City of Jacksonville, Florida

Lenny Curry, Mayor

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ONE CITY. ONE JACKSONVILLE.

May 1, 2018

TO: Gregory W. Pease, Chairman
Professional Services Evaluation Committee

THRU: John P. Pappas, P.E.
Director

FROM: Tom Fallin, P. E.
Chief, Engineering and Construction Management Division

Robert Skalitzky, Chief
Natural and Marine Resources

SUBJECT: P-52-17 Professional Services for Dock Inspections and Designs
Contract # 8567-02 Amendment 2
RPWF165-06505---AFA017-01

Based on the assessment of the current condition of the damages caused by Hurricane Matthew for the Northbank Riverwalk Floating Dock facility, Taylor Engineering, Inc. is to provide final engineering design and permitting to construct replacement floating docks within the existing docks' footprint. Negotiations with the consultant for these services have resulted in the attached Scope of Services, Exhibit E and Fee Summary, Exhibit F. The City's JSEB program is not applicable to this project.

Accordingly, this is to recommend that Contract # 8567-02, originally executed November 14, 2017, between the City of Jacksonville and Taylor Engineering, Inc. for Professional Services for Dock Inspections and Designs, be amended to incorporate the attached Scope of Services identified as Exhibit "E" and Fee Summary identified as Exhibit "F", to increase the lump sum amount for Dock Inspections and Design by $102,175.46 to a new total of $316,716.66 and to add new not to exceed limits for Surveying in the amount of $26,300.00 and Geotechnical in the amount of $38,700.00, thereby increasing the maximum indebtedness to the City by $167,175.46 to a new maximum of $381,716.66, with all other terms and conditions of the Agreement remaining unchanged.

TF/lw

Attachment: Exhibits E & F

cc: Lori West, Contract Specialist

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EXHIBIT E

Scope of Work
For
City of Jacksonville
Northbank Riverwalk
Engineering and Permitting Services

INTRODUCTION

In 2016, Hurricane Matthew brought strong winds and coastal conditions that severely damaged the floating docks at the Northbank Riverwalk facility in the City of Jacksonville (COJ). While portions of the dock are still in use, based on an inspection completed by Taylor Engineering, the dock requires replacement. Through a previous qualification-based selection process, the COJ has chosen Taylor Engineering, Inc. (TAYLOR) to provide all professional services necessary to perform inspections; prepare condition reports, including recommendations for repair and/or replacement; prepare final design and bid documents; and provide post design construction phase support to repair or replace these facilities. As a continuing phase of this work, the COJ has requested TAYLOR provide this proposal for engineering and permitting services to replace the floating docks at the Northbank Riverwalk facility.

This scope of work entails providing final engineering design and permitting to construct replacement floating docks within the existing docks' footprint. As part of this project, Taylor Engineering will investigate the future flood/storm damage mitigation strategy of adjusting anchor pile locations, sizes, and heights to improve the structure's resiliency. Therefore, this scope of work assumes the entire existing floating docks and guide piles will be demolished, and no existing features will be reused.

<u>Assumptions</u>

- The project does not include shoreline armoring or another shoreline treatment.
- The replacement floating docks will remain within (or only minimally outside of) the existing docks footprint and have the same, or fewer, amenities as previously existed.
- Because of the project location, water depth, salinity, and water quality conditions, no eelgrass or other submersed vegetation will occur within the project location. The only environmental fieldwork necessary is a short visit to verify site conditions for permit application purposes.
- The dock is still functional, so qualifies for an exemption from State of Florida environmental permitting.
- The last state permit for maintenance and improvements to the floating docks authorized use of SSL under "Consent of Use". Therefore, no easement survey or easement request is required as part of the permit application.
- The project qualifies for a Nationwide Permit (NWP) 3 (Maintenance).
- The COJ will pay all permit fees.
- The COJ will be the permit applicant. TAYLOR will serve as the Engineer of Record and Agent for the permit applications.
- TAYLOR does not guarantee, warranty, or otherwise ensure that the agencies will authorize the exemption and Nationwide Permit requested by COJ.

If any of the above assumptions prove incorrect, TAYLOR will consult with COJ and, as necessary or appropriate, modify this scope of services and fee.

SCOPE OF WORK

TASK 1 – DATA COLLECTION

Through this task, TAYLOR and its subcontractors will conduct field investigations and collect necessary data to support engineering design and permitting for a replacement the floating docks at the Northbank Riverwalk facility in Jacksonville, Florida. For each of the subtasks below, TAYLOR will coordinate field activities with COJ such that the work does not interfere with any other activities.

Task 1.1 – Topographic and Hydrographic Survey

TAYLOR's subconsultant — ARC Surveying and Mapping, Inc. (ARC) — will complete topographic and hydrographic survey of the site. The survey will include:

- Existing features survey (sidewalks, pavement edges, electric poles, culverts, manholes, drainage inlets, etc.) within 5 ft upland of bulkhead
- Bathymetric survey within 100 ft of floating docks footprint
- Low bridge clearance
- Mean High Water (MHW) line identification
- Existing conditions/ structure survey of the floating docks and associated features

If it becomes necessary, this scope of work also includes the surveyor's effort to:

1. Develop a property boundary survey with riparian lines
2. Research the existing submerged land lease or easement survey

Task 1.2 – Geotechnical Exploration

TAYLOR subconsultant — ECS Florida, LLC (ECS) — will conduct geotechnical exploration at the site. The objective of the geotechnical exploration is to provide site and subsurface information to evaluate the subsurface conditions at the site for the proposed construction. The team will conduct the field investigations summarized by the table below.

Location	Number of Borings	Depth of Borings Below Ground Surface
Water side borings adjacent to the floating docks[1]	5 SPT[2]	60-70 ft (below river mudline)

[1] Proposed Locations: a) Three borings riverward of Floating Dock 1 b) One boring riverward of Floating Dock 2, c) One boring riverward of Floating Dock 3
[2] Standard Penetration Test

Notably, the geotechnical investigation includes a contingency of obtaining 8 -ft of rock core samples at three locations (24-ft total) in the event that bedrock is encountered during the investigation.

ECS will perform laboratory classification and index property tests on selected soil samples obtained from the exploration.

A geotechnical engineer, licensed in the State of Florida, will direct the geotechnical exploration and provide an engineering evaluation of the site and subsurface conditions with respect to the planned construction and imposed loading conditions. The results of the exploration and engineering evaluation will then be documented in a deliverable report containing the following:

1. A brief discussion of the understanding of the planned construction and imposed loading conditions.
2. A presentation of the field and laboratory test procedures used and the data obtained.
3. A presentation of the existing on-site conditions, such as topography, surface vegetation, etc. as they relate to the planned construction.
4. A presentation of the encountered subsurface conditions, including subsurface profiles and measured groundwater levels, estimated seasonal high groundwater levels, and estimated geotechnical engineering properties (as necessary).
5. A geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned construction.
6. Geotechnical design recommendations for foundation design parameters, including estimate of the performance of recommended pile foundation systems.
7. Installation recommendations for piles.

Task 1.3 Environmental Fieldwork and Desktop Assessments

<u>Fieldwork</u>

One TAYLOR junior environmental scientist will conduct a short field visit and photograph conditions; the findings will be included in the permit application to provide verification of the expected natural resource conditions.

<u>Desktop Assessments</u>

The Florida Verification of Exemption Permit Application and the Federal NWP 3 permit applications (see Task 3 below) require identification of any natural resources present within the work footprint, and avoidance and minimization, and mitigation for unavoidable impacts. TAYLOR does not expect vegetation to occur at the site, and we expect only attached invertebrates on the structures and adjacent bulkhead. However, the docks occur in listed species habitat (particularly manatee), marine mammal habitat (particularly dolphins), essential fish habitat (EFH), and within a migratory fish community. The permit application requires that each of these habitats be described, any impacts identified, and mitigations (if needed) described to detail avoidance, minimization, and any mitigation the project will include. An alternatives analysis for the project must be developed for the federal application. TAYLOR will develop the necessary resource summaries for each agency based on the permit application guidance and discussions with the agency staffs.

TASK 2 – CONCEPTUAL DESIGN (30%-Complete)

Task 2.1 – Coastal Conditions Analysis

TAYLOR will evaluate the historical and FEMA storm data for the area near the project site and modify and apply a previously developed two-dimensional model to determine water levels and current speeds at the site for the desired return period storms. TAYLOR will determine wave heights at the site from FEMA wave model results and compare these to fetch-limited model wave heights based on ASCE 7-16 wind speeds. TAYLOR will also compare the coastal conditions determined in this Task with available data from Hurricanes Matthew and Irma. TAYLOR will document tide and storm water levels, wind speeds, wave heights and wave periods, and recommended dock pile elevation in a coastal conditions report.

TAYLOR will apply these conditions to estimate the design hydraulic loads on the floating docks and supports and document the results. Applying this information, TAYLOR will recommend a new pile size and length as a FEMA Hazard Mitigation strategy. Additionally, this coastal condition analysis will provide input for the floating dock performance specification/requirements.

Task 2.2 – Conceptual Design Engineering

During this task, TAYLOR will apply the data collected in Task 1 and results from Task 2.1 to complete an assessment to evaluate alternative pile configurations that will avoid conflict with existing piles and may mitigate future storm damage. Also, TAYLOR will analyze potential alternative material options for the floating dock modules.

TASK 3 – PRELIMINARY DESIGN (60%-Complete)

Through this task, TAYLOR will apply the data collected in Task 1 and Task 2 to complete preliminary engineering design for the replacement floating docks.

Task 3.1 – Preliminary Design Engineering

Based on previously collected data and evaluations, TAYLOR will develop a preliminary structural design for the replacement floating docks within the current footprint. Preliminary engineering will consider upland site conditions, geotechnical conditions, and anticipated coastal conditions. TAYLOR will work to identify a constructible, cost-effective, and resilient structural alternatives for the replacement of the floating docks.

The task deliverable will include preliminary drawings; these drawings will depict plan arrangement, typical cross-sections, anticipated pile requirements, and estimated pile embedment depths, and draft floating dock performance specifications. The designer will also provide an updated opinion of probable costs based on 60%-complete level of design.

Once the preliminary engineering design is complete, TAYLOR will coordinate with COJ to schedule a meeting to review the preliminary design and receive comments. TAYLOR will make one revision to the preliminary design to incorporate those comments received from COJ.

TASK 4 – ENVIRONMENTAL PERMITTING SUPPORT

TAYLOR will assist the COJ in seeking necessary state and federal environmental permit authorizations for the proposed reconstruction of the floating dock replacements.

Task 4.1 – Preliminary Draft Permit Applications

Based on Chapter 62-330.051(5)d F.A.C. Exempt Activities, TAYLOR will file for verification of an exemption from the state environmental permitting process, and an application to the USACE for a Nationwide Permit 3 - Maintenance. Note that the USACE Jacksonville District has recently redefined their environmental resources permit (404/401b) application process, completely separating it from the state process for environmental resource permit authorizations. As soon as the COJ approves the preliminary design (Task 3), TAYLOR will develop draft permit application packages for FDEP and USACE. These draft packages, including the preliminary design drawing, will provide the basis for the preapplication meetings.

Task 4.2 – Preapplication Meeting

As soon as COJ approves a preliminary design, TAYLOR will work with the COJ to coordinate and facilitate a joint preapplication meeting with FDEP and USACE or a meeting with each agency, as requested by the agencies, to present and discuss the proposed project with the state and federal lead permitting agencies. A two to three-week lead time for the meeting date may be expected. TAYLOR will discuss a joint meeting with both agencies. However, this scope of work's budget includes two meetings in case this is not possible, or an agency prefers a separate meeting. In preparation for the meeting, TAYLOR will prepare and submit a project description package to the agencies one to two weeks prior to the meeting. The package, to be used for both meetings, is a standard agency request to support their meeting preparations. A teleconference audio link will be offered to anyone requesting that alternative. For COJ and agency review, TAYLOR will submit a meeting summary of each meeting. The meeting summary(ies) will focus on agency recommendations for the application contents.

Task 4.3 – Permit Application Package Completion and Submittal

TAYLOR will modify the design and permit application packages based on input received during the preapplication meetings and submit the revised packages for COJ approval. After making any final changes to the application packages, TAYLOR will submit the required permit application packages to FDEP and USACE.

Task 4.4 – Response to Requests for Additional Information

Due to the relatively straightforward regulatory nature of the project and the minimal environmental impacts that the project may incur, TAYLOR expects to and has budgeted for responses to one request for additional information (RAI) from the FDEP. The USACE review process includes several steps: completion review, public noticing, response to public comments, and NEPA (National Environmental Policy Act) coordination. Under NEPA, the USACE must coordinate with other federal agencies – for this project likely the NMFS and possibly the USFWS. This scope of work includes responses to one RAI letter as part of the USACE application completion review, responses to public comments, and one response effort for questions and comments provided by sister federal agencies as part of NEPA coordination. In total, TAYLOR has budgeted $6,596.00 for all RAI responses. If agency request requires efforts expected to require a level of effort beyond this limit, TAYLOR will inform COJ and provide a proposal for the required

additional services.

TASK 5 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

Taylor Engineering will develop the final design for the floating dock installation. The design will describe the locations, requirements, and parameters necessary to construct the proposed floating dock systems. During the design process, Taylor Engineering will solicit input from multiple floating dock manufacturers to value engineer the floating dock systems based on current floating dock manufacturing practices. Because COJ will select a manufacturer through competitive bid process, Taylor Engineering will author an engineering performance specification to detail the design components in terms of project-specific requirements. The specification will not limit selection to specific manufacturers, materials, processes, parts, etc. The performance specification will provide sufficient engineering design detail to ensure the owner receives a satisfactory product without limiting the bid selection process to a specific manufacturer or proprietary floating dock system. Because floating dock system design details and engineering parameters vary from manufacturer to manufacturer, the performance specification will require the selected manufacturer to provide final product-specific engineering documents, signed and sealed by a professional engineer licensed in Florida, during the construction process.

Because coastal conditions play a significant role in floating dock performance, the engineering performance specification incorporate the coastal conditions analysis completed in Task 2.1.

In parallel with this final design effort, TAYLOR will incorporate the comments from the regulatory agencies to prepare the 90%-complete design submittal. TAYLOR will deliver the 90%-complete submittal in electronic (PDF) format. The 90%-complete design package will include updated design calculations, construction drawings, project technical specifications, and opinion of probable cost.

TAYLOR will coordinate with COJ to incorporate the project technical specifications within COJ's standard "front-end" documents (bid documents, contract agreements, general and specific condition, forms, etc.). However, COJ will retain the right and responsibility to develop, review, and finalize all project manual components beyond those technical specifications prepared by TAYLOR.

TAYLOR will address all comments received from COJ and finalize project documents. TAYLOR will develop final signed and sealed construction drawings and technical/performance specifications. TAYLOR will prepare and provide a proposed schedule of bid items and a final updated opinion of probable cost.

DELIVERABLES

TASK 1 – DATA COLLECTION

- Signed and sealed topographic and hydrographic survey
- Signed and sealed geotechnical exploration report
- Summary of environmental fieldwork and desktop analysis

TASK 2 – CONCEPTUAL DESIGN (30%-Complete)

- Coastal Conditions Report
- 30%-complete design package (conceptual drawings, draft dock performance specifications, and opinion of probable cost)

TASK 3 – PRELIMINARY DESIGN (60%-Complete)

- 60%-complete design package (drawings, technical/performance specifications, and opinion of probable cost)

TASK 4 – ENVIRONMENTAL PERMITTING SUPPORT

- Preliminary draft permit application
- Preapplication meeting notes
- Final permit application packages (FDEP and USACE)
- RAI Responses

TASK 5 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

- 90%-complete design package (drawings, technical/performance specifications, calculations, and permits)
- Signed and sealed construction drawings and technical specifications
- Final opinion of probable construction cost
- Schedule of bid items

SCHEDULE

TAYLOR intends to complete the project on the timeline outlined below.

No.	Task	Months from Start Date											
		1	2	3	4	5	6	7	8	9	10	11	12
		Task Timelines											
1	DATA COLLECTION												
2	CONCEPTUAL DESIGN												
3	PRELIMINARY DESIGN												
4	PERMITTING SUPPORT*												
5	FINAL DRAWINGS AND SPECIFICATIONS												

* Note – Permitting timeline is estimated. TAYLOR has no control over agency review timelines.

EXCLUSIONS

The following tasks are excluded from this Scope of Work unless later included through issuance of an amendment or additional authorization for work:

- Boundary survey, or additional topographic or bathymetric surveying services beyond those included within this Scope of Work;

- Geotechnical investigations beyond those described herein;
- Additional natural resource, wetland surveys, or existing environmental condition assessments (e.g., water quality or sediment quality assessments, etc.) beyond those described herein;
- Numerical wave transformation, hydrographic, or sediment transport/morphologic modeling to assess hydrodynamic flushing, wave/structure interactions, long-shore and cross-shore sediment transport, or the potential impacts to adjacent shorelines or property;
- Upland planning, site layout, or design;
- Development of multiple conceptual structure alternatives beyond those described above;
- Cost comparison for multiple project alternatives;
- Bidding or construction phase services.

FEES

TAYLOR will complete the work on a fixed fee basis for task-by-task fees as summarized in the table below. Exhibit B outlines these fees in the Contract Fee Summary Format, Engineering Division, City of Jacksonville.

Task	Fee
TASK 1 – DATA COLLECTION[1,2,3]	$72,754.91
TASK 2 – CONCEPTUAL DESIGN (30%-Complete)	$25,163.34
TASK 3 – PRELIMINARY DESIGN (60%-Complete)	$22,900.61
TASK 4 – ENVIRONMENTAL PERMITTING SUPPORT	$25,558.72
TASK 5 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS	$20,797.88
TOTAL	**$167,175.46**

[1] Arc Surveying Base ($24,800.00)
[2] Arc Surveying Option Tasks ($1500.00)
[3] ECS Geotechnical Collection ($38,700.00)

EXHIBIT F

Fee

Summary

EXHIBIT F

CONTRACT FEE SUMMARY FOR ENGINEERING DIVISION
CITY OF JACKSONVILLE, FLORIDA

PART I - GENERAL	
1. Project COJ Northbank Riverwalk Design Engineering	2. Proposal Number P-52-17 8567-02
3. Name of Consultant Taylor Engineering, Inc.	4. Date of Proposal 03/28/18

PART II - LABOR RELATED COSTS				
5. Direct Labor	Hourly Rate	Estimated Hours	Estimated Cost	TOTAL
Principal Engineer	$67.87	34	$2,307.58	
Senior Professional	$55.41	207	$11,469.87	
Staff Professional	$31.48	388	$12,214.24	
Sr. CAD Manager	$45.90	152	$6,976.80	
Program Manger	$60.82	12	$729.84	
Admin	$19.67	4	$78.68	
TOTAL DIRECT LABOR		797	Hours	$33,777.01
6. Overhead (Combined Fringe Benefit & Administrative)			175%	$59,109.77
7. SUBTOTAL: Labor + Overhead (Items 5 & 6)				$92,886.78
8. PROFIT: Labor Related Costs (Item 7)			x 10%	$9,288.68

PART III - OTHER COSTS		
9. Miscellaneous Direct Costs		
	$	
	$	
	$	
	$	
MISCELLANEOUS DIRECT COSTS SUB-TOTAL		$0.00
10. SUBCONTRACTS (Lump Sum)		
	$	
	$	
SUB-CONTRACT SUB-TOTAL		$0.00
TOTAL LUMP SUM AMOUNT (Items 5, 6, 8, 9 and 10)		$102,175.46
11. REIMBURSABLE COSTS (Limiting Amount)		
ARC Surveying (Base)	$ 24,800.00	
ARC Surveying (Option)	$ 1,500.00	
ECS Geotechnical	$ 38,700.00	
SUB-TOTAL REIMBURSABLES		$65,000.00

PART IV - SUMMARY	
TOTAL AMOUNT OF AMENDMENT #6 (Lump Sum Plus Reimbursables) (Items 5, 6, 8, 9, 10 and 11)	**$167,175.46**
12. PRIOR CONTRACT AMOUNT (Through Amendment # 1)	$214,541.20
AMENDED AMOUNT OF CONTRACT	**$381,716.66**

EXHIBIT G