

ATTACHMENT 1

TASK ORDER

TASK ORDER: 1377-17 CONSULTANT: Olsen Associates, Inc.

ACCOUNT: 3652-381-M028-3120 5032-CJB-008 CONTRACT: R2016-1377, R2018-1390

[Fiscal approval of Budget Availability: S. Henry 8/7/19]

PROJECT MANAGER: Reubin Bishop PHONE: 561-233-2519

CONTRACT MANAGER: Juan Cueto PHONE: 561-233-2431

PROJECT NAME: North County Comprehensive Shore Protection Project – Segment III Renourishment (Juno Beach)

LOCATION/DISTRICT #: Juno Beach / District 1

TASK DESCRIPTION (use additional pages if necessary): The Consultant shall provide professional engineering services to include pre-construction, construction, and miscellaneous additional services, as described in the attached proposal dated July 31, 2019.

DELIVERABLES: See scope of work.

TASK ORDER TYPE: FIXED PRICE

DUE DATE: October 31, 2021

TOTAL AMOUNT \$262,816.00

(Check where appropriate)

for Contract and Subcontract Amounts:

	Black	Hispanic	Women	Other (specify)	White Male
M/WBE (State) <input type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ _____	
SBE-M/WBE* <input type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ _____	
SBE <input checked="" type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ _____	\$19,460.00

*certified as both an SBE and a State MBE

TOTAL SBE-M/WBE PARTICIPATION: \$19,460.00

CONSULTANT REP: Christopher G. Creed DATE: 8-1-2019
Christopher G. Creed, P.E.

APPROVED AS TO TERMS AND CONDITIONS:

ERM DIRECTOR: Deborah Drum DATE: 8-14-19

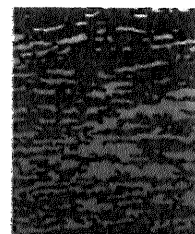
APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

ASSISTANT COUNTY ATTORNEY: _____ DATE: _____

BOARD OF COUNTY COMMISSIONERS: _____ DATE: _____
Mack Bernard, Mayor

July 31, 2019

Reubin Bishop, Environmental Analyst
Palm Beach County Department of Environmental Resources Management
2300 North Jog Road, 4th Floor
West Palm Beach, FL 33411-2743



olsen
associates, inc.
Coastal Engineering

Re: Annual Coastal Engineering Contract
Task Order 1377-17 Proposal
North County Comprehensive Shore Protection Project
Segment III Renourishment; Palm Beach County, Florida

Dear Mr. Bishop,

Attached please find supporting documentation for proposed Task Order 1377-17 of our existing contract with Palm Beach County.

Palm Beach County Department of Environmental Resources Management (County) has requested Olsen Associates, Inc. (OAI/Consultant), to provide a proposal for (1) pre-construction services, (2) construction services, and (3) miscellaneous additional services as they relate to the planned renourishment of the North County Comprehensive Shore protection Project, Segment III. Designated surveying work will be conducted by OAI's sub-consultant Terraquatic, Inc. OAI's role in this task order is described in detail in the attached Scope of Services. A detailed summary of total proposed costs and Terraquatics' statement of work and cost proposal are attached to this letter.

Costs by task are detailed in the attached cost itemization table. The total proposed lump sum cost for all tasks is \$262,816.00. Of this amount, \$19,460.00 or 7.4% is allocated to Terraquatics, Inc., a SBE certified firm.

Should you have any questions, please do not hesitate to contact me at c Creed@olsen-associates.com or (904) 387-6114 ext. 312.

Sincerely,

Christopher G. Creed
Vice President/Senior Coastal Engineer

Attachments

- Scope of Services and Cost Details
- Terraquatic Proposal

cc: File

Scope of Services
North County Comprehensive Shore Protection Project
Segment III Renourishment

PREAMBLE: This Scope of Services provides for Professional Coastal Engineering Consulting Services for the planned 2020 renourishment of the North County Comprehensive Shore Protection Project (NCCSPP) – Segment III (i.e., Juno Beach). Segment III extends approximately 2.4 miles between control monuments R26 and R38. In general, these services include (1) pre-construction services, (2) construction services, and (3) miscellaneous additional services. Olsen Associates, Inc. (OAI), the project designer, permit agent, and Engineer-of-Record, shall act as Engineering Consultant (CONSULTANT) during the period of work provided for in this Task Order.

TASK 1.0: PRE-CONSTRUCTION SERVICES

Task 1.1: Design Survey, Final Design, Bid/Contract Documents

The CONSULTANT shall (1) conduct a design beach profile survey, (2) develop final project design dimensions, (3) formulate contract/bid documents, and (4) assist the COUNTY with project bidding and contractor selection required for the construction of the 2020 NCCSPP Segment III renourishment project. It is assumed that the project sand will be sourced from a borrow area located offshore of Jupiter Inlet (FDEP P/N 0303863-006-JM).

1.1.1 Design Survey

Design Beach Profile Survey. CONSULTANT shall establish a construction baseline utilizing existing FDEP Range (R) monuments along the project shoreline as well as project specific intermediate monuments between the existing R-monuments. The CONSULTANT shall perform a final design beach profile survey at each primary and intermediate monument (25 profiles, in total) along the construction baseline prior to completion of the final design and construction plans. The CONSULTANT shall utilize the results of the final design survey to compare beach conditions with the conditions measured 1) by the most recent previously surveyed beach conditions, and 2) the surveyed conditions represented in the project permit application. The analyses shall identify any differences in required fill quantities and configuration necessary to maintain the permitted and desired beach dimensions.

Design Beach Profile Survey Deliverable. Final deliverables for beach profile survey shall include the following:

- AutoCAD format files (*.dwg) showing data in plan and profile view on CD or DVD.
- One (1) draft copy (24" x 36") of beach profiles surveys. One (1) final signed and sealed copy (24" x 36") of beach profiles surveys.
- One (1) electronic set of signed and sealed beach profiles in 11" x 17" PDF format with legible seal or an
- electronic seal.
- Surveyor Certification
- Field book copies in PDF format
- ASCII raw data file
- ASCII DEP xyz files
- DEP DZ formatted files
- ASCII monument information file

Borrow Area Design Survey. The permitted offshore sand borrow area is presently scheduled to be utilized for renourishment of NCCSPP - Segment I (Jupiter/Carlin) in the winter of 2019 by the US Army Corps of Engineers, Jacksonville District (USACE). To quantify the amount of sand that may be available in the permitted borrow area following completion of the Segment I project noted above, the CONSULTANT shall utilize a post-dredge hydrographic survey of the permitted borrow area. It is assumed that the post-dredge dredge hydrographic survey will be performed by a PLS licensed in Florida, and completed by others, likely the Segment I dredging contractor, and provided to the CONSULTANT by the COUNTY. If such a survey is not available, the CONSULTANT, through a qualified sub-consultant and under an independent Task Order, shall collect the requisite hydrographic survey data of the entire permitted borrow area (~477 acres) depicting post-dredge conditions. Either survey shall be used to determine the amount of material that may be available for the proposed project following the above noted USACE project.

Task 1.1.2 Final Design

Final Beach Fill and Borrow Area Design. The CONSULTANT shall consider the most current project-related information and data to formulate a final design for the beach fill and offshore borrow area. Such information may include, but may not be limited to, the latest available aerial photographs, beach and borrow area design surveys, agency comments provided during the regulatory and resource agency project review, permit conditions, and any relevant results from prior engineering analyses. The CONSULTANT shall incorporate this information into final

design analyses to determine the requisite configuration and dimensions of the beach fill and borrow area to meet COUNTY goals and project permit conditions. The CONSULTANT shall update the required beach fill and borrow area volume computations for inclusion in the project plans and bid documents.

1.1.3: Plan and Project Manual Development and Bid Support

Plans and Elements of the Project Manual. The CONSULTANT shall prepare the project construction plans and select elements of the Project Manual for the NCCSPP Segment III renourishment. The select elements of the Project Manual shall include the Bid Schedule, Supplemental General Conditions, Technical Specifications, bidder experience qualification (to be formulated in consultation with the COUNTY), and Environmental Protection Requirements as they relate to the borrow area excavation, transport of materials, and beach fill construction.

Construction Plans. The CONSULTANT shall develop project construction plans for the beach renourishment project based upon the final design configuration of the beach fill and borrow area. Construction plans shall include, but not be limited to, the project aerials (provided by COUNTY), bathymetric and sand isopach charts (which shall be updated to reflect conditions measured by the hydrographic survey proposed in Task 1.1.1), locations of various project elements, access locations and requirements, staging and storage areas, the location, dimension, and dredging criteria for the offshore borrow area, boring logs, grain size distribution curves, beach fill and borrow area cross-sections (templates), beach fill Acceptance Sections and fill schedules, offshore travel corridors, pipeline corridors, alongshore limits of dune construction (COUNTY coordination may be required), dune vegetation, and other information required for description of the intended work and the requirements of dredging contractors preparing bids for the proposed work. Preparation of Construction Plans shall include one (1) site visit by the CONSULTANT for the purpose of delineating the alongshore extent of dune construction along the Segment III reach.

CONSULTANT shall develop a dredge plan for the offshore borrow area intended to describe the most efficient utilization of the borrow area and emphasize the conservation of available beach compatible sediments therein. The dredge plan shall define allowable excavation areas within the borrow area such that any remaining material can be effectively dredged during subsequent events.

Technical Specifications. The CONSULTANT shall prepare technical specifications that describe the work to be performed and performance criteria of each work element. The technical

specifications shall include a project schedule, description for the project layout and control, order of work requirements, performance of work criteria, pre- and post-construction documentation requirements and allowable tolerances, survey requirements, methods of payment, dredge material quality criteria, contractor reporting requirements, beach tilling and escarpment adjustment requirements, vibration monitoring specifications, and environmental protection requirements that relate to dredging operations in the borrow area and construction of the beach renourishment project.

CONSULTANT shall coordinate with COUNTY procurement in order to ensure consistency between the Construction Plans, Technical Specifications, and Supplemental General Conditions with standard COUNTY requirements. As needed, CONSULTANT shall advise COUNTY on scope of appropriate liquidated damages and CONTRACTOR qualifications for inclusion in the contract conditions and the Project Manual. CONSULTANT shall review General Conditions (developed by COUNTY) for compliance with Federal contracting requirements, as appropriate.

Deliverables. The CONSULTANT shall submit draft versions of the Plans and elements of the Project Manual to the COUNTY, as necessary, for review. The CONSULTANT shall provide up to three (3) revisions of the Plans and elements of the Project Manual that may be required by COUNTY and regulatory review. The CONSULTANT shall provide two (2) signed and sealed hard copies of the finalized Plans.

The CONSULTANT shall prepare and provide to the COUNTY an electronic version and two (2) hard copies of the Bid Schedule, Supplemental General Conditions, Technical Specifications, and Environmental Protection Requirements for incorporation into the COUNTY's final Project Manual document. The CONSULTANT shall be available to assist the COUNTY with final QA/QC review of the Project Manual prior to bid.

Task 1.2: Bid Support

The CONSULTANT shall support the COUNTY during the bid process required for contractor identification and selection. In preparation of the bid advertisement, the CONSULTANT shall provide the COUNTY with a list of dredge contractors which have the experience, equipment, qualifications, and expertise to carry out the various elements of project construction.

CONSULTANT shall assist the COUNTY in preparing for and participating in one (1) pre-bid conference and one (1) field visit to the project location, at which CONSULTANT shall be prepared and available to answer technical and engineering questions related to the project. It is

assumed that the field visit will occur on the same day as the pre-bid conference. CONSULTANT shall prepare a technical summary of the project for distribution to each attendee at the pre-bid meeting. This document shall be made available to the COUNTY within three (3) days of the event.

CONSULTANT shall provide the COUNTY with timely responses to the inquiries of prospective bidders for use in written addenda, as required. It is assumed that COUNTY shall prepare and distribute necessary addenda to prospective bidders.

Within seven (7) days following bid opening, CONSULTANT shall provide to COUNTY an evaluation of the bids for technical completeness, full responsiveness to technical requirements and price, including alternative prices and unit prices. CONSULTANT shall provide a written recommendation to COUNTY with respect to award of the contract. Non-technical bid issues and bidder references shall be evaluated by the COUNTY.

TASK 2.0: CONSTRUCTION SERVICES

The CONSULTANT shall support the COUNTY during project construction by providing limited permit compliance review and limited oversight services. In addition to being available to County staff to address questions and provide clarification on design and contract requirements during the construction period, the CONSULTANT shall assist the COUNTY with the following tasks.

Notice to Proceed. The CONSULTANT shall make all required submittals to FDEP and the U.S. Army Corps of Engineers for issuance of respective regulatory Notices to Proceed.

Pre-Construction Conference. The CONSULTANT shall prepare for and attend a pre-construction conference to review construction methodologies, and the specific site conditions, survey and monitoring requirements of the Permits with the CONTRACTOR, CONTRACTOR's associated SUB-CONTRACTORS, COUNTY staff and other involved parties. The CONSULTANT shall conduct a brief overview of the project and shall reiterate communications and reporting protocols for the duration of CONTRACTOR mobilization, construction, and demobilization activities. The conference shall be held at least 21 days prior to the commencement date of construction. A minimum 7 days advance written notification to the parties advising of the date, time, and location of the pre-construction conference shall be provided.

Project Layout. Prior to the initiation of dredging, the CONSULTANT shall update the computation of the volume required for the fill and rebalance the fill as allowable by permit for purposes of reflecting changed conditions along the beach and monitoring the anticipated contract amount. As necessary, deliverables shall include revised designed sheets, modified Acceptance Sections and berm and dune width tabulations necessary for layout. It is assumed that the survey data required for this rebalance shall be provided by the CONTRACTOR.

Site Representation during Construction. It is understood that the COUNTY will provide dedicated Site Representative(s) for on-site construction compliance observations during the construction period. These observers will review and document contractor and construction activities for the purpose of reviewing contract and permit compliance. Daily observations will be provided to both the COUNTY and CONSULTANT. It is assumed that data collected by COUNTY construction observers shall be sufficient for supporting a determination of project compliance with all relevant permit conditions.

The CONSULTANT shall review information provided by the COUNTY and the CONTRACTOR's daily quality control reports (daily reports) throughout the duration of the project from contractor mobilization through contractor demobilization from the project site. The CONSULTANT shall likewise review water quality monitoring reports to be provided by the CONTRACTOR. The CONSULTANT shall also review the dredge position data to be provided by the CONTRACTOR. The horizontal and vertical position data will be evaluated and compared to the permitted borrow area limits. Violations will be reported to the CONTRACTOR and COUNTY.

The CONSULTANT shall conduct visits to the project site once every two weeks, on average, during construction. This assumes the construction will not exceed 90 days in duration. The purpose of these visits shall be to confirm the condition of completed portions of the project, review construction activities personally, and be available to address any outstanding questions that the COUNTY and/or project contractor may have regarding project requirements and construction activities. Upon completion of each site visit, the CONSULTANT shall prepare a summary memorandum for the COUNTY that details observations, activities, and action items generated from the site visit and meetings with county representatives and the construction CONTRACTOR.

Through construction observation documentation and information provided by the COUNTY, CONSULTANT staff observation, and the construction CONTRACTOR's daily reports, the CONSULTANT shall monitor progress of the work, track construction contractor activities, production rates, including delays and sources thereof, and notify the COUNTY or regulatory agencies as appropriate.

The Project Engineer or COUNTY's Site Representative shall attend periodic progress meetings either by teleconference or in person with the CONTRACTOR and the CONTRACTOR's associated subcontractors, as appropriate during construction.

Sediment QA/QC. Sand sampling and laboratory testing for the purposes of sediment QA/QC and permit compliance during construction is not provided for in this Task Order. It is understood that the COUNTY and/or the COUNTY's construction contractor will be responsible for all visual inspection and collection of the requisite compliance sand samples during project construction.

The CONSULTANT shall assist the COUNTY with evaluation of sediment samples and laboratory results produced for permit compliance. Compliance criteria will be estimated or

measured by others and reported to CONSULTANT. In the event that non-compliant material is deposited onto the beach, CONSULTANT shall coordinate with County staff and notify the appropriate regulatory agencies as required by permit. The CONSULTANT shall also be available to make recommendations regarding corrections to dredge positioning within the borrow area, as necessary, to address any sediment compliance issues.

CONTRACTOR Plan or Submittal Review. The CONSULTANT shall review and comment on the acceptance of the following typical Plans-of-Action or submittals required of the CONTRACTOR and supplied to the CONSULTANT by the COUNTY:

- a) Quality Control Plan (include QA/QC Plan compliance)
- b) Notice-To-Mariners (USGS)
- c) Survey and Construction Baseline Plan
- d) Grade Stake Recovery Plan
- e) Dredge Excavation Plan (Borrow Site); Pipeline Corridor Plan
- f) Environmental Protection Plan, including required monitoring
- g) Structure Protection/Vibration Monitoring Plan
- h) Accident Prevention Plan as part of Safety Plan
- i) Severe Storm Plan as part of Safety Plan
- j) Operations Plan

The CONSULTANT shall review the results of vibration (or other) monitoring performed by the CONTRACTOR throughout the duration of the work (as applicable).

CONTRACTOR Requests for Payment. The CONSULTANT shall review the CONTRACTORS' progress and payment (AD/BD) surveys for compliance with the project Plans and payment eligibility criteria. The CONSULTANT shall be available to make decisions regarding the acceptance of completed areas of the beach fill. The CONSULTANT shall make a volumetric comparison of the pre-construction survey and the CONTRACTOR's pay survey in order to verify the section was filled to specifications and assist the COUNTY in evaluating the periodic and final payments to the CONTRACTOR. The CONSULTANT shall also review all pay requests submitted by the construction contractor for accuracy, completeness, and compliance with approved work.

The CONSULTANT shall assist the COUNTY in assembling the documentation needed for any potential future State or Federal reimbursement or cost sharing.

Notice of Anticipated Deviation. The CONSULTANT shall notify the COUNTY and the appropriate regulatory agencies in writing of any anticipated deviation from the Permits. If deemed necessary, a minor modification to any Permit will be formulated and submitted.

Notice of Non-Compliance. CONSULTANT shall prepare and submit all notices of non-compliance to the State and Federal agencies, as appropriate. Collection of all data relied upon to determine compliance shall be provided by the COUNTY.

Certification of Completion. Within 30 days after completion of construction authorized by the permit and receipt of post-construction surveys, the CONSULTANT shall submit to the COUNTY a written statement of completion and certification by a registered professional engineer. This certification shall state that all locations and elevations specified by the permits have been verified; the activities authorized by the permits have been performed in compliance with the plans and specifications approved as a part of the permits, and all conditions of the permits; or shall describe any deviations from the plans and specifications, and all conditions of the permits. When the completed activity differs substantially from the permitted plans, any substantial deviations shall be noted and explained on two copies of as-built drawings.

TASK 3.0: ADDITIONAL SERVICES

Task 3.1: Post-Construction Documentation Report

Subsequent to completion of the project, OAI shall formulate a post-construction documentation report that describes the various elements of the construction and completed work for the purpose of describing the project as an “engineered beach”. The documentation report will be available as necessary to describe the project for the purposes of future eligibility for FEMA related post-disaster funding in general conformance with the Stafford Act. The report will document the post-construction condition of the engineered beach and borrow area as described by the post-construction beach profile and borrow area surveys. The report will also document relevant aspects of the project design and construction which will be beneficial in the design and planning of future renourishment efforts. The post-construction report will likewise provide a technical predicate to the first year of post-construction monitoring. That is to say, it provides the baseline condition for subsequent annual monitoring surveys/reporting. It likewise will serve as a form of evidence to the State and Federal agencies regarding permit compliance and eligibility for future cost reimbursement or cost-sharing, should such become available.

The report will discuss contractor productivity, dredging techniques and conditions, weather conditions during the prosecution of the work, borrow site usage, soil quality, constructability issues, etc. Additionally, the report will summarize the bid results, elements of the total cost to construct, permit, environmental (in general) issues occurring during the period of construction and other factors potentially affecting future projects. The CONSULTANT shall access, analyze, and summarize CONTRACTOR related data obtained from daily reports, project specific reporting submittals, internal reports, etc. Whenever possible such databases will be formulated in a graphic format for visual interpretation by the layman. It is assumed that all survey documentation for the project limits will be provided to the COUNTY by the CONTRACTOR as part of the contract deliverables.

Deliverable. The CONSULTANT shall provide to the COUNTY one PDF copy of the draft report for review and comments by the COUNTY. Following receipt of comments from County staff, the CONSULTANT shall make one revision to the draft document and produce a final version of the report for submittal to the COUNTY. The CONSULTANT shall produce one PDF copy of the final report and submit to the COUNTY.

Schedule. The report shall be delivered to the County within 90 days following final acceptance of the completed project and/or delivery of requisite project-related data, whichever is later.

Scope of Services
North County Comprehensive Shore Protection Project
Segment III Renourishment
Task Order 1377-17
COST DETAILS

Sub Task 1.1.1 - Design Survey													
DIRECT LABOR											OUTSIDE SVS/SUB-CONTRACTORS		
LABOR CATEGORY	ADMIN/ MGMT	LIASON	QA/QC						TOTAL HOURS	RATE	COST	SERVICE	COST
Principal									0	\$ 230.00	\$ -		
Principal II									0	\$ 205.00	\$ -	Tetraquatic	\$19,460
Senior Engineer	2		2						4	\$ 174.00	\$ 696.00		
Coastal Engineer I		4	8						12	\$ 134.00	\$ 1,608.00		
Coastal Engineer II									0	\$ 110.00	\$ -		
Coastal Engineer III			2						2	\$ 101.00	\$ 202.00		
CADD Technician									0	\$ 68.00	\$ -		
Administrative Assistant	2								2	\$ 72.00	\$ 144.00		
SUBTOTAL DIRECT LABOR											\$ 2,650.00	subtotal	\$19,460
Sub Task 1.1.2 - Final Design													
DIRECT LABOR											OUTSIDE SVS/SUB-CONTRACTORS		
LABOR CATEGORY	ADMIN/ MGMT	LIASON	QA/QC	DESIGN	DOC PREP.	MEETINGS			TOTAL HOURS	RATE	COST	SERVICE	COST
Principal									0	\$ 230.00	\$ -		
Principal II			4						4	\$ 205.00	\$ 820.00		
Senior Engineer	16	4	16	8	4	10			58	\$ 174.00	\$ 10,092.00		
Coastal Engineer I	2	4		60	24	10			100	\$ 134.00	\$ 13,400.00		
Coastal Engineer II									0	\$ 110.00	\$ -		
Coastal Engineer III									0	\$ 101.00	\$ -		
CADD Technician				24	16				40	\$ 68.00	\$ 2,720.00		
Administrative Assistant	4			48	8				60	\$ 72.00	\$ 4,320.00		
SUBTOTAL DIRECT LABOR											\$ 31,352.00	subtotal	\$0
Sub Task 1.1.3 - Plans, Technical Specifications, and Project Manual Development													
DIRECT LABOR											OUTSIDE SVS/SUB-CONTRACTORS		
LABOR CATEGORY	ADMIN/ MGMT	LIASON	QA/QC	Review/ Coordination	DOC PREP.	MEETINGS			TOTAL HOURS	RATE	COST	SERVICE	COST
Principal									0	\$ 230.00	\$ -		
Principal II			8	4					12	\$ 205.00	\$ 2,460.00		
Senior Engineer	16	4	16	8	32				76	\$ 174.00	\$ 13,224.00		
Coastal Engineer I	2	16		32	120	20			190	\$ 134.00	\$ 25,460.00		
Coastal Engineer II					40				40	\$ 110.00	\$ 4,400.00		
Coastal Engineer III					16	20			36	\$ 101.00	\$ 3,636.00		
CADD Technician				16	80				96	\$ 68.00	\$ 6,528.00		
Administrative Assistant	4				24				28	\$ 72.00	\$ 2,016.00		
SUBTOTAL DIRECT LABOR											\$ 57,724.00	subtotal	\$0

Scope of Services
North County Comprehensive Shore Protection Project
Segment III Renourishment
Task Order 1377-17
COST DETAILS

Sub Task 1.2 - Bid Support													
DIRECT LABOR											OUTSIDE SVS/SUB-CONTRACTORS		
LABOR CATEGORY	ADMIN/ MGMT	LIASON	QA/QC	MEETING PREP	MEETINGS	BID ANALYSIS	DOC PREP.		TOTAL HOURS	RATE	COST	SERVICE	COST
Principal									0	\$ 230.00	\$ -		
Principal II			2						2	\$ 205.00	\$ 410.00		
Senior Engineer	8	4	4	2	10	3	8		39	\$ 174.00	\$ 6,786.00		
Coastal Engineer I	2	4	16	4	10	5	24		65	\$ 134.00	\$ 8,710.00		
Coastal Engineer II									0	\$ 110.00	\$ -		
Coastal Engineer III									0	\$ 101.00	\$ -		
CADD Technician									0	\$ 68.00	\$ -		
Administrative Assistant	4						16		20	\$ 72.00	\$ 1,440.00		
SUBTOTAL DIRECT LABOR											\$ 17,346.00	subtotal	\$0
Sub Task 2.0 - Construction Services													
DIRECT LABOR											OUTSIDE SVS/SUB-CONTRACTORS		
LABOR CATEGORY	ADMIN/ MGMT	LIASON	DATA ASSEMBLY	QA/QC	ANALYSES	DESIGN	REPORT-ING	MEETINGS	TOTAL HOURS	RATE	COST	SERVICE	COST
Principal									0	\$ 230.00	\$ -		
Principal II				16					16	\$ 205.00	\$ 3,280.00		
Senior Engineer	16	24		16		2	8	50	116	\$ 174.00	\$ 20,184.00		
Coastal Engineer I	16	32	24	20	80	16	60	80	328	\$ 134.00	\$ 43,952.00		
Coastal Engineer II		24		24					48	\$ 110.00	\$ 5,280.00		
Coastal Engineer III			40		40			20	100	\$ 101.00	\$ 10,100.00		
CADD Technician						16	24		40	\$ 68.00	\$ 2,720.00		
Administrative Assistant	8						24		32	\$ 72.00	\$ 2,304.00		
SUBTOTAL DIRECT LABOR											\$ 87,820.00	subtotal	\$0
Sub Task 3.1 - Additional Services (Post-Construction Report)													
DIRECT LABOR											OUTSIDE SVS/SUB-CONTRACTORS		
LABOR CATEGORY	ADMIN/ MGMT	LIASON	DATA ASSEMBLY	QA/QC	ANALYSES	DOC PREP.			TOTAL HOURS	RATE	COST	SERVICE	COST
Principal									0	\$ 230.00	\$ -		
Principal II				4					4	\$ 205.00	\$ 820.00		
Senior Engineer	8	4	16	16	16	8			68	\$ 174.00	\$ 11,832.00		
Coastal Engineer I	4	8	16		24	80			132	\$ 134.00	\$ 17,688.00		
Coastal Engineer II						32			32	\$ 110.00	\$ 3,520.00		
Coastal Engineer III			16	36	40				92	\$ 101.00	\$ 9,292.00		
CADD Technician						36			36	\$ 68.00	\$ 2,448.00		
Administrative Assistant	4					8			12	\$ 72.00	\$ 864.00		
SUBTOTAL DIRECT LABOR											\$ 46,464.00	subtotal	\$0
SUBTOTAL ALL TASKS											\$ 243,356.00		\$ 19,460.00
TOTAL											\$ 282,816.00		

Terraquatic, Inc.
1220 Tangelo Terr, Unit A-12
Delray Beach, Florida 33444

TERRAQUATIC
SURVEYING AND MAPPING

July 8, 2019

Chris Creed, P.E.
Olsen Associates, Inc.
2618 Herschel Street
Jacksonville, Florida 32204

**RE: Professional Surveying and Mapping Proposal
Hydrographic / Topographic Surveying & Mapping
Onshore / Offshore Profiles
Juno Beach R26 through R38, Design Survey
Palm Beach County, Florida**

Dear Chris,

In accordance with your request, Terraquatic Inc. is pleased to provide the following proposal for professional services pertaining to the above referenced project. The scope of work shall encompass collecting a total of thirteen (13) onshore / offshore FDEP profile lines R-26 through R-38 and twelve (12) intermediate or half-monument profiles. Upland and offshore profiles shall be collected following the same standards as described for typical monitoring surveys. Data shall be collected landward to a point of refusal such as impenetrable vegetation, building, roadway or other permanent improvement. Upland profiles shall extend and overlap the offshore survey by 100-ft. The offshore profiles shall extent seaward 1-mile. Profiles shall be collected along historic profile azimuths with newly established intermediate profiles collected along azimuths either parallel to the adjacent lines or an average azimuth in the case of non-parallel adjacent profiles. Intermediate profiles shall not be monumented as part of this survey scope, but could be included in a separate scope of services if required.

Final Deliverables for Beach Profiles:

- AutoCAD format files (*.dwg) showing data in plan and profile view on CD or DVD.
- One (1) draft copy (24" x 36") of beach profiles surveys. One (1) final signed and sealed copy (24" x 36") of beach profiles surveys.
- One (1) electronic set of signed and sealed beach profiles in 11" x 17" PDF format with legible seal or an electronic seal.
- Surveyor Certification
- Field book copies in PDF format
- ASCII raw data file
- ASCII DEP xyz files
- DEP DZ formatted files
- ASCII monument information file

Cost:

The lump sum fee for the above described services shall be \$19,460.00 ls. Including planning, control verification, field data collection, data processing and preparation of final deliverables.

Sincerely,
Terraquatic, Inc.



Kenneth C. Jackson, PSM
Terraquatic, Inc.

Terraquatic, Inc.
 1220 Tangelo Terr, Unit A-12
 Delray Beach, Florida 33444



Cost Breakdown for Crew and Office

Juno Beach Profiles

Profiles R26 through R38, including intermediates, 25-Profiles

Onshore / Offshore Beach Profiles -Juno Beach

Onshore / Offshore Profiles

Cost Breakdown:

Crew / Services	Estimated Hours	Regular Hourly Rate	Unit	Total Cost
2- Person GPS Crew	8	\$175.00	Crew Hour	\$1,400
3-Person GPS Crew	24	\$225.00	Crew Hour	\$5,400
3-Person Hydrographic Crew	32	\$255.00	Crew Hour	\$8,160
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Computer / Processing CADD	32	\$90.00	Per Hour	\$2,880
Field Survey Manager / Planning	8	\$95.00	Per Hour	\$760
Project Manager	2	\$130.00	Per Hour	\$260
Professional Surveyor & Mapper	4	\$150.00	Per Hour	\$600
Total Cost:				\$19,460

Olsen Associates, Inc.
Continuing Contract for Coastal and Marine Engineering

Contract (R2016-1377) dated September 27, 2016 for a period of two years expires on September 26, 2018.
 First Amendment (R2018-1390) dated September 18, 2018 extends the contract through September 26, 2019.
 SBE-M/WBE Goal 38.0% (28% State MBE/Woman; 6% SBE/White; 4% SBE/Woman)

Task Order summary:

TASK NUMBER	TOTAL/ SBE and/or MWBE AMOUNT	TASK DUE DATE	TASK DESCRIPTION	APPROVED BY/DATE
1377-01	166,585.00 5,500.00	1/15/2018	North County Comprehensive Shore Protection Project Segment II Feasibility Study	BCC 5/2/2017
1377-02	26,631.00 25,385.00	8/18/2017	2017 Exotic Dune Vegetation Survey and Mapping	ERM 5/19/2017
1377-03	55,890.25 53,770.00	8/22/2017	2017 Regional Monitoring - Beach Profiles and Ebb Shoal Surveys	CRC 5/24/2017
1377-04	24,261.00 0.00	11/30/2017	Ocean Ridge Shore Protection Project 3 - 3 Year Post- Construction Physical Monitoring	ERM 5/19/2017
1377-05	45,354.00 43,680.00	4/30/2018	2017 Lake Worth Lagoon Fixed Transect SAV Monitoring	ERM 7/20/2017
1377-01A	4,501.00 4,300.00	1/15/2018	North County Comprehensive Shore Protection Project Segment II Feasibility Study	ERM 8/16/2017
1377-06	19,666.00 18,760.00	10/6/2017	Lake Okeechobee Survey and Sediment and Jet Probes	ERM 8/22/2017
1377-07	44,275.25 42,770.00	11/30/2017	Post Hurricane Irma Beach Profile Survey and Analysis	ERM 9/12/2017
1377-07A	13,730.00 0.00	11/30/2017	Post Hurricane Irma Beach Profile Survey and Analysis	CRC 9/27/2017
1377-08	3,490.00 3,325.00	10/31/2017	Coral Cove Beach Surveys for CCCL Application	ERM 10/18/2017
1377-09	21,731.00 0.00	4/30/2018	USS Clamagore Sub-bottom Surveys	ERM 1/18/2018
1377-10	25,322.00 0.00	8/1/2018	Post Irma FEMA Project Worksheets	ERM 6/6/2018
1377-11	55,751.00 53,000.00	9/17/2018	2018 Regional Monitoring - Beach Profile Surveys	CRC 6/13/2018
1377-12	58,016.00 56,088.00	5/31/2019	2018 Lake Worth Lagoon Fixed Transect SAV Monitoring	CRC 6/20/2018
1377-13	99,552.00 94,934.00	5/31/2019	2018 Lake Worth Lagoon Seagrass Mapping	CRC 6/20/2018
First Amendment			1-Year Contract Extension	BCC 9/18/2018
1377-14	160,645.50 125,348.00	9/30/2019	2019 Regional Monitoring - Beach Profiles, Ebb Shoal Surveys, Post-Storm Beach Profiles, and Damage Assessment Report	BCC
1377-15	24,261.00 0.00	11/30/2019	Ocean Ridge Shore Protection Project 3 - 5 Year Post- Construction Physical Monitoring	ERM 5/15/2019
1377-16	37,506.00 35,644.00	4/30/2020	2019 Lake Worth Lagoon SAV Fixed Transect Monitoring	ERM 5/30/2019
1377-17	262,816.00 19,460.00	10/31/2021	North County Comprehensive Shore Protection Project - Segment III Renourishment (Juno Beach)	BCC

Total: 1,149,984.00

SBE-M/WBE: 581,964.00

SBE-M/WBE Participation: 50.6%

Report Date & Filename: 08/06/19

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