

**NASSAU COUNTY - SAISSA
Task Order Memorandum
Contract CM1852**

To: Olsen Associates, Inc.
2618 Herschel St.
Jacksonville, FL 32204

Date: 03 March 2020
Contract: Coastal Engineering
Request Made By: Bill Moore, SAISSA Rep.
Request Received By: Albert E. Browder, Ph.D., P.E.
Task Order No: CM1852 TO #38

Task Order: 2020 Year-9 Physical Monitoring of Engineered Beach Nourishment Project
2011 Renourishment: South Amelia Island Shore Stabilization Project

Consultant shall complete the 2020 annual physical monitoring of the South Amelia Island Shore Stabilization Project, as described in the attached Scope-of-Work (Exhibit A).

Deliverables shall include a detailed monitoring report documenting the 2020 pre-storm season condition of the engineered beach, including updated analyses of the performance of the beach fill since construction (relative to the 1994 pre-restoration and August 2011 post-renourishment conditions). Any anomalous areas (hot-spots, etc.) observed in the data shall be identified and discussed. Up to two (2) hardcopies of the report shall be delivered to SAISSA along with an electronic *.PDF copy on CD-ROM disc. A signed/sealed set of the beach profile survey maps shall be provided. Electronic copies of the controlled digital aerial orthophotography shall be provided on CD- or DVD-ROM disc. All work shall be performed on a Lump Sum basis.

Fee: \$ 117,300.00 (Lump Sum)

Requested Completion Date: Four (4) months from receipt of survey.

Olsen Associates, Inc.

SAISSA



Albert E. Browder, Ph.D., P.E.

Date: 03 March 2020



Mr. Andrew L. Wallace, SAISSA President

Date: 4-30-2020

**Nassau County, Board of County
Commissioners**

Attest to Chair
Signature

Daniel B. Leeper
Its: Chair

Date:

John A. Crawford
It's: Ex-Officio Clerk

Approved As To Form and Legal Sufficiency:

Date:

Michael S. Mullin

Date:

SCOPE OF WORK

Year-9 Physical Monitoring Survey (Spring/Summer 2020)
2011 Renourishment:
South Amelia Island Shore Stabilization Project
JCP #0187721-010

March 2020

OVERVIEW

The purpose of the task is to conduct the Year-9 annual physical monitoring of the S. Amelia Island Shore Stabilization Project, as directed by the Florida Department of Environmental Protection Joint Coastal Permit #0187721-010 and its associated physical monitoring plan. The monitored area extends for over 5 miles, including FDEP R-monuments R-55 to R-82 in Nassau County, FL (**Figure 1**). The survey area likewise includes the offshore borrow site, located roughly one mile offshore in the Atlantic Ocean off R-75 to R-77, approx., and Nassau Sound (surveyed every 3 years, approx.). In 2020 the Nassau Sound ebb shoal and the 2011 borrow area shall be surveyed under separated Task Order (previously approved). The project was last nourished in May-August 2011.

Task A - Analyses, Mgmt., Engineering, Report & FDEP Documentation –

Task A - Description

"The Permittees shall submit an engineering report and the monitoring data to the FDEP Beaches Inlets and Ports Program within 90 days following completion of the post-construction survey(s) and each annual monitoring survey. The report shall summarize and discuss the data, the performance of the beach fill project, and identify erosion and accretion patterns within the monitored area. In addition, the report shall include a comparative review of project performance to performance expectations and identification of adverse impacts attributable to the project. Appendices shall include plots of survey profiles and graphical representations of volumetric and shoreline position changes for the monitoring area. Results shall be analyzed for patterns, trends, or changes between annual surveys and cumulatively since project construction."

Consistent with the approved Physical Monitoring Plan, as with all previous monitoring efforts, the Consultant shall prepare a detailed annual (or biennial) project monitoring report. The purpose of each report shall be to summarize the annual as well as cumulative data base and to assess project performance. The report includes graphic presentations of temporal and cumulative changes of selected beach contours over time. Volumetric changes at each survey profile and throughout the limits of fill shall be computed and presented in tabular and graphic forms. Aerial photography (if collected) will be utilized to further analyze shoreline changes that may occur between survey lines (beach cusps, rhythmic bar features, structure effects, etc.). Changes over time within and adjacent to the constructed borrow site shall be quantified and discussed (if surveyed). Analyses shall discuss shoreline change trends, potential cause and effect relationships, building proximity (and vulnerability) to the MHWL, storm impacts, other littoral impacts, and a local sediment budget for the area of interest. Net changes to the adjacent shorelines shall be assessed.

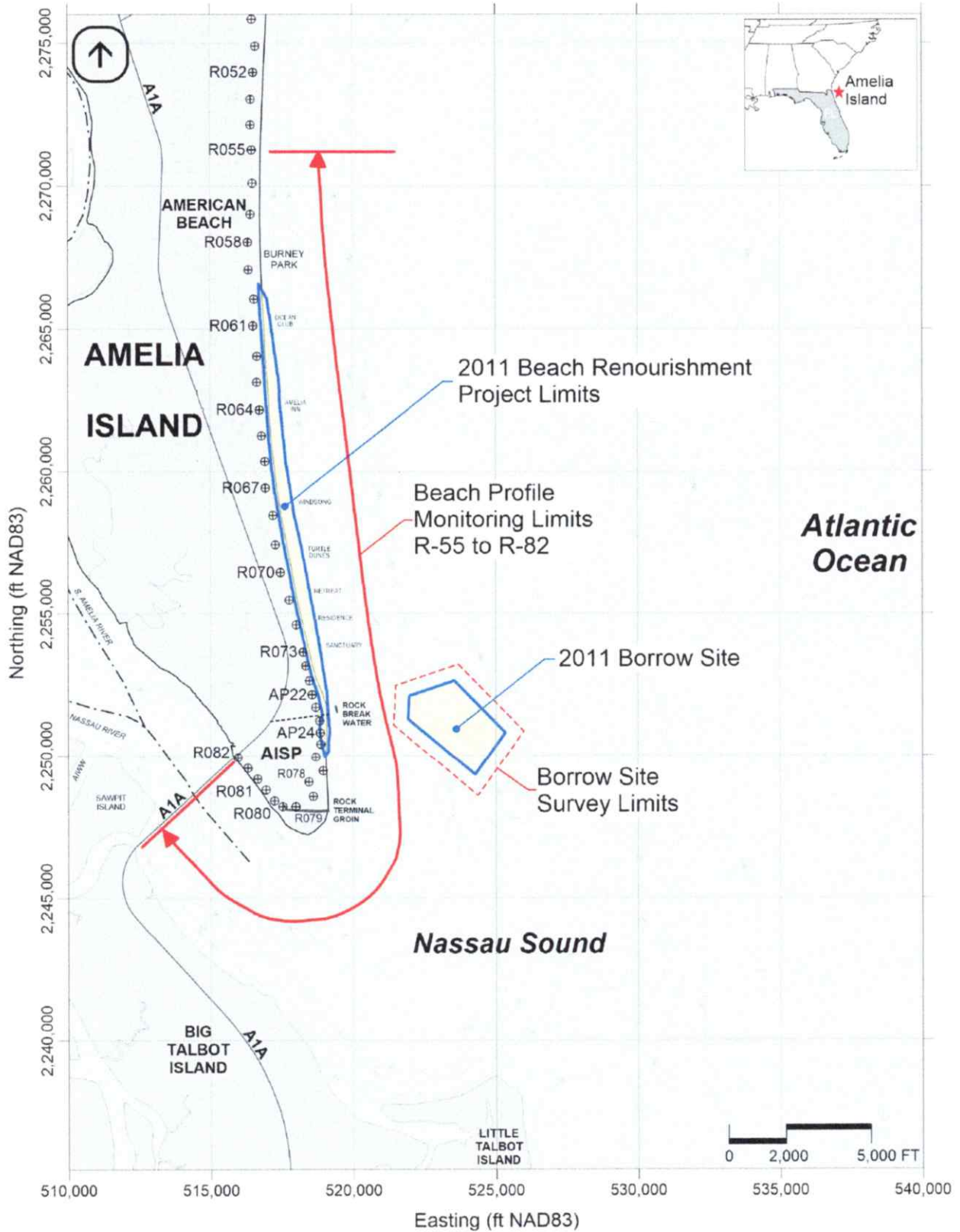


Figure 1 – Location map - physical monitoring plan – South Amelia Island Shore Stabilization Project.

Major report(s) of findings will be submitted annually approximately 90 days subsequent to each major monitoring survey. The surveys, aerials, and reports have proven invaluable for this and other projects in documenting not only pre-storm conditions for FEMA-declared disasters, but also providing clear information regarding the efforts of SAISSA, Nassau County, and the Florida Park Service (FPS) in maintaining an engineered beach eligible for post-disaster assistance from FEMA. This eligibility is critical for the post-storm restoration of the project.

Sub-tasks include:

- Contract and Subcontractor management,
- Liaison with Park personnel and regulatory agencies,
- Data quality control and quality assurance,
- Data assimilation/formatting per FDEP specifications,
- Update of post-construction history:
 - Overall project history
 - Storms
 - Wave climate for prior year
 - Beach maintenance activities and Other beach impacts
- Update of sea turtle nesting activities upon project shoreline,
- Analysis of shoreline position and beach volume changes:
 - Most recent annual intersurvey period
 - Since renourishment (2011) and since restoration (1994)
 - Interpretation of aerial photography (when collected) and potential effects of alongshore variations and structures
 - graphical and tabular data created
- Analysis of borrow areas and Sound volume and morphological changes:
 - *[performed in 2020 under separate Task Order]*
 - Most recent intersurvey period (2018-2020)
 - Relative to older surveys where applicable
 - Interpretation of aerial photography and changes in shoal features, channel alignments
- Interpretation and summary of overall project performance
 - Relative to design intent and local sediment budget
 - Relative to particular beach impacts experienced
- Recommendations for Future Activities,
- Preparation of historical beach profile plots, including most recent survey,
- Preparation of shoreline aerial maps (when aerials flown),
- Assembly of data submittals
 - Electronic Data (CD- or DVD-ROM Disc)
 - Subcontractor reports
 - Surveyor and Flight/Camera Calibration Reports (when flown)
 - Aerial photography (DVD-ROM discs – when flown)
- Document preparation, printing, and distribution

Task A – Deliverables

Annually, SAISSA shall receive:

- Up to two (2) hardcopies of the annual monitoring report (if desired),
- one set of DVD-ROM discs containing the digital aerial orthophotos (if flown),
- one CD-ROM disc containing a copy of the report in PDF format, the FDEP-formatted beach profile data (including borrow site and Nassau Sound if surveyed), and survey/flight control reports, with metadata.
- FDEP shall receive electronic copies of all deliverables and data.

Task B – Beach Profile Surveys

Task B - Description

“Topographic and bathymetric profile surveys of the beach and offshore shall be conducted within 90 days prior to commencement of construction, and within 60 days following completion of construction of the project. Thereafter, monitoring surveys shall be conducted annually for a period of three (3) years, then biennially until the next beach nourishment event or the expiration of the project design life, whichever occurs first. The monitoring surveys shall be conducted during a spring or summer month and repeated as close as practicable during that same month of the year. If the time period between the immediate post-construction survey and the first annual monitoring survey is less than six months, then the Permittees may request a postponement of the first monitoring survey until the following spring summer. The request should be submitted as part of the cover letter for the post-construction report. A prior design survey of the beach and offshore may be submitted for the pre-construction survey if consistent with the other requirements of this condition.

The monitoring area shall include profile surveys at each of the DEP reference monuments within the bounds of the beach fill area and along at least 5,000 feet of the adjacent shoreline, on both sides of the beach fill area. For those project areas that contain erosion control structures, such as groins or breakwaters, additional profile lines shall be surveyed at a sufficient number of intermediate locations to accurately identify patterns of erosion and accretion within this subarea. All work activities and deliverables shall be conducted in accordance with the latest update of the FDEP BIPP Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100.”

Consistent with the approved Physical Monitoring Plan, as with all previous surveys, a certified hydrographic surveyor will conduct the beach and offshore project surveys for the annual/biennial monitoring. ARC Surveying and Mapping, Inc., of Jacksonville, FL, shall conduct the surveys, under the direction of Mr. Rick Sawyer, PLS. These data shall be collected in accordance with the FDEP monitoring guidelines for collection of survey data www.dep.state.fl.us/beaches/publications/pdf/standard.pdf.

Forty (40) beach and offshore profile lines, R-55 to R-82 (plus intermediate stations at tip of island), shall be surveyed and the data provided to the Engineer. Details of the survey plan and schedule can be found in the Physical Monitoring Plan.

Task B – Deliverables Surveyor shall provide electronic copies of the survey data in the prescribed datums to the Engineer for formatting and distribution to the Clients (SAISSA, FPS, FDEP).

Surveyor and Engineer shall develop and submit those portions of the FDEP BIPP data submittal requirements that are the primary responsibility of the Surveyor, including copies of the field book pages from the survey, monument control, QA/QC, surveyor reports, etc. Engineer shall review and approve prior to submittal to FDEP.

Task C – Borrow Area and Nassau Sound Surveys

[2020: borrow area and Sound surveys to be performed under separate Task Order (#37)]

Task C – Description

"Bathymetric surveys of the borrow area shall be conducted within 90 days prior to commencement of construction, and within 60 days following completion of construction of the project concurrently with the beach and offshore surveys required above. Thereafter, monitoring surveys of the borrow areas shall be at two (2) year intervals concurrently with the beach and offshore surveys required above [revised March 2011]. A prior design survey of the borrow area may be submitted for the pre-construction survey if consistent with the other requirements of this condition.

Survey grid lines across the borrow area(s) shall be spaced to provide sufficient detail for accurate volumetric calculations but spaced not more than a maximum of 500 feet apart, and shall extend a minimum of 500 feet beyond the boundaries of the borrow site. For borrow sites located in tidal inlet shoals, bathymetric surveys of the entire shoal complex, including any attachment bars, shall be conducted unless otherwise specified by the Department based upon the size of the shoal and the potential effects of the dredging on inlet processes. In all other aspects, work activities and deliverables shall be consistent with the BBIP Monitoring Standards for Beach Erosion Control Projects, Section 01200."

As depicted in the Physical Monitoring Plan, the Nassau Sound ebb shoal platform is also surveyed every three years (approx.) to document the conditions of the shoals in the unstabilized inlet and evaluate the condition of the shoals, the coastal structures on Amelia Island, and the position of the major natural channels through the inlet. Consistent with the Physical Monitoring Plan, as with all previous surveys, a certified hydrographic surveyor will conduct the borrow area survey and Nassau Sound ebb shoal complex survey for the required monitoring. ARC Surveying and Mapping, Inc., of Jacksonville, FL, shall conduct the survey, under the direction of Mr. Rick Sawyer, PLS. These data shall be collected in accordance with the FDEP monitoring guidelines for collection of survey data, as published in "Monitoring Standards for Beach Erosion Control Projects," (FDEP, October 2014). "

Task C – Deliverables

[2020: borrow area and Sound surveys to be performed under separate Task Order (#37)]

Surveyor shall provide electronic copies of the survey data in the prescribed datums to the Engineer for formatting and distribution to the Clients (SAISSA, FPS, FDEP). Surveyor shall likewise provide to Engineer three (3) signed and sealed hardcopies of the survey.

Surveyor and Engineer shall develop and submit those portions of the FDEP data submittal requirements that are the primary responsibility of the Surveyor, including copies of the field book pages from the survey, monument control, QA/QC, surveyor reports, etc. Engineer shall review and approve these documents and any geotechnical analysis results prior to submittal to FDEP.

Task D – Digital Aerial Orthoimagery and Oblique Photography

Task D – Description

"Aerial photography of the beach shall be taken concurrently with the post-construction survey and each annual and biennial monitoring survey required above, as close to the date of the beach profile surveys as possible. The limits of the photography shall include the surveyed monitoring area as described above. All work activities and deliverables shall be conducted in accordance with the latest update of the BBIP Monitoring Standards for Beach Erosion Control Projects, Section 02000 – Aerial Photography Acquisition."

Consistent with the approved Physical Monitoring Plan, digital color aerial orthophotography shall be collected by a qualified subcontractor along the monitored shoreline and across Nassau Sound at or about the time of the annual/biennial beach profile surveys. These data shall be collected in accordance with the FDEP monitoring guidelines for collection of survey data, as published in *"Monitoring Standards for Beach Erosion Control Projects," (FDEP, October 2014, as updated).*

Oblique digital aerial photography and/or video shall be collected prior to the 2020 storm season and incorporated in the annual reporting. Where applicable, the photography/video will document any potential changes in shoreline configuration.

Task D – Deliverables

Digital copies of the aerial orthoimagery (when collected) shall be provided to the Owner group and the FDEP on DVD-ROM disc or flash drive in accordance with the Joint Coastal Permit. Hardcopy prints of the aerials can be provided at additional cost. Digital copies of the oblique aerial images shall be provided to the Owner group on CD-ROM or DVD-ROM disc and can be posted by the FL Division of Recreation and Parks for review by third parties.

Potential FDEP Cost-shared Tasks*
2020 Year-9 Post-Renourishment Physical Monitoring
South Amelia Island Shore Stabilization Project
JCP 0187721-010

March 2020

Task	Total Fee	Potential State Cost-Share* (43.03%)	Local Cost-Share (56.97%)
A. Analyses, Mgmt., Engineering, Report, and FDEP Documentation	\$81,800.00	\$35,198.54	\$46,601.46
B. Beach Profile Survey	\$19,000.00	\$8,175.70	\$10,824.30
C. Borrow Area/Sound Survey			
C.1 Borrow Site	--	--	--
C.2 Nassau Sound	--	--	--
D. Digital Orthoimagery	\$16,500.00	\$0	\$16,500.00
	\$117,300.00	\$43,374.24	\$73,925.76

* Allocation of State funding subject to FDEP ranking procedures and ultimate funding determination. Percentages subject to change. Value indicates most recent grant values.