

NASSAU COUNTY - SAISSA  
Task Order Memorandum  
Contract CM1852

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

Date: 6 January 2014  
Contract: Coastal Engineering  
Request Made By: SAISSA Rep.  
Request Received By: Erik J. Olsen, P.E.  
Task Order No: CM1852-TO 07

Task Order: 2013/2014 Year-3 Physical Monitoring of Engineered Beach Nourishment Project  
2011 Renourishment: South Amelia Island Shore Stabilization Project

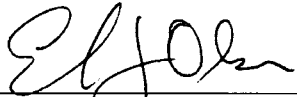
Consultant shall complete the 2013/2014 annual physical monitoring of the South Amelia Island Shore Stabilization Project, as described in the previously approved Scope-of-Work (see Task Order CM 1852-TO 01)

Deliverables shall include a detailed monitoring report documenting the 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 as well as any federal beach disposal contracts. Ten (10) 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. This work is potentially eligible for State cost sharing at 39.21%.

Fee: \$ 129,800.00 (Lump Sum)


Requested Completion Date: December 31, 2014.

Olsen Associates, Inc.

  
Erik J. Olsen, P.E.

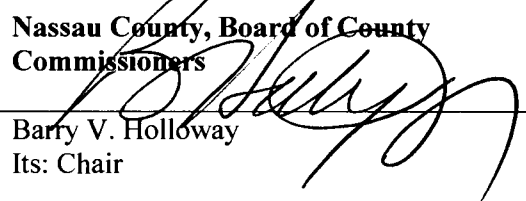
Date: 6 January 2014

SAISSA

  
Mr. Bob Martin, SAISSA President

Date: 02/25/14

Nassau County, Board of County Commissioners

  
Barry V. Holloway  
Its: Chair

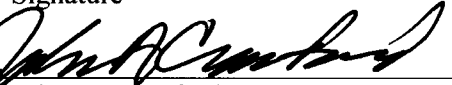
Date: 3-10-14

Approved As To Form and Legal Sufficiency:

  
David A. Hallman

Date: 3-10-14

Attest to Chair  
Signature

  
John A. Crawford  
Its: Ex Officio Clerk

Date: 3/12/14

MES  
03-11-14

**SCOPE OF WORK**

**Year-3 Physical Monitoring Survey (Spring/Summer 2014)  
2011 Renourishment:  
South Amelia Island Shore Stabilization Project  
JCP #0187721-010**

**February 2014**

**Overview**

The purpose of the task is to conduct the Year-3 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 (attached). The monitored area extends from FDEP R-monument R-55 to monument R-82 in Nassau County, FL (**Figure 1**). The project area area likewise includes the offshore borrow site, located roughly one mile offshore in the Atlantic Ocean off R-75 to R-77, approx. (borrow site not surveyed in 2014). The project was last nourished in May-August 2011.

According to the JCP #0187721-010 terms and conditions (pg 22 of 24):

**PHYSICAL MONITORING REQUIRED:**

33. The Permittees shall conduct a physical monitoring program as specified in the *South Amelia Island Shoreline Stabilization Project Beach Renourishment – Physical Monitoring Plan with Structure Remediation Contingency*, dated December 21, 2009 [revised March 2011]; however, annual surveys in addition to biennial surveys after the third post-construction monitoring survey, and hydrographic surveys of Nassau Sound, are not required as a condition of this permit. The Plan can be revised at any later time by written request of the Permittees and with the written approval of the Department. If there is a subsequent modification of the permit, the Department may require revised or additional monitoring requirements as a condition of approval of the permit modification.

The monitoring program shall include the following:

- a. 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 Bureau of Beaches and Coastal Systems (BBCS) *Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100*.

- b. 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. 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 BBCS *Monitoring Standards for Beach Erosion Control Projects, Section 01200*.

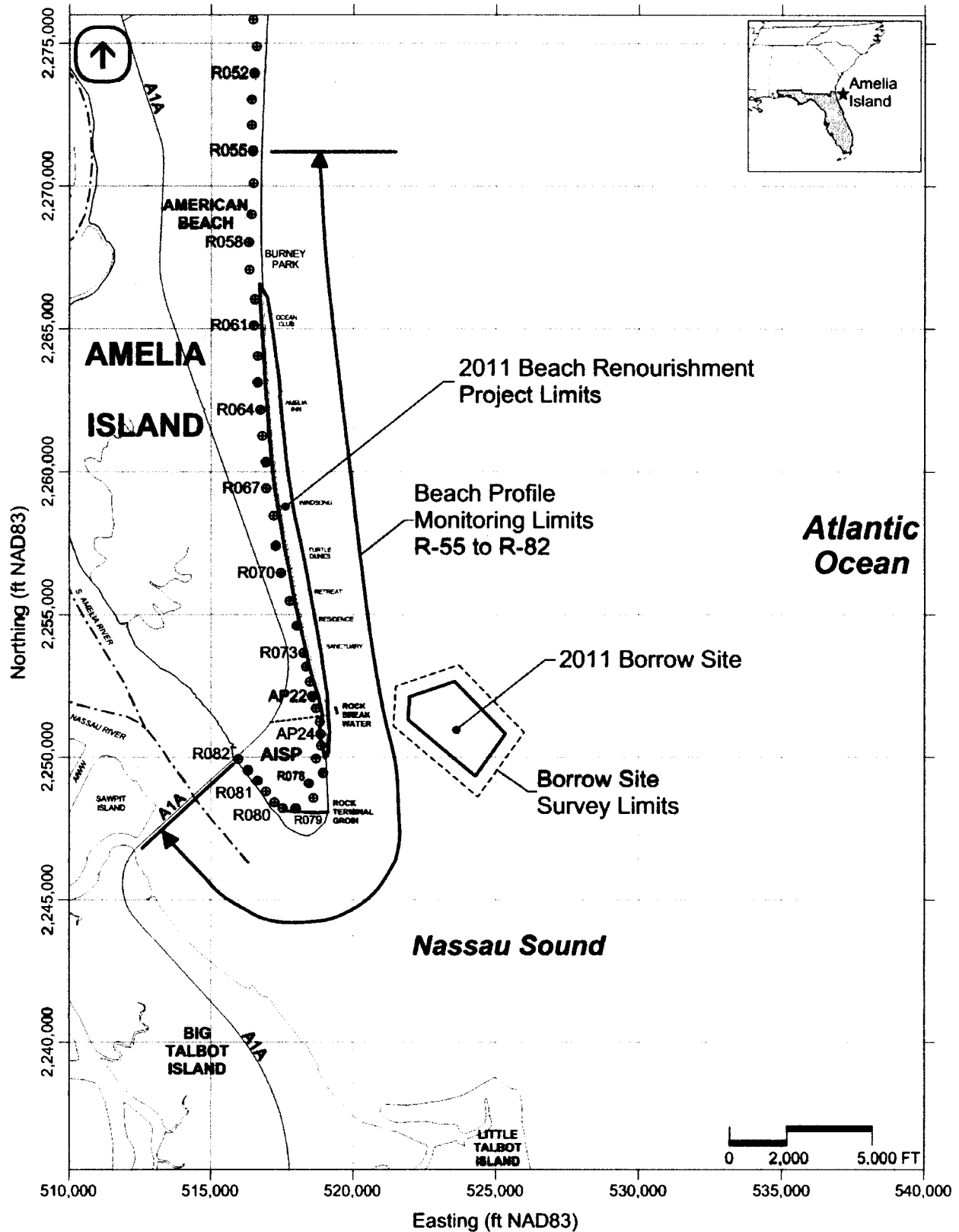


Figure 1 – Location map - physical monitoring plan – South Amelia Island Shore Stabilization Project.

- c. 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 BBCS *Monitoring Standards for Beach Erosion Control Projects, Section 02000 – Aerial Photography Acquisition*.
- d. The Permittees shall submit an engineering report and the monitoring data to the BBCS 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.
- e. Monitoring reports and data shall be submitted to the Bureau of Beaches and Coastal Systems in Tallahassee, JCP Compliance Officer. Failure to submit reports and data in a timely manner constitutes grounds for revocation of the permit. When submitting any monitoring information to the Bureau, please include a transmittal cover letter clearly labeled with the following at the top of each page: "This monitoring information is submitted in accordance with the approved Physical Monitoring Plan for Permit No. 0187721-010-JC for the monitoring period [insert dates]."

### **Task 1.0 - Analyses, Mgmt., Engineering, Report & FDEP Documentation – (Physical Monitoring Plan Item 2.4)**

#### **Task 1.1 – Description**

*"The Permittees shall submit an engineering report and the monitoring data to the BBCS 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 Items 2.4 of the approved Physical Monitoring Plan (attached), 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.

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 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 BBSC specifications,
- Update of post-construction history:
  - Overall project history
  - Storms
  - Wave climate for prior year
  - Other beach impacts
  - Beach maintenance activities,
- Update of sea turtle nesting activities upon project shoreline,
- Analysis of shoreline position changes (graphical and tabular data created):
  - Most recent annual intersurvey-period
  - Since renourishment (2011)
  - Since restoration (1994)
  - Interpretation of aerial photography and potential effects of alongshore variations and structures
- Analysis of beach volume changes (graphical and tabular data created):
  - Most recent annual intersurvey-period
  - Since renourishment (2011)
  - Since restoration (1994)
  - Analysis of percentage of placed sand remaining
  - Interpretation of aerial photography and potential effects of alongshore variations and structures
- 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 Reports
    - Flight/Camera Calibration Reports – when flown
  - Aerial photography (DVD-ROM discs) – when flown
- Document preparation, printing, and distribution

#### Task 1.2 – Deliverables

Annually, FDEP shall receive:

- Ten (10) hardcopies of the annual monitoring report,
- 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 if surveyed), and all survey control and flight control reports, with metadata (if collected).

Task 1.3 – Fee - \$87,400.00

**Task 2.0 – Beach Profile Survey (Physical Monitoring Plan – Item 2.1)**

**Task 2.1 – 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 Bureau of Beaches and Coastal Systems (BBCS) Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100.”*

Consistent with Section 2.1 of the approved Physical Monitoring Plan (attached), as with all previous surveys, a certified hydrographic surveyor will conduct the beach and offshore project surveys for the Year-3 annual 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 BBCS monitoring guidelines for collection of survey data ( [www.dep.state.fl.us/beaches/publications/pdf/standard.pdf](http://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 attached Physical Monitoring Plan.

**Task 2.2 – 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 BBCS). Surveyor shall likewise provide to Engineer four (4) signed and sealed hardcopies of the survey data, in either planview or beach profile section view format.

Surveyor and Engineer shall develop and submit those portions of the FDEP BBCS 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 BBCS.

Task 2.3 – Fee - \$26,400.00

**Task 3.0 – Borrow Site/Nassau Sound Survey (Physical Monitoring Plan – Item 3.1.5)****Task 3.1 – 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 BBCS Monitoring Standards for Beach Erosion Control Projects, Section 01200.”*

**[not surveyed in Year-3 monitoring]**

**Task 4.0 – Digital Aerial Orthophotography and Oblique Photography (Physical Monitoring Plan Item 2.2)****Task 4.1 – 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 BBCS Monitoring Standards for Beach Erosion Control Projects, Section 02000 – Aerial Photography Acquisition.”*

Consistent with Section 2.2.1 of the approved Physical Monitoring Plan (attached), digital color aerial orthophotography shall be collected by a qualified subcontractor along the monitored shoreline at or about the time of the annual/biennial beach profile surveys. These data shall be collected in accordance with the FDEP BBCS monitoring guidelines for collection of survey data. ([www.dep.state.fl.us/beaches/publications/pdf/standard.pdf](http://www.dep.state.fl.us/beaches/publications/pdf/standard.pdf)).

Consistent with Section 2.2.2, oblique digital aerial photography shall be collected biannually at strategic times to document any potential changes in shoreline configuration, structure condition, and changes to the Nassau Sound ebb shoal system (the “Bird Island Shoals”).

**Task 4.2 – Deliverables**

Hardcopy prints of the digital orthophotography shall be provided to the Owner group and the FDEP BBCS in accordance with the Joint Coastal Permit. Likewise, digital copies of the controlled aerial orthophotography will be provided to the Owner group and FDEP BBCS on DVD-ROM disc.

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.

**Task 4.3 – Fee - \$16,000.00**

**Potential FDEP Cost-shared Tasks\***  
**2014 Year-3 Post-Renourishment Physical Monitoring**  
**South Amelia Island Shore Stabilization Project**  
**JCP 0187721-010**

Task	Total Fee	State Cost-Share* (39.21%)	Local Cost-Share (60.79%)
1.0 Analyses, Mgmt., Engineering, Report, and FDEP Documentation*	\$87,400.00	\$34,260.80	\$53,139.20
2.0 Beach Profile Survey	\$26,400.00	\$10,348.80	\$16,051.20
3.0 Borrow Site/Sound Survey	--	--	--
4.1 Aerial Photography	\$16,000.00	\$6,272.00	\$9,728.00
	\$129,800.00	\$50,881.60	\$78,918.40

\*At this time, no funds were allotted by FDEP Bureau of Beaches and Coastal Systems for either construction or Year-1, Year-2, and Year-3 physical monitoring. Future applications to FDEP BCS for these funds *MAY* be approved, assuming funds became available for reimbursement. Table reflects only the schedule of potential cost-sharing, to be submitted for consideration in future funding requests. Cost-sharing funds *MAY* be allotted to the project as part of the 2014/15 Fiscal Year (not approved by the Legislature as of the time of this writing).