

Memorandum

DATE: July 16, 2013
TO: City Council
THROUGH: City Manager Judie Zimomra
FROM: Public Works Director Keith Williams
RE: 2014 Winter Beach Monitoring Survey

RECOMMENDATION: Approve Proposal for Professional Services with Sea Diversified, Inc. to perform the 2014 winter beach monitoring survey for \$68,250.

Since 1992, the City has contracted for a survey of its beaches in order to monitor the shoreline and locate any changes or trends in beach erosion. The area surveyed includes the entire Gulf shoreline and the eastern third of the Bay shoreline. This program is critical for beach maintenance and for potential funding of any beach damaged during hurricanes or other natural disasters.

At its June 1, 2010 meeting, City Council authorized the City Manager to enter into contract negotiations with Sea Diversified, Inc. to perform the City's beach monitoring surveys for the next 4 years. Since the survey scope may vary from year to year, separate proposals are negotiated annually for the work, with the proposal for the 2014 winter survey attached for review. The 2014 winter survey scope will involve both onshore (beach) and off shore (up to 3,000 feet out) measurements at a cost of \$68,250.

Staff recommends that Council approve the Proposal for Consulting Services with Sea Diversified, Inc. to perform the 2014 winter beach monitoring survey for \$68,250. The Tourist Development Council (TDC) is funding \$34,125 of the cost while the remaining \$34,125 is funded through Beach Parking (Fund 470). Each is an existing component of the FY2014 budget.

cc: Finance Director Sylvia Edwards
City Attorney Ken Cuyler



SEA Diversified, Inc.
21 NW 2nd Street
Delray Beach, Florida 33444
Phone: 561-243-4920
Facsimile: 561-243-4957

1900 South Harbor City Blvd, #110
Melbourne, Florida 32901
Phone: 321-984-7268
Facsimile: 321-984-7270

December 19, 2013

Mr. Scott Krawczek, P.E.
City Engineer
City of Sanibel Public Works Department
800 Dunlop Road
Sanibel, Florida 33957

Sent via Electronic Mail on December 19, 2013
scott.krawczuk@mysanibel.com

**RE: Proposal for Professional Services
Sanibel Island
Physical Monitoring of Coastal Erosion and Accretion
Year 2014 Winter Monitoring Event
Sea Diversified Inc. Proposal Number 13-2156**

Dear Mr. Krawczek:

In accordance with your request, Sea Diversified, Inc. (SDI) is pleased to submit the following proposal for professional services. The scope of work shall include an onshore / offshore profile survey extending from Florida Department of Environmental Protection (FDEP) profile control monument R-108 through R-174 including Bay-1 through Bay-21, totaling one hundred twenty seven (127) beach profiles.

Beach and offshore profile surveys shall be conducted in accordance with the Monitoring Standards for Beach Erosion Control Projects prepared by the Department of Environmental Protection (FDEP), Bureau of Beaches and Coastal Systems (BBCS), dated March 2004 (Specifications).

Details of the scope of work are as follows:

General:

Sea Diversified, Inc. shall provide supervision, field / office support staff and equipment to perform the scope of work described, herewith. All work shall be conducted to the highest level of industry standards and under the responsible charge of a Professional Surveyor and Mapper registered in the State of Florida. All work shall meet or exceed the Minimal Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers and be conducted in compliance with the U.S. Army Corps of Engineers' "Technical Requirements for Hydrographic and Topographic Surveying" for Class III Hydrographic Surveys.

Horizontal and Vertical Datum:

Horizontal Datum: Feet, relative to the Florida State Plane Coordinate System, West Zone, North American Datum (NAD), 83/90
Vertical Datum: Feet, relative to the North American Vertical Datum, (NAVD) of 1988.

Task One: Onshore / Offshore Profile Surveys

Horizontal / Vertical Control Verification

SDI will verify the horizontal and vertical position of all found and used monuments for the survey. Horizontal and vertical positions will be verified via Real-Time Kinematic GPS procedures. In the event vertical obstructions prohibit the use of GPS, conventional methodologies will be employed.



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Sanibel Island-Physical Monitoring of Coastal Erosion and Accretion
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Lee County, Florida
Sea Diversified P.N. 13-2156
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Temporary control points (TBM's) will be set in the event a monument cannot be readily found. As practical, the TBM will be set at the reference monument location. If the specified location is not practical, the TBM will be set at a more suitable location either landward or seaward along the specified profile azimuth. TBM's will be established in accordance with the Specifications.

Onshore Profile Data Collection - Topographic

Onshore profile data collection shall extend from the FDEP profile control monument seaward to approximate wading depth or as required to overlap the offshore profile data a minimum distance of fifty (50) feet. Data collection shall extend upland to the profile monument or approximately 150 feet landward of the vegetation line, whichever is most landward.

In the event there is a physical barrier on line between the beach and the monument, every reasonable attempt shall be made to extend the survey beyond the barrier to the reference monument position. It is understood that certain physical barriers may be considered impassible such as large buildings, private residences with difficult access, waterbodies, mangroves or other heavy vegetation requiring line clearing. At the discretion of the surveyor, data collection will be terminated at the first physical barrier if deemed impassible using practical means of extending the survey landward. Profiles terminated due to impassible barriers will be noted in the field books.

Profile data will be collected using either conventional differential leveling or Real-time Kinematic Differential Global Positioning techniques. Accuracy levels shall be in accordance with the Specifications. Data points will be collected at a maximum interval of twenty-five (25) feet and at all grade breaks (exceeding six inches) and material changes along the profile. In the event the FDEP monument is located more than 300 feet landward of the vegetation line, data points shall be extended to one hundred (100) foot intervals from two hundred (200) feet landward of the approximate vegetation line to the monument location. The reference monument shall be recorded as range 0.0 along the profile with positive ranges extending seaward of the monument and negative ranges extending landward of the monument.

Offshore Profile Data Collection - Bathymetric

Bathymetric profile data shall be collected as close to high tide as practical and shall extend landward to a depth that overlaps the onshore portion of the survey a minimum distance of fifty (50) feet. Bathymetric profile data collection shall extend offshore 3000 feet from the profile control monument. Bathymetric data collection shall occur as close to the time of the onshore topographic survey as practical, which shall not exceed seven (7) days of time difference between the two (2) survey events. Maximum wave height during the course of bathymetric data collection shall be three (3) feet.

Bathymetric data shall be collected using an automated hydrographic system comprised of a survey launch equipped with a marine grade sounder, differential global positioning system and computer-based navigation / data collection system. The sounder shall be calibrated via bar checks prior to the start of the survey. Prior to the start of the survey a tide staff or gauge will be established in proximity to the project for recording water levels during the course of the data collection activities. The tide staff or gauge will be set relative to published control in the vicinity of the project.

Digital Ground Photography

During the course of field data collection, digital photographs shall be taken at approximate mid-beach along each profile line. Three (3) photographs shall be captured, one each shore-parallel north and south of the profile and one towards the monument location. An additional photograph of the monument or TBM shall



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be taken with sufficient clarity to read the monument stamping. Digital images shall be provided to the City on CD or DVD media in .jpg format at a minimum 640 x 480 resolution.

Data Processing and Final Deliverables

Upon completion of field survey activities, data will be edited and reduced to the project datum and translated to an x,y,z, ASCII format for submittal to the City. In addition, and in accordance with the Specifications, the following deliverables will be provided:

1. Survey report / monument control report certified by a Professional Surveyor and Mapper.
2. Copies of field books and data collection files, as applicable. (hardcopy and PDF format)
3. Description of all monuments and TBM's used for the survey, including identification, stamping, coordinates, elevations and profile azimuths. Control description shall be provided in both hardcopy and digital formats (ASCII and Excel)
4. Final profile data in ASCII x,y,z format and FDEP distance / depth format with associated header records
5. ASCII raw data file
6. Digital photographs in .jpg format with appropriate labeling
7. Plan / profile charts in AutoCAD .dwg format
8. Plan / profile charts in hardcopy format (24"x 36")
9. Metadata files

Schedule:

SDI shall be able to mobilize for the survey within eight (8) business days from a notice to proceed, assuming fair weather conditions. The survey duration is expected to take approximately 2-3 weeks, assuming fair weather conditions. Data processing and preparation of final deliverables shall be approximately ten (10) business days following completion of field data collection.

Cost:

The total lump sum fee for the referenced survey shall be \$ 68,250.00.

Should you have questions or require additional information please do not hesitate to contact us at your convenience. We appreciate this opportunity to assist you with this project and look forward to hearing from you soon.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Sadler'.

William T. Sadler Jr., P.E., P.S.M.

WTS/dq