to be exported as an ArcGIS shape file at the end of each field day.

10.2 Permanent 150-m Shore Perpendicular Transects

The CONSULTANT shall monitor 13, 150-m permanent cross-shore transects within the Park reach as described in the BMP. Of the 13 transects, seven (7) are biological transects and six (6) are sediment transects. Other than the downdrift biological transect (BT 7), the permanent monitoring transects are the same as those monitored for the 2013 Port Everglades Maintenance Dredging Project. During each post-construction monitoring event, divers shall note the condition of the permanent markers and document if maintenance is needed. The CONSULTANT shall replace or reinstall pins/eyebolts as needed during each monitoring event.

Along each permanent biological transect, the CONSULTANT shall apply several methods including quadrat-based benthic ecological assessments, line-intercept for sediment, interval sediment depth measurements, and digital video transects.

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Along sediment-only monitoring transects, hardbottom line-intercept and 1-m interval sediment depth measurements will be collected with qualitative video documentation.

10.2.1 Permanent benthic quadrats

The CONSULTANT shall monitor the same 15 1-m² permanent quadrat locations east of the ETOF that were installed and monitored during the pre-construction survey in September 2020. The CONSULTANT shall collect the benthic data using the quadrat-based Benthic Ecological Assessment for Marginal Reefs (BEAMR) method.

10.2.2 Sediment line intercept

The CONSULTANT shall document the location of hardbottom boundaries interrupted by sand patches larger than 0.5 m in length (by the transect interception) to determine change in sand cover along each shore-perpendicular transect.

10.2.3 Sediment depth interval measurements

The CONSULTANT shall measure sediment depth (cm) at 1-m intervals along each shore-perpendicular transect to provide a snapshot of the cross-shore sand distribution across and in between the nearshore hardbottom patches at each sampling event.

10.2.4 Video Transects

The CONSULTANT shall conduct digital video documentation along the length of each shore-perpendicular transect using a HD video camera in progressive scan mode. A close-up of the transect name clearly written on a waterproof slate shall be recorded for each video transect. The video shall be recorded at a height of 40 cm above the substrate and a speed of approximately 4-5 meters per minute so that it is acceptable for video analysis, if required at a later date. Landscape panoramic views (360°) shall be recorded at the start and end of each transect. Additionally, a panoramic view shall be recorded at the start and end of each interruption of the benthos by a sand gap that extends for more than 10 m.

10.2.5 Listed Coral Monitoring Station LS-1

Listed coral monitoring station LS-1 is located downdrift of the Park reach near R-92.5. Pursuant to the BMP, the station contains three circular monitoring plots with two permanent 14-m transects within each plot. Within each plot, all colonies of listed coral species are to be located, identified to species, measured, and have their condition assessed and

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recorded. Colony location within each circular plot shall be measured as the distance and bearing from the center pin. Colony size measurements shall include planar length, planar width, and height from colony base through the growth axis to the tallest point. Colony condition shall be assessed by documenting percent live tissue and presence of bleaching, disease, and predation. Still photographs of each colony shall be taken.

Line-intercept and sediment depth interval measurements at 1-m intervals shall be conducted along each of the two permanent transects within each circular plot. The position of each sand patch/trough at least 0.5 m in length shall be recorded along each transect by reference to transect tape meter marks.

10.3 2022 Immediate Post-Construction Data Analyses/Reporting

Consistent with the permitted BMP for the Segment III project dated March 2021, the CONSULTANT shall prepare the 2022 Immediate post-construction monitoring data deliverable for the Park reach. Hardbottom monitoring data shall be entered into a Microsoft Access database for data management, and two rounds of QA-QC review shall be conducted to ensure accuracy of monitoring data prior to submittal to the COUNTY and FDEP. Individual datasets shall be exported as Microsoft Excel workbooks.

If required, the 2022 Immediate post-construction biological monitoring report for the Park reach shall compare the pre-construction dataset from the 2020 monitoring survey to the 2022 Immediate post-construction dataset. The report shall analyze and discuss changes in the benthic communities, observed burial and sedimentation on nearshore hardbottom that may occur due the project, and results of the hardbottom edge mapping surveys.

Annual biological monitoring reports shall be provided to the COUNTY in digital format. These reports shall include:

- a. A map including the project area and adjacent hardbottom resources and monitoring transects overlaid onto recent, clear aerial photographs (in digital format);
- b. Analysis of sedimentation on the transect outside the ETOF (including the updrift and downdrift hardbottom monitoring sites) based on line-intercept data, interval sediment depth measurements and data from quadrats;
- c. Multivariate analysis of quantitative data with subsequent analysis of benthic biological components on the transects east of the ETOF (*e.g.*, percent cover and density by corals, octocorals, sponges and algae);

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- d. A comparison of post-construction monitoring results to pre-construction monitoring results;
- e. A figure comparing the most recent annual hardbottom delineation and all previous hardbottom delineations;
- f. Calculation of buried and exposed hardbottom acreage and comparison to previous hardbottom acreages;
- g. Trends or notable differences between transects located seaward of the ETOF (designated P-transects) compared to transects located updrift and downdrift of the project limits (designated OP-transects);
- h. An analysis of biological and physical monitoring data to identify the location and extent of the project-related influence to the coastal system. This will include an interpretation of a non-project related impacts caused by background conditions. Consideration will be given to the amount of change to hardbottom areas proportioned between with and without project conditions if impacts are identified above background; and
- i. A comparison of benthic community conditions to the physical (beach profile) surveys to assist in understanding regional or local coastal processes.

Deliverable. Within 45 days of completion of field data collection for the Immediate post-construction survey (Park reach), the CONSULTANT shall submit all data, including still photo transect and listed coral station images, digital video transects, digital video of the nearshore hardbottom edge, GIS shape files of the permanent transects and nearshore hardbottom edge, PDF of scanned field datasheets, and Microsoft Excel worksheets of quadrat, sediment, and listed coral station data, directly and concurrently (simultaneously) to the COUNTY and FDEP in electronic format. Data shall be submitted either on a single portable hard drive or via an FTP site.

Within 90 days of completion of field data collection, the CONSULTANT shall submit the final Immediate post-construction biological monitoring report in digital (PDF) format with all attachments suitable for posting online (and appropriate electronic sharing to the COUNTY, FDEP, and USACE). The PDF file will be provided on electronic media (USB flash drive, ftp site, etc.) suitable for distribution as may be necessary. The report shall contain a review of the efficacy of monitoring methods and recommendations for adjustments to the protocol as needed. All PDF copies will be ADA compliant. The CONSULTANT shall also coordinate with FDEP and submit all notifications and deliverables according to the conditions of the BMP and permits. The CONSULTANT shall attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

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11. HARDBOTTOM MONITORING FOR PARK REACH: IMMEDIATE POST-CONSTRUCTION SURVEY 2

The CONSULTANT shall conduct the same field methods and provide the same data and report deliverables as detailed above in Task 10. The same reporting timeline outlined in Task 10.3 shall apply.

A single Immediate post-construction report shall be prepared which summarizes the results of both immediate post-construction surveys (Summer 2022 and Summer 2023). The 2023 post-construction report shall be cumulative and compare the 2020 pre-construction survey to each immediate post-construction monitoring survey. The report shall contain a review of the efficacy of monitoring methods and recommendations for adjustments to the protocol as needed. The CONSULTANT shall also coordinate with FDEP and submit all notifications and deliverables according to the conditions of the BMP and permits. The CONSULTANT shall attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

12. HARDBOTTOM MONITORING FOR PARK REACH: YEAR 1 POST-CONSTRUCTION SURVEY

The CONSULTANT shall conduct the same field methods and provide the same data and report deliverables as detailed above in Task 10. The same reporting timeline outlined in Task 10.3 shall apply.

The Year 1 post-construction report shall be cumulative and compare the 2020 pre-construction dataset to each subsequent post-construction monitoring survey. The report shall contain a review of the efficacy of monitoring methods and recommendations for adjustments to the protocol as needed. The CONSULTANT shall also coordinate with FDEP and submit all notifications and deliverables according to the conditions of the BMP and permits. The CONSULTANT shall attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

13. HARDBOTTOM MONITORING FOR PARK REACH: YEAR 2 POST-CONSTRUCTION SURVEY

The CONSULTANT shall conduct the same field methods and provide the same data and report deliverables as detailed above in Task 10.3. The same reporting timeline outlined in Task 10.3 shall apply.

The Year 2 post-construction report shall be cumulative and compare the 2020 pre-construction dataset (Park reach) to each subsequent post-construction monitoring survey. The CONSULTANT shall coordinate with FDEP and submit all notifications and deliverables according to the conditions of the BMP and permits. The CONSULTANT shall attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

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14. HARDBOTTOM MONITORING FOR PARK REACH: YEAR 3 POST-CONSTRUCTION SURVEY

The CONSULTANT shall conduct the same field methods and provide the same data and report deliverables as detailed above in Task 10. The same reporting timeline outlined in Task 10.3 shall apply.

The Year 3 post-construction report for the Park will be cumulative and compare the 2020 pre-construction dataset to each subsequent post-construction monitoring survey. The Year 3 post-construction report shall provide a final impact assessment for the project. The CONSULTANT will coordinate with FDEP and submit all notifications and deliverables according to the conditions of the BMP and permits. The CONSULTANT shall also attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

**BROWARD SEGMENT III – HOLLYWOOD, HALLENDALE & DANIA REACH (HHD)
EXISTING BMP & FDEP PERMIT NO. 0163435-015-JC**

15. HARDBOTTOM MONITORING FOR HDD REACH- IMMEDIATE PRE-CONSTRUCTION SURVEY 2 (AUTHORIZATION WITHHELD)

This task is required if construction of the HDD reach is delayed until Fall 2023 or if construction of HDD requires two seasons.

15.1 Nearshore Hardbottom Edge Mapping

The CONSULTANT shall map the position of the nearshore hardbottom edge within the HHD reach (plus 1,000 ft. updrift and 3,000 ft downdrift of the beach fill area) between R-95 in Dania Beach and R-4 in Dade County. The CONSULTANT shall follow the inshore contour of the most prominent hardbottom-sand border. A buoy with a Differential Global Positioning System (DGPS) antenna, linked wirelessly to a topside computer via radio/receiver, shall be towed along this boundary to record the position of the nearshore hardbottom edge. The benthic community along the hardbottom edge shall be documented with high-definition digital video, and coordinates shall be recorded during mapping to georeference the digital video record. The topside computer shall run Trimble Penmap hydrographic software which stores edge data as a line feature to be exported as an ArcGIS shape file at the end of each field day.

15.2 Permanent 100-m Shore Perpendicular Transects

The CONSULTANT shall monitor 52, 100-m permanent cross-shore transects within the HHD reach between R-97 in Dania Beach and R-3 in Dade County. Of the 52 transects, 32 are biological transects and 20 are sediment only transects.

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During each post-construction monitoring event, divers shall note the condition of the permanent markers and document if maintenance is needed. The CONSULTANT shall replace or reinstall pins/eyebolts as needed during each monitoring event.

Along each permanent biological transect, the CONSULTANT shall apply multiple methods including quadrat-based benthic ecological assessments, line-intercept for sediment, interval sediment depth measurements, and digital video transects. Along sediment-only monitoring transects, hardbottom line-intercept and 1-m interval sediment depth measurements will be collected with qualitative video documentation.

15.2.1 Permanent benthic quadrats

The CONSULTANT shall monitor the 13 1-m² permanent quadrats along each of the 32 biological transects in the HHD reach. The CONSULTANT shall collect benthic data using the quadrat-based Benthic Ecological Assessment for Marginal Reefs (BEAMR) method.

15.2.2 Sediment line intercept

The CONSULTANT shall document the location of hardbottom boundaries interrupted by sand patches larger than 0.5 m in length (by the transect interception) to determine change in sand cover along all 52 shore-perpendicular transects.

15.2.3 Sediment depth interval measurements

The CONSULTANT shall measure sediment depth (cm) at 1-m intervals along each shore-perpendicular transect to provide a snapshot of the cross-shore sand distribution across and in between the nearshore hardbottom patches at each sampling event.

15.2.4 Video Transects

The CONSULTANT shall conduct digital video documentation along the length of each shore-perpendicular transect using a HD video camera in progressive scan mode. A close-up of the transect name clearly written on a waterproof slate shall be recorded for each video transect. The video shall be recorded at a height of 40 cm above the substrate and a speed of approximately 4-5 meters per minute so that it is acceptable for video analysis, if required at a later date. Landscape panoramic views shall be recorded at the start and end of each transect. Additionally, a panoramic view shall be recorded at the start and end of each interruption of the benthos by a sand gap that extends for more than 10 meters.

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15.3 Listed Coral Monitoring Stations LS-2 through LS-7

Pursuant to the BMP, each of the six (6) listed coral monitoring stations in the HDD reach contain three circular monitoring plots with two permanent 14-m transects within each plot. Within each plot, all colonies of listed coral species are to be located, identified to species, measured, and have their condition assessed and recorded. Colony location within each circular plot shall be measured as the distance and bearing from the center pin. Colony size measurements shall include planar length, planar width, and height from colony base through the growth axis to the tallest point. Colony condition shall be assessed by documenting percent live tissue and presence of bleaching, disease, and predation. Still photographs of each colony shall be taken.

Line-intercept and sediment depth interval measurements at 1-m intervals shall be conducted along each of the two permanent transects within each circular plot. The position of each sand patch/trough at least 0.5 m in length shall be recorded along each transect by reference to transect tape meter marks.

Deliverable. Within 60 days of completion of Pre-construction Survey 2, the CONSULTANT shall submit all raw pre-construction baseline data (PDF of scanned field sheets), Microsoft Excel spreadsheets containing listed coral and sediment monitoring data, still photographs, and GIS shape files of the listed coral monitoring sites, directly and concurrently (simultaneously) to the COUNTY and FDEP in electronic format. The data deliverable shall be provided on an external hard drive or FTP site.

16. HARDBOTTOM MONITORING FOR HDD REACH- IMMEDIATE POST-CONSTRUCTION SURVEY

16.1 Nearshore Hardbottom Edge Mapping

The CONSULTANT shall map the position of the nearshore hardbottom edge within the HDD reach (plus 1,000 ft. updrift and 3,000 ft. downdrift of the beach fill area) between R-95 in Dania Beach and R-4 in Dade County. The CONSULTANT shall follow the inshore contour of the most prominent hardbottom-sand border. A buoy with a Differential Global Positioning System (DGPS) antenna, linked wirelessly to a topside computer via radio/receiver, shall be towed along this boundary to record the position of the nearshore hardbottom edge. The benthic community along the hardbottom edge shall be documented with high-definition digital video, and coordinates shall be recorded during mapping to georeference the digital video record. The topside computer shall run Trimble Penmap hydrographic software which stores edge data as a line feature to be exported as an ArcGIS shape file at the end of each field day.

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16.2 Permanent 100-m Shore Perpendicular Transects

The CONSULTANT shall monitor 52, 100-m permanent cross-shore transects within the HHD reach between R-97 in Dania Beach and R-3 in Dade County. Of the 52 transects, 32 are biological transects and 20 are sediment only transects.

During each post-construction monitoring event, divers shall note the condition of the permanent markers and document if maintenance is needed. The CONSULTANT shall replace or reinstall pins/eyebolts as needed during each monitoring event.

Along each permanent biological transect, the CONSULTANT shall apply multiple methods including quadrat-based benthic ecological assessments, line-intercept for sediment, interval sediment depth measurements, and digital video transects. Along sediment-only monitoring transects, hardbottom line-intercept and 1-m interval sediment depth measurements will be recorded with qualitative video documentation.

16.2.1 Permanent benthic quadrats

The CONSULTANT shall monitor the 13 1-m² permanent quadrats along each of the 32 biological transects in the HHD reach. The CONSULTANT shall collect benthic data using the quadrat-based Benthic Ecological Assessment for Marginal Reefs (BEAMR) method.

16.2.2 Sediment line intercept

The CONSULTANT shall document the location of hardbottom boundaries interrupted by sand patches larger than 0.5 m in length (by the transect interception) to determine change in sand cover along all 52 shore-perpendicular transects.

16.2.3 Sediment depth interval measurements

The CONSULTANT shall measure sediment depth (cm) at 1-m intervals along each shore-perpendicular transect to provide a snapshot of the cross-shore sand distribution across and in between the nearshore hardbottom patches at each sampling event.

16.2.4 Video Transects

The CONSULTANT shall conduct digital video documentation along the length of each shore-perpendicular transect using a HD video camera in progressive scan mode. A close-up of the transect name clearly written on a waterproof slate shall be recorded for each video transect. The video shall be recorded at a height of 40 cm above the substrate and a speed of

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approximately 4-5 meters per minute so that it is acceptable for video analysis, if required at a later date. Landscape panoramic views shall be recorded at the start and end of each transect. Additionally, a panoramic view shall be recorded at the start and end of each interruption of the benthos by a sand gap that extends for more than 10 meters.

16.3 Listed Coral Monitoring Stations LS-2 through LS-7

Pursuant to the BMP, each of the six (6) listed coral monitoring stations in the HDD reach will contain three circular monitoring plots with two permanent 14-m transects within each plot. Within each plot, all colonies of listed coral species are to be located, identified to species, measured, and have their condition assessed and recorded. Colony location within each circular plot shall be measured as the distance and bearing from the center pin. Colony size measurements shall include planar length, planar width, and height from colony base through the growth axis to the tallest point. Colony condition shall be assessed by documenting percent live tissue and presence of bleaching, disease, and predation. Still photographs of each colony shall be taken.

Line-intercept and sediment depth interval measurements at 1-m intervals shall be conducted along each of the two permanent transects within each circular plot. The position of each sand patch/trough at least 0.5 m in length shall be recorded along each transect by reference to transect tape meter marks.

16.4 Immediate Post-Construction Data Analyses/Reporting

Consistent with the permitted BMP, the CONSULTANT shall prepare the annual monitoring data deliverable, conduct statistical analyses, and prepare the Immediate post-construction biological monitoring report according to the 2016 FDEP Standard Operation Procedures for Nearshore Hardbottom Monitoring. Hardbottom monitoring data shall be entered into a Microsoft Access database for data management, and two rounds of QA-QC review shall be conducted to ensure accuracy of monitoring data prior to submittal to the COUNTY and FDEP. Individual datasets shall be exported as Microsoft Excel workbooks.

The report shall provide data on the pre-construction dataset to each respective post-construction dataset for the monitoring event. The CONSULTANT shall analyze and discuss changes in benthic community, observed burial and sedimentation on the nearshore hardbottom that may occur due the project, and the results of the hardbottom edge mapping surveys.

Annual biological monitoring reports shall be provided to the COUNTY in digital format. These reports shall include:

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- a. A map including the project area and adjacent hardbottom resources and monitoring transects overlaid onto recent, clear aerial photographs (in digital format);
- b. Analysis of sedimentation on the transect outside the ETOF (including the updrift and downdrift hardbottom monitoring sites) based on line-intercept data, interval sediment depth measurements and data from quadrats;
- c. Multivariate analysis of quantitative data with subsequent analysis of benthic biological components on the transects east of the ETOF (*e.g.*, percent cover and density by corals, octocorals, sponges and algae);
- d. A comparison of post-construction monitoring results to pre-construction monitoring results;
- e. A figure comparing the most recent annual hardbottom delineation and all previous hardbottom delineations;
- f. Calculation of buried and exposed hardbottom acreage and comparison to previous hardbottom acreages;
- g. Trends or notable differences between transects located seaward of the ETOF (designated P-transects) compared to transects located updrift and downdrift of the project limits (designated OP-transects);
- h. An analysis of biological and physical monitoring data to identify the location and extent of the project-related influence to the coastal system. This will include an interpretation of a non-project related impacts caused by background conditions. Consideration will be given to the amount of change to hardbottom areas proportioned between with and without project conditions if impacts are identified above background; and
- i. A comparison of benthic community conditions to the physical (beach profile) surveys to assist in understanding regional or local coastal processes.

Deliverable. Within 45 days of completion of each annual monitoring event, the CONSULTANT shall submit all hardbottom data, including still photo transect images, digital video transects, digital video of the nearshore hardbottom edge, GIS shape files of the permanent transects and nearshore hardbottom edge, PDF file of scanned field datasheets, and Microsoft Excel spreadsheets of quadrat and sediment data, directly and concurrently (simultaneously) to the COUNTY and FDEP in electronic format. Data shall be submitted either on a single portable hard drive or via an FTP site.

Within 90 days of completion of data collection, the CONSULTANT shall submit the final report specific to the HDD reach in digital (PDF) format with all attachments suitable for posting online and appropriate electronic sharing to the COUNTY, FDEP, and USACE. The PDF copy will be provided on electronic media (USB flash drive, ftp site, etc.) suitable for distribution as may be necessary. All PDF copies will be ADA compliant. The CONSULTANT

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shall attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

17. HARDBOTTOM MONITORING FOR HDD REACH- YEAR 1 POST-CONSTRUCTION SURVEY

The CONSULTANT shall conduct the field methods for edge mapping, permanent transects, and listed coral monitoring stations described in Task 16 and provide the data deliverables as detailed above in Task 16.4. During each annual post-construction monitoring event, divers shall note the condition of the permanent markers and document if maintenance is needed. Markers shall be replaced or re-installed as needed during each monitoring event.

The reporting timeline as outlined in Task 16.4 shall apply. The Year 1 post-construction report shall be cumulative and compare the pre-construction dataset to each subsequent post-construction monitoring survey. The report shall contain a review of the efficacy of monitoring methods and recommendations for adjustments to the protocol as needed. The CONSULTANT shall attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

18. HARDBOTTOM MONITORING FOR HDD REACH- YEAR 2 POST-CONSTRUCTION

The CONSULTANT shall conduct the field methods for edge mapping, permanent transects, and listed coral stations described in Task 16 above and provide the data deliverables as detailed above in Task 16.4. During each annual post-construction monitoring event, divers shall note the condition of the permanent markers and document if maintenance is needed. Markers shall be replaced or re-installed as needed during each monitoring event.

The same reporting timeline as outlined in Task 16.4 shall apply. The Year 2 post-construction report shall be cumulative and compare the pre-construction dataset to each subsequent post-construction monitoring survey. The report shall contain a review of the efficacy of monitoring methods and recommendations for adjustments to the protocol as needed. The CONSULTANT shall attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

19. HARDBOTTOM MONITORING FOR HDD REACH- YEAR 3 POST-CONSTRUCTION

The CONSULTANT shall conduct the field methods for edge mapping, permanent transects, and listed coral monitoring stations described in Task 16 and provide the data deliverables as detailed above in Task 16.4.

The same reporting timeline as outlined in Task 16.4 shall apply. The Year 3 post-construction report shall be cumulative and compare the pre-construction dataset to each subsequent post-construction monitoring survey. The Year 3 post-construction report

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shall provide a final impact assessment for the project. The CONSULTANT shall coordinate with FDEP and submit all notifications and deliverables according to the conditions of the BMP and permits. The CONSULTANT shall attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

20. HARDBOTTOM MONITORING FOR HDD REACH- YEAR 3 POST-CONSTRUCTION FOR PORTION OF HDD REACH COMPLETED IN SEASON 2 (AUTHORIZATION WITHHELD)

This task is required if the HDD reach is constructed over two seasons and would serve as the Year 3 post-construction monitoring for the portion of the HDD reach constructed in Season 2. If this task is authorized by the COUNTY, the CONSULTANT shall conduct the same field methods and provide the same data and report deliverables as detailed above in Task 16. The same reporting timeline outlined in Task 16.4 would apply.

The Year 3 post-construction report for HDD- Season 2 would be cumulative and compare the pre-construction dataset to each subsequent post-construction monitoring survey. The Year 3 post-construction report shall provide a final impact assessment for the project. The CONSULTANT would coordinate with FDEP and USACE and submit all notifications and deliverables according to the conditions of the BMP and permits. The CONSULTANT would also attend up to two meetings/year during review of the annual monitoring report to discuss the findings with FDEP staff.

21. YEAR 1 POST-CONSTRUCTION MITIGATION REEF ARTIFICIAL REEF MONITORING

There are seven (7) artificial reefs constructed for mitigation for the 2006 Segment III project; the reefs are located between R-101 and R-126. Pursuant to the BMP, the CONSULTANT shall conduct diver mapping perimeter surveys of the seven artificial reefs at Year 1 post-construction for the HDD reach to estimate gross exposure (acreage). Divers shall follow the same protocols as the nearshore hardbottom edge mapping described in Task 16.1. above. The non-towing diver shall record digital video of the reef perimeter to document the benthic community along the sides of the boulders. After data collection, positional data shall be entered into ArcGIS for area of coverage evaluation and creation of GIS maps.

Deliverable. Within 45 days of completion of the Year 1 post-construction survey, the CONSULTANT shall submit the GIS shape files of the diver-mapped reef perimeters and associated hyperlinked video files in conjunction with the data deliverable described in Task 16.4 above. An evaluation of gross acreage of mitigation artificial reef shall be provided in the Year 1 post-construction monitoring report described in Task 17.

22. YEAR 3 POST-CONSTRUCTION MITIGATION REEF ARTIFICIAL REEF MONITORING

Pursuant to the BMP, the CONSULTANT shall conduct diver mapping perimeter surveys of the seven (7) mitigation artificial reefs at Year 3 post-construction for the HDD reach to

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estimate gross exposure (acreage). Divers shall follow the same protocols as the nearshore hardbottom edge mapping described in Task 16.1. above. The non-towing diver shall record digital video of the perimeter of each reef to document the benthic community along the sides of the perimeter boulders. After data collection, positional data will be entered into ArcGIS for area of coverage evaluation and creation of GIS maps.

Deliverable. Within 45 days of completion of the Year 3 post-construction survey, the CONSULTANT shall submit the GIS shape files of the diver-mapped reef perimeters and associated hyperlinked video files in conjunction with the data deliverable described in Task 16.4 above. An evaluation of gross acreage of mitigation artificial reef shall be provided in the Year 3 post-construction monitoring report described in Task 19.

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SEGMENT III FEDERAL PROJECT REAUTHORIZATION SERVICES

**23. FEDERAL PROJECT REAUTHORIZATION STUDY PLANNING and SUPPORT
(AUTHORIZATION WITHHELD)**

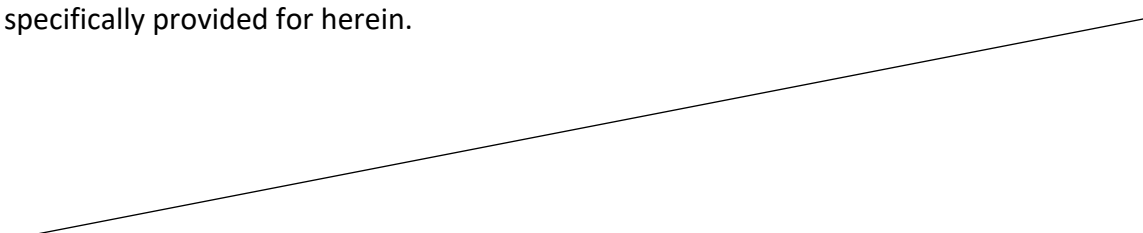
The CONSULTANT shall be available for coordination with the USACE to develop the scope and Project Review Plan for the required Feasibility Study (FS) and related environmental documents to support the reauthorization of the Segment III project. It is anticipated that this effort will require online and in-person meetings with County and USACE staff to develop the framework for the FS, the distribution of work between the COUNTY and the USACE, the approval process, and the eventual authorization of a new 50-year Federal project for the Segment III shoreline. The CONSULTANT shall also be available to support the COUNTY and USACE with data collection, engineering and economic analyses, environmental analyses and documentation, report preparation, public and regulatory and resource agency coordination, document review processes. The CONSULTANT shall also assist the COUNTY with other associated tasks as may be required by the USACE, which are consistent with this scope and budget, to assist the COUNTY with the initiation, execution, and approval of a reauthorization study for the Broward County Federal Shore Protection Project – Segment III.

Deliverables. Relevant deliverables will be prepared as required and provided to the County.

OPTIONAL SERVICES

24. OPTIONAL SERVICES (AUTHORIZATION WITHHELD)

This Optional Services task provides for consulting services related to the survey, planning, engineering, modeling, design, permitting, construction document preparation, bidding assistance, and construction oversight that may be required to complete the ongoing Segment III work, including dune construction, as well as work described herein but have not been anticipated during the development of this scope of work and are not specifically provided for herein.



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GENERAL COASTAL ENGINEERING CONSULTING

25. GENERAL COASTAL ENGINEERING CONSULTING (T&M)

This task provides for general coastal engineering consulting services on an as needed basis for the CONSULTANT to assist the COUNTY and County staff with matters related to the County's Segment III beach management program.

----- *End of Scope of Consulting Services* -----

Broward County Shore Protection Project Segment III
Agreement T2112588P1
(First Amendment Phase IV Total Cost Summary)

Task	Olsen	Olsen	Olsen	Subconsult		Total	Total
	Lump Sum	NTE	Optional Services	Lump Sum	Reimb (NTE)	Less Reimbursement, Optional Services, and General Coastal Engineering Services	
1.0 Post-Construction Engineering Report	\$ 47,400.00			\$ -	\$ -	\$ 47,400.00	\$ 47,400.00
Physical Monitoring							
2.0 Physical Monitoring: Intermediate Condition Survey	\$ 76,800.00			\$ 44,100.00	\$ 3,600.00	\$ 120,900.00	\$ 124,500.00
3.0 Physical Monitoring: Intermediate Condition Survey (Authorization Withheld)	\$ 76,800.00			\$ 45,400.00	\$ 3,600.00	\$ 122,200.00	\$ 125,800.00
4.0 Physical Monitoring: Immediate Post-Construction	\$ 76,800.00			\$ 46,800.00	\$ 3,600.00	\$ 123,600.00	\$ 127,200.00
5.0 Physical Monitoring: 1-Year Post-Construction	\$ 76,800.00			\$ 48,200.00	\$ 3,600.00	\$ 125,000.00	\$ 128,600.00
6.0 Physical Monitoring: 2-Year Post-Construction	\$ 76,800.00			\$ 49,600.00	\$ 3,600.00	\$ 126,400.00	\$ 130,000.00
7.0 Physical Monitoring: 3-Year Post-Construction	\$ 76,800.00			\$ 51,100.00	\$ 3,600.00	\$ 127,900.00	\$ 131,500.00
8.0 Physical Monitoring: 4-Year Post-Construction	\$ 76,800.00			\$ 52,600.00	\$ 3,600.00	\$ 129,400.00	\$ 133,000.00
9.0 Physical Monitoring: 5-Year Post-Construction	\$ 76,800.00			\$ 54,200.00	\$ 3,600.00	\$ 131,000.00	\$ 134,600.00
subtotal	\$ 614,400.00			\$ 392,000.00	\$ 28,800.00	\$ 1,006,400.00	\$ 1,035,200.00
Environmental Services							
10.0 Hardbottom Monitoring for Park Reach: Immediate Post-Construction Survey 1	\$ 10,720.00			\$ 50,170.00	\$ 3,600.00	\$ 60,890.00	\$ 64,490.00
11.0 Hardbottom Monitoring for Park Reach: Immediate Post-Construction Survey 2	\$ 10,720.00			\$ 90,160.00	\$ -	\$ 100,880.00	\$ 100,880.00
12.0 Hardbottom Monitoring for Park Reach: Year 1 Post-Construction	\$ 10,720.00			\$ 93,570.00	\$ -	\$ 104,290.00	\$ 104,290.00
13.0 Hardbottom Monitoring for Park Reach: Year 2 Post-Construction	\$ 10,720.00			\$ 99,650.00	\$ -	\$ 110,370.00	\$ 110,370.00
14.0 Hardbottom Monitoring for Park Reach: Year 3 Post-Construction	\$ 10,720.00			\$ 105,630.00	\$ -	\$ 116,350.00	\$ 116,350.00
15.0 Hardbottom Monitoring for HHD Reach: Immediate Pre-construction Survey 2 (AW)	\$ 10,720.00			\$ 162,510.00	\$ -	\$ 173,230.00	\$ 173,230.00
16.0 Hardbottom Monitoring for HHD Reach: Immediate Post-Construction	\$ 10,720.00			\$ 204,110.00	\$ -	\$ 214,830.00	\$ 214,830.00
17.0 Hardbottom Monitoring for HHD Reach: Year 1 Post-Construction	\$ 10,720.00			\$ 208,210.00	\$ -	\$ 218,930.00	\$ 218,930.00
18.0 Hardbottom Monitoring for HHD Reach: Year 2 Post-Construction	\$ 10,720.00			\$ 214,330.00	\$ -	\$ 225,050.00	\$ 225,050.00
19.0 Hardbottom Monitoring for HHD Reach: Year 3 Post-Construction	\$ 10,720.00			\$ 217,480.00	\$ -	\$ 228,200.00	\$ 228,200.00
20.0 Hardbottom Monitoring for HHD - Year 3 Post-Const for Portion of HHD Completed in Season 2 (AW)	\$ 10,720.00			\$ 79,650.00	\$ -	\$ 90,370.00	\$ 90,370.00
21.0 Year 1 Post-Construction Mitigation Reef Artificial Reef Monitoring	\$ 10,720.00			\$ 13,160.00	\$ -	\$ 23,880.00	\$ 23,880.00
22.0 Year 3 Post-Construction Mitigation Reef Artificial Reef Monitoring	\$ 10,720.00			\$ 13,160.00	\$ -	\$ 23,880.00	\$ 23,880.00
subtotal	\$ 139,360.00			\$ 1,551,790.00	\$ 3,600.00	\$ 1,691,150.00	\$ 1,694,750.00
Segment III Federal Project Reauthorization Services							
23.0 Federal Project Reauthorization Study Planning and Support (AW)	\$ 850,000.00			\$ -	\$ 50,000.00	\$ 850,000.00	\$ 900,000.00
Optional Services							
24.0 Optional Services (AW)			\$ 800,000.00				\$ 800,000.00
General Coastal Engineering Services							
25.0 General Coastal Engineering Services (T&M / NTE)		\$ 100,000.00					\$ 100,000.00
TOTAL	\$ 1,651,160.00	\$ 100,000.00	\$ 800,000.00	\$ 1,943,790.00	\$ 82,400.00	\$ 3,594,950.00	\$ 4,577,350.00

8/18/2022 (revised)

**AMENDED EXHIBIT B
MAXIMUM BILLING RATES**

Maximum Billing Rates

2022



Project No: T2112588P1_Amendment 1

Project Title: Coastal Engineering Consultant Services for Segment III Shore Protection Project

Consultant/Subconsultant Name: Olsen Associates, Inc. (Prime)

TITLE	MAXIMUM HOURLY RATE (\$/HR)	*	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Principal	\$ 76.55		2.90		\$ 222.00
Senior Engineer	\$ 56.41		2.90		\$ 163.59
Coastal Engineer III	\$ 39.65		2.90		\$ 114.99
Coastal Engineer II	\$ 37.89		2.90		\$ 109.88
Coastal Engineer I	\$ 35.47		2.90		\$ 102.86
CADD Technician	\$ 29.52		2.90		\$ 85.61
Administrative Assistant	\$ 31.16		2.90		\$ 90.36

OVERHEAD (\$/HR) = HOURLY RATE X OVERHEAD%⁽¹⁾ 103.33%

FRINGE (\$/HR) = HOURLY RATE X FRINGE%⁽¹⁾ 59.96%

PROFIT (\$/HR) = HOURLY RATE+ OVERHEAD+ FRINGE) X PROFIT% 10.00%

⁽¹⁾ Based upon FAR compliant audit for Olsen (attached).

**AMENDED EXHIBIT B
MAXIMUM BILLING RATES**

Project No: RFP T2112588P1
Project Title: Segment III Post-Construction Monitoring Services
Consultant/ Coastal Eco-Group Inc.
Subconsultant Name:

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
			Safe Harbor		
President, Principal Scientist	\$54.64		2.35		\$128.40
Senior Scientist	\$43.08		2.35		\$101.23
Staff Scientist	\$29.50		2.35		\$69.33
Boat Captain	\$27.32		2.35		\$64.20

Multiplier of X.XX is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (X.XX)%

FRINGE = HOURLY RATE X FRINGE (X.XX) %

OPERATING MARGIN = (HOURLY RATE + OVERHEAD + FRINGE) X OPERATING MARGIN (X.XX)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + OPERATING MARGIN) / HOURLY RATE

*Notes: Consultant has elected to use "Safe Harbor" combined fringe benefit and overhead rate of 110% in accordance with Section 5.2.5.

*1.00 1.10 2.10 x 12% operating margin = 0.25 2.35 OH Factor

**EXHIBIT F-1
FEDERALLY FUNDED CONTRACTS REQUIREMENTS**

Consultant shall comply with the following additional obligations of this exhibit (this “Exhibit”) to the extent applicable, and such applicable obligations are hereby incorporated by reference and made a part of this Agreement:

1. Federally assisted construction contracts. For all federally assisted construction contracts (as defined in 41 C.F.R. Part 60-1.3):

Consultant will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. Consultant will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

1.01 Consultant will, in all solicitations or advertisements for employees placed by or on behalf of Consultant, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

1.02 Consultant will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with Consultant's legal duty to furnish information.

1.03 Consultant will send to each labor union or representative of workers with which Consultant has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of Consultant's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

1.04 Consultant will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

1.05 Consultant will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

1.06 In the event of Consultant's noncompliance with the nondiscrimination clauses of this Agreement or with any of the said rules, regulations, or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and Consultant may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

1.07 Consultant will include the provisions of Section 1.01 – 1.07 of this Exhibit in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subconsultant or vendor. Consultant will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event Consultant becomes involved in, or is threatened with, litigation with a Subconsultant or vendor as a result of such direction by the administering agency (as defined in 41 C.F.R. Part 60-1.3), Consultant may request the United States to enter into such litigation to protect the interests of the United States.

1.08 Unless provided otherwise in 41 C.F.R. § 60-1, Subpart A, Consultant shall comply with the requirements of 41 C.F.R. § 60-1.7 (Reports and other required information), 41 C.F.R. § 60-1.8 (Segregated facilities), 41 C.F.R. § 60-1.9 (Compliance by labor unions and by recruiting and training agencies), 41 C.F.R. § 60-1.10 (Foreign government practices), 41 C.F.R. § 60-1.11 (Payment or reimbursement of membership fees and other expenses to private clubs), and 41 C.F.R. § 60-1.12 (Record retention).

2. Construction Work. For all contracts for construction work (as defined in 41 C.F.R. Part 60-1.3) in excess of \$2,000:

2.01 Consultant shall comply with 40 U.S.C. §§ 3141-3144, 3146-3148 as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federal Financed and Assisted Construction") and shall comply with requirements of 29 C.F.R. Part 3, as may be applicable.

2.02 Consultant shall pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. Consultant shall pay such wages not less than once a week.

2.03 Consultant shall comply with the Copeland "Anti-Kickback" Act, 18 U.S.C. § 874, 40 U.S.C. § 3145, and 29 C.F.R. Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States," as may be applicable. Consultant shall not induce by any means any person employed in construction, completion, or repair of work, to give up any part of the compensation to which such person is otherwise entitled.

2.04 Consultant shall include Sections 2.01 – 2.03 of this Exhibit in any contract with a Subconsultant related to the performance of this Agreement and shall require all Subconsultants to include such clauses in any contract with any lower-tier subcontract.

2.05 A breach of any requirement in Sections 2.01 – 2.04 of this Exhibit may be grounds for termination of this Agreement by County and may be a basis for the debarment of Consultant or any Subconsultant as provided in 29 C.F.R. § 5.12.

3. Mechanics or Laborers. For all contracts in excess of \$100,000 that involve the employment of mechanics or laborers:

3.01 Consultant shall comply with 40 U.S.C. §§ 3702 and 3704, as supplemented by the Department of Labor regulations (29 CFR Part 5).

3.02 Consultant shall, among other things, compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Consultant shall compensate work in excess of the standard work week at a rate of not less than one and half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Consultant shall not require laborers or mechanics to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous.

4. Environmental Requirements.

4.01 Consultant shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387), and shall report any violations thereof to FEMA and the Regional Office of the Environmental Protection Agency (EPA).

4.02 Consultant shall comply with all mandatory standards and policies relating to energy efficiency contained in State of Florida's energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201).

5. Debarment and Suspension.

5.01 This Agreement is a “covered transaction” for purposes of 2 C.F.R. Part 180 and 2 C.F.R. Part 3000. Consultant affirms and verifies that neither Consultant, nor any of its principals (as defined in 2 C.F.R. § 180.995) or affiliates (as defined in 2 C.F.R. § 180.905) are excluded (as defined in 2 C.F.R. § 180.940) or disqualified (as defined at 2 C.F.R. § 180.935) from participating in this Agreement.

5.02 Consultant shall comply with 2 C.F.R. Part 180, Subpart C and 2 C.F.R. Part 3000, Subpart C, and shall include the requirement to comply with those regulations in any lower tier contract (*i.e.*, contract with a subconsultant) that is a “covered transaction” relating to this Agreement.

5.03 If it is later determined that Consultant did not comply with 2 C.F.R. Part 180, Subpart C or 2 C.F.R. Part 3000, Subpart C, in addition to remedies available to County, the Federal Government may pursue available remedies against Consultant, including but not limited to suspension and/or debarment.

5.04 Consultant agrees to comply with the requirements of 2 C.F.R. Part 180, Subpart C, and 2 C.F.R. Part 3000, Subpart C, until the termination or expiration of this Agreement. Consultant further agrees to include a provision requiring such compliance in its lower tier (*i.e.*, contracts with a subconsultant) covered transactions relating to this Agreement.

6. Byrd Anti-Lobbying Requirements. By execution of this Agreement, Consultant certifies that:

6.01 No Federal appropriated funds have been paid or will be paid, by or on behalf of the contract, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

6.02 If any funds other than federally-appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, Consultant shall complete and submit standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

6.03 Consultant shall require that the language contained in Sections 6.01 – 6.02 of this Exhibit be included in all contracts with Subconsultants in connection with this Agreement.

6.04 This certifications in Sections 6.01 – 6.03 of this Exhibit are material representations of fact upon the County is relying in entering into this Agreement. Consultant certifies and affirms the truthfulness and accuracy of each statement of the foregoing certifications. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to these certifications.

7. Domestic Preferences for Procurements. Pursuant to 2 C.F.R. § 200.322 and consistent with applicable law, Consultant shall provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States for goods, products, or materials purchased, acquired, or used in this Agreement. Consultant shall include a provision requiring such compliance in all subawards, subcontracts, purchase orders, or other transactions relating to this Agreement.

8. Procurement of Recovered Materials. Pursuant to 2 CFR § 200.323, Consultant agrees to comply with the requirements of Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, for all purchases under this Agreement. Consultant shall procure only items designated in the guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procure solid waste management services in a manner that maximizes energy and resource recovery; and establish an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

9. Rights to Inventions Made Under a Contract or Agreement. If Consultant or its subconsultant is a small business firm or nonprofit organization performing experimental, developmental, or research work under a “funding agreement,” as defined under 37 C.F.R. § 401.2, the requirements of 37 C.F.R. Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements” and any implementing regulations issued by the awarding agency will apply to this Agreement. The clauses set forth under 37 C.F.R. § 401.14 are hereby incorporated by reference to the extent applicable under 37 C.F.R. § 401.3, with such changes as are necessary (*mutatis mutandis*).