Agenda Item: **3L-3**

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS

AGENDA ITEM SUMMARY

Meeting Date:	May 7, 2024	(X) Consent ( ) Workshop	( ) Regular ( ) Public Hearing
Department:	Environmental Resources Management		

I. EXECUTIVE BRIEF

Motion and Title: Staff recommends motion to approve Consultant Services Authorization (CSA) No. 0090-07 to Contract (R2023-0090) approved on January 24, 2023 with Olsen Associates, Inc. (Olsen) in the amount of $195,326.24 to provide professional engineering, environmental surveys, reporting, and documentation to be used in permit required monitoring.

Summary: The Board of County Commissioners approved the Contract with Olsen, a Jacksonville company, on January 24, 2023. CSA No. 0090-07 authorizes Olsen to conduct yearly topographic and hydrographic surveys required by project permits. The CSA also contains optional tasks for post-hurricane surveys and damage assessment reports to aid in securing disaster assistance funding. Costs will be paid from the Beach Improvement Fund. On April 6, 2022, the Goal Setting Committee established a 20% mandatory Small Business Enterprise (SBE) subcontracting goal and an SBE Evaluation Preference for Prime Respondents or Bidders (up to 15 points) as the Affirmative Procurement Initiatives. Olsen committed to an overall 48% SBE participation in the Contract. SBE participation for this CSA is 67.4%. **The cost to the County is $195,326.24.** Districts 1 and 4 (YBH)

Background and Justification: Yearly physical monitoring surveys are required as permit conditions for existing beach and dune restoration projects located throughout the County. Post disaster surveys and damage reports are critical to securing funding assistance from the Federal Emergency Management Agency and the United States Army Corps of Engineers.

Attachment:
1. CSA No. 0090-07 with Exhibits A – D

Recommended by: mm ybh _____ 3/29/24
Department Director **Date**

Approved by: for _____ 4/15/24
Assistant County Administrator **Date**

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2024	2025	2026	2027	2028
Capital Expenditures	$195,326				
Operating Costs					
External Revenues					
Program Income (County)					
In-Kind Match (County)					
NET FISCAL IMPACT	$195,326				
No. ADDITIONAL FTE POSITIONS (Cumulative)					

Is Item Included in Current Budget? Yes X No ____

Does this item include the use of federal funds? Yes ____ No X

Does this item include the use of state funds? Yes X No ____

Budget Account No.: **Fund** 3652 **Department** 381
Unit M015, M028, M037, M040, M044, M045, and M046
Object 3120 **Program** ____

Reporting Category ____

B. Recommended Sources of Funds/Summary of Fiscal Impact:
Beach Improvement Fund

C. Department Fiscal Review:

III. REVIEW COMMENTS

A. OFMB Fiscal and /or Contract Dev. and Control Comments:

OFMB 4/11/2024 DA 4/3 DA 4/4

Contract Development and Control 4/9/24 4/9/24

B. Legal Sufficiency:

Assistant County Attorney 4/12/24

C. Other Department Review:

Department Director

CONSULTANT SERVICES AUTHORIZATION

CSA #: 0090-07 CONSULTANT: Olsen Associates, Inc.

ACCOUNT: various CONTRACT: R2023-0090

[Fiscal approval of Budget Availability: See attached BAS (Exhibit A)]

PROJECT MANAGER: Hailey Wilson PHONE: 561-233-2465

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

PROJECT NAME: 2024 Regional Monitoring Surveys and Post-Storm Damage Assessment

LOCATION/DISTRICT #: Countywide Coastline and Atlantic Ocean / Districts 1 and 4

TASK DESCRIPTION (use additional pages if necessary): The Consultant shall conduct and prepare surveys and provide data, as described in the attached Olsen proposal dated February 16, 2024 (Exhibit C). OEBO Schedules 1 and 2 (Exhibit B) and the Contract History (Exhibit D) are attached hereto and made part of this CSA. *Execution of Tasks 12 through 21 will require separate written Notice to Proceed from the County.*

DELIVERABLES: See Olsen's proposal dated 2/16/2024 (Exhibit C).

CSA TYPE: FIXED PRICE DUE DATE: January 31, 2025

TOTAL AMOUNT: $195,326.24

(Check where appropriate)
for Contract and Subcontract Amounts:

	Black	Hispanic	Women	Other (specify)	White Male
M/WBE (State) ☐	$	$	$	$	
SBE-M/WBE* ☐	$	$	$	$	
SBE ☒	$	$	$	$	$131,675.00

*certified as both an SBE and a State MBE
TOTAL SBE PARTICIPATION: $131,675.00

(REMAINDER OF PAGE LEFT INTENTIONALLY BLANK)

CONSULTANT REP: _____ DATE: 2-28-2024
Christopher G. Creed, Vice President

APPROVED AS TO TERMS AND CONDITIONS:

ERM DIRECTOR: _____ DATE: 3-13-24
Deborah Drum

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

ASSISTANT COUNTY ATTORNEY: _____ DATE: 4/2/24
Yelizaveta B. Herman

ATTEST: JOSEPH ABRUZZO
CLERK & COMPTROLLER: _____ DATE: _____
Deputy Clerk

BOARD OF COUNTY COMMISSIONERS: _____ DATE: _____
Maria Sachs, Mayor

Exhibit A

Palm Beach County
Environmental Resources Management

INTERDEPARTMENTAL BUDGET AVAILABILITY STATEMENT

REQUEST DATE: 03/13/2024

REQUESTED BY: Juan Cueto **PHONE:** 233-2431

PROJECT TITLE: Regional Monitoring Surveys **PROJECT NO:** CSA 0090-07

SITE: Multiple **ACTIVITY**: Monitoring

CONTRACTOR/CONSULTANT NAME: Olsen Associates, Inc.

SCOPE OF SERVICES: Regional Monitoring Surveys & Post-Storm Damage Assessment

BUDGET ACCOUNT NUMBER(S):

Fund	Dept	Unit	Obj	SObj	Program	(Proj) Task	(Site) Sub Task	(Activity) Task Ord	Amount $
3652	381	M015	3120		E015	S040	COCR	008	19,990.88
3652	381	M028	3120		E028	S032	CJUB	008	35,161.19
3652	381	M037	3120		E037	S015	CSII	008	31,114.55
3652	381	M040	3120		E040	S011	CCOC	008	35,329.55
3652	381	M044	3120		E044	S023	CSPB	008	6,013.89
3652	381	M045	3120		E045	S037	CJUC	008	30,749.88
3652	381	M046	3120		E046	S029	CSLW	008	36,966.30
Total									195,326.24

FISCAL APPROVAL: _____ **DATE:** 3/13/24

ENCUMBRANCE NUMBER: _____

OEBO SCHEDULE 1

SOLICITATION/PROJECT/BID NAME: 2024 Regional Monitoring Surveys and Post-Storm Damage Assessment

SOLICITATION/PROJECT/BID NO.: CSA No. 0090-07

SOLICITATION OPENING/SUBMITTAL DATE: _____

COUNTY DEPARTMENT: Environmental Resources Management

Section A

PLEASE LIST THE DOLLAR AMOUNT OR PERCENTAGE OF WORK TO BE COMPLETED BY THE PRIME CONTRACTOR/CONSULTANT* ON THE PROJECT:

NAME OF PRIME RESPONDENT/BIDDER: Olsen Associates, Inc.

ADDRESS: 2618 Herschel Street, Jacksonville, FL 32204

CONTACT PERSON: Steven C. Howard, P.E.

PHONE NO.: 904-387-6114

E-MAIL: showard@olsen-associates.com

PRIME'S DOLLAR AMOUNT OR PERCENTAGE OF WORK: $63,651.24

*SMWBE Prime's must include their percentage or dollar amount in the Total Participation line under section B.

Non-SBE	MBE	WBE	SBE
☑	☐	☐	☐

Section B

PLEASE LIST THE DOLLAR AMOUNT OR PERCENTAGE OF WORK TO BE COMPLETED BY ALL SUBCONTRACTORS/SUBCONSULTANTS ON THE PROJECT BELOW:

Subcontractor/Sub consultant Name	(Check all Applicable Categories) Non-SBE	MBE Minority Business	WBE Women Business	SBE Small Business	DOLLAR AMOUNT OR PERCENTAGE OF WORK Black	Hispanic	Women	Caucasian	Asian	Other
1. Terraquatic, Inc.	☐	☐	☐	☑				$131,675.00		
2.	☐	☐	☐	☐						
3.	☐	☐	☐	☐						
4.	☐	☐	☐	☐						
5.	☐	☐	☐	☐						
Total										

(Please use additional sheets if necessary)

Total Bid/Offer Price $ 195,326.24

Total Certified S/M/WBE Participation $ $131,675.00

I hereby certify that the above information is accurate to the best of my knowledge: _____ Vice President

Name & Authorized Signature — Title

Note:

1. **The amount listed on this form for a Subcontractor/sub consultant must be supported by price or percentage listed on the properly executed Schedule 2 or attached signed proposal.**
2. **Only those firms certified by Palm Beach County at the time of solicitation due date are eligible to meet the established OEBO Affirmative Procurement Initiative (API). Please check the applicable box and list the dollar amount or percentage under the appropriate demographic category.**
3. **Modification of this form is not permitted and will be rejected upon submittal.**

REVISED 09/22/2022

Exhibit B
p. 1 of 2

OEBO LETTER OF INTENT – SCHEDULE 2

A completed Schedule 2 is a binding document between the Prime Contractor/consultant and a Subcontractor/subconsultant (for any tier) and should be treated as such. The Schedule 2 shall contain bolded language indicating that by signing the Schedule 2, both parties recognize this Schedule as a binding document. All Subcontractors/subconsultants, including any tiered Subcontractors/subconsultants, must properly execute this document. Each properly executed Schedule 2 must be submitted with the bid/proposal.

SOLICITATION/PROJECT NUMBER: CSA No. 0090-07

SOLICITATION/PROJECT NAME: 2024 Regional Monitoring Surveys and Post-Storm Damage Assessment

Prime Contractor: Olsen Associates, Inc. Subcontractor: Terraquatic, Inc.

(Check box(s) that apply)

☒ SBE ☐ WBE ☐ MBE ☐ M/WBE ☐ Non-S/M/WBE Date of Palm Beach County Certification (if applicable): 7/20/2023.

The undersigned affirms they are the following (select one from each column **if applicable**):

Column 1	**Column 2**	**Column 3**
☒ Male ☐ Female	☐ African-American/Black ☐ Asian American ☒ Caucasian American ☐ Hispanic American ☐ Native American	☐ Supplier

S/M/WBE PARTICIPATION – S/M/WBE Primes must document all work to be performed by their own work force on this form. Failure to submit a properly executed Schedule 2 for any **S/M/WBE** participation may result in that participation not being counted. Specify in detail, the scope of work to be performed or items supplied with the dollar amount and/or percentage for each work item. S/M/WBE credit will only be given for the areas in which the S/M/WBE is certified. A detailed proposal may be attached to a properly executed Schedule 2.

Line Item	Item Description	Unit Price	Quantity/ Units	Contingencies/ Allowances	Total Price/Percentage
	Professional Surveying Services				$131,675.00

The undersigned Subcontractor/subconsultant is prepared to self-perform the above-described work in conjunction with the aforementioned project at the following total price or percentage: $131,675.00

If the undersigned intends to subcontract any portion of this work to another Subcontractor/subconsultant, please list the business name and the amount below accompanied by a separate properly executed Schedule 2.

_____ **Price or Percentage:** _____

Name of 2nd/3rd tier Subcontractor/subconsultant

Olsen Associates, Inc.
Print Name of Prime

By: _____
Authorized Signature

CHRISTOPHER G. CREED
Print Name

Vice President
Title

Date: 28 Feb 2024

Terraquatic, Inc.
Print Name of Subcontractor/subconsultant

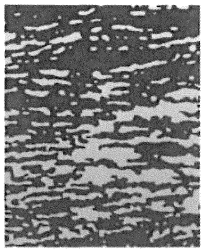
By: _____
Authorized Signature

JOSHUA LEE
Print Name

PRESIDENT
Title

Date: 28 FEBRUARY 2024

Revised 09/17/2019



olsen
associates, inc.
Coastal Engineering

February 16, 2024

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

Re: Annual Coastal Engineering Contract
CSA 0090-07 Proposal
2024 Beach Physical Monitoring Surveys & Post-Hurricane FEMA Project Worksheet Assistance; Palm Beach County, Florida

Dear Ms. Wilson,

Attached please find supporting documentation for proposed Consultant Services Authorization number 0090-07 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 the 2024 Beach Physical Monitoring. All surveying and mapping work will be conducted by OAI's sub-consultant Terraquatic, Inc. OAI's role in collection of the survey data will be limited to contract management, coordination, and limited QA/QC. A detailed summary of total proposed costs and Terraquatics' statement of work and cost proposal are attached to this letter.

The County has additionally requested OAI to provide a proposal for completing post-hurricane surveys, engineering analyses, and providing limited coordination with FEMA in order to develop a FEMA Category G Project Worksheet(s) for the County's existing, non-Federal coastal projects. For these tasks, all surveying and mapping work will be conducted by OAI's sub-consultant Terraquatic, Inc., and all engineering analyses and post-storm report development will be conducted by OAI. A detailed summary of the statement of work follows herein, and a statement of the total proposed costs is attached to this letter. Each of these tasks is to be completed on a contingency basis and requires written Notice to Proceed from the County.

Summary of Work (Tasks 1 through 11: 2024 Annual Physical Monitoring)

- Task 1 = R1 to R8 (8) Onshore/offshore profiles
- Task 2 = R1.5 to R7.5 (7) Wading depth profiles at intermediate monuments
- Task 3 = R13 to R23 (11) Onshore/offshore profiles
- Task 4 = T24 to R45 (22) Onshore/offshore profiles
- Task 5 = R61 to R66 (6) Onshore/offshore Profiles
- Task 6 = R61.5 to R66.5 (6) Wading depth profiles at intermediate monuments
- Task 7 = R134 to R151 (18) Onshore/offshore profiles
- Task 8 = T152 to R164 (13) Onshore/offshore profiles
- Task 9 = Jupiter Ebb Shoal (No 2024 Action Required. Intentionally left blank.)

- Task 10 = SLWI Ebb Shoal (No 2024 Action Required. Intentionally left blank.)
- Task 11 = SLWI Flood Shoal (No 2024 Action Required. Intentionally left blank.)

Tasks 12 through 19: Post-storm beach survey

- Task 12 = Post-Storm R1 to R8 (8) Onshore/offshore profiles
- Task 13 = Post-Storm R1.5 to R7.5 (7) Wading depth profiles at intermediate monuments
- Task 14 = Post Storm R13 to R23 (11) Onshore/offshore profiles
- Task 15 = Post-storm T24 to R45 (22) Onshore/offshore profiles
- Task 16 = Post-Storm R61 to R66 (6) Onshore/offshore Profiles
- Task 17 = Post-Storm R61.5 to R66.5 (6) Wading depth profiles at intermediate monuments
- Task 18 = Post-Storm R134 to R151 (18) Onshore/offshore profiles
- Task 19 = Post-Storm T152 to R164 (13) Onshore/offshore profiles

A description of the proposed means and methods to be used for completion of each survey task is included in the attached statement of work from Terraquatic, Inc. Execution of Tasks 12 through 19 will require written Notice To Proceed (NTP) from County.

Deliverables and Project Timeline (Tasks 1 through 19)

Final deliverables are described in the attached proposal from Terraquatic, Inc. Beach profiles field data collection will be completed within forty days (40) of the notice to proceed (NTP). The processing and preparation of final (draft) deliverables shall be submitted with ninety days (90) of the NTP. Deliverable dates are offered as weather permitting.

Summary of Work (Tasks 20 and 21: FEMA Project Worksheet Assistance)

Tasks 20 and 21 will provide for professional coastal engineering services to assist the County in preparing engineering damage reports and cost analyses required to support the preparation of FEMA Category G Project Worksheets for five (5) County projects that have established engineered beach or dune sections following hurricane impacts. Execution of Tasks 20 and 21 will require written Notice To Proceed from County. These projects are,

- Coral Cove (R-1 to R-7.5). Eligible infrastructure is a non-Federal engineered dune.
- South Jupiter (aka North County Comprehensive Shore Protection Project (NCCSPP) Segment II; R-19 to R-26). Eligible infrastructure is a non-Federal engineered dune.
- Juno Beach (aka NCCSPP; R-26 to R-38) Segment III. Eligible infrastructure is a non-Federal engineered beach and dune project.
- Singer Island (R-60.9 to R-67). Eligible infrastructure is a non-Federal engineered dune.
- Southern Palm Beach County / Lantana (R-135+450' to R-137+500'). Eligible infrastructure is a non-Federal engineered dune.

Task 20: Post-Storm Damage Assessment

Following the Federal disaster declaration associated with the impacts from a declared disaster (i.e., a hurricane), Palm Beach County is eligible to seek reimbursement for a portion of the cost to repair storm related damages to non-Federal engineered beaches and dunes through the FEMA Public Assistance Program. Such reimbursement is for the beaches and dunes that are eligible as Category G facilities. The Consultant shall document the locations of the qualifying engineered beaches and dunes and quantify the extent of storm related damages that may be eligible for reimbursement.

As directed by the County, the Consultant may prepare two reports; the first will be for the Juno Beach project and the second will be for the four dune projects, as described above. Should pre- and post-storm survey data be unavailable, estimations of storm losses produced by the County shall be relied upon, where available. For each reach, the report(s) shall include the following information:

- Description of the previously constructed engineered beach or dune project limited to quantification of the historical alongshore limits of sand placement and the project description included in the permit(s) for the project.
- A summary of the storm event which resulted in the claimed losses.
- Quantification of volumetric losses due to the storm event.
- Where available, storm losses shall be based upon analysis of the pre- and post-storm surveys completed in conjunction with the County's annual physical monitoring efforts. Volume loss computations shall extend seaward to the point of profile closure or as required by updated guidance from FEMA representatives. Measured volumes shall be adjusted for background erosion potential between pre- and post-storm surveys, as applicable.
- Where pre- and post-storm beach profile survey data are available, volume losses along dune only segments shall be computed as measured volume change above mean high water (MHW), representative seaward dune toe elevation, or as required by updated guidance from FEMA. Computations shall utilize an average-end-area methodology based upon the alongshore footprint of the engineered project and surveyed volume change.
- For projects where no pre- and post-storm profile surveys are available, storm-related volume change will be reported according to field observations made by County staff and provided to Olsen Associates. Please note that field observations may not be acceptable to FEMA for the purpose of quantifying storm damages.
- Preparation of an Engineer's opinion on probable cost to construct storm repairs for each segment.

As directed by the County, the Consultant shall summarize post-storm volumetric change along the Ocean Ridge (T152 to R159) and North County Comprehensive Shore Protection Project, Segment I (AKA Jupiter/Carlin, R13 to R19) reaches. Volume change computations shall extend seaward to the point of profile closure, where available.

The Consultant assumes the following with respect to completion of Task 20:

- No additional survey data will be required.
- In the absence of other supporting documentation, quantification of storm-related losses to vegetation shall be based upon data supplied by Palm Beach County.

Deliverables (Task 20)

As directed by the County, the Consultant shall prepare up to two draft summary reports, one for the Juno Beach project and a combined report for all of the dune only project segments. Additionally, the Consultant will compute and report volume changes along the Ocean Ridge and NCCSPP Segment I shorelines, as described herein, within 45 days of receipt of a Notice to Proceed, final survey data, and all necessary project documentation from Palm Beach County. Final copies of each report shall be completed within 15 working days of receipt of Palm Beach County comments.

Task 21: Post-Storm Agency Coordination

As directed by the County, the Consultant shall coordinate with the Client and the Federal Emergency Management Agency (FEMA) for purposes of finalizing a Project Worksheet (PW) to secure FEMA funding assistance for the repairs to the eligible engineered beaches and dunes. Such coordination shall be limited to six (6) teleconferences with FEMA representatives. Coordination shall include two (2) revisions to the reports submitted to the County which incorporates additional FEMA guidance. Any additional coordination that may be required shall be considered additional work.

Any additional work required as a result of agency coordination is not included in this proposal. In the event that additional work is required, modifications to this proposal shall be required.

Deliverables (Task 21)

The Consultant shall provide to the County, in writing, periodic updates regarding the coordination efforts with FEMA or digital copies of final reports which incorporate FEMA guidance.

Summary of Costs

Costs by task are detailed in the attached cost itemization table. The total proposed lump sum cost for all tasks is $195,326.24. Of this amount, $131,675.00 or 67.4% is allocated to Terraquatics, Inc., a SBE certified firm. This total lump sum amount is broken down between 2024 Annual Physical Monitoring and post-storm contingency tasks, as follows:

Summary of Costs (Tasks 1 through 11)

The total proposed lump sum cost for Tasks 1 through 11 is $65,598.52.

Summary of Costs (Tasks 12 through 21)

The total lump sum cost for Tasks 12 through 21 is $129,727.72. All work proposed under Tasks 12 through 21 shall be completed on a contingency basis and requires written Notice To Proceed from the County.

Should you have any questions, please do not hesitate to contact me at showard@olsen-associates.com or (904) 387-6114 ext. 316.

Sincerely,

Steven C. Howard
Senior Engineer

Attachments:
- Cost details
- Terraquatic Proposal

cc: File

Palm Beach County, Florida

ANNUAL COASTAL ENGINEERING CONTRACT, CSA 0090-02

COST SUMMARY

Task	Olsen Associates, Inc.	SBE Sub	CEG ODC's (WBE)	ODC's (non-SBE/ WMBE firm)	Total
CSA 0090-07: 2024 Beach ProfileSurveys for Annual Physical Monitoring & FEMA Project Worksheet Assistance					
Task 1 (R-1 to R-8)	$ 450.44	$ 5,575.00			$ 6,025.44
Task 2 (R1.5 to R7.5)	$ 450.44	$ 4,095.00			$ 4,545.44
Task 3 (R-13 to R-23)	$ 450.44	$ 7,665.00			$ 8,115.44
Task 4 (R-24 to R-45)	$ 450.44	$ 15,330.00			$ 15,780.44
Task 5 (R-61 to R-66)	$ 450.44	$ 4,180.00			$ 4,630.44
Task 6 (R-61.5 to R-66.5)	$ 450.44	$ 3,550.00			$ 4,000.44
Task 7 (R-134 to R-151)	$ 450.44	$ 12,540.00			$ 12,990.44
Task 8 (R-152 to R-164)	$ 450.44	$ 9,060.00			$ 9,510.44
Task 9 : Jupiter Ebb Shoal	$ -	$ -			$ -
Task 10: SLWI Ebb Shoal	$ -	$ -			$ -
Task 11: SLWI Flood Shoal	$ -	$ -			$ -
Subtotal (2024 Annual Physical Monitoring, Non-contingency)	**$ 3,603.52**	**$ 61,995.00**	**$ -**	**$ -**	**$ 65,598.52**
Task 12 (Post-Storm R-1 to R-8)	$ 450.44	$ 6,175.00			$ 6,625.44
Task 13 (Post-Storm R1.5 to R7.5)	$ 450.44	$ 5,105.00			$ 5,555.44
Task 14 (Post-Storm R-13 to R-23)	$ 450.44	$ 8,490.00			$ 8,940.44
Task 15 (Post-StormR-24 to R-45)	$ 450.44	$ 16,980.00			$ 17,430.44
Task 16 (Post-Storm R-61 to R-66)	$ 450.44	$ 4,630.00			$ 5,080.44
Task 17 (Post-Sotrm R-61.5 to R-66.5)	$ 450.44	$ 4,375.00			$ 4,825.44
Task 18 (Post-Storm R-134 to R-151)	$ 450.44	$ 13,895.00			$ 14,345.44
Task 19 (Post-Storm R-152 to R-164)	$ 450.44	$ 10,030.00			$ 10,480.44
Subtotal (Post-Storm Physical Monitoring, Contingency)	**$ 3,603.52**	**$ 69,680.00**	**$ -**	**$ -**	**$ 73,283.52**
Task 20 (Post-Storm Damage Assessment)	$ 30,665.26	$ -			$ 30,665.26
Task 21 (Agency Coordination)	$ 25,778.94	$ -			$ 25,778.94
Subtotal (FEMA Project Worksheet Assistance, Contingency)	**$ 56,444.20**	**$ -**	**$ -**	**$ -**	**$ 56,444.20**
Total (All Tasks, Lump Sum)	**$ 63,651.24**	**$ 131,675.00**	**$ -**	**$ -**	**$ 195,326.24**
				SBE Participation (All Tasks)	67.4%

Palm Beach County, Florida

CSA 0090-02

DIRECT LABOR									OUTSIDE SVS/SUB-CONTRACTORS		TOTAL
LABOR CATEGORY	Principal	Sr Engineer	Coastal Engr III	Coastal Engr II	Coastal Engr I	CAD	Admin. Asst.	COST	SERVICE	COST	
Rate ($/hr)	$ 235.31	$ 173.39	$ 121.89	$ 116.09	$ 104.72	$ 90.74	$ 95.79				
Task 1 (R-1 to R-8)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 5,575.00	$ 6,025.44
Task 2 (R1.5 to R7.5)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 4,095.00	$ 4,545.44
Task 3 (R-13 to R-23)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 7,665.00	$ 8,115.44
Task 4 (R-24 to R-45)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 15,330.00	$ 15,780.44
Task 5 (R-61 to R-66)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 4,180.00	$ 4,630.44
Task 6 (R-61.5 to R-66.5)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 3,550.00	$ 4,000.44
Task 7 (R-134 to R-151)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 12,540.00	$ 12,990.44
Task 8 (R-152 to R-164)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 9,060.00	$ 9,510.44
Task 9: Jupiter Ebb Shoal (No 2024 Work)								$ -			$ -
Task 10: SLWI Ebb Shoal (No 2024 Work)								$ -			$ -
Task 11: SLWI Flood Shoal (No 2024 Work)								$ -			$ -
Subtotal (Tasks 1-11, Direct Labor)								**$ 3,603.52**	**subtotal**	**$ 61,995.00**	**$ 65,598.52**
Task 12 (Post-Storm R-1 to R-8)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 6,175.00	$ 6,625.44
Task 13 (Post-Storm R1.5 to R7.5)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 5,105.00	$ 5,555.44
Task 14 (Post-Storm R-13 to R-23)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 8,490.00	$ 8,940.44
Task 15 (Post-StormR-24 to R-45)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 16,980.00	$ 17,430.44
Task 16 (Post-Storm R-61 to R-66)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 4,630.00	$ 5,080.44
Task 17 (Post-Sotrm R-61.5 to R-66.5)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 4,375.00	$ 4,825.44
Task 18 (Post-Storm R-134 to R-151)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 13,895.00	$ 14,345.44
Task 19 (Post-Storm R-152 to R-164)	0.50	0.75			1.25		0.75	$ 450.44	Terraquatic	$ 10,030.00	$ 10,480.44
Subtotal (Tasks 12-19, Direct Labor)								**$ 3,603.52**	**subtotal**	**$ 69,680.00**	**$ 73,283.52**
Task 20 (Post-Storm Damage Assessment)											
Admin. / Management	4.00	10.00					5.00	$ 3,154.09			$ 3,154.09
Engineering / Design								$ -			$ -
Analysis / Modeling		30.00			8.00			$ 6,039.46			$ 6,039.46
Fieldwork								$ -			$ -
Travel								$ -			$ -
Liason	12.00	12.00						$ 4,904.40			$ 4,904.40
Report Preparation		80.00	8.00			6.00		$ 15,390.76			$ 15,390.76
QA/QC	5.00							$ 1,176.55			$ 1,176.55
Subtotal (Task 20, Direct Labor)								**$ 30,665.26**	**subtotal**	**$ -**	**$ 30,665.26**
Task 21 (Agency Coordination)											
Admin. / Management	2						2.00	$ 662.20			$ 662.20
Engineering / Design		35.00						$ 6,068.65			$ 6,068.65
Analysis / Modeling		35.00						$ 6,068.65			$ 6,068.65
Fieldwork								$ -			$ -
Travel								$ -			$ -
Liason	8	32.00						$ 7,430.96			$ 7,430.96
Report Preparation		32.00						$ 5,548.48			$ 5,548.48
QA/QC								$ -			$ -
Subtotal (Task 21, Direct Labor)								**$ 25,778.94**	**subtotal**	**$ -**	**$ 25,778.94**
SUBTOTAL (Tasks 1 through 11, non-contingency)								**$ 3,603.52**		**$ 61,995.00**	**$ 65,598.52**
SUBTOTAL (Tasks 12 through 19, contingency)								**$ 3,603.52**		**$ 69,680.00**	**$ 73,283.52**
SUBTOTAL (Tasks 20 and 21, contingency)								**$ 56,444.20**		**$ -**	**$ 56,444.20**
TOTAL (Tasks 1 through 21)								**$ 63,651.24**		**$ 131,675.00**	**$ 195,326.24**

Terraquatic, Inc.
1220 Tangelo Terrace Unit A-12
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TERRAQUATIC
SURVEYING AND MAPPING

February 15, 2024

Steven C. Howard, P.E., D.CE
Olsen Associates, Inc.
2618 Herschel Street
Jacksonville, Florida 32204

RE: Professional Surveying and Mapping Proposal
Hydrographic / Topographic Surveying & Mapping
Onshore / Offshore Profiles
2024 Annual Monitoring & Post-Storm Events
Palm Beach County, Florida

Dear Steven,

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 seventy-eight (78) onshore / offshore FDEP profile lines and thirteen (13) intermediate or half-monument wading depth profiles, as follows:

• Task 1: R1 to R8	(8) Onshore/offshore profiles
• Task 2: R1.5 to R7.5	(7) Wading depth profiles at intermediate monuments
• Task 3: R13 to R23	(11) Onshore/offshore profiles
• Task 4: T24 to R45	(22) Onshore/offshore profiles
• Task 5: R61 to R66	(6) Onshore/offshore Profiles
• Task 6: R61.5 to R66.5	(6) Wading depth profiles at intermediate monuments
• Task 7: R134 to R151	(18) Onshore/offshore profiles
• Task 8: T152 to R164	(13) Onshore/offshore profiles
• Task 9: Jupiter Ebb Shoal Survey	
• Task 10: SLWI Ebb Shoal Survey	
• Task 11: SLWI Flood Shoal Survey	
• Task 12: Post-Storm R1 to R8	(8) Onshore/offshore profiles
• Task 13: Post-Storm R1.5 to R7.5	(7) Wading depth profiles at intermediate monuments
• Task 14: Post Storm R13 to R23	(11) Onshore/offshore profiles
• Task 15: Post-storm T24 to R45	(22) Onshore/offshore profiles
• Task 16: Post-Storm R61 to R66	(6) Onshore/offshore Profiles
• Task 17: Post-Storm R61.5 to R66.5	(6) Wading depth profiles at intermediate monuments
• Task 18: Post-Storm R134 to R151	(18) Onshore/offshore profiles
• Task 19: Post-Storm T152 to R164	(13) Onshore/offshore profiles

**Sections 9 through 11 have been intentionally left blank. No action required for 2024.*

The scope of this survey task shall be consistent with that described in the scope / task list of services you requested via electronic mail dated February 14, 2024. All survey operations will be conducted under the direct responsible charge of a Florida Licensed Professional Surveyor and Mapper and will be in accordance with the "Standards of Practice" set forth in Florida Statue 472, Administrative Code 5J17.

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Beach Profiles:
Terraquatic, Inc. shall follow the above-described scope of services for the beach profiles as follows:

- ***Planning and compiling historic profile information:***
  - Obtain all necessary profile and beach information needed to assist in survey planning and scheduling, such as recent aerial images, previous monitoring report containing all profile control dates, photographs, positions, elevations, and historical azimuths.

- ***Reconnaissance of profile monuments and controlling survey stations***
  - Upload all profile and control station positions into the GPS data collector.
  - All profile data shall be positioned using the second-order control monuments found in the field and calibrated into the network using the Trimble Virtual Reference Station (VRS), which is a subscription service broadcasting RTK corrections statewide.
  - Once a network is established it will be used to navigate to each profile control station at which time a photograph will be taken along with verification of monument stamping, condition, and completeness of to reach description.
  - Results of field profile control reconnaissance information will be inserted into the FDEP control spreadsheet for both profile control and survey second-order control stations.

- ***Upland profile data collection***
  - Upland profile data shall be collected using whatever necessary survey methods are needed, such as rod, level and measuring tape, total station or RTK GPS methods and combinations depending on the environmental conditions.
  - Data shall be collected in accordance with the "Physical Monitoring Manual" prepared by FDEP and edited October 2014.
  - Upland data shall commence from each profile control station and extend landward to the limits as defined in the FDEP manual and extend seaward defining all material changes, such as vegetation, dunes, boardwalks, pavement, sand or rock and changes in grade greater than six inches (6").
  - Profile data shall extend into the water to yield a depth sufficient to establish continuity with the offshore profile data.

- ***Wading Depth-Half Monument Profiles***
  - Shall be conducted following the same guidelines as the upland profile data collection methodologies and techniques.
  - These "Half Monument" profiles shall be collected along profiles placed at a mid-point between adjacent historic profiles and an azimuth either on an average of the adjacent profiles or on a preapproved azimuth directed by the client.
  - Half monument profiles shall extend seaward from the hypothetical profile control point to a minimum depth of approximately minus four feet (-4 foot), NAVD, 88.

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- ***Offshore Profile***
  - Horizontal and vertical control of the offshore profile shall be measured using the network previously established for the upland data collection in conjunction with a dual antenna RTK Differential GPS. This GPS (Trimble SPS 461 or similar) has manufacturers horizontal and vertical accuracy tolerances of 2cm.
  - Horizontal and vertical checks shall be conducted at the start and end of each day to confirm position and tide or vertical control accuracies.
  - Horizontal checks will be conducted using existing or established control points set or verified relative to the project GPS network.
  - Vertical or tide checks will be conducted using vertical control points either existing or established points set or verified relative to the project GPS network. This check is conducted by measuring to the existing water level (from stated network control) and monitoring the tide level being calculated on the vessel's navigation computer. Adjustments are made to the antenna offset to dial-in the correct tide readings.
  - The GPS unit is also used to aid an inertial navigation sensor that provides vessel motion such as heave, pitch, and roll. The SBG model "Ekinox2 "E" unit can also be used to post-process vessel positioning and provide real-time inertial guidance during weak or poor GPS periods or near unsuitable GPS conditions, such as piers, bridges, or large ships.
  - To measure depths a fully digital dual frequency survey grade sounder will be used in conjunction with a 200kHz narrow beam (3°) transducer. The sounder records an interactive digital trace of the seafloor for archive and post-processing purposes.
  - The sounders draft and speed of sound are calibrated at the start and end of each survey day using standard bar-check calibration and sound velocity casts. The bar check is conducted using a flat plate or disc suspended by a graduated cable or chain incremented at five-foot intervals. The bar is then suspended below the sounder transducer for calibration. The bar check is conducted from a minimum depth of (5 feet) to a depth within five-feet of the maximum survey depth or a maximum of sixty-feet (60'). The sound velocity casts are conducted using a velocity probe (Castaway or similar) which records water continuity, temperature, and depth (CTD) throughout the water column.
  - The sound velocity profile of the water column is applied prior to data collection as needed or during post-processing.

- ***Offshore Data Collection***
  - The vessel operator shall navigate the vessel along the historic profile azimuth using "Hypack" data acquisition and navigation software.
  - Sounding data shall be collected continuously along the profile while recording depth, position, time, date, GPS quality, tide, and vessel position relative to the transect.
  - Offshore profiles shall extend from the nearshore limits of the survey vessel, ensuring a depth sufficient to establish continuity with the upland profile data and extend seaward to -32-foot (NAVD, 88) or one-mile whichever is further.
  - Digital sounder records (charts) are recorded simultaneously along with depths to a digital file (*.BIN) which is used for archive records, post-processing, and QA/QC purposes.

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- ***Data Review, Processing and Charting***
  - Upon completion of all field data collection both upland and offshore profile data are reviewed and processed to the project vertical datum, elevations in feet referenced to NAVD, 88. Each profile set (upland and offshore) shall be overlaid prior to merging to confirm vertical closure meets the requirements set forth in the Monitoring Standards.
  - Final merged data sets will be formatted to required Ascii XYZ and FDEP acceptable data formats.
  - The final XYZ data set shall be imported to a Computer Aided Design (CAD *.DWG) program for production of plan-view, profile, final digital and hard copy charts.

Final Deliverables Beach Profiles

- AutoCAD format files (*.dwg) showing data in plan and profile view.
- Digital Final Deliverable (PDF) electronically signed and sealed, 11" x 17" format, plan view and profile surveys.
- Surveyor Certification – Survey Report
- Field book copies in PDF format
- Survey report/monument control report
- QA/AC Report
- ASCII final XYZ data file
- FDEP acceptable formatted data files
- ASCII monument information file
- Digital photos of monument locations
- Metadata files
- Completed GIS Data Sheet

* *Deliverables shall be provided in electronically certified digital format and delivered via FTP or other electronic means.*

Cost: Annual / Post-Storm Monitoring

Onshore / Offshore Profiles

The cost for the above-described services shall be as follows:

• Task 1: R1 to R8 (8) Profiles	$ 5,575.00
• Task 3: R-13 to T-23 (11) Profiles	$ 7,665.00
• Task 4: T-24 to R-45 (22) Profiles	$15,330.00
• Task 5: R-61 to R-66, (6) Profiles	$ 4,180.00
• Task 7: R-134 to R-151, (18) Profiles	$12,540.00
• Task 8: T-152 to R-164, (13) Profiles	$ 9,060.00
Beach Profiles (78), Onshore / Offshore, lump sum fee:	**$54,350.00**

*See Appendix A: Cost Breakdown.

Cost: *Upland Wading Depth Half Monument Profiles*

The cost for upland / onshore profiles shall be as follows:

• Task 2: R1.5 to R-7.5 (7) ½ monument profiles	$ 4,095.00
• Task 6: R-61.5 to R-66.5, (6) ½ monument profiles	$ 3,550.00
Wading Depth Beach Profiles (13), Onshore, lump sum fee:	**$ 7,645.00**

*See Appendix A: Cost Breakdown.

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TERRAQUATIC
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Post-Storm Surveys - Contingency
Onshore / Offshore Profiles
The cost for the above-described services shall be as follows:

• Task 12: R1 to R8 (8) Profiles	$ 6,175.00
• Task 14: R-13 to T-23 (11) Profiles	$ 8,490.00
• Task 15: T-24 to R-45 (22) Profiles	$16,980.00
• Task 16: R-61 to R-66, (6) Profiles	$ 4,630.00
• Task 18: R-134 to R-151, (18) Profiles	$13,895.00
• Task 19: T-152 to R-164, (13) Profiles	$10,030.00
Beach Profiles (78), Onshore / Offshore, lump sum fee:	**$60,200.00**

*See Appendix A: Cost Breakdown.

Cost: *Upland Wading Depth Half Monument Profiles*
The cost for upland / onshore profiles shall be as follows:

• Task 13: R1.5 to R-7.5 (7) ½ monument profiles	$ 5,105.00
• Task 17: R-61.5 to R-66.5, (6) ½ monument profiles	$ 4,375.00
Wading Depth Beach Profiles (13), Onshore, lump sum fee:	**$ 9,480.00**

*See Appendix A: Cost Breakdown.

Ebb and Flood Shoal Bathymetric Surveys

- **Task 9:** ***Jupiter Inlet ebb-shoal survey***:
  - No 2024 Action Required, intentionally left blank.
- **Task 10:** ***South Lake Worth Inlet ebb-shoals survey***:
  - No 2024 Action Required, intentionally left blank.
- **Task 11**: ***South Lake Worth Inlet flood shoal survey***:
  - No 2024 Action Required, intentionally left blank.

We appreciate the opportunity to provide this proposal and look forward to the opportunity of performing this year's survey for Olsen Associates, Inc. & Palm Beach County.

Sincerely,
Terraquatic, Inc.

Joshua Lee, PSM
Terraquatic, Inc.

Terraquatic, Inc.
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Delray Beach, Florida 33444

TERRAQUATIC
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Appendix A: Cost Breakdown

2024 Annual Beach Profile Monitoring

Profiles R-1 to R-8, R-13 to T-23, R-24 to R-45, R-61 to R-66, R-134 to R-151, T-152 to R-164, 78-Profiles

Onshore / Offshore Profiles

Cost Breakdown:

Crew / Services	Estimated Hours	Regular Hourly Rate	Unit	Total Cost
2- Person GPS Crew	40	$175.00	Crew Hour	$7,000
3-Person GPS Crew	80	$230.00	Crew Hour	$18,400
3-Person Hydrographic Crew	48	$270.00	Crew Hour	$12,960
Computer / Processing CADD	64	$100.00	Per Hour	$6,400
Field Survey Manager / Planning	48	$95.00	Per Hour	$4,560
Project Manager	24	$150.00	Per Hour	$3,600
Professional Surveyor & Mapper	8.17	$175.00	Per Hour	$1,430
Total Cost:				**$54,350**

2024 Annual Beach Profile Monitoring

Half Monument Wading Depth Profile: R1 to R8 & R61 to R66 - 13- Profiles

Onshore Profiles

Cost Breakdown:

Crew / Services	Estimated Hours	Regular Hourly Rate	Unit	Total Cost
2- Person GPS Crew	0	$175.00	Crew Hour	$0.00
3-Person GPS Crew	24	$230.00	Crew Hour	$5,520.00
3-Person Hydrographic Crew	0	$270.00	Crew Hour	$0.00
Computer / Processing CADD	8	$100.00	Per Hour	$800.00
Field Survey Manager / Planning	4	$95.00	Per Hour	$380.00
Project Manager	4	$150.00	Per Hour	$600.00
Professional Surveyor & Mapper	1.97	$175.00	Per Hour	$345.00
Total Cost:				**$7,645.00**

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2024 Post-Storm Beach Profiles

Profiles R-1 to R-8, R-13 to T-23, R-24 to R-45, R-61 to R-66, R-134 to R-151, T-152 to R-164, 78-Profiles

Onshore / Offshore Profiles

Cost Breakdown:

Crew / Services	Estimated Hours	Regular Hourly Rate	Unit	Total Cost
2- Person GPS Crew	40	$175.00	Crew Hour	$7,000
3-Person GPS Crew	96	$230.00	Crew Hour	$22,080
3-Person Hydrographic Crew	56	$270.00	Crew Hour	$15,120
Computer / Processing CADD	64	$100.00	Per Hour	$6,400
Field Survey Manager / Planning	48	$95.00	Per Hour	$4,560
Project Manager	24	$150.00	Per Hour	$3,600
Professional Surveyor & Mapper	8.23	$175.00	Per Hour	$1,440
Total Cost:				**$60,200**

2024 Post-Storm Beach Profiles

Half Monument Wading Depth Profile: R1 to R8 & R61 to R66 - 13-Profiles

Onshore Profiles

Cost Breakdown:

Crew / Services	Estimated Hours	Regular Hourly Rate	Unit	Total Cost
2- Person GPS Crew	0	$175.00	Crew Hour	$0.00
3-Person GPS Crew	32	$230.00	Crew Hour	$7,360.00
3-Person Hydrographic Crew	0	$270.00	Crew Hour	$0.00
Computer / Processing CADD	8	$100.00	Per Hour	$800.00
Field Survey Manager / Planning	4	$95.00	Per Hour	$380.00
Project Manager	4	$150.00	Per Hour	$600.00
Professional Surveyor & Mapper	1.94	$175.00	Per Hour	$340.00
Total Cost:				**$9,480.00**

Exhibit D

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

Contract R2023-0090 dated January 24, 2023 for a period of two years, expires on January 23, 2025.
SBE Goal: 48.0% (28% SBE/White Male; 20% SBE/Woman)

Consultant Services Authorization summary:

CSA #	TOTAL/ SBE and/or MWBE AMOUNT	CSA DUE DATE	PROJECT DESCRIPTION	APPROVED BY/DATE
0090-01	47,130.28 44,853.00	12/31/2023	2023 Lake Worth Lagoon Seagrass Fixed Transect Monitoring	ERM 3/16/2023
0090-02	227,979.42 167,485.00	1/31/2024	2023 Regional Monitoring Surveys and Post-Storm Damage Assessment	BCC 5/16/2023
0090-03	43,889.84 42,089.00	12/31/2023	2023 Lake Worth Lagoon Seagrass Mapping	ERM 4/19/2023
0090-04	33,321.55 0.00	11/30/2023	NCCSPP Segment I - 1 Year Post-Construction Physical Monitoring Report	ERM 5/1/2023
0090-03A	124,767.98 122,082.00	12/31/2023	2023 Lake Worth Lagoon Seagrass Mapping	BCC 7/11/2023
0090-05	34,495.46 0.00	5/1/2024	NCCSPP Sand Search - Phase 1	ERM 8/18/2023
0090-06	5,845.67 5,072.00	12/31/2023	NCCSPP Segment 2 Legal Descriptions	ERM 11/9/2023
0090-07	195,326.24 131,675.00	1/31/2025	2024 Regional Monitoring Surveys and Post-Storm Damage Assessment	BCC

Total: 712,756.44
SBE-M/WBE: 513,256.00
SBE-M/WBE Participation: 72.0%
Report Date & Filename: 03/28/24 T:\eer\engser\Consultants\Olsen 2023-2025\[history_0090.xls]Sheet1