Foth Infrastructure and Environment, LLC
23 January 2025

To: Mr. Seth McConihe
Senior Purchasing Agent
Martin County Board of County Commissioners
2401 SE Monterey Road
Stuart, FL 34996

From: Kevin R. Bodge, PE, PhD
Senior Coastal Engineer & Client Manager
Steven C. Howard, PE
Lead Coastal Engineer
Foth Infrastructure & Environment, LLC
2618 Herschel Street
Jacksonville, FL 32204
(904) 387-6114

Cc: Ms. Jessica Garland, PE
Coastal Program Manager, Martin County

Re: Scope of Work for Professional Services for the
Bathtub Reef Beach Park / Sailfish Point Beach Nourishment Project (2027)

Att.: Cost Summary, cost details, and hourly rates 2025-29

Dear Mr. McConihe;

The tasks outlined below are proposed in support of the 2027 renourishment of the Bathtub Reef Beach Park / Sailfish Point Restoration Project over a projected five-year period from approximately February 2025 through February 2030. The timeline of each task described herein is based upon our understanding that construction is planned for early 2027 (likely January through May). In addition to supporting the 2027 renourishment project from design and permitting to construction, this proposal includes various permit-required tasks which are related to the maintenance and monitoring of the constructed 2024 renourishment project. Lastly, this proposal includes miscellaneous anticipated engineering and survey support tasks related to the 2027 project including, but not limited to, providing the following: emergency post-storm reporting and agency liaison as required to pursue FEMA Category G funding; analysis of proposed upland sand sources; and technical review of engineering reports prepared by others for Martin County. Several of the tasks involve scopes which are inherently uncertain in both duration and the extent of services required. For these items, we have proposed payment on a time and materials (T&M) basis; otherwise, anticipated costs are presumed as Lump Sum (LS).

Task 1 Contract Administration and Project Management

1A - Overall Project Management and Coordination (T&M)

Task 1A provides for Foth | Olsen's project management and coordination efforts for all tasks outlined in the present scope of work for the planned 2027 renourishment project and physical monitoring of the physical performance of both the 2024 and 2027 renourishment projects. These administration and management costs would be included (apportioned) within specific tasks assigned during the contract, i.e., Tasks 2-18.

1B - Project Partner Coordination and Planning (T&M)

The project team will coordinate with Martin County, the Florida Department of Environmental Protection (FDEP), the U.S. Army Corps of Engineers (USACE), and other regulatory agencies as needed for items related to the planning and pre-permit application coordination related to the 2027 renourishment. Task 1B also includes services related to project coordination and planning which are not identified herein but may arise during the course of this contract. These coordination and planning costs would be included (apportioned) within specific tasks assigned during the contract, i.e., Tasks 2-18.

1C – Meeting Attendance and Additional Assignments (T&M)

The project team will attend meetings at the request of, and coordinated through, Martin County staff. These include, but are not limited to, Board of County Commission meetings, unanticipated permitting and/or construction meetings, and other in-person requirements related to the specific tasks assigned during the contract, i.e., Tasks 2-18. Task 1C additionally includes allowance for services related to the Bathtub Reef Beach Park / Sailfish Point project which are not identified herein but may arise during the duration of this contract.

Task 2 2025 Physical Monitoring (YR-1)

2A - Data Analysis & Reporting (LS)

Task 2A includes the analysis and engineering summary report describing the 2025 physical monitoring conditions of the Bathtub Beach/Sailfish Point beach nourishment project, based upon physical surveys of the beach measured in early summer 2025. This shall represent the Year-One post-construction beach monitoring report, pursuant to the project's 2024 renourishment. The analysis and report shall include the beach from R34 to R42.5, including half-monument locations (19 total lines), utilizing onshore/offshore beach profile data. This proposal assumes that all beach profile survey data will be provided by the County. All surveys shall be at locations consistent with the project's prior analysis. Data at half-monuments are consistent with the project's monitoring history and they are critical to assessing project performance. The data analysis and engineering summary report shall be completed per the requirements described in the project's FDEP permits and Physical Monitoring Plan; and the work shall consolidate the physical and environmental data & analysis to the project database; and quantify and discuss sediment transport patterns based upon the physical surveys and integrated database. The summary report shall describe the beach volume, shoreline and seabed changes along the beach fill and adjacent shorelines (R34-R42.5) over the one-year period since the last monitoring survey, and the period since initial construction of the project in 2016. The volume required to construct the project fill

template shall be described. Project volume losses shall be computed and reported per FDEP criteria in the current Beach Ranking methodology.

In accordance with the approved Physical Monitoring Plan for the project, the monitoring report shall include analysis of the borrow areas utilized for construction of the 2024 project. The borrow area analysis shall, at a minimum, quantify the approximate volume of material remaining within the permitted limits of the borrow areas and describe the observed changes in seabed elevation between the two most recent physical monitoring bathymetric surveys of the borrow areas. This proposal assumes that all borrow area survey data will be provided by the County.

This proposal does not include monitoring or surveys of nearshore hardbottom or other environmental resources.

Foth | Olsen shall submit to Martin County a digital draft report within 60 days of receipt of all data, for review. Within 10 days of receipt of County review, Foth | Olsen shall incorporate County comments and submit a final report and the monitoring data (as necessary) to Martin County, FDEP, and USACE.

Task 3 2026 Physical Monitoring (YR-2)

3A - Data Analysis & Reporting (LS)

Task 3A includes the analysis and engineering summary report describing the 2026 physical monitoring conditions of the Bathtub Beach/Sailfish Point beach nourishment project, based upon physical surveys of the beach measured in early summer 2026. This shall represent the Year-Two post-construction beach monitoring report, pursuant to the project's 2024 renourishment. The analysis and report shall include the beach from R34 to R42.5, including half-monument locations (19 total lines), utilizing onshore/offshore beach profile data. This proposal assumes that all beach profile survey data will be provided by the County. All surveys shall be at locations consistent with the project's prior analysis. Data at half-monuments are consistent with the project's monitoring history and they are critical to assessing project performance. The data analysis and engineering summary report shall be completed per the requirements described in the project's FDEP permits and Physical Monitoring Plan; and the work shall consolidate the physical and environmental data & analysis to the project database, and quantify and discuss sediment transport patterns based upon the physical surveys and integrated database. The summary report shall describe the beach volume, shoreline and seabed changes along the beach fill and adjacent shorelines (R34-R42.5) over the one-year period since the last monitoring survey, the two-year period since the most recent renourishment, and the period since the project's initial construction in 2016. The volume required to construct the project fill template shall be described. Project volume losses shall be computed and reported per FDEP criteria in the current Beach Ranking methodology.

In accordance with the approved Physical Monitoring Plan for the project, the monitoring report shall include analysis of the borrow areas utilized for construction of the 2024 project. The borrow area analysis shall, at a minimum, quantify the approximate volume of material remaining within the permitted limits of the borrow areas and describe the observed changes in seabed elevation between the two most recent physical monitoring bathymetric surveys of the borrow areas. This proposal assumes that all borrow area survey data will be provided by the County.

This proposal does not include monitoring or surveys of nearshore hardbottom or other environmental resources.

Foth | Olsen shall submit to Martin County a digital draft report within 60 days of receipt of all data, for review. Within 10 days of receipt of County review, Foth | Olsen shall incorporate County comments and submit a final report and the monitoring data (as necessary) to Martin County, FDEP, and USACE.

Task 4 2027 Physical Monitoring (YR-3)

4A - Data Analysis & Reporting (LS)

Task 4A includes the analysis and engineering summary report describing the 2027 physical monitoring conditions of the Bathtub Beach/Sailfish Point beach nourishment project, based upon physical surveys of the beach measured in early summer 2027. Based on the planned 2027 renourishment schedule, construction is scheduled for January – May 2027, a year-three physical monitoring may not be required. A post-construction engineering report for the 2027 renourishment is included in the scope of services for Task 9O, herein, which would obviate the requirement and cost for Task 4A.

Should construction be delayed, this report will be required by permit, as follows: This shall represent the Year-Three post-construction beach monitoring report, pursuant to the project's 2024 renourishment. The analysis and report shall include the beach from R34 to R42.5, including half-monument locations (19 total lines), utilizing onshore/offshore beach profile data. This proposal assumes that all beach profile survey data will be provided by the County. All surveys shall be at locations consistent with the project's prior analysis. Data at half-monuments are consistent with the project's monitoring history and they are critical to assessing project performance. The data analysis and engineering summary report shall be completed per the requirements described in the project's FDEP permits and Physical Monitoring Plan; and the work shall consolidate the physical and environmental data & analysis to the project database, and quantify and discuss sediment transport patterns based upon the physical surveys and integrated database. The summary report shall describe the beach volume, shoreline and seabed changes along the beach fill and adjacent shorelines (R34-R42.5) over the one-year period since the last monitoring survey, the three-year period since the most recent renourishment, and the period since the project's initial construction in 2016. The volume required to construct the project fill template shall be described. Project volume losses shall be computed and reported per FDEP criteria in the current Beach Ranking methodology.

In accordance with the approved Physical Monitoring Plan for the project, the monitoring report shall include analysis of the borrow areas utilized for construction of the 2024 project. The borrow area analysis shall, at a minimum, quantify the approximate volume of material remaining within the permitted limits of the borrow areas and describe the observed changes in seabed elevation between the two most recent physical monitoring bathymetric surveys of the borrow areas. This proposal assumes that all borrow area survey data will be provided by the County.

This proposal does not include monitoring or surveys of nearshore hardbottom or other environmental resources.

Foth | Olsen shall submit to Martin County a digital draft report within 60 days of receipt of all data, for review. Within 10 days of receipt of County review, Foth | Olsen shall incorporate County comments and submit a final report and the monitoring data (as necessary) to Martin County, FDEP, and USACE.

Task 5 Beach Tilling (YR-1)

5A - Beach Tilling & Escarpment Removal (2025) (LS)

Through a qualified subcontractor, Foth | Olsen will complete the permit-required year-one tilling and escarpment removal for the 2024 renourishment of the Bathtub Reef Beach Park / Sailfish Point Project. Tilling will be completed along the entire project length, or along areas where sand from the renourishment remains. Tilling will be complete by March 1, 2025. It is assumed that data related to the escarpment removal (height, length, etc.) shall be provided by the County prior to the issuance of a notice to proceed. It is expected that Glacier Contracting will complete the work.

Task 6 Beach Tilling (YR-2)

6A - Beach Tilling & Escarpment Removal (2026) (LS)

Through a qualified subcontractor, Foth | Olsen will complete the permit-required year-two tilling and escarpment removal for the 2024 renourishment of the Bathtub Reef Beach Park / Sailfish Point Project. Tilling will be completed along the entire project length, or along areas where sand from the renourishment remains. Tilling will be complete by March 1, 2026. It is assumed that data related to the escarpment removal (height, length, etc.) shall be provided by the County prior to the issuance of a notice to proceed. It is expected that Glacier Contracting will complete the work.

Task 7 Beach Tilling (YR-3)

7A - Beach Tilling & Escarpment Removal (2027) (LS)

Through a qualified subcontractor, Foth | Olsen will complete the permit-required year-three tilling and escarpment removal for the 2024 renourishment of the Bathtub Reef Beach Park / Sailfish Point Project. Tilling will be completed along the entire project length, or along areas where sand from the renourishment remains. Work will be complete by March 1, 2027. It is assumed that data related to the escarpment removal (height, length, etc.) shall be provided by the County prior to the issuance of a notice to proceed. This task will be completed in conjunction with the 2027 renourishment if construction is completed in early 2027, in which case the 2027 tilling may be otherwise included in the renourishment construction cost and not required in the current contract. Otherwise, it is expected that Glacier Contracting will complete the work.

Task 8 2027 Beach Renourishment, Permitting & Design

8A - Engineering Design (T&M)

Task 8A includes engineering analysis related to the design of the 2027 renourishment project. Design needs include evaluation of physical performance of the project since the most recent renourishment (2024); analysis of any existing issues along the project shoreline; and coordination with Martin County and Sailfish Point HOA regarding current project specific issues and requirements.

8B - Borrow Area Modification (T&M)

It is assumed that additional sand source(s), beyond those utilized in past renourishments, may be needed for the 2027 renourishment. Task 8B includes engineering analysis in support of the development of additional borrow sources. Work items include evaluation of the sediment – quantity and quality – located in existing borrow areas. This includes nominal allowance for collection and analysis of 10 Vibracores, the locations of which are TBD. Vibracore collection will be conducted by Athena Technologies, Inc.

8C - State and Federal Permitting (FDEP, USACE, SARBO) (T&M)

Task 8C includes coordination with FDEP and USACE for the modification of existing permits to authorize use of additional borrow source(s). This task includes coordination with the regulatory agencies, preparation of permit modification requests, and responses for up to two (2) requests for additional information from each of the regulatory authorities. A nominal allowance for a $250 permit minor modification fee is included.

Task 8C also includes coordination with the regulatory agencies (USACE and National Marine Fisheries Service) to develop any required plan to ensure the protection of listed species – specifically, the Queen Conch. Coastal EcoGroup will assist Foth | Olsen with this effort on an as needed basis.

8D – This Task is Intentionally Blank

8E - Beach Profile Surveys (construction plans) (LS)

Foth | Olsen, through a qualified subcontractor, shall complete a beach profile survey along the monitored shoreline, R34 to R42.5 including intermediate monuments. The survey results shall be (a) used to complete the tasks listed in Task 8A, Engineering Design; and (b) incorporated into the construction plans to be used for the 2027 renourishment project. Morgan & Eklund will complete the survey work under subcontract to Foth | Olsen.

8F - Inlet Survey (construction plans) (LS)

Foth | Olsen, through a qualified subcontractor, shall complete a bathymetric survey within St. Lucie Inlet. The spatial limits of the survey will be consistent with those completed in the past and shall include any proposed additional sand borrow area(s) identified in Tasks 8A and 8B. The survey results shall be (a) used to complete the tasks listed in Task 8A, Engineering Design; and (b) incorporated into the construction plans to be used for the 2027 renourishment project. It is expected that Morgan & Eklund will complete the survey work under subcontract to Foth | Olsen.

8G - Upland Sand Evaluation (LS)

Between planned renourishment events, erosional hot spots within the project limits have required placement of upland sand as emergency remediation. It is our understanding that Martin County is seeking alternative upland sand sources in order to reduce costs associated with emergency placement events. Analyses completed by Foth | Olsen shall include informal tests to assess the likelihood that use of the sampled sand may result in excessive turbidity, cementation, or otherwise non-compatible sand on the beach. A summary letter report will be submitted to Martin County describing the findings and providing an engineering opinion regarding use of the sampled sand. Task 8G includes allowance for Foth | Olsen to assess up to four (4) upland sand samples provided by Martin County for consideration of

beach placement. It is assumed that granulometric data required for analysis will be provided by Martin County with each sample; else, nominal allowance for laboratory analysis of up to 4 samples by ECS is included. The fees shown in the cost schedule include allowance for four (4) sand source evaluations, per the above. Fees listed in the attached cost detail for ECS laboratory analysis reflect 2024 costs adjusted to 2027 dollars at 3%. Per sample fees shall be prorated on a Lump Sum basis.

Task 9 2027 Beach Renourishment, Construction (12/2026 to 4/2027)

Task 9 includes all presently anticipated items directly related to the construction of the planned 2026/27 renourishment project -- excepting tasks specifically related to routine (annual) nearshore hardbottom and marine turtle monitoring. The latter tasks are assumed to be completed by others under other contract(s) with Martin County. Task 9 includes allowance for seagrass and Queen Conch compliance activities, both of which are anticipated to be required for 2026/27 construction.

9A - Plans and Specifications Development (T&M)

Foth | Olsen shall prepare and provide plans and technical specifications suitable for bidding and constructing the 2027 renourishment project. The construction plans and specifications shall rely on surveys and analysis completed by Foth | Olsen as described in other tasks within this Scope of Services. Task 9A provides for up to two (2) rounds of revisions to the Plans or Specifications following County review.

9B - Bid Solicitation Support (T&M)

Task 9B includes allowance for Foth | Olsen to assist Marting County with the development of bid documents, providing engineering opinion on the bid results, and providing engineering support in the event of a vendor protest to the bid. Task 9B does not include support for re-solicitation of the bid, if required.

9C – Pre-Construction Coordination, Submittals, NTP (T&M)

Task 9C includes pre-construction requirements during which Foth | Olsen shall coordinate with the County and construction contractor for requisite schedules and work plan submittals, review contractor submittals, submit pre-construction information to FDEP & USACE per permit requirements, coordinate and co-direct the pre-construction conference, and seek acquisition of the FDEP notice-to-proceed (NTP) for the 2027 renourishment. Foth | Olsen shall review pre-construction survey data to assess the fill volume required to construct the project renourishment template since the plans and specifications update were completed. Foth | Olsen shall adjust the construction template and/or recommend modifications to the contract fill volume, per County direction, to accommodate contemporary pre-construction conditions (allowance for the pre-construction beach profiles survey is included in Task 9L). Foth | Olsen will consult with the County and Sailfish Point to refine specific locations and order of work for dredging and beach fill, within the context of the existing contract plans & specifications, based upon the pre-construction survey conditions.

9D - Environmental Surveys - Seagrass (immediate pre-construction) (T&M)

Foth | Olsen, through a qualified subcontractor, shall perform an immediate pre-construction survey for seagrass in the turbidity mixing zone within 30 days prior to construction of the 2027 renourishment

project. The purpose of the immediate pre-construction survey is to map the locations of seagrass bed edges within the 150-m turbidity mixing zone at the time of dredging. This survey determines the locations for turbidity sampling at seagrass bed edges during dredging and installation of turbidity curtains to avoid direct mechanical impacts to seagrass beds. Seagrass bed edges within the mixing zone are mapped by scientific divers using a Differential GPS with decimeter accuracy. It is anticipated that all in-water work will be performed by Coastal EcoGroup. This task includes an allowance for two days of field work. The immediate pre-construction is required by permit and the Final Biological Monitoring Plan (BMP) and is in addition to the pre-construction and post-construction summer seagrass surveys which will be completed by others, under separate contract to Martin County.

9E - Environmental Surveys - Seagrass (during-construction) (T&M)

Should seagrass be identified within the work areas or 150-m turbidity mixing zone around dredge areas, Task 9E includes allowance for seagrass surveys to be completed during construction to remain compliant with the BMP and project permits for avoidance of significant sedimentation impacts to seagrasses. During active dredging, turbidity monitoring is required at the edge of SAV patches greater than 100 sq. m in area that are located within 150 m of dredging activities. If the patch is less than 100 sq. m in size during the immediate pre-construction survey, an immediate post-construction survey shall not be required. If a turbidity reading exceeding 7.2 NTUs above background is recorded at the edge of a SAV patch during dredging operations, then the patch(s) shall be surveyed within 48 hours of the elevated reading. These results should be submitted to JCP Compliance immediately (within 10 days). Foth | Olsen, through a qualified subcontractor, shall complete the surveys in the areas identified during completion of Task 9C and report the results to FDEP and the County, as required. It is anticipated that all in-water work will be performed by Coastal EcoGroup. This task includes an allowance for two days of field work.

9F - Environmental Surveys - Seagrass (immediate post-construction) (T&M)

Foth | Olsen, through a qualified subcontractor, shall complete the surveys of identified seagrass beds following construction activities. The immediate post-construction survey will be conducted within 30 days of completion of dredging using similar methods to the immediate pre-construction survey (Task 9E). Seagrass bed edges within the mixing zone will be mapped by scientific divers using a Differential GPS with decimeter accuracy. Seagrass beds will be inspected for potential mechanical and sedimentation impacts (dusting, accumulation, or burial by sediments) and documented with digital still photography. A detailed description of the current condition of SAV resources will be provided including a description of any visually conspicuous changes in the condition of resources compared to previous surveys. Biologists will record and report any areas of unexpected direct mechanical damage or sedimentation/burial impacts to SAV resources. If monitoring data indicate that any unpermitted impacts to SAV resources have resulted from dredging, FDEP shall be notified as soon as practicable via email to JCP Compliance. It is anticipated that all in-water work will be performed by Coastal EcoGroup. This task includes an allowance for two days of field work plus reporting efforts.

9G - Environmental Surveys - Queen Conch (baseline pre-construction) (T&M)

Pre-construction in-water surveys for Queen Conch are expected to be required prior to construction. Foth | Olsen, through a qualified subcontractor, shall complete the pre-construction surveys for Queen

Conch according to the latest National Marine Fisheries Service guidelines. The scope of the pre-construction survey is dependent upon the specific work areas for each event. This task assumes that the nearshore hardbottom adjacent to the beach fill area, seagrass beds within the mixing zone around the Sailfish Point Navigation Channel, and sand bottom within and immediately adjacent to the interior borrow areas will be included in the survey scope. Task 9F includes allowance for coordination with resource agencies. Foth | Olsen shall report the findings of the survey to Martin County. This task includes an allowance for relocation of up to 10 Queen Conch identified by the survey. It is anticipated that all in-water work will be performed by Coastal EcoGroup.

9H - Environmental Surveys - Queen Conch (during-construction) (T&M)

Should the survey described in Task 9I identify Queen Conch, additional in-water monitoring may be required During construction. Foth | Olsen, through a qualified subcontractor, shall complete during-construction surveys and collection of Queen Conch. The scope and frequency of during-construction surveys shall be negotiated in consultation with USACE/NMFS. Task 9G includes allowance for coordination with resource agencies for this survey.

In addition to the survey(s), this task includes allowance for: relocation of conch and assumes 10 or fewer Queen Conch will require relocation. Foth | Olsen shall report the findings of the survey to Martin County. It is anticipated that all in-water work will be performed by Coastal EcoGroup. This task allows for up to three during-construction surveys. The timing of, and ultimate need for, each survey will depend upon the duration of construction, the number of conch relocated, and the location of the relocation site(s) relative to construction activities.

Task 9H includes an allowance for mapping and final reporting efforts related to the survey(s) and relocation(s).

9I – Immediate Pre-construction Queen Conch Relocation and Special Activities License (T&M)

If Queen Conch are identified within the work areas during the Baseline Pre-construction survey described in Task 9G, Foth | Olsen, through a qualified subconsultant, will obtain a Special Activities License (SAL) from the Florida Fish and Wildlife Conservation Commission (FWCC) to allow for relocation of Queen Conch. Under Tasak 9I, an immediate pre-construction survey will be conducted immediately prior to initiation of dredging to locate and collect Queen Conch in the work areas. Divers will document the locations with Differential DGPS, note life stages, and document with digital still photography as they are being collected. Queen conch will be hand collected underwater by divers and placed in crates. The conch will be transported immediately after collection to the approved receiver sites and placed at the receiver sites within thirty minutes of collection. This task assumes there are no more than 10 Queen Conch identified in the survey area. Identification of additional Conch may require additional consultation with the agencies, which is assumed to be additional work not scoped herein. It is anticipated that Coastal EcoGroup will complete all in-water work and shall be named in any SAL issued. This task does not guarantee issuance of an SAL by FWCC.

9J - Construction Review (T&M)

Through a qualified subcontractor (Gahagan & Bryant), Foth | Olsen shall provide engineering support, project management, and field inspection services seven days per week during the period of construction of the 2027 project. Task 9J allows for up to an approximate 14-week construction schedule for mobilization, dredging, fill placement, and demobilization from the beach, during which time Foth | Olsen shall provide engineering review of the construction activity for payment, requisite modifications, and conformance with the plans & specifications & permits. This includes periodic site visits by Foth | Olsen engineers to examine construction in addition to requisite desk-top analysis, modifications to plans, review, liaison, and coordination with the County, Sailfish Point, Contractor, and project delivery team during construction.

Foth | Olsen shall submit notices of commencement to FDEP and USACE/Regulatory in advance of construction. Foth | Olsen shall analyze during-construction surveys and re-balance the fill templates to yield the contract volume, if/as required; prepare pay template and associated digital drawings to assess fill conformance and payment during construction; review Contractor submittals; respond to Requests for Information; prepare recommendations and responses for County, as required; review Contractor's plans for pipeline, booster pump, operations plans, Environmental Protection Plan and the progress dredging surveys for QA/QC compliance with project permits and specifications; review Before/After Dredge (BD/AD) surveys of beach fill and borrow area, and compute volumes, compliance, and payment according to project permits & contract specifications (on daily/weekly basis); prepare biweekly updated spreadsheets of beach fill progress, placed volumes, and payment volumes; provide daily desk-top coordination with Contractor, County, and Sailfish Point to respond to changes in work plans, permit compliance, and related issues. Allowance is included for grain size analysis of 3 beach fill samples for interim QA check during construction. Foth | Olsen shall conduct one-day engineering-review site visits at least once every 3 to 4 weeks to assess project progress, conformance with permits, plans and specifications; prepare follow-up memorandum promptly after each site visit to outline observations, recommendations, and requirements. This shall include a site visit at Substantial Completion and preparation of the 'punch list' for Final Completion.

Task 9J includes allowance for BD/AD beach surveys to be collected at 100-ft alongshore spacing and shall be the basis of payment for beach fill, along with BD/AD borrow area surveys, by Gahagan & Bryant.

In the event 3rd party documentation regarding the characterization of sand placed onto the beach during construction is required, Task 9J includes allowance for laboratory analysis (Grain size distribution, Munsell color, visual shell content, and carbonate content) of up to four (4) sediment samples, by ECS, during construction. Costs per sample are as provided by ECS and adjusted to 2027 dollars at 3% (see Task 8G).

Similarly, Task 9J includes allowance for one day of in-water field time (at the daily rate for seagrass surveys) and reporting efforts (Queen Conch reporting rate) for Coastal EcoGroup in the event of an unanticipated need to document environmental conditions during construction – this is in addition to those tasks expressly described herein (seagrass, Queen Conch, etc.).

9K- Weekly Meetings & Coordination - 4 months anticipated (T&M)

Task 9K includes allowance for Foth | Olsen attendance at regular meetings typically held weekly throughout the duration of project construction. To reduce costs to Martin County, this task includes allowance for up to five (5) in-person meetings and attendance of up to two Foth | Olsen staff members per meeting. It is assumed that the remaining meetings will be attended virtually at the discretion of Foth | Olsen and/or at the direct request of the County.

9L - Pre- and Post-Construction Beach Profile Surveys (LS)

Foth | Olsen, through a qualified subcontractor (Morgan & Eklund) shall complete pre- and post-construction beach profiles surveys for the project. The surveys shall include beach profiles from R34.5 to R42.5, including half-monument locations (18 total lines), utilizing onshore/offshore beach profile data. Data at half-monuments are consistent with the project's monitoring history and they are critical to assessing project performance -- given the highly varying coastline dynamics and beach response between the whole monuments along this specific project location. The data shall be collected per the requirements described in the project's FDEP permits and Physical Monitoring Plan. Additionally, all the data submittals will adhere to the Martin County Coastal GIS Data Submission Standards. Deliverables shall include signed and sealed survey drawings and digital delivery of the XYZ survey data in a format acceptable to FDEP. All horizontal data shall be referenced in feet relative to the Florida State Plane, East Zone 1983 North American Datum (NAD83). Vertical data shall be reported in feet relative to the North American Vertical Datum of 1988 (NAVD88).

9M- Pre- and Post-Construction Borrow Area Surveys (LS)

Foth | Olsen, through a qualified subcontractor (Morgan & Eklund) shall complete pre- and post-construction bathymetric surveys of all borrow areas utilized for the construction of the 2027 project renourishment. The surveys shall extend a minimum of 500 feet beyond the permitted boundaries of all borrow areas used for construction and utilize multibeam sonar providing 100% coverage of the seafloor. The data shall be collected per the requirements described in the project's FDEP permits and Physical Monitoring Plan. Additionally, all the data submittals will adhere to the Martin County Coastal GIS Data Submission Standards. Deliverables shall include signed and sealed survey drawings and digital delivery of the survey data – including both reduced XYZ data and a point cloud containing all measured data. All horizontal data shall be referenced in feet relative to the Florida State Plane, East Zone 1983 North American Datum (NAD83). Vertical data shall be reported in feet relative to the North American Vertical Datum of 1988 (NAVD88).

9N - Post-Construction Sediment QA/QC (LS)

Foth | Olsen shall prepare a post-construction Sediment QA/QC report following construction of the 2027 project renourishment. Foth | Olsen shall collect sediment samples at a minimum of every half control monument along the portion of the shoreline receiving fill in 2027. Task 9M includes allowance for sediment sampling between R34.5 and R40, twelve (12) total samples by Foth | Olsen engineers.

Through a qualified subcontractor, Engineering Consulting Services (ECS), all sediment samples will be analyzed for compliance with the adopted Sediment QA/QC Plan for the project. A digital summary report detailing the laboratory results relative to compliance standards and *in situ* borrow area sediments shall be provided to the County. Upon acceptance from the County, Foth | Olsen shall submit

the Sediment QA/QC Report to FDEP and USACE as required by permits. Fees listed in the attached cost detail for ECS laboratory analysis reflect 2024 costs adjusted to 2027 dollars at 3%.

9O - Post-construction Close-out & Reporting (T&M)

Task 9O includes a site visit by Foth | Olsen engineers concurrent with review for final completion and contract close-out. Foth | Olsen will prepare the post-construction completion reports and certifications and submit to FDEP and USACE as required by permits, as follows:

Under Task 9O, Foth | Olsen shall prepare and submit to USACE an as-built certification, as required by permit. The as-built certification shall include a summary of project activities, any noted construction deviations from the plans and specifications, and as-built drawings.

Under Task 9O, Foth | Olsen shall additionally prepare a post-construction engineering report for the 2027 project renourishment. Both the beach and borrow areas shall be included in the data analysis and engineering summary report, per the adopted Physical Monitoring Plan for the project. Foth | Olsen shall evaluate on/offshore post-construction beach profile surveys at 19 lines (R34-R42.5) for Physical Monitoring requirements per permit; contrast pre- and post-construction surveys, prepare analysis of volume changes and conformance with BD/AD surveys at beach & borrow areas; and, prepare engineering summary report of Pre- and Post-Construction conditions, including all minimum requirements, analysis and graphics described in the project's FDEP permits and Physical Monitoring Plan; compute beach fill physical performance and related attributes required per FAC 62B-36.006 (Beach Mgt Funding Assistance Program); and consolidate the physical and environmental data & analysis to the project database. The summary report shall describe the project, volume and shoreline changes along the beach fill and adjacent shorelines (R34-R42.5), and volume and bathymetry changes at the project's borrow areas and adjacent seabed for those borrow areas used in construction. The summary report shall include an analysis to quantify and discuss sediment transport patterns based upon the physical surveys and integrated GIS database, by others.

9P- Public Liaison, Outreach and Relations (T&M)

The following services shall be provided through The Firefly Group, per attached scope of work, through at least 31 May 2027 (assuming a 2027 construction timeline), including:

Provide weekly updates on important information relating to construction, traffic, navigation, and progress and milestone achieved. Prepare statements, press releases, media advisories; coordinate with County's Public Information Officer on distribution of press releases to media and citizen email distribution list; serve as media contact liaison as needed; track media coverage; provide crisis communications if needed; and serve as government liaison as needed. Attend in-person or virtual team meetings for the project. This SOW presumes, per County's communications protocol and unless otherwise instructed, that press releases shall be approved by the County and then distributed by Martin County's Public Information Office.

Task 10 2028 Physical Monitoring (YR-1)

10A - Data Analysis & Reporting (LS)

Task 10A includes the analysis and engineering summary report describing the 2028 physical monitoring conditions of the Bathtub Beach/Sailfish Point beach nourishment project, based upon physical surveys of the beach measured in early summer 2028. This shall represent the Year-One post-construction beach monitoring report, pursuant to the project's 2027 renourishment. The analysis and report shall include the beach from R34 to R42.5, including half-monument locations (19 total lines), utilizing onshore/offshore beach profile data. This proposal assumes that all beach profile survey data will be provided by the County. All surveys shall be at locations consistent with the project's prior analysis. Data at half-monuments are consistent with the project's monitoring history and they are critical to assessing project performance. The data analysis and engineering summary report shall be completed per the requirements described in the project's FDEP permits and Physical Monitoring Plan; and the work shall consolidate the physical and environmental data & analysis to the project database, and quantify and discuss sediment transport patterns based upon the physical surveys and integrated database. The summary report shall describe the beach volume, shoreline and seabed changes along the beach fill and adjacent shorelines (R34-R42.5) over the one-year period since the last monitoring survey, and the period since the project's initial construction in 2016. The volume required to construct the project fill template shall be described. Project volume losses shall be computed and reported per FDEP criteria in the current Beach Ranking methodology.

In accordance with the approved Physical Monitoring Plan for the project, the monitoring report shall include analysis of the borrow areas utilized for construction of the 2027 project. The borrow area analysis shall, at a minimum, quantify the approximate volume of material remaining within the permitted limits of the borrow areas and describe the observed changes in seabed elevation between the two most recent physical monitoring bathymetric surveys of the borrow areas. This proposal assumes that all borrow area survey data will be provided by the County.

This proposal does not include monitoring or surveys of nearshore hardbottom or other environmental resources.

Foth | Olsen shall submit to Martin County a digital draft report within 60 days of receipt of all data, for review. Within 10 days of receipt of County review, Foth | Olsen shall incorporate County comments and submit a final report and the monitoring data (as necessary) to Martin County, FDEP, and USACE.

Task 11 2029 Physical Monitoring (YR-2)

11A - Data Analysis & Reporting (LS)

Task 11A includes the analysis and engineering summary report describing the 2029 physical monitoring conditions of the Bathtub Beach/Sailfish Point beach nourishment project, based upon physical surveys of the beach measured in early summer 2029. This shall represent the Year-Two post-construction beach monitoring report, pursuant to the project's 2027 renourishment. The analysis and report shall include the beach from R34 to R42.5, including half-monument locations (19 total lines), utilizing onshore/offshore beach profile data. This proposal assumes that all beach profile survey data will be provided by the County. All surveys shall be at locations consistent with the project's prior analysis. Data

at half-monuments are consistent with the project's monitoring history and they are critical to assessing project performance. The data analysis and engineering summary report shall be completed per the requirements described in the project's FDEP permits and Physical Monitoring Plan; and the work shall consolidate the physical and environmental data & analysis to the project database, and quantify and discuss sediment transport patterns based upon the physical surveys and integrated database. The summary report shall describe the beach volume, shoreline and seabed changes along the beach fill and adjacent shorelines (R34-R42.5) over the one-year period since the last monitoring survey, the two-year period since the most recent renourishment, and the period since the project's initial construction in 2016. The volume required to construct the project fill template shall be described. Project volume losses shall be computed and reported per FDEP criteria in the current Beach Ranking methodology.

In accordance with the approved Physical Monitoring Plan for the project, the monitoring report shall include analysis of the borrow areas utilized for construction of the 2027 project. The borrow area analysis shall, at a minimum, quantify the approximate volume of material remaining within the permitted limits of the borrow areas and describe the observed changes in seabed elevation between the two most recent physical monitoring bathymetric surveys of the borrow areas. This proposal assumes that all borrow area survey data will be provided by the County.

This proposal does not include monitoring or surveys of nearshore hardbottom or other environmental resources.

Foth | Olsen shall submit to Martin County a digital draft report within 60 days of receipt of all data, for review. Within 10 days of receipt of County review, Foth | Olsen shall incorporate County comments and submit a final report and the monitoring data (as necessary) to Martin County, FDEP, and USACE.

Task 12 2030 Physical Monitoring -

12A - Data Analysis & Reporting (LS)

Task 12A includes the analysis and engineering summary report describing the 2030 physical monitoring conditions of the Bathtub Beach/Sailfish Point beach nourishment project, based upon physical surveys of the beach measured in early summer 2030. Based on a three-year renourishment interval for the project, renourishment construction is scheduled for January to May 2030 and would occur under a separate (yet to be awarded) contract with Martin County. If construction was delayed, this report is required by permit and shall represent the Year-Three post-construction beach monitoring report, pursuant to the project's 2027 renourishment, as follows. It is noted, however, that execution of this 2023 monitoring survey and report may fall beyond the 5-year schedule anticipated in this scope of work; and as such, it may or may not be included in the 5-year scope of work.

The analysis and report shall include the beach from R34 to R42.5, including half-monument locations (19 total lines), utilizing onshore/offshore beach profile data. This proposal assumes that all beach profile survey data will be provided by the County. All surveys shall be at locations consistent with the project's prior analysis. Data at half-monuments are consistent with the project's monitoring history and they are critical to assessing project performance. The data analysis and engineering summary report shall be completed per the requirements described in the project's FDEP permits and Physical Monitoring Plan; and the work shall consolidate the physical and environmental data & analysis to the project database,

and quantify and discuss sediment transport patterns based upon the physical surveys and integrated database. The summary report shall describe the beach volume, shoreline and seabed changes along the beach fill and adjacent shorelines (R34-R42.5) over the one-year period since the last monitoring survey, the three-year period since the most recent renourishment, and the period since the project's initial construction in 2016. The volume required to construct the project fill template shall be described. Project volume losses shall be computed and reported per FDEP criteria in the current Beach Ranking methodology.

In accordance with the approved Physical Monitoring Plan for the project, the monitoring report shall include analysis of the borrow areas utilized for construction of the 2027 project. The borrow area analysis shall, at a minimum, quantify the approximate volume of material remaining within the permitted limits of the borrow areas and describe the observed changes in seabed elevation between the two most recent physical monitoring bathymetric surveys of the borrow areas. This proposal assumes that all borrow area survey data will be provided by the County.

This proposal does not include monitoring or surveys of nearshore hardbottom or other environmental resources.

Foth | Olsen shall submit to Martin County a digital draft report within 60 days of receipt of all data, for review. Within 10 days of receipt of County review, Foth | Olsen shall incorporate County comments and submit a final report and the monitoring data (as necessary) to Martin County, FDEP, and USACE.

Task 13 Beach Tilling (YR-1)

13A - Beach Tilling & Escarpment Removal (2028) (LS)

Through a qualified subcontractor, Foth | Olsen will complete the permit-required year-one tilling and escarpment removal for the 2027 renourishment of the Bathtub Reef Beach Park / Sailfish Point Project. Tilling will be completed along the entire project length, or along areas where sand from the renourishment remains. Work will be completed by March 1, 2028. It I assumed that data related to the escarpment removal (height, length, etc.) shall be provided by the County prior to issuance of a notice to proceed. Subsequent to satisfactory completion of the work, Foth | Olsen shall submit a notice of completion to FDEP. It is assumed that Glacier Contracting will perform the tilling work.

Task 14 Beach Tilling (YR-2)

14A - Beach Tilling & Escarpment Removal (2029) (LS)

Through a qualified subcontractor, Foth | Olsen will complete the permit-required year-two tilling and escarpment removal for the 2027 renourishment of the Bathtub Reef Beach Park / Sailfish Point Project. Tilling will be completed along the entire project length, or along areas where sand from the renourishment remains. Work will be completed by March 1, 2029. It I assumed that data related to the escarpment removal (height, length, etc.) shall be provided by the County prior to issuance of a notice to proceed. Subsequent to satisfactory completion of the work, Foth | Olsen shall submit a notice of completion to FDEP. It is assumed that Glacier Contracting will perform the tilling work.

Task 15 Beach Tilling (YR-3)

15A - Beach Tilling & Escarpment Removal (2030) (LS)

Through a qualified subcontractor, Foth | Olsen will complete the permit-required year-three tilling and escarpment removal for the 2027 renourishment of the Bathtub Reef Beach Park / Sailfish Point Project. Tilling will be completed along the entire project length, or along areas where sand from the renourishment remains. Work will be completed by March 1, 2030. It is assumed that data related to the escarpment removal (height, length, etc.) shall be provided by the County prior to issuance of a notice to proceed. It is recognized that this Task may conflict with the panned 2030 renourishment of the project and may not be necessary. If required, subsequent to satisfactory completion of the work, Foth | Olsen shall submit a notice of completion to FDEP. It is assumed that Glacier Contracting will perform the tilling work. This task (to be completed in February 2030) is presumed to be included in the 5-year schedule described by the current scope of work.

Task 16 Emergency Storm Response

16A - Beach Profile Surveys (LS)

Task 16A includes allowance for up to two (2) beach profile surveys to be commissioned following the passage of a storm event(s), the damaged from which may be eligible for FEMA Category G assistance to fund repairs. Beach profile surveys will be collected by a qualified subcontractor between control monuments R34 and R42.5 and shall include intermediate monuments. Foth | Olsen shall be responsible for management of the surveys and Quality Control of the surveys.

Survey deliverables shall include signed and sealed drawings, and ASCII text files in a format which is acceptable to FDEP. Each of the data submittals will adhere to the Martin County Coastal GIS Data Submission Standards. Deliverables shall include signed and sealed survey drawings and digital delivery of the XYZ survey data in a format acceptable to FDEP. All horizontal data shall be referenced in feet relative to the Florida State Plane, East Zone 1983 North American Datum (NAD83). Vertical data shall be reported in feet relative to the North American Vertical Datum of 1988 (NAVD88).

16B - FEMA Reporting & Coordination (LS)

Foth | Olsen shall analyze and interpret the beach profile data completed in Task 16A and those collected as part of Martin County's annual physical monitoring efforts (not included in this Scope of Services). Foth | Olsen shall prepare a letter report summarizing the damages to the beach project from up to four (4) storm events including (a) the volumetric losses attributable to the storm event which numerically consider the effects of background erosion expected to have occurred between pre- and post-storm surveys; (b) damage to dune vegetation attributable to the storm; and (c) the probable costs associated with repairing the storm-related loss to the beach and dune vegetation.

Subsequent to finalization of the damage report with the County, Foth | Olsen will coordinate with representatives of FEMA, as required, in support of the County's request for Category G post-disaster funding assistance. For up to four storm events, Task 16B includes allowance for discussion with FEMA staff on an as needed basis and one revision of the report. While efforts will be made to accommodate requests by FEMA during report development, Task 16B does not guarantee ultimate FEMA acceptance of the report or successful funding reimbursement from FEMA.

Task 17 Coastal GIS Database Maintenance

17A - Ongoing Maintenance of the County Coastal GIS Database (T&M)

Foth | Olsen shall, through a qualified subcontractor (CMAR Consulting, LLC), ensure that project data is properly uploaded, recorded, and integrated within the County's Coastal GIS Geodatabase annually. This includes permitting, pre-construction, construction, and post-construction associated physical and biological monitoring data. This task also includes coordination, preparation of desktop and web GIS products, and data integration reports. Foth | Olsen shall review CMAR deliverables prior to submission to Martin County.

The anticipated cost for this work is grouped over the 5-year period of this scope of work, to be allocated (by year) among those specific tasks that are assigned.

Task 18 Structural Stabilization Study

18A – Engineering Review (LS)

Foth | Olsen shall complete an engineering review of the structural stabilization modeling study completed by others for Martin County in late 2024. Deliverables shall include a memorandum summarizing Foth | Olsen's comments on the report contents and recommendations for additional study (if any) and follow-up discussion with the County. This task does not include engineering analysis.

Task 19 Hazard Mitigation Grant Program Support

Foth | Olsen shall provide support for Martin County's planned application for project funding through FEMA's Hazard Mitigation Grant Program (HMGP).

19A – HMGP Application Support (T&M)

Task 19A includes allowance for Foth | Olsen to supply technical guidance to Martin County -- both directly and in coordination their designated consultant -- towards the preparation of an application for mitigation funding through the HMGP. Task 19A is proposed to be broad in scope with an anticipated principal requirement of preparing drawings/figures/etc. of a concept solution to be included with the application; supporting the technical, coastal engineering aspects of the beach and inlet system (hydraulics, hydrodynamics, littoral transport, sea level rise, etc.); and providing an opinion on the probable costs associated with design, permitting, and construction. An allowance is made for similar engineering support of requests for additional information from the grant program on an as-needed basis. It is assumed that the HMGP application will be prepared and submitted by others. Task 19A does not include development of a benefit to cost analysis. Foth | Olsen is aware of the time constraints surrounding the application process, and we are willing and able to accommodate these needs in cooperation with the County's consultant for the application.

19B – Alternatives Analysis, Phase I (LS)

Foth | Olsen in cooperation with a qualified subconsultant shall prepare an alternative analysis in support of Martin County's HMGP application. Task 19B represents a phase I effort which will build upon

previous numerical modeling studies completed by Sustainable Coastal Solutions (SCS) for the BRBP/SP shoreline. Task 19B includes allowance for modest refinement of the existing model domain, as necessary to potentially expand the assessment of structural alternatives beyond the limits of Bathtub Reef Beach Park, along with modeling up to ten (10) additional erosion abatement solutions along the study shoreline. Task 19B is scoped as to not require duplication of field data collection, model calibration, verification, etc. The goal of this Phase I effort is to broadly assess each alternative's potential for success in protecting the BRBP/SP shoreline and provide, at a minimum, a relative assessment of potential downdrift and inlet littoral impacts. In addition to the physical performance of each alternative, the analysis will consider the likely construction costs, the relative potential for impacts to hardbottom communities off BRBP/SP, and an estimation of the resources and costs associated with design and permitting in arriving at one (or more) potentially successful alternatives. Given the complexity of analysis for any mitigation solution along this shoreline, Martin County should be aware that completion of the Alternative Analysis is unlikely to be coincident with finalization of the HMGP application described in Task 19A, although we would recommend concurrent authorization of Tasks 19A and 19B in order to better support the application in a timely manner.

To quantify potential hardbottom impacts associated with a given alternative, it is necessary to document existing hardbottom resources within the proposed mitigation area(s). Task 19B includes an allowance for an environmental field survey to be completed by Coastal EcoGroup. It is assumed that the survey would require up to three field days along with an allowance for reporting the findings. 19C –

19C - Selected Alternative(s) Analysis, Phase II (LS)

Task 19C describes a Phase II alternatives analysis which will build upon the results of the Phase I effort. While the Phase I effort (Task 19B) will describe the overall likelihood of success of a given alternative (i.e., proof of concept), it is unlikely to be sufficient to address detailed questions and concerns of both project stakeholders and regulatory agencies in terms of providing reasonable assurances for the purpose of permitting. We anticipate additional analysis and numerical modeling – potentially involving the development and application of one or more additional numerical models -- may be required to sufficiently address questions regarding details of potential downdrift shoreline impacts as well as mid- to long-term alternations to the sediment flux entering the inlet. These efforts will also afford an opportunity to refine the design and include an allowance to simulate up to three (3) alternatives. While every effort will be made to utilize numerical models already developed for the County under other contracts, Task 19C includes allowance for the setup and calibration of additional numerical models. The goal of Task 19C is to arrive at a reasonably detailed project alternative and provide a solid foundation for moving forward with project permitting. It is anticipated that Foth | Olsen and SCS will work in cooperation to complete the modelling component of Task 19C.

Foth | Olsen shall develop and submit a report detailing the predicted physical performance of modeled alternative(s). Task 19C includes allowance for Foth | Olsen engineers and representatives from SCS to participate in up to three (3) in-person meetings in Martin County to discuss the project findings. Meeting attendance will be at the request of the County.

Summary

The following sheets itemize and summarize the anticipated effort and costs associated with the tasks described above. Costs are based upon hourly labor rates, which are listed for 2025 and adjusted upwards at 3% per year through 2029. The "work year" cited for each task (see cost detail sheet) is the assumed calendar year during which the majority of each task's work effort would be completed. The corresponding labor rates for that year are applied to compute the anticipated cost of each task. The total anticipated fee proposed for Tasks 1 through 18 is $3,112,077.00. Of that amount, $1,442,514.51 or 46.4% is allocated to subcontractors.

We thank you for the opportunity to continue to support the Martin County beach program.

Kevin R. Bodge, PE, PhD
Senior Coastal Engineer & Client Manager

Steven C. Howard, PE
Lead Coastal Engineer

Cost Summary

Professional Services for the Bathtub Reef Beach Park / Sailfish Point Nourishment Project (2027)

DIRECT LABOR					OUTSIDE SVS/SUB-CONTRACTORS				
Task	**Sub-Task**	**Description**	UNIT	COST	SERVICE	COST	BURDEN		**TOTAL**
							Percent	Amount	
Task 1 Contract Administration and Project Management	1A- YR1-5	Overall Project Management and Coordination	T&M	$ 180,908.00				$ -	$ 180,908.00
	1B -YR1-5	Project Partner Coordination and Planning	T&M	$ 91,927.12				$ -	$ 91,927.12
	1C	Meeting Attendance and Additional Assignments	T&M	$ 174,957.25				$ -	$ 174,957.25
Task 2 2025 Physical Monitoring (YR-1)	2A	Data Analysis & Reporting	LS	$ 49,541.00				$ -	$ 49,541.00
Task 3 2026 Physical Monitoring (YR-2)	3A	Data Analysis & Reporting	LS	$ 51,027.31				$ -	$ 51,027.31
Task 4 2027 Physical Monitoring	4A	Data Analysis & Reporting	LS	$ 52,557.67				$ -	$ 52,557.67
Task 5 Beach Tilling (YR-1)	5A	Beach Tilling & Escarpment Removal (2025)	LS	$ 3,495.00	Glacier	$ 21,000.0	10%	$ 2,100.00	$ 26,595.00
Task 6 Beach Tilling (YR-2)	6A	Beach Tilling & Escarpment Removal (2026)	LS	$ 3,599.95	Glacier	$ 24,150.0	10%	$ 2,415.00	$ 30,164.95
Task 7 Beach Tilling (YR-3)	7A	Beach Tilling & Escarpment Removal (2027)	LS	$ 3,707.87	Glacier	$ 27,772.5	10%	$ 2,777.25	$ 34,257.62
Task 8 2027 Beach Renourishment, Permitting & Design	8A	Engineering Design	T&M	$ 29,046.00				$ -	$ 29,046.00
	8B	Borrow Area Modification	T&M	$ 32,669.88	Athena	$ 52,028.0	10%	$ 5,202.80	$ 89,900.68
	8C	State and Federal Permitting (FDEP, USACE, SARBO)	T&M	$ 29,715.55	CEG	$ 9,992.0	10%	$ 999.20	$ 40,706.75
	8D	Task Intentionally Left blank	T&M	$ -				$ -	$ -
	8E	Beach Profile Surveys (construction plans)	LS	$ 2,305.18	M&E	$ 10,800.0	10%	$ 1,080.00	$ 14,185.18
	8F	Inlet Survey (construction plans)	LS	$ 525.30	M&E	$ 28,059.0	10%	$ 2,805.90	$ 31,390.20
	8G	Upland Sand Evaluation	LS	$ 30,890.30	ECS	$ 896.0	10%	$ 89.60	$ 31,875.90
Task 9 2027 Beach Renourishment, Construction (12/2026 to 4/2027)	9A	Plans and Specifications Development	T&M	$ 41,538.20				$ -	$ 41,538.20
	9B	Bid Solicitation Support	T&M	$ 11,896.50				$ -	$ 11,896.50
	9C	Pre-Construction Coordination, Submittals, NTP	T&M	$ 28,473.40				$ -	$ 28,473.40
	9D	Environmental Surveys - Seagrass (pre-construction)	T&M	$ 2,296.90	CEG	$ 9,096.0	10%	$ 909.60	$ 12,302.50
	9E	Environmental Surveys - Seagrass (during-construction)	T&M	$ 2,365.78	CEG	$ 9,096.0	10%	$ 909.60	$ 12,371.38
	9F	Environmental Surveys - Seagrass (post-construction)	T&M	$ 2,365.78	CEG	$ 18,928.0	10%	$ 1,892.80	$ 23,186.58
	9G	Environmental Surveys - Queen Conch (baseline pre-construction)	T&M	$ 2,296.90	CEG	$ 32,026.0	10%	$ 3,202.60	$ 37,525.50
	9H	Environmental Surveys - Queen Conch (during-constr., 3 events)	T&M	$ 7,097.34	CEG	$ 48,198.0	10%	$ 4,819.80	$ 60,115.14
	9I	Immediate Pre-construction Queen Conch Relocation and SAL	T&M	$ 3,278.14	CEG	$ 6,142.0	10%	$ 614.20	$ 10,034.34
	9J	Construction Review	T&M	$ 102,412.02	GBA	$ 452,000.0	5%	$ 22,600.00	$ 577,012.02
					ECS & CEG	$ 10,460.0	10%	$ 1,046.00	$ 11,506.00
	9K	Weekly Meetings & Coordination - 4 months anticipated	T&M	$ 10,048.80				$ -	$ 10,048.80
	9L	Pre- and Post-Construction Beach Profile Surveys	LS	$ 442.90	M&E	$ 22,032.0	10%	$ 2,203.20	$ 24,678.10
	9M	Pre- and Post-Construction Borrow Area Surveys	LS	$ 442.90	M&E	$ 56,845.0	10%	$ 5,684.50	$ 62,972.40
	9N	Post-Construction Sediment QA/QC	LS	$ 14,210.65	ECS	$ 2,688.0	10%	$ 268.80	$ 17,167.45
	9O	Post-construction Close-out & Reporting	T&M	$ 61,474.72				$ -	$ 61,474.72
	9P	Public Outreach and Relations	T&M	$ 108.15	Firefly	$ 15,000.0	10%	$ 1,500.00	$ 16,608.15
Task 10 2028 Physical Monitoring (YR-1)	10A	Data Analysis & Reporting	LS	$ 54,019.40				$ -	$ 54,019.40
Task 11 2029 Physical Monitoring (YR-2)	11A	Data Analysis & Reporting	LS	$ 55,640.36				$ -	$ 55,640.36
Task 12 2030 Physical Monitoring	12A	Data Analysis & Reporting	LS	$ 55,640.36				$ -	$ 55,640.36
Task 13 Beach Tilling (YR-1)	13A	Beach Tilling & Escarpment Removal (2028)	LS	$ 3,819.19	Glacier	$ 31,938.4	10%	$ 3,193.84	$ 38,951.40
Task 14 Beach Tilling (YR-2)	14A	Beach Tilling & Escarpment Removal (2029)	LS	$ 3,933.74	Glacier	$ 36,729.1	10%	$ 3,672.91	$ 44,335.78
Task 15 Beach Tilling (YR-3)	15A	Beach Tilling & Escarpment Removal (2030)	LS	$ 3,933.74	Glacier	$ 42,238.5	10%	$ 4,223.85	$ 50,396.09
Task 16 Emergency Storm Response	16A	Beach Profile Surveys (2 events)	LS	$ 912.36	M&E	$ 23,832.0	10%	$ 2,383.20	$ 27,127.56
	16B	FEMA Reporting & Coordination (4 events)	LS	$ 108,025.98				$ -	$ 108,025.98
Task 17 Coastal GIS Maintenance	17A	Ongoing Maintenance of the County Coastal GIS Database	T&M	$ 1,140.45	CMAR	$ 177,042.0	10%	$ 17,704.20	$ 195,886.65
Task 18 Structural Stabilization Study	18A	Engineering Review	LS	$ 23,900.00				$ -	$ 23,900.00
Task 19 - Hazard Mitigation Grant Program Support	19A	HMGP Application Support	T&M	$ 42,270.00				$ -	$ 42,270.00
	19B	Alternatives Analysis, Phase I	LS	$ 76,089.00	CEG	$ 24,226.0	10%	$ 2,422.6	$ 102,737.60
					SCS	$ 130,560.0	5%	$ 6,528.0	$ 137,088.00
	19C	Selected Alternative(s) Analysis, Phase II	LS	$ 103,429.00	SCS	$ 118,740.0	5%	$ 5,937.0	$ 228,106.00
TOTAL				**$ 1,560,376.04**		**$ 1,442,514.51**		**$ 109,186.45**	**$ 3,112,077.00**

Cost Details
Professional Services for the Bathtub Reef Beach Park / Sailfish Point Nourishment Project (2027)

DIRECT LABOR																					OUTSIDE SVS/SUB-CONTRACTORS				TOTAL
Task	Sub-Task	Description	Work Year	Principal rate	Principal	Sr Engineer rate	Sr Engineer	Coastal Engr III rate	Coastal Engr III	Coastal Engr II rate	Coastal Engr II	Coastal Engr I rate	Coastal Engr I	CAD rate	CAD	Admin. Asst. rate	Admin. Asst.	Total Hours	UNIT	COST	SERVICE	COST	BURDEN Percent	BURDEN Amount	
Task 1 Contract Administration and Project Management	1A- YR1	Overall Project Management and Coordination	2025	$ 255.00	60	$ 215.00	80	$ 174.00		$ 142.50		$ 122.00		$ 108.50		$ 105.00	15	155	T&M	$ 34,075.00				$ -	$ 34,075.00
	1B -YR1	Project Partner Coordination and Planning	2025	$ 255.00	28	$ 215.00	40	$ 174.00		$ 142.50		$ 122.00		$ 108.50		$ 105.00	15	83	T&M	$ 17,315.00				$ -	$ 17,315.00
	1A -YR2	Overall Project Management and Coordination	2026	$ 262.65	60	$ 221.45	80	$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15	15	155	T&M	$ 35,097.25				$ -	$ 35,097.25
	1B -YR2	Project Partner Coordination and Planning	2026	$ 262.65	28	$ 221.45	40	$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15	15	83	T&M	$ 17,834.45				$ -	$ 17,834.45
	1A -YR3	Overall Project Management and Coordination	2027	$ 270.53	60	$ 228.09	80	$ 184.60		$ 151.18		$ 129.43		$ 115.11		$ 111.39	15	155	T&M	$ 36,149.85				$ -	$ 36,149.85
	1B -YR3	Project Partner Coordination and Planning	2027	$ 270.53	28	$ 228.09	40	$ 184.60		$ 151.18		$ 129.43		$ 115.11		$ 111.39	15	83	T&M	$ 18,369.29				$ -	$ 18,369.29
	1A -YR4	Overall Project Management and Coordination	2028	$ 278.65	60	$ 234.93	80	$ 190.14		$ 155.72		$ 133.31		$ 118.56		$ 114.73	15	155	T&M	$ 37,234.35				$ -	$ 37,234.35
	1B -YR4	Project Partner Coordination and Planning	2028	$ 278.65	28	$ 234.93	40	$ 190.14		$ 155.72		$ 133.31		$ 118.56		$ 114.73	15	83	T&M	$ 18,920.35				$ -	$ 18,920.35
	1A -YR5	Overall Project Management and Coordination	2029	$ 287.01	60	$ 241.98	80	$ 195.84		$ 160.39		$ 137.31		$ 122.12		$ 118.17	15	155	T&M	$ 38,351.55				$ -	$ 38,351.55
	1B -YR5	Project Partner Coordination and Planning	2029	$ 287.01	28	$ 241.98	40	$ 195.84		$ 160.39		$ 137.31		$ 122.12		$ 118.17	15	83	T&M	$ 19,488.03				$ -	$ 19,488.03
	1C	Meeting Attendance and Additional Assignments	2027	$ 270.53	320	$ 228.09	360	$ 184.60		$ 151.18		$ 129.43		$ 115.11	40	$ 111.39	15	735	T&M	$ 174,957.25				$ -	$ 174,957.25
Task 2 2025 Physical Monitoring (YR-1)	2A	Data Analysis & Reporting	2025	$ 255.00	60	$ 215.00	128	$ 174.00		$ 142.50		$ 122.00	40	$ 108.50	16	$ 105.00	1	245	LS	$ 49,541.00				$ -	$ 49,541.00
Task 3 2026 Physical Monitoring (YR-2)	3A	Data Analysis & Reporting	2026	$ 262.65	60	$ 221.45	128	$ 179.22		$ 146.78		$ 125.66	40	$ 111.76	16	$ 108.15	1	245	LS	$ 51,027.31				$ -	$ 51,027.31
Task 4 2027 Physical Monitoring	4A	Data Analysis & Reporting	2027	$ 270.53	60	$ 228.09	128	$ 184.60		$ 151.18		$ 129.43	40	$ 115.11	16	$ 111.39	1	245	LS	$ 52,557.67				$ -	$ 52,557.67
Task 5 Beach Tilling (YR-1)	5A	Beach Tilling & Escarpment Removal (2025)	2025	$ 255.00		$ 215.00	3	$ 174.00		$ 142.50	20	$ 122.00		$ 108.50		$ 105.00		23	LS	$ 3,495.00	Glacier	$ 21,000.00	10%	$ 2,100.00	$ 26,595.00
Task 6 Beach Tilling (YR-2)	6A	Beach Tilling & Escarpment Removal (2026)	2026	$ 262.65		$ 221.45	3	$ 179.22		$ 146.78	20	$ 125.66		$ 111.76		$ 108.15		23	LS	$ 3,599.95	Glacier	$ 24,150.00	10%	$ 2,415.00	$ 30,164.95
Task 7 Beach Tilling (YR-3)	7A	Beach Tilling & Escarpment Removal (2027)	2027	$ 270.53		$ 228.09	3	$ 184.60		$ 151.18	20	$ 129.43		$ 115.11		$ 111.39		23	LS	$ 3,707.87	Glacier	$ 27,772.50	10%	$ 2,777.25	$ 34,257.62
Task 8 2027 Beach Renourishment, Permitting & Design	8A	Engineering Design	2026	$ 262.65	24	$ 221.45	80	$ 179.22		$ 146.78		$ 125.66	40	$ 111.76		$ 108.15		144	T&M	$ 29,046.00				$ -	$ 29,046.00
	8B	Borrow Area Modification	2026	$ 262.65	20	$ 221.45	80	$ 179.22		$ 146.78	60	$ 125.66		$ 111.76	8	$ 108.15		168	T&M	$ 32,669.88	Athena	$ 52,028.00	10%	$ 5,202.80	$ 89,900.68
	8C	State and Federal Permitting (FDEP, USACE, SARBO)	2026	$ 262.65	24	$ 221.45	72	$ 179.22	24	$ 146.78		$ 125.66	12	$ 111.76	10	$ 108.15	5	147	T&M	$ 29,715.55	CEG	$ 9,992.00	10%	$ 999.20	$ 40,706.75
	8D	Task Intentionally Left blank	2026	$ 262.65		$ 221.45		$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15		0	T&M	$ -				$ -	$ -
	8E	Beach Profile Surveys (construction plans)	2026	$ 262.65	2	$ 221.45	4	$ 179.22		$ 146.78		$ 125.66		$ 111.76	8	$ 108.15		14	LS	$ 2,305.18	M&E	$ 10,800.00	10%	$ 1,080.00	$ 14,185.18
	8F	Inlet Survey (construction plans)	2026	$ 262.65	2	$ 221.45		$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15		2	LS	$ 525.30	M&E	$ 28,059.00	10%	$ 2,805.90	$ 31,390.20
	8G	Upland Sand Evaluation	2026	$ 262.65	16	$ 221.45	40	$ 179.22		$ 146.78	120	$ 125.66		$ 111.76		$ 108.15	2	178	LS	$ 30,890.30	ECS	$ 896.00	10%	$ 89.60	$ 31,875.90
Task 9 2027 Beach Renourishment, Construction (12/2026 to 4/2027)	9A	Plans and Specifications Development	2026	$ 262.65	40	$ 221.45	100	$ 179.22		$ 146.78	24	$ 125.66		$ 111.76	48	$ 108.15		212	T&M	$ 41,538.20				$ -	$ 41,538.20
	9B	Bid Solicitation Support	2026	$ 262.65	20	$ 221.45	30	$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15		50	T&M	$ 11,896.50				$ -	$ 11,896.50
	9C	Pre-Construction Coordination, Submittals, NTP	2026	$ 262.65	40	$ 221.45	70	$ 179.22	3	$ 146.78	4	$ 125.66		$ 111.76	12	$ 108.15		129	T&M	$ 28,473.40				$ -	$ 28,473.40
	9D	Environmental Surveys - Seagrass (pre-construction)	2026	$ 262.65	2	$ 221.45	8	$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15		10	T&M	$ 2,296.90	CEG	$ 9,096.00	10%	$ 909.60	$ 12,302.50
	9E	Environmental Surveys - Seagrass (during-construction)	2027	$ 270.53	2	$ 228.09	8	$ 184.60		$ 151.18		$ 129.43		$ 115.11		$ 111.39		10	T&M	$ 2,365.78	CEG	$ 9,096.00	10%	$ 909.60	$ 12,371.38
	9F	Environmental Surveys - Seagrass (post-construction)	2027	$ 270.53	2	$ 228.09	8	$ 184.60		$ 151.18		$ 129.43		$ 115.11		$ 111.39		10	T&M	$ 2,365.78	CEG	$ 18,928.00	10%	$ 1,892.80	$ 23,186.58
	9G	Environmental Surveys - Queen Conch (baseline pre-construction)	2026	$ 262.65	2	$ 221.45	8	$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15		10	T&M	$ 2,296.90	CEG	$ 32,026.00	10%	$ 3,202.60	$ 37,525.50
	9H	Environmental Surveys - Queen Conch (during-constr., 3 events)	2027	$ 270.53	6	$ 228.09	24	$ 184.60		$ 151.18		$ 129.43		$ 115.11		$ 111.39		30	T&M	$ 7,097.34	CEG	$ 48,198.00	10%	$ 4,819.80	$ 60,115.14
	9I	Immediate Pre-construction Queen Conch Relocation and SAL	2027	$ 270.53	2	$ 228.09	12	$ 184.60		$ 151.18		$ 129.43		$ 115.11		$ 111.39		14	T&M	$ 3,278.14	CEG	$ 6,142.00	10%	$ 614.20	$ 10,034.34
	9J	Construction Review	2027	$ 270.53	96	$ 228.09	288	$ 184.60		$ 151.18		$ 129.43	60	$ 115.11	24	$ 111.39	2	470	T&M	$ 102,412.02	GBA	$ 452,000.00	5%	$ 22,600.00	$ 577,012.02
																					ECS & CEG	$ 10,460.00	10%	$ 1,046.00	$ 11,506.00
	9K	Weekly Meetings & Coordination - 4 months anticipated	2027	$ 270.53	16	$ 228.09	16	$ 184.60		$ 151.18		$ 129.43	16	$ 115.11		$ 111.39		48	T&M	$ 10,048.80				$ -	$ 10,048.80
	9L	Pre- and Post-Construction Beach Profile Surveys	2026	$ 262.65		$ 221.45	2	$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15		2	LS	$ 442.90	M&E	$ 22,032.00	10%	$ 2,203.20	$ 24,678.10
	9M	Pre- and Post-Construction Borrow Area Surveys	2026	$ 262.65		$ 221.45	2	$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15		2	LS	$ 442.90	M&E	$ 56,845.00	10%	$ 5,684.50	$ 62,972.40
	9N	Post-Construction Sediment QA/QC	2027	$ 270.53	6	$ 228.09	32	$ 184.60		$ 151.18		$ 129.43	40	$ 115.11		$ 111.39	1	79	LS	$ 14,210.65	ECS	$ 2,688.00	10%	$ 268.80	$ 17,167.45
	9O	Post-construction Close-out & Reporting	2027	$ 270.53	64	$ 228.09	115	$ 184.60		$ 151.18	80	$ 129.43	30	$ 115.11	16	$ 111.39	1	306	T&M	$ 61,474.72				$ -	$ 61,474.72
	9P	Public Outreach and Relations	2026	$ 262.65		$ 221.45		$ 179.22		$ 146.78		$ 125.66		$ 111.76		$ 108.15	1	1	T&M	$ 108.15	Firefly	$ 15,000.00	10%	$ 1,500.00	$ 16,608.15
Task 10 2028 Physical Monitoring (YR-1)	10A	Data Analysis & Reporting	2028	$ 278.65	60	$ 234.93	128	$ 190.14		$ 155.72		$ 133.31	40	$ 118.56	16	$ 114.73		244	LS	$ 54,019.40				$ -	$ 54,019.40
Task 11 2029 Physical Monitoring (YR-2)	11A	Data Analysis & Reporting	2029	$ 287.01	60	$ 241.98	128	$ 195.84		$ 160.39		$ 137.31	40	$ 122.12	16	$ 118.17		244	LS	$ 55,640.36				$ -	$ 55,640.36
Task 12 2030 Physical Monitoring	12A	Data Analysis & Reporting	2029	$ 287.01	60	$ 241.98	128	$ 195.84		$ 160.39		$ 137.31	40	$ 122.12	16	$ 118.17		244	LS	$ 55,640.36				$ -	$ 55,640.36
Task 13 Beach Tilling (YR-1)	13A	Beach Tilling & Escarpment Removal (2028)	2028	$ 278.65		$ 234.93	3	$ 190.14		$ 155.72	20	$ 133.31		$ 118.56		$ 114.73		23	LS	$ 3,819.19	Glacier	$ 31,938.38	10%	$ 3,193.84	$ 38,951.40
Task 14 Beach Tilling (YR-2)	14A	Beach Tilling & Escarpment Removal (2029)	2029	$ 287.01		$ 241.98	3	$ 195.84		$ 160.39	20	$ 137.31		$ 122.12		$ 118.17		23	LS	$ 3,933.74	Glacier	$ 36,729.13	10%	$ 3,672.91	$ 44,335.78
Task 15 Beach Tilling (YR-3)	15A	Beach Tilling & Escarpment Removal (2030)	2029	$ 287.01		$ 241.98	3	$ 195.84		$ 160.39	20	$ 137.31		$ 122.12		$ 118.17		23	LS	$ 3,933.74	Glacier	$ 42,238.50	10%	$ 4,223.85	$ 50,396.09
Task 16 Emergency Storm Response	16A	Beach Profile Surveys (2 events)	2027	$ 270.53		$ 228.09	4	$ 184.60		$ 151.18		$ 129.43		$ 115.11		$ 111.39		4	LS	$ 912.36	M&E	$ 23,832.00	10%	$ 2,383.20	$ 27,127.56
	16B	FEMA Reporting & Coordination (4 events)	2027	$ 270.53	72	$ 228.09	360	$ 184.60		$ 151.18		$ 129.43	48	$ 115.11		$ 111.39	2	482	LS	$ 108,025.98				$ -	$ 108,025.98
Task 17 Coastal GIS Maintenance	17A	Ongoing Maintenance of the County Coastal GIS Database	2027	$ 270.53		$ 228.09	5	$ 184.60		$ 151.18		$ 129.43		$ 115.11		$ 111.39		5	T&M	$ 1,140.45	CMAR	$ 177,042.00	10%	$ 17,704.20	$ 195,886.65
Task 18 Structural Stabilization Study	18A	Engineering Review	2025	$ 255.00	60	$ 215.00	40	$ 174.00		$ 142.50		$ 122.00		$ 108.50		$ 105.00		100	LS	$ 23,900.00				$ -	$ 23,900.00
Task 19 - Hazard Mitigation Grant Program Support	19A	HMGP Application Support	2025	$ 255.00	40	$ 215.00	128	$ 174.00		$ 142.50		$ 122.00		$ 108.50	40	$ 105.00	2	210	T&M	$ 42,270.00				$ -	$ 42,270.00
	19B	Alternatives Analysis, Phase I	2025	$ 255.00	100	$ 215.00	200	$ 174.00		$ 142.50		$ 122.00	40	$ 108.50	24	$ 105.00	1	365	LS	$ 76,089.00	CEG	$ 24,226.00	10%	$ 2,422.60	$ 102,737.60
																					SCS	$ 130,560.00	5%	$ 6,528.00	$ 137,088.00
	19C	Selected Alternative(s) Analysis, Phase II	2025	$ 255.00	160	$ 215.00	256	$ 174.00		$ 142.50		$ 122.00	40	$ 108.50	24	$ 105.00	1	481	LS	$ 103,429.00	SCS	$ 118,740.00	5%	$ 5,937.00	$ 228,106.00
TOTAL																				**$ 1,560,376.04**		**$ 1,442,514.51**		**$ 109,186.45**	**$ 3,112,077.00**

January 9th, 2025

Steven C. Howard, P.E., BC.CE
Lead Coastal Engineer
Foth | Olsen
2618 Herschel Street
Jacksonville, FL 32204-4512

RE: ***Cost Proposal for Vibracore Sample Collection and Geotechnical Reporting***
St. Lucie Inlet Flood Shoal Borrow Area Investigation
Martin County, Florida

Dear Mr. Howard,

This letter is intended to serve as a technical cost proposal for the above-mentioned vibracore sampling effort. This proposal is based on discussions between Athena Technologies, Inc. (Athena) and Foth | Olsen in December of 2024.

It is our understanding that you will require the collection of up to 10 vibracores to a depth of up to 15 feet below sediment surface. The intent of the investigation is to determine sediment characteristics in the ebb shoal associated with St. Lucie Inlet, located in Martin County, Florida. Target core recovery is understood to be 13 to 14 feet. We understand that you will also require geotechnical reporting, which will include core logging, core photography, and laboratory analyses of sub-samples from the vibracores.

We are proposing the use of our thirty-five (35) foot research vessel, *Artemis*, to operate as the sampling platform for this effort. This vessel is equipped with all required U.S. Coast Guard (USCG) safety gear and will be operated by a USCG-certified Master Captain. The Captain will be accompanied by 3 additional crew members. Athena will utilize a Trimble Differential Global Positioning System (sub-meter accurate) interfaced with HYPACK for horizontal positioning, and a Furuno fathometer and lead line for collecting water depths. A Spectra Precision SP80 Global Navigation Satellite System (GNSS) (accurate to +/- 2 centimeters) interfaced with the Florida Permanent Reference Network (FPRN) will be utilized to determine sediment surface elevations and final horizontal coordinates.

During field activities, Athena will navigate to the sample coordinates and, once on station, the vessel will be immobilized using a triple-point anchor system. When the vessel is immobilized, the

coordinates at the vessel location will be compared with coordinates for the desired sample site to ensure accurate vessel positioning. Athena's custom-designed and fabricated vibracore system will then be deployed from the sampling platform. The vibracore system consists of a generator with a mechanical vibrator attached via cable to a 3-inch diameter, aluminized steel sample barrel. The sample barrel is lowered to the sediment surface through a moon pool in the deck of the vessel by attaching lengths of drill stem. The vibracore machine is then turned on and the sample barrel is allowed to penetrate until it reaches target depth, or refusal. The sample barrel is then retrieved using an electric winch. Once the sample is on deck, the core is measured to ensure acceptable recovery. The completed core will then be capped on both ends, labeled and marked with arrows for orientation purposes.

Based on past experience working in the study area, it is anticipated that refusal may be encountered at certain sample locations. The refusal material was commonly comprised of a carbonate-cemented sandstone. If vibracore recovery is less than 80%, or if refusal is met and the material at the base of the core is not limestone, carbonate-cemented clastic sediments, or indurated silt/clay, then Athena will make one additional vibracore attempt to reach the required penetration depth and/or increase recovery.

It should be emphasized that crew and vessel safety is of utmost concern when working adjacent to, or on top of, nearshore shoal complexes associated with inlets. In shoal-type settings, wave action is increased due to amplification and wave angles converge (due to refraction) as they approach the shoal, which can create potentially hazardous situations. We may also be impacted by excessive vessel traffic causing large wakes at the shallower core locations. Athena will make every reasonable attempt to collect the vibracore samples from the requested locations; however, the vessel captain will have sole discretion to abandon, or choose not to attempt, core collection in certain areas if crew and vessel safety are threatened due to site conditions. If a location is deemed unsafe, Athena will contact the Foth | Olsen project manager to discuss alternate sample locations.

The completed cores will be sectioned into 5-foot lengths and opened longitudinally at Athena's facility in McClellanville, South Carolina. Athena will photograph and log the cores (in accordance with ASTM D2488-09A) at this facility. Draft core logs and vibracore photomosaic images will be sent to Foth | Olsen to allow for sub-sample interval determination. Upon receipt of sample intervals from Foth | Olsen, Athena will extract and ship the sub-samples to Terracon Consultants, Inc. (Terracon) in Jacksonville, Florida for analysis. Terracon is a USACE- and AASHTO-certified laboratory. We understand that the sub-samples will be analyzed for grain size distribution, shell content, and carbonate content. Grain size analysis will be conducted in accordance with procedures outlined in ASTM D6913, using sieves: 3/4-inch, 5/8-inch, No. 3.5, No. 4, No. 5, No. 7, No. 10, No. 14, No. 18, No. 25, No. 35, No. 45, No. 60, No. 80, No. 120, No. 170, No. 200, and No. 230. Visual estimation of shell content will be conducted for each sub-sample using the Terry and Chilingar (1955) method, and sub-samples will also be classified in accordance with guidelines outlined in ASTM D2487. Carbonate content will be determined via the Twenhofyl and Tyler acid digestion method (1941).

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Upon receipt of all laboratory sub-sample data, Athena will produce a PDF report that will contain sampling methodology, site maps, core logs, photomosaic images, grain size and carbonate data, and a summary of site conditions. Athena will also provide the gINT project file used to produce the core logs and grain size statistics.

In consideration of the scope of services, our proposed costs for this effort are as follows:

ItemNo.	Description	Amount
1	Mobilization/Demobilization, lump sum	$11,826.00
2	Vibracore Collection, per core	$2,485.20
3	Spectra Precision SP80 GNSS Rental, lump sum	$1,000.00
4	Vibracore Processing, Logging, Photomosaic Production, and Archiving, per core	$400.00
5	Grain Size Analysis with Visual Percent Shell, per sample (ASTM D6913 Method & Terry & Chilingar Method))	$90.00
6	Carbonate Content, per sample (Twenhofyl and Tyler Acid Digestion Method)	$125.00
7	Analytical Sample Shipping, lump sum	$500.00
8	Geotechnical Reporting, lump sum	$5,000.00

The per core rate includes the following: vessel and vibracore equipment rental, labor, per diem, consumables, and all other associated sediment sampling costs. The above prices are valid through July 9th, 2025, and are subject to change if the final scope of work deviates from the scope outlined above.

We sincerely appreciate the opportunity to provide a cost estimate for this project. Please let us know if you have any questions or comments.

Best Regards,

J. Neil Wicker
Marketing Director

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Coastal Eco Group
Fee Schedule , BRBP / SP 2027 Renourishment

Professional Services for Bathtub Beach Sailfish Point Project			Task 1 - Permitting Support		Task 2 - Data Collection								Task 3 - Seagrass Data Deliverable, Maps and Report (one per event)		Task 4 - Queen Conch Maps and Report (one per event)	
			Task 1		Task 2A		Task 2B		Task 2C		Task 2D		Task 3 - Queen		Conch Maps and Report	
Fee Proposal for State & Federal Permitting Support, Seagrass Surveys, & Queen Conch Surveys			Permitting & Meetings (T&M)		Seagrass Surveys- Daily Rate (T&M)		Baseline Pre-construction Queen Conch Surveys Shallow Water Daily Rate (T&M)		Baseline Queen Conch Surveys- Deep Water/Adjacent to Channel Daily Rate (T&M)		Immediate Pre-construction Queen Conch Relocation & SAL acquisition (T&M)		Seagrass Maps and Reporting (T&M)		Queen Conch Maps and Reporting (T&M)	
	CATEGORY	Rate	HRS	LABOR	HRS	LABOR	HRS	LABOR	HRS	LABOR	HRS	LABOR	HRS	LABOR	HRS	LABOR
Coastal Eco-Group Inc.	Principal Scientist	$152.00	24.00	$3,648.00		$0.00		$0.00		$0.00	12.00	$1,824.00	16.00	$2,432.00	8.00	$1,216.00
	Sr Scientist	$125.00	24.00	$3,000.00		$0.00	10.00	$1,250.00	10.00	$1,250.00	10.00	$1,250.00	40.00	$5,000.00	24.00	$3,000.00
	Staff Scientist	$100.00	20.00	$2,000.00	20.00	$2,000.00	10.00	$1,000.00		$0.00	20.00	$2,000.00	24.00	$2,400.00	8.00	$800.00
	Boat Captain	$78.00		$0.00	10.00	$780.00	10.00	$780.00		$0.00		$0.00		$0.00		$0.00
	Junior Scientist	$84.00	16.00	$1,344.00	10.00	$840.00	10.00	$840.00		$0.00	10.00	$840.00		$0.00		$0.00
	Commercial Dive Team- Daily	$6,500.00							1.00	$6,500.00		$0.00		$0.00		$0.00
Total Labor			**84.00**	**$9,992.00**	**40.00**	**$3,620.00**	**40.00**	**$3,870.00**	**10.00**	**$7,750.00**	**52.00**	**$5,914.00**	**80.00**	**$9,832.00**	**40.00**	**$5,016.00**
Direct Costs																
Underwater Still Camera (Per Day)		$30.00		$0.00	1.00	$30.00	1.00	$30.00		$0.00	1.00	$30.00		$0.00		$0.00
Underwater Video System (Per Day)		$50.00		$0.00	1.00	$50.00	1.00	$50.00		$0.00		$0.00		$0.00		$0.00
Trimble DGPS (Per Day)		$50.00		$0.00	1.00	$50.00	1.00	$50.00		$0.00	1.00	$50.00		$0.00		$0.00
Dive Expendables (Per Day)		$25.00		$0.00	1.00	$25.00	1.00	$25.00	1.00	$25.00	1.00	$25.00		$0.00		$0.00
Dive Equipment (Per Day Per Person)		$25.00		$0.00	3.00	$75.00	3.00	$75.00	1.00	$25.00	3.00	$75.00		$0.00		$0.00
SCUBA Tank Fills (Per Tank)		$8.00		$0.00	6.00	$48.00	6.00	$48.00	2.00	$16.00	6.00	$48.00		$0.00		$0.00
Mileage (Per Mile)		$0.56		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00
Survey Vessel (Per Day)		$650.00		$0.00	1.00	$650.00	1.00	$650.00		$0.00		$0.00		$0.00		$0.00
Commerical Diver Mob/Demob Fee- Per Survey		$1,000.00		$0.00					1.00	$1,000.00		$0.00		$0.00		$0.00
Total Direct Costs				**$0.00**		**$928.00**		**$928.00**		**$1,066.00**		**$228.00**		**$0.00**		**$0.00**
Coastal Eco-Group, Inc. Subtask Totals				***$9,992.00***		***$4,548.00***		***$4,798.00***		***$8,816.00***		***$6,142.00***		***$9,832.00***		***$5,016.00***

TOTALS

Task 8C State and Federal Permitting	$9,992.00	
Task 9D Seagrass Survey (Pre-Construction event- max 2 days)	$9,096.00	(CEG Task 2A, 2 days)
Task 9E Seagrass Survey (During-Constr.)	$9,096.00	(CEG Task 2A, 2 days)
Task 9D Seagrass Survey (Post-Construction)	$18,928.00	(CEG Task 2A, 2 days) + CEG Task 3
Task 9J Construction Review	$9,564.00	(CEG Task 2A, 1 day) + CEG Task 4
Task 9G Queen Conch (pre-Construction)	$32,026.00	(CEG Task 2B, 3 days)+(CEG Task 2C, max 2 days)
subtotal Task 9H Queen Conch (During-Constr., per event)	$14,394.00	(CEG Task 2B, 3 days)
subtotal Task 9H Queen Conch (During-Constr., 3 events)	$43,182.00	
subtotal Task 9H- Queen Conch Report (one report at end)	$5,016.00	(CEG Task 4)
Task 9H- Total	$48,198.00	
Task 9I - Immediate pre-con. Relocation and SAL	$6,142.00	
Task 19B - Alternatives Analysis Phase I	$24,226.00	(CEG Task 2B, 3 days) + CEG Task 3

CMAR CONSULTING, LLC
Environmental & GIS Services

January 8, 2025

Steven C. Howard, P.E., BC.CE
Lead Coastal Engineer
Foth | Olsen
2618 Herschel Street
Jacksonville, FL 32204-4512

RE: GIS Services for the professional services for the Bathtub Beach / Sailfish Point Beach Nourishment Project (2027)

Dear Mr. Howard

CMAR is pleased to submit the 2025 – 2029 GIS services levels and fees (Table I) for the professional services for the Bathtub Beach / Sailfish Point Beach Nourishment Project (2027). The total contact amount over the five years totals $177,042.00, with annual contract amounts listed in Table II.

CMAR Consulting, LLC (CMAR) will ensure that the project's datasets are properly uploaded, recorded, and integrated within the County's Coastal GIS Geodatabase annually. Datasets for this project includes permitting, pre-construction, construction, and post-construction engineering data, and the associated annual physical and biological monitoring data. CMAR will also coordinate with County staff, prepare desktop and web GIS management and planning tools, and conduct and report data analysis results, specifically from the integration of physical and biological monitoring data.

CMAR thanks you for the opportunity to continue to work with Foth | Olsen and Martin County. Please contact me at 904-993-4806 or via email at: alexandra@cmarconsulting.com if you have any questions regarding this submittal.

Best Regards,

Maria Alexandra Carvalho

Alexandra Carvalho, Ph.D., GISP

7990 Baymeadows Rd. E. #308 Jacksonville, FL 32256
TEL 904.993.4806 ● FAX 904.997.0963 www.cmarconsulting.com

CMAR CONSULTING, LLC
Environmental & GIS Services

PROFESSIONAL SERVICES FOR THE BATHTUB BEACH / SAILFISH POINT BEACH NOURISHMENT PROJECT (2027)

TABLE I - 2025 – 2029 SERVICE LEVELS AND FEES

Service Level	Hourly Rate				
	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
CEO	$250	$259	$268	$277	$287
Project Manager	$195	$202	$209	$216	$224
Senior GIS	$165	$171	$177	$183	$189
Coastal GIS Specialist	$140	$145	$150	$155	$161
GIS Analyst	$110	$114	$118	$122	$126
GIS Technician	$95	$98	$102	$105	$109

TABLE II – ANNUAL CONTRACT FEES

Annual Contract Totals					TOTAL $ 5 YEARS
Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029	
$30,970.00	$32,050.00	$44,190.00	$34,298.00	$35,534.00	$177,042.00

7990 Baymeadows Rd. E. #308 Jacksonville, FL 32256
TEL 904.993.4806 ● FAX 904.997.0963 www.cmarconsulting.com

2025 FEE SCHEDULE

Geotechnical Exploration and Engineering Services

I. LABORATORY TESTING

A.	Grain Size Distribution	$ 70.00/EA
B.	Munsell Color	$ 15.00/EA
C.	Visual Shell Content	$ 15.00/EA
D.	Carbonate Content	$ 105.00/EA

NOTE: This Fee Schedule lists typical laboratory services provided for most beach nourishment projects and should be used for budgeting purposes only. Additional services can be quoted upon request. Please contact an engineering professional at ECS Florida to discuss a specific scope-of-work for your project so that a fee proposal can be prepared.

PER SAMPLE TOTAL: $205.00 (2024); $224.00 (2027 @ 3%)

December 2, 2024

Steven C. Howard, P.E., BC.CE
Foth |Olsen
2618 Herschel Street
Jacksonville, FL 32204

Re: Bathtub Beach Public Outreach & Education Services

Scope of Work

The goal is to proactively educate residents and keep them engaged and informed on the Bathtub Beach renourishment project. Communications will be provided to the Coastal division for dissemination by the County's Public Information Officer (PIO) via their email, social, and other outreach channels. Communications will generally be provided on a weekly basis or as needed.

I. **Key Messaging Development and Updates.** Assist team in developing key messaging and talking points to be woven into communications.

II. **Social Media Content Creation.** Create social media content to provide project updates on important information relating to construction, traffic, navigation, milestones achieved, etc.

III. **Social Media/Traditional Media Monitoring.** Firefly will monitor social media (Facebook, Nextdoor, etc.) and traditional media to track public sentiment, concerns and misinformation and report findings.

IV. **Media Relations/Government Relations.** Create prepared statements, press releases, and media advisories as needed; Serve as media liaison as needed; Track media coverage generated; Crisis communications if needed; Serve as government liaison as needed

Note: Unless otherwise instructed, per Martin County's communications protocol, press releases would be approved by the County and then distributed by Martin County's PIO.

v. **Project Construction Team Meetings**. Participation in team/construction meetings (in-person and virtual) for project.

772.287.5272 • info@fireflyforyou.com • 1211 SW Sunset Trail, Palm City, FL 34990 • fireflyforyou.com

Terms

Timeframe. Upon execution of this agreement, Firefly will be retained for one year or through project completion. Agreement may be extended at the mutual convenience of both parties.

Fee for services. Firefly would be compensated on an hourly basis at the rates below for services described in this Scope of Work, not to exceed $15,000 annually (exclusive of reimbursable expenses) without prior approval. Services outside of this scope of work would also be billed at the rates below on an hourly basis with prior approval from you.

Staff	***Discounted Rates (hourly)***
Principal/Chief Communications Strategist	$185
Sr PR/Lead Communications Specialist	$170
Communications/Public Outreach Specialist	$150
Communications/Public Outreach Coordinator	$125
Graphic/Website Design	$ 85
Administrative	$ 35

Reimbursable Expenses. Compensation does not include reimbursable expenses. Reimbursable expenses include but are not limited to: use of approved third party vendors or other agreed upon and reasonable expenses to perform services such as photography, videography, printing, postage, graphic design, other advertising costs, virtual meeting costs, mileage, etc. Reimbursables must be pre-approved by you.

Payment. Foth|Olsen agrees to provide payment for services on a monthly basis upon receipt of an invoice from Firefly. Payment will be made within sixty (60) days of receipt of invoice. Invoices not paid within sixty (60) days are subject to a 2% monthly interest charge. Firefly may also request an advance payment of fifty percent (50%) of the costs of any collateral and production expenses to be produced through third-party vendors.

Ste3ven, if the information contained in this proposal is satisfactory to you, please acknowledge your acceptance of the above terms and conditions by signing in the space provided below and emailing an executed copy of this agreement to our office.

We look forward to our continued relationship!

Sincerely,

Stacy Ranieri
President
Firefly Communications Inc.
d/b/a The Firefly Group
December 2, 2024

_____
Steven C. Howard, P.E., BC.CE
Foth | Olsen

Date: _____

772.287.5272 • info@fireflyforyou.com • 1211 SW Sunset Trail, Palm City, FL 34990 • fireflyforyou.com

Gahagan & Bryant Associates, Inc.
3802 W. Bay to Bay Blvd., Suite B-22
Tampa, Florida 33629
(813) 831-4408 Fax (813) 831-4216
gbatpa@gba-inc.com

ENGINEERS ★ SURVEYORS

December 27, 2024

Mr. Steve Howard, P.E.
Olsen Associates, Inc.
2618 Herschel Street
Jacksonville, FL 32204

RE: Scope of Services and Fee Proposal
In Support of the Bathtub Beach\Sailfish Point Beach Restoration 2027
Inspection and Contract Surveys of Bathtub\Sailfish Point Beach, Borrow Sites, and Sailfish Point Channel

Dear Mr. Howard,

Below please find the requested scope of work and fee schedule to provide our services in support of the County's Beach 2027 Beach Restoration Project at Bathtub Beach and Sailfish Point.

Construction Inspection and Surveys of Beach, Borrow Sites, and Sailfish Point Channel

We will provide support engineering, project management, and field inspection services on a 7 day per week basis for the duration of the project. A construction inspector and survey technician will be provided to monitor the contractor's progress and performance during the construction phase of the project at the inlet dredging areas and at the beach disposal area at Bathtub Beach\Sailfish Point. The inspector will make daily site visits and review the daily dredge and disposal activities to ensure that the intent of the permits is being met. The beach disposal area will be monitored daily to ensure that the proper beach fill template is being constructed and to monitor sediment quality of the placed beach fill. The inspector will attend weekly toolbox meetings with representatives of the contractor and the County to provide assistance in the resolution of any project issues.

We will perform contract pay surveys of the profiles in the beach fill area and will perform periodic hydrographic surveys of the borrow sites and the Sailfish Point channel in the vicinity of dredge operations. BD/AD beach surveys will be performed at 100-ft alongshore spacing and at baseline PI's, and shall be the basis of payment for beach fill. The borrow site surveys will document the quantity removed during dredging operations and provide for accountability of sand transfer within the inlet. Bathymetric surveys will be performed by employing a fully automated hydrographic survey system, operated from a shallow draft survey vessel. Navigation and positioning for the offshore survey will be accomplished using a real time kinematic(RTK) Global Positioning System, which will significantly reduce the tide reduction errors caused by the extreme tidal gradient within the inlet. All data will be recorded on a disk drive for post survey data processing. Bar check calibration of the fathometer will be taken at the start and end of each survey day. Tide readings will be taken periodically as a control check for the vertical component of the RTK. The bathymetric survey will be performed by procedures meeting USACE standards. Topographic data from the spit along Sailfish Point will be obtained by conventional RTK methods.

The survey data will be processed and cross-sections will be plotted. The data shall also be provided in XYZ format. The interim surveys will be compared to prior surveys on a daily basis and the contract pay quantities will be calculated. We will also review and verify the contractor's pay requests.

We have estimated 10 hydrographic survey days per month, which will require a survey vessel dedicated to the project on a full-time basis. Contract pay surveys on the beach will be performed on a daily basis.

This SOW includes allowance for the performance of pre- and post-construction surveys of the borrow sites, and beach profile monitoring surveys at R- and half-monuments (R34.5-R42.5) . The pre-construction surveys are envisioned to be performed during December 2026 to provide for adequate time to re-evaluate the beach construction templates and update the available borrow site quantities. The post construction surveys will be performed immediately following completion of construction operations.

All survey activities and deliverables shall be conducted in accordance with

- FDEP permit 0326938-001-JC and the St. Lucie Inlet Countywide Physical Monitoring Plan (approved for Martin County on 10/4/2012 in association with JCP 0269814-007-JC); approved Physical Monitoring Plan dated 3/20/2015; and
- the latest update of the BIPP *Monitoring Standards for Beach Erosion Control Projects, Section 01000–Beach Profile Topographic Surveying* and *Section 01100–Offshore Profile Topographic Surveying,* and *Section 01200 – Borrow Site, Shoal & Other Bathymetric Surveying.*

Our cost to perform the subject services is **$129,274 per month**, as detailed in the attached cost estimate. The job is currently envisioned to last 3.5 months for a total estimated budget of **$452,000**. The project will be performed on a lump sum monthly basis, pro rata, based on actual construction project duration.

We trust that these quotes meet with your approval. Should you have any questions or require any additional information regarding this matter, please do not hesitate to call. We look forward to another successful Bathtub Beach\Sailfish Point beach nourishment project.

Best regards,

Clay M. Bryant, P.E.
Project Manager

Bathtub Beach\Sailfish Point Beach Project 2027

Daily Construction Inspection, Beach & Borrow Site Surveys

Gahagan and Bryant Associates, Inc.

LABOR:		Unit	Unit Cost	Total
Sr. Associate	23	Manhours	$266.00	$6,118.00
Associate	16	Manhours	$209.00	$3,344.00
Sr. Engineer	24	Manhours	$172.00	$4,128.00
Engineer II	80	Manhours	$141.00	$11,280.00
Engineer I	20	Manhours	$109.00	$2,180.00
Construction Inspector\Surveyor	270	Manhours	$136.00	$36,720.00
Technician	250	Manhours	$77.00	$19,250.00
CAD\Draftsman	12	Manhours	$101.00	$1,212.00
	Total Labor:			$84,232.00
EQUIPMENT:				
Level, Tripods,Rods, Tools	30	Day	$30.00	$900.00
PC Computer System, Plotter, Software	30	Day	$25.00	$750.00
27' Survey Vessel	10	Day	$1,150.00	$11,500.00
27' Survey Vessel-Standby	20	Day	$300.00	$6,000.00
ATV	30	Day	$75.00	$2,250.00
Trimble RTK Positioning System	30	Day	$200.00	$6,000.00
4x4 Truck	30	Day	$95.00	$2,850.00
	Total Equipment:			$30,250.00
EXPENSES:				
Survey supplies, dockage, fuel, stakes, etc.				$14,792.00
			Total Expenses:	$14,792.00
			Total Cost Per Month:	**$129,274.00**
			Grand Total for 3.5 months of Survey & Inspection:	**$452,000.00**

14286 Beach Blvd Ste 19
Jacksonville, FL 32250

January 8, 2025

Steve Howard
Foth / Olsen
2618 Herschel Street
Jacksonville, Florida 32204

RE: Bathtub Beach Tilling – Stuart, FL

Mr. Steve Howard,

Glacier Contracting Inc can provide beach tilling and escarpment removal services covering the scope and fee schedule listed below.

Scope:
Work will include tilling approximately 7 acres of beach berm (+/- 3300 LF), of Bathtub Beach located in Stuart, FL. Contractor is to till to a depth of 36” and leave no rutting. Contractor will be responsible to remove escarpments no more than 36” in height. The pricing below is based on one mobilization and the parking lot at 1585 SE MacArthur being shut down by others.

Price Schedule:

2025 $21,000
2026 $24,150
2027 $27,772.50
2028 $31,938.38
2029 $36,729.13
2030 $42,238.50

Sincerely,

Gus Natvig

Digitally signed by Gus Natvig
DN: C=US, E=gus.natvig@glaciercontracting.com, O=Glacier Contracting Inc, CN="Gus Natvig"
Date: 2025.01.08 08:50:43-05'00'

Gus Natvig
Glacier Contracting Inc, President

Morgan & Eklund, Inc.
4909 US Highway 1
Vero Beach, Florida 32967
Phone: 772-388-5364
Fax: 772-388-3165

November 14, 2024

Foth Infrastructure & Environment, LLC
Olsen Associates, Inc.
Attn: Steven C. Howard, PE, BC.CE
2618 Herschel Street
Jacksonville, FL 32204-4512

RE: Onshore/Offshore Beach Profiles, Bathtub Reef Beach Park and Sailfish Point R34 to R42.5, 2026 to 2029, Martin County, FL

Dear Steven:

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

Onshore/offshore beach profiles will be conducted from R34 to R42.5 including half lines Deliverables will include plan and profile in PDF and AutoCAD formats along with FDEP submittal requirements.

Plan and Spec Survey – September 2026		
18 onshore/offshore profiles @ $600/line	$	10,800.00
Pre-Construction Survey – December 2026		
18 onshore/offshore profiles @ $600/line	$	10,800.00
Post-Construction Survey – May 2027		
18 onshore/offshore profiles @ $624/line	$	11,232.00
Optional Post-Storm Survey – 2028		
18 onshore/offshore profiles @ $649/line	$	11,682.00
Optional Post-Storm Survey – 2029		
18 onshore/offshore profiles @ $675/line	$	12,150.00

Should the survey encompass the collection of data at less than ten R-monument transects, the fee/survey line will be renegotiated.

As always, Morgan & Eklund, Inc. is looking forward to working with you and Foth|Olsen Associates, Inc. on this project.

Sincerely,

David W. Coggin

Digitally signed by David W. Coggin
Date: 2024.11.14 11:00:48 -05'00'

David W. Coggin, PSM
Vice President

DWC:dmc

lling: Will be invoiced upon completion of each survey
Terms: Net 30 days

Morgan & Eklund, Inc.
4909 US Highway 1
Vero Beach, Florida 32967
Phone: 772-388-5364
Fax: 772-388-3165

November 15, 2024

Foth Infrastructure & Environment, LLC
Olsen Associates, Inc.
Attn: Kevin Bodge, PhD, PE
2618 Herschel Street
Jacksonville, FL 32204

RE: Emergency Post-Storm Single Beam Bathymetric Survey of St. Lucie Inlet, Martin County, FL

Dear Kevin:

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

The scope of work will include performing a single beam bathymetric survey of the St. Lucie Inlet to -3 NAVD± for approximately 56 line miles. Additionally, wading profiles will be performed near the impound basin only. See attached sketch for areas to be surveyed.

Deliverables will include signed and sealed plan view drawings in .dwg and .pdf formats, a survey report, XYZ data and full point cloud(s).

Our price will be as follows:

2028 Single Beam Post-Storm
Lump Sum Fee.....$ 28,059.00

2029 Single Beam Post-Storm
Lump Sum Fee.....$ 28,786.00

As always, Morgan & Eklund, Inc. appreciates this opportunity to work with you and Foth|Olsen Associates, Inc. on this project.

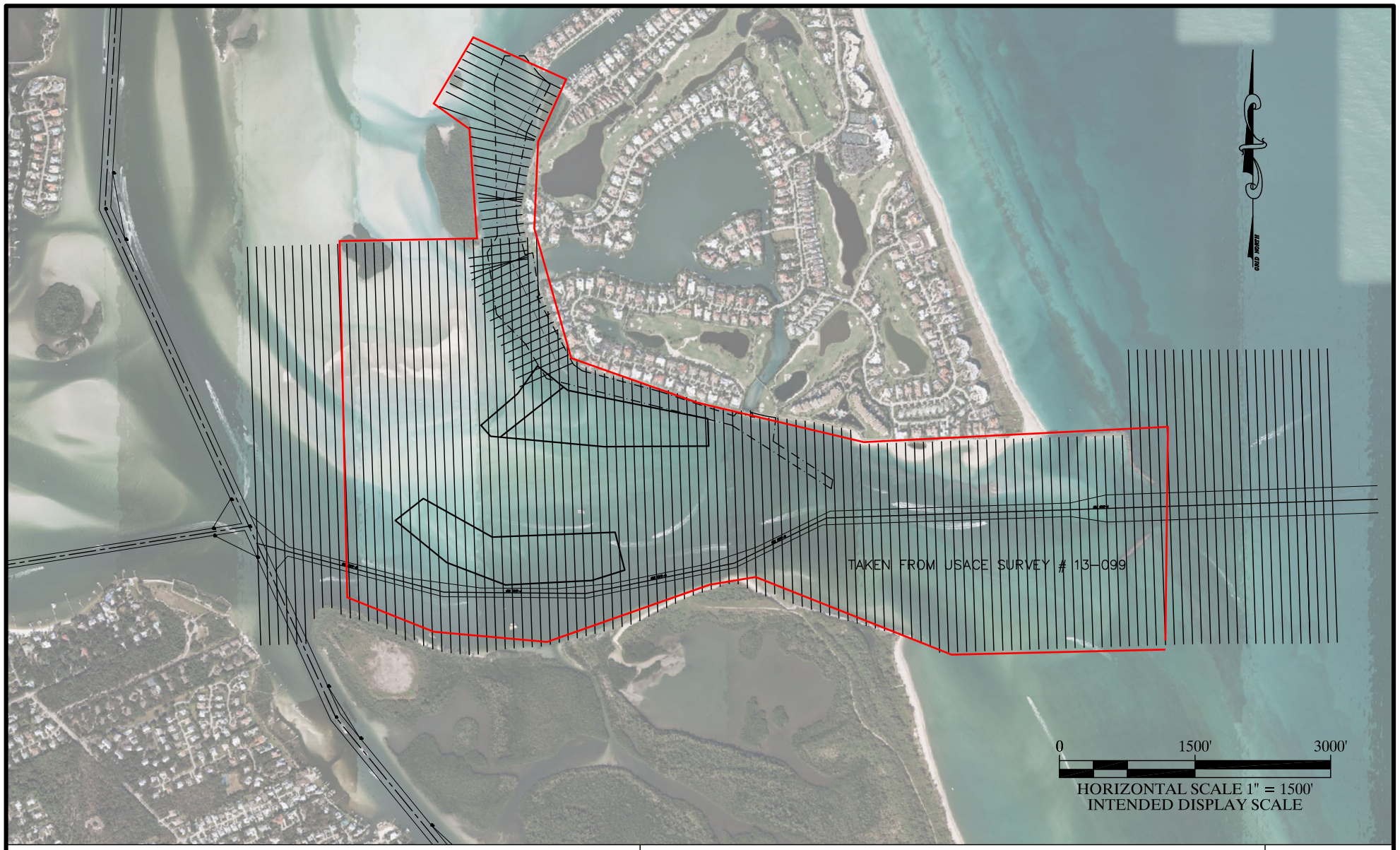
Sincerely,

David W. Coggin

Digitally signed by David W. Coggin
Date: 2024.11.15 14:02:32 -05'00'

David W. Coggin, PSM
Vice President

DWC:dmc
Billing: Will be invoiced upon completion of survey
Terms: Net 30 days
Prices are good through December 2029



H:\Sdskpro\5075-30\dwg\sli-proposal-exhibit.dwg chris Thu, 14 Nov 2024 - 2:54pm

Morgan & Eklund Inc.

PROFESSIONAL SURVEY CONSULTANTS

4909 US HIGHWAY #1
VERO BEACH, FL 32967
PHONE: (772) 388-5364
FAX: (772) 388-3165

1557 NE 164TH STREET
UNIT 1
NORTH MIAMI BEACH, FL 33162
PHONE: (305) 403-9557

LB #4298

TOPOGRAPHIC AND HYDROGRAPHIC SURVEY
TOPOGRAPHY AND SINGLE-BEAM BATHYMETRY
ST. LUCIE INLET AND SAILFISH ENTRANCE CHANNEL
FOR OLSEN ASSOCIATES, INC.

DRAWN BY	CHECKED BY	FIELD BOOK / PAGE NO.	DATE OF SURVEY
–	DWC	000 / 000	-----

COMMISSION NO.	-----
SCALE	1" = 1,500'
DATE	11/13/24
SHEET	1 OF 1

Sustainable Coastal Soluitions (SCS) Budget for Bathtub Beach Coastal Processes Modeling Refinement and Alternatives Analysis

Task/Sub-Task	Description	Qty/Hours	Rate	Total	Task Sub-Total
1) Olsen/Foth Task 19B - Alterrnatives Analysis, Phase I	Principal Coastal Engineer	130	$280.00	$36,400.00	
	Senior Coastal Engineer	400	$195.00	$78,000.00	
	Coastal Engineer	80	$110.00	$8,800.00	
	Coastal GIS Analyst	64	$115.00	$7,360.00	$130,560.00
2) Olsen/Foth Task 19C - Selected Alterrnative(s) Analysis, Phase II	Principal Coastal Engineer	144	$280.00	$40,320.00	
	Senior Coastal Engineer	340	$195.00	$66,300.00	
	Coastal Engineer	60	$110.00	$6,600.00	
	Coastal GIS Analyst	48	$115.00	$5,520.00	$118,740.00
				TOTAL	**$249,300.00**