CONTRACT, LEASE, AGREEMENT CONTROL FORM

Date: 01/20/2021

Contract/Lease Control #: C18-2727-TDD

Procurement#: RFQ TDD 01-18

Contract/Lease Type: CONTRACT

Award To/Lessee: TAYLOR ENGINEERING, INC.

Owner/Lessor: OKALOOSA COUNTY

Effective Date: 09/07/2018

Expiration Date: 10/31/2021

Description of: EAST PASS INLET SEDIMENT STUDY

Department: TDD

Department Monitor: ADAMS

Monitor's Telephone #: 850-609-3897

Monitor's FAX # or E-mail: JADAMS@MYOKALOOSA.COM

Closed:

Cc: BCC RECORDS

CONTRACT#: C18-2727-TDD
TAYLOR ENGINEERING, INC.
EAST PASS INLET SEDIMENT STUDY
EXPIRES: 12/31/2021

CHANGE ORDER FORM

Date: 12/29/2020 **Contract No.:** C18-2727-TDD **Change Order No.:** 3

Owner: OKALOOSA COUNTY BOARD OF COUNTY COMMISSIONERS

Contractor: Taylor Engineering, Inc.

Original Contract Price:	
Net change by previously authorized Change Orders:	
Present Contract Price:	
This Change Order will (add/deduct):	
New Contract Price:	

DESCRIPTION	DATE OR NUMBER OF DAYS
Original Contract Time:	
Original Substantial Completion Date:	10/31/2019
Net change by previously authorized Change Orders:	12/31/2020
This Change Order will (add/deduct):	
New Contract Time:	
New Substantial Completion Date:	12/31/2021

Charlotte Dunworth

APPROVALS

REQUESTED BY: Jennifer Adams Digitally signed by Jennifer Adams Date: 2021.01.08 09:47:34 -06'00' DATE: _____

PROJECT ENGINEER: _____ DATE: _____

CONTRACTOR: Jonathan Armbruster Digitally signed by Jonathan Armbruster Date: 2021.01.08 09:00:51 -05'00' DATE: _____

OWNER: _____ DATE: JAN 19 2021

Carolyn N. Ketchel, Chairman

This Change Order is an amendment to the Contract/Agreement between Contractor and the Owner, and all other contract provisions shall remain in full force and effect unless specifically amended in writing, signed by both parties.

SEAL
BOARD OF COUNTY COMMISSIONERS OF OKALOOSA COUNTY, FLORIDA

CONTRACT, LEASE, AGREEMENT CONTROL FORM

Date: 06/17/2020

Contract/Lease Control #: C18-2727-TDD

Procurement#: RFQ TDD 01-18

Contract/Lease Type: CONTRACT

Award To/Lessee: TAYLOR ENGINEERING, INC.

Owner/Lessor: OKALOOSA COUNTY

Effective Date: 09/07/2018

Expiration Date: 12/31/2020

Description of: EAST PASS INLET SEDIMENT STUDY

Department: TDD

Department Monitor: ADAMS

Monitor's Telephone #: 850-609-3897

Monitor's FAX # or E-mail: JADAMS@MYOKALOOSA.COM

Closed:

Cc: BCC RECORDS

CONTRACT#: C18-2727-TDD
TAYLOR ENGINEERING, INC.
EAST PASS INLET SEDIMENT STUDY
EXPIRES: 12/30/2020

CHANGE ORDER FORM

Date: 6/3/2020 **Contract No.:** C18-2727-TDD **Change Order No.:** 2

Owner: OKALOOSA COUNTY BOARD OF COUNTY COMMISSIONERS

Contractor: Taylor Engineering, Inc.

CHANGE TO CONTRACT PRICE	
DESCRIPTION	**AMOUNT**
Original Contract Price:	
Net change by previously authorized Change Orders:	
Present Contract Price:	
This Change Order will (add/deduct):	
New Contract Price:	

CHANGE TO CONTRACT TIME	
DESCRIPTION	**DATE or NUMBER OF DAYS**
Original Contract Time:	
Original Substantial Completion Date:	10/31/2019
Net change by previously authorized Change Orders:	3/31/2020
This Change Order will (add/deduct):	
New Contract Time:	
New Substantial Completion Date:	12/31/2020

Charlotte Dunworth Digitally signed by Charlotte Dunworth Date: 2020.06.04 09:33:19 -05'00'

REQUESTED BY: Jennifer Adams Digitally signed by Jennifer Adams Date: 2020.06.08 07:07:00 -05'00' DATE: APPROVALS

PROJECT ENGINEER: _____ DATE: _____

CONTRACTOR: Jonathan Armbruster Digitally signed by Jonathan Armbruster Date: 2020.06.05 17:27:10 -04'00' DATE: 6/3/2020

OWNER: _____ DATE: JUN 16 2020

Robert A. "Trey" Goodwin III, Chairman

SEAL OF OKALOOSA COUNTY, FLORIDA

This Change Order is an amendment to the Contract Agreement between Contractor and the Owner, and all other contract provisions shall remain in full force and effect unless specifically amended in writing, signed by both parties.

CONTRACT, LEASE, AGREEMENT CONTROL FORM

Date: 01/09/2020

Contract/Lease Control #: C18-2727-TDD

Procurement#: RFQ TDD 1-18

Contract/Lease Type: CONTRACT

Award To/Lessee: TAYLOR ENGINEERING, INC.

Owner/Lessor: OKALOOSA COUNTY

Effective Date: 09/07/2018

Expiration Date: 03/31/2020

Description of EAST PASS INLET SEDIMENT STUDY

Department: TDD

Department Monitor: ADAMS

Monitor's Telephone #: 850-609-3897

Monitor's FAX # or E-mail: JADAMS@MYOKALOOSA.COM

Closed:

Cc: BCC RECORDS

CHANGE ORDER FORM

Date: 12/12/19 **Contract No.:** C18-2727-TDD **Change Order No.:** 1

Owner: OKALOOSA COUNTY BOARD OF COUNTY COMMISSIONERS

Contractor: Taylor Engineering, Inc.

CHANGE TO CONTRACT PRICE	
DESCRIPTION	**AMOUNT**
Original Contract Price:	
Net change by previously authorized Change Orders:	
Present Contract Price:	
This Change Order will (add/deduct):	
New Contract Price:	

CHANGE TO CONTRACT TIME	
DESCRIPTION	**DATE or NUMBER OF DAYS**
Original Contract Time:	
Original Substantial Completion Date:	October 31, 2019
Net change by previously authorized Change Orders:	
This Change Order will (add/deduct):	
New Contract Time:	
New Substantial Completion Date:	March 31, 2020

APPROVALS

REQUESTED BY: _____ DATE: 12/17/19

PROJECT ENGINEER: _____ DATE: _____

CONTRACTOR: Angela L Schadel FOR DATE: December 13, 2019

OWNER: JAMES N. MARINO SEAL DATE: JAN 0 7 2020

Robert A. "Trey" Goodwin III, Chairman

This Change Order is an amendment to the Contract/Agreement between Contractor and the Owner, and all other contract provisions shall remain in full force and effect unless specifically amended in writing, signed by both parties.

CONTRACT#: C18-2727-TDD
TAYLOR ENGINEERING, INC.
EAST PASS INLET SEDIMENT STUDY
EXPIRES: 03/31/2020

CONTRACT, LEASE, AGREEMENT CONTROL FORM

Date: 09-10-2018

Contract/Lease Control #: C18-2727-TDD

Procurement#: RFQ TDD 01-18

Contract/Lease Type: CONTRACT

Award To/Lessee: TAYLOR ENGINEERING, INC.

Owner/Lessor: OKALOOSA COUNTY

Effective Date: 09/07/2018

Expiration Date: 10/31/2019

Description of Contract/Lease: EAST PASS INLET SEDIMENT STUDY

Department: TDD

Department Monitor: ADAMS

Monitor's Telephone #: 850-609-3897

Monitor's FAX # or E-mail: JADAMS@MYOKALOOSA.COM

Closed:

Cc: Finance Department Contracts & Grants Office

NOTICE TO PROCEED

TO: TAYLOR ENGINEERING, INC.
4300 Legendary Dr., Suite C246
Destin, FL 32541

CONTRACT#: C18-2727-TDD
TAYLOR ENGINEERNG, INC.
EAST PASS INLET SEDIMENT TUDY
EXPIRES: 10/31/2019

PROJECT: East Pass Inlet Supplemental Sediment Excavation Study

DESCRIPTION: RFQ TDD 01-18, Contract C18-2727-TDD

You are hereby notified you are able to commence WORK in accordance with the Agreement dated September 7, 2018. The Contract will continue until all tasks and deliverables have been completed. All tasks and deliverables must be completed no later than October 31, 2019.

You are required to return an acknowledged copy of this **NOTICE TO PROCEED** to the **OWNER**: Okaloosa County Purchasing, Attention: DeRita Mason, 5479A Old Bethel Road, Crestview, FL 32536, within 15 days from the date this **NOTICE TO PROCEED** is fully executed.

Dated this 14 day of September, 2018

OKALOOSA COUNTY BOARD OF COUNTY COMMISSIONERS
OWNER

BY: _____
Stephanie Herrick, OMB Director

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged.

Date of Commencement of Work: 9-17-18.

Taylor Engineering
Company Name

This the 12 day of September, 2018

Jonathan Armbruster
Signature

By: JONATHAN ARMBRUSTER
Type or Print Name/Title

A NEW WAY TO SIGN IN - If you already have a SAM account, use your **SAM email** for login.gov.

Log In

Login.gov FAQs

ALERT - June 11, 2018: Entities registering in SAM must submit a notarized letter appointing their authorized Entity Administrator. Read our updated FAQs to learn more about changes to the notarized letter review process and other system improvements.

Entity Dashboard

- Entity Overview
- Entity Registration
  - Core Data
  - Assertions
  - Reps & Certs
  - POCs
- Exclusions
  - Active Exclusions
  - Inactive Exclusions
  - Excluded Family Members

RETURN TO SEARCH

Taylor Engineering, Inc.

DUNS: 181561168 CAGE Code: 0L8G0

Status: Active

10199 Southside Blvd Ste 310
Jacksonville, FL, 32256-0758 ,
UNITED STATES

Expiration Date: 07/24/2019

Purpose of Registration: All Awards

Entity Overview

Entity Registration Summary

Name: Taylor Engineering, Inc.
Business Type: Business or Organization
Last Updated By: Laura Rosenbaum
Registration Status: Active
Activation Date: 07/26/2018
Expiration Date: 07/24/2019

Exclusion Summary

Active Exclusion Records? No

PROCUREMENT/CONTRACT/LEASE
INTERNAL COORDINATION SHEET

Procurement/Contract/Lease Number: TBD RFQ 01-18 Tracking Number: 3045-18

Procurement/Contractor/Lessee Name: Taylor Engineering Grant Funded: YES X NO ___

Purpose: Cool Pass Inlet Study

Date/Term: 10-31-19

Amount: $465,570.50

Department: DPD

Dept. Monitor Name: Adams

1. [X] GREATER THAN $100,000
2. [ ] GREATER THAN $50,000
3. [ ] $50,000 OR LESS

Purchasing Review

Procurement or Contract/Lease requirements are met:

Purchasing Manager or designee Jeff Hyde, DeRita Mason Date: 7-10-18

2CFR Compliance Review (if required)

FDEP - State not federally funded

Approved as written: Meets: 2CFR 200 Record Ret = 5 yrs per Grant agreement

Grants Coordinator Danielle Garcia Date: 7.20.18

Risk Management Review

Approved ~~as written~~: With Ins. Requirements changed to ours.

Risk Manager or designee Laura Porter or Krystal King Date: 7-12-18

County Attorney Review

Approved as written: see email attached

County Attorney Gregory T. Stewart, Lynn Hoshihara, Kerry Parsons or Designee Date: 7/14/18

Following Okaloosa County approval:

Clerk Finance

Document has been received:

Finance Manager or designee Date: ___

DeRita Mason

From: Parsons, Kerry <KParsons@ngn-tally.com>
Sent: Tuesday, August 07, 2018 9:15 AM
To: DeRita Mason
Cc: Lynn Hoshihara
Subject: RE: Taylor Contract East Pass

DeRita remove section 15.2 and this is approved for legal purposes.

From: DeRita Mason [mailto:dmason@myokaloosa.com]
Sent: Tuesday, August 07, 2018 8:22 AM
To: Parsons, Kerry
Cc: Lynn Hoshihara
Subject: FW: Taylor Contract East Pass

Kerry, here is the message we were talking about last night. I have changed or addressed items 1-3 but needed your input on item 4. I have also attached the updated and final contract after my changes.

Thank you,

DeRita

From: Matthew Trammell [mailto:mtrammell@taylorengineering.com]
Sent: Wednesday, July 25, 2018 4:35 PM
To: DeRita Mason <dmason@myokaloosa.com>; Jim Trifilio <jtrifilio@myokaloosa.com>
Cc: Jon Armbruster <jarmbruster@taylorengineering.com>; Jim Marino <jmarino@taylorengineering.com>
Subject: RE: Taylor Contract East Pass

DeRita,

Attached is the signed contract. After further discussions with Jim Trifilio, it sounds like this item may be pushed to the second meeting in August. If this is the case, please consider the following contract revisions...

1. You have our old Jacksonville address. Please use the following: 10199 Southside Blvd., Suite 310, Jacksonville, FL 32256

DeRita Mason

From: Danielle Garcia
Sent: Monday, August 06, 2018 7:40 AM
To: DeRita Mason
Subject: RE: Draft construction contract with Bayou Mechanical, Inc. for VPS Chiller Replacement

Please add the Federal Special Provisions "Exhibit B" to the contract.

Kind regards,

Danielle Garcia
Grants Coordinator
Okaloosa County Purchasing Department
Tel: (850) 689-5960 | Fax: (850) 689-5058
5479A Old Bethel Road | Crestview, FL 32536

From: DeRita Mason
Sent: Friday, August 03, 2018 11:25 AM
To: Danielle Garcia <dgarcia@myokaloosa.com>
Subject: FW: Draft construction contract with Bayou Mechanical, Inc. for VPS Chiller Replacement

Please review for grant conditions. It was reviewed prior during the bidding process.

From: Collins, John, P.E. [mailto:jcollins@avconinc.com]
Sent: Friday, August 03, 2018 10:58 AM
To: DeRita Mason <dmason@myokaloosa.com>
Cc: Tracy Stage <tstage@myokaloosa.com>; Allyson Oury <aoury@myokaloosa.com>; Cheryl Barrow <cbarrow@myokaloosa.com>; Robert "Chad" Rogers <rrogers@myokaloosa.com>; Lewis, Virgil <vclewis@avconinc.com>
Subject: Draft construction contract with Bayou Mechanical, Inc. for VPS Chiller Replacement

DeRita,

DeRita Mason

From: Parsons, Kerry <KParsons@ngn-tally.com>
Sent: Saturday, July 14, 2018 10:51 AM
To: DeRita Mason
Cc: Lynn Hoshihara
Subject: RE: RFQ TDD 01-18 Taylor Engineering Contract

This is approved for legal purposes.

From: DeRita Mason [mailto:dmason@myokaloosa.com]
Sent: Tuesday, July 10, 2018 3:15 PM
To: Parsons, Kerry
Cc: Lynn Hoshihara
Subject: RFQ TDD 01-18 Taylor Engineering Contract

Please review and approve. Jim would like to take this before the TDC on July 24 and then we will take it to the August 7 meeting.

Thank you,

DeRita

DeRita Mason
Contracts and Lease Coordinator
Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, Florida 32536
(850) 689-5960
dmason@myokaloosa.com

Board of County Commissioners
Purchasing Department

State of Florida

Date: February 16, 2018

OKALOOSA COUNTY PURCHASING DEPARTMENT
NOTICE OF INTENT TO AWARD
RFQ TDD 01-18
East Pass Inlet Supplemental Sediment Excavation Study

The Okaloosa County Tourist Development Department would like to thank all businesses which submitted responses to our East Pass Inlet Supplemental Sediment Excavation Study. (RFQ TDD 01-18).

After in-depth examination of all submittals in accordance with the County's Purchasing Manual, the County announces its intent to award the contract/purchase order to the following:

Taylor Engineering, Inc.
4300 Legendary Dr., Suite C246
Destin, FL 32541

This Notice of Intent does NOT constitute the formation of a contract/purchase order between Okaloosa County and the apparent successful bidder/respondent. The County reserves the right to enter into negotiations with the successful bidder/respondent in order to finalize contract terms and conditions. No agreement is entered into between the County and any parties until a contract is approved and fully executed.

Any person/entity desiring to file a procurement protest must meet all the standards and criteria in accordance with Section 30 of the Okaloosa County Purchasing Manual. Failure to file a protest within the time prescribed in Section 30.02 of the Okaloosa County Purchasing Manual, shall constitute a waiver of protest proceedings.

Sincerely,

Greg Kisela
Purchasing Director

5479A Old Bethel Road, Crestview, FL 32536 Voice: (850) 689-5960 Fax: (850) 689-5970

CONTRACT FOR PROFESSIONAL CONSULTING SERVICES

This Contract is made and entered into this 7th day of September 2018, by and between OKALOOSA COUNTY, FLORIDA ("COUNTY"), a political subdivision of the State of Florida, located at 1250 N. Eglin Parkway, Shalimar, Florida 32579, and **Taylor Engineering, Inc.**, whose principal place of business is at 10199 Southside Blvd., Suite 310, Jacksonville, FL 32256 (the "Consultant"), whose Federal I.D. number is **59-2850478** in connection with Okaloosa County Request for Qualifications No. RFQ TDD 01-18 and the professional services set forth therein.

W I T N E S S E T H

WHEREAS, the County has pursued the professional services selection process contemplated under section 287.055, Florida Statutes; and

WHEREAS, Okaloosa County desires to obtain the professional consulting services of the Consultant concerning said services being more fully described in the exhibits attached to this Contract.

NOW, THEREFORE, in consideration of the mutual promises herein, the County and the Consultant agree as follows:

ARTICLE ONE
CONSULTANT'S RESPONSIBILITY

1.1. Consultant shall provide to County professional engineering consulting services for the duration of the Contract.

1.2. The Services required under this Contract to be performed by Consultant shall be those set forth in **Exhibit "A"** and shall be issued as a one-time Notice to Proceed. The basis of compensation to be paid Consultant by the County for Services is set forth in the scope of work attached to the Notice to Proceed. Work shall consist of providing a detailed study included within the scope of work

1.3. The Consultant agrees to obtain and maintain throughout the period of this Contract all such licenses as are required to do business in the State of Florida, including, but not limited to, all licenses required by the respective state boards, and other governmental agencies responsible for regulating and licensing the professional services to be provided and performed by the Consultant pursuant to this Contract.

1.4. The Consultant agrees that, when the services to be provided hereunder relate to a professional service which, under Florida Statutes, requires a license, certificate of authorization or other form of legal entitlement to practice such services, it shall employ and/or retain only qualified personnel to provide such services.

CONTRACT#: C18-2727-TDD
TAYLOR ENGINEERING, INC.
EAST PASS INLET SEDIMENT STUDY
EXPIRES: 10/31/2019

1.5. Consultant agrees that the Project Manager for the term of this Contract shall be:

Matthew Trammell

The Consultant agrees that the Project Manager shall devote whatever time is required to satisfactorily manage the services to be provided and performed by the Consultant hereunder. The person selected by the Consultant to serve as the Project Manager shall be subject to the prior approval and acceptance of the County, such approval or acceptance shall not be unreasonably withheld.

1.6. Consultant agrees, within fourteen (14) calendar days of receipt of a written request from the County, to promptly remove and replace from the project team the Project Manager, or any other personnel employed or retained by the Consultant, or any subconsultants or subcontractors or any personnel of any such subconsultants or subcontractors engaged by the Consultant to provide and perform services or work pursuant to the requirements of this Contract, whom the County shall request in writing to be removed, which request may be made by the County with or without cause.

1.7. The Consultant has represented to the County that it has expertise in the type of professional services that will be required for the Project. The Consultant agrees that all services to be provided by Consultant pursuant to this Contract shall be subject to the County's review and approval and shall be in accordance with the generally accepted standards of professional practice in the State of Florida, as well as in accordance with all published laws, statutes, ordinances, codes, rules, regulations and requirements of any governmental agencies which regulate or have jurisdiction over the Project or the services to be provided and performed by Consultant hereunder. In the event of any conflicts in these requirements, the Consultant shall notify the County of such conflict and utilize its best professional judgment to advise County regarding resolution of the conflict.

1.9. Evaluations of the County's adopted capital improvement budget, preliminary estimates of construction cost and detailed estimates of construction cost prepared by the Consultant represent the Consultant's best judgment as a design professional familiar with the construction industry. The Consultant cannot and does not guarantee that bids or negotiated prices will not vary from any estimate of construction cost or evaluation prepared or agreed to by the Consultant.

1.10 Consultant shall be responsible for obtaining a copy of the Grant Agreement, referenced in this Agreement as **Agreement #18OK1, East Pass Inlet Management Study**, from the County to ensure that the Consultant understands the Grant requirements fully. The Consultant agrees to abide by all terms and conditions stated within said Grant Agreement.

ARTICLE TWO
SERVICES OF CONSULTANT

2.1 As authorized or required by the County in the Notice to Proceed, and agreed to by Consultant, Consultant shall furnish or obtain from others Services of the types listed in Exhibit "A" These services will be paid for by the County as indicated in Article Five and Exhibit "B" and as confirmed in the Notice to Proceed.

ARTICLE THREE
COUNTY'S RESPONSIBILITIES

3.1. The County shall designate in writing a representative to act as County's representative with respect to the services to be rendered under this Contract (hereinafter referred to as the "County's Representative"). The County's Representative shall have County transmit instructions, receive information, interpret and define County's policies and decisions with respect to Consultant's services for the Project. However, the County's Representative is not authorized to issue any verbal or written orders or instructions to the Consultant that would have the effect, or be interpreted to have the effect, of modifying or changing in any way whatever:

a. The scope of services to be provided and performed by the Consultant hereunder;

b. The time the Consultant is obligated to commence and complete all such services; or

c. The amount of compensation the County is obligated or committed to pay the Consultant.

3.2. The County's Representative shall:

a. Review and make appropriate recommendations on all requests submitted by the Consultant for payment for services and work provided and performed in accordance with this Contract;

b. Provide all criteria and information requested by Consultant as to County's requirements, for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility and expandability, and any budgetary limitations;

c. Upon request from Consultant, assist Consultant by placing at Consultant's disposal all available information in the County's possession pertinent to the Project, including existing drawings, specifications, shop drawings, product literature, previous reports and any other data relative to the Project;

d. Provide notice to Consultant of any deficiencies or defects discovered by the County with respect to the services to be rendered by Consultant hereunder.

3.3 For the purposes of this Contract, the County's Representative shall be:

Jim Trifilio, Coastal Management Coordinator

ARTICLE FOUR
TIME

4.1. Services to be rendered by Consultant shall be commenced subsequent to the execution of the Notice to Proceed issued pursuant to this Contract, after receiving written Notice to Proceed from County for all or any designated portion of the Project and shall be performed and completed in accordance with the Project Schedule attached to the Notice to Proceed for the Project.

4.2. Should Consultant be obstructed or delayed in the prosecution or completion of its services as a result of unforeseeable causes beyond the control of Consultant, and not due to its own fault or neglect, including but not restricted to acts of God or of public enemy, acts of government or of the County, fires, floods, epidemics, quarantine regulations, strikes or lock-outs, then Consultant shall notify County in writing within five (5) working days after commencement of such delay, stating the cause or causes thereof, or be deemed to have waived any right which Consultant may have had to request a time extension.

4.3. No interruption, interference, inefficiency, suspension or delay in the commencement or progress of Consultant's services from any cause whatsoever, including those for which County may be responsible in whole or in part, shall relieve Consultant of its duty to perform or give rise to any right to damages or additional compensation from County. Consultant's sole remedy against County will be the right to seek an extension of time to its schedule. This paragraph shall expressly apply to claims for early completion, as well as claims based on late completion. Provided, however, if through no fault or neglect of the Consultant, the services to be provided hereunder have not been completed within the schedule identified in the Notice to Proceed, the Consultant's compensation shall be equitably adjusted, with respect to those services that have not yet been performed, to reflect the incremental increase in costs experienced by Consultant.

4.4. Should the Consultant fail to commence, provide, perform or complete any of the services to be provided hereunder in a timely and reasonable manner, in addition to any other rights or remedies available to the County hereunder, the County at its sole discretion and option may withhold any and all payments due and owing to the Consultant until such time as the Consultant resumes performance of its obligations hereunder in such a manner so as to reasonably establish to the County's satisfaction that the Consultant's performance is or will shortly be back on schedule.

ARTICLE FIVE
COMPENSATION

5.1. Compensation and the manner of payment of such compensation by the County for services rendered hereunder by Consultant shall be as prescribed in Exhibit B which are attached hereto and made a part hereof.

5.2. The total amount to be paid by the County under this Contract for all services and materials, including "out of pocket" expenses and any approved subcontracts, shall not exceed the amount set forth in the approved Notice to Proceed without prior approval of the County. The Consultant shall notify the County's Representative in writing when 90% of the "not to exceed amount" has been reached.

5.3. Invoices received by the County from the Consultant pursuant to this Contract will be reviewed and approved in writing by the County's Representative, who shall indicate whether services have been rendered in conformity with the Contract, and then sent to the County's Office of Management and Budget for processing payment. All invoices shall contain a detailed breakdown of the services provided for which payment is being requested. Invoices shall be paid within thirty (30) days following the County Representative's approval, who shall process all payments in accordance with the Florida Prompt Payment Act or advise Consultant in writing of reasons for not processing same. In addition to detailed invoices, upon request of the County's Representative, Consultant will provide County with detailed periodic Status Reports on the project.

5.4. "Out-of-pocket" expenses shall be reimbursed in accordance with Florida law. .All requests for payment of "out-of-pocket" expenses eligible for reimbursement under the terms of this Contract shall include copies of paid receipts, invoices, or other documentation acceptable to the County's Representative. Such documentation shall be sufficient to establish that the expense was actually incurred and necessary in the performance of the Scope of Work described in this Contract.

5.5. In order for both parties herein to close their books and records, the Consultant will clearly state "final invoice" on the Consultant's final/last billing to the County.. This final invoice shall also certify that all services provided by Consultant have been performed in accordance with the applicable Notice to Proceed and all charges and costs have been invoiced to the County. Because this account will thereupon be closed, any and other further charges not included on this final invoice are waived by the Consultant. Acceptance of final payment by Consultant shall constitute a waiver of all claims and liens against County for additional payment.

ARTICLE SIX
WAIVER OF CLAIMS

6.1. Consultant's acceptance of final payment shall constitute a full waiver of any and all claims related to the obligation of payment by it against County arising out of this Contract or otherwise related to the Project, except those previously made in writing and identified by Consultant as unsettled at the time of the final payment. Neither the acceptance of Consultant's services nor payment by County shall be deemed to be a waiver of any of County's rights against Consultant.

ARTICLE SEVEN
TRUTH IN NEGOTIATION REPRESENTATIONS

7.1. Consultant warrants that Consultant has not employed or retained any company or person, other than a bona fide employee working solely for Consultant, to solicit or secure this Contract and that Consultant has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bona fide employee working solely for Consultant, any fee, commission, percentage, gift or any other consideration contingent upon or resulting from the award or making of this Contract.

7.2. In accordance with provisions of Section 287.055(5)(a), Florida Statutes, the signature of this Contract by the Consultant shall also act as the execution of a truth in negotiation certificate certifying that the wage rates, overhead charges, and other costs used to determine the compensation provided for in this Contract are accurate, complete and current as of the date of the Contract and no higher than those charged the Consultant's most favored customer for the same or substantially similar service. Should the County determine that said rates and costs were significantly increased due to incomplete, noncurrent or inaccurate representation, then said rates and compensation provided for in this Contract shall be adjusted accordingly.

ARTICLE EIGHT
TERMINATION OR SUSPENSION

8.1. Consultant shall be considered in material default of this Contract and such default will be considered cause for County to terminate this Contract, in whole or in part, as further set forth in this section, for any of the following reasons: (a) failure to begin work under the Contract within a reasonable time after issuance of the Notice to Proceed, or (b) failure to properly and timely perform the services to be provided hereunder or as directed by County pursuant to this Contract, or (c) the bankruptcy or insolvency or a general assignment for the benefit of creditors by Consultant or by any of Consultant's principals, officers or directors, or (d) failure to obey laws, ordinances, regulations or other codes of conduct, or (e) failure to perform or abide by the terms or spirit of this Contract, or (f) for any other just cause. The County may so terminate this Contract, in whole or in part, by giving the Consultant seven (7) calendar days' written notice.

8.2. If, after notice of termination of this Contract as provided for in paragraph 8.1 above, it is determined for any reason that Consultant was not, in default, or that its default was excusable, or that County otherwise was not entitled to the remedy against Consultant provided for in

paragraph 8.1, then the notice of termination given pursuant to paragraph 8.1 shall be deemed to be the notice of termination provided for in paragraph 8.3 below and Consultant's remedies against County shall be the same as and limited to those afforded Consultant under paragraph 8.3 below.

8.3. County shall have the right to terminate this Contract, in whole or in part, without cause upon seven (7) calendar days' written notice to Consultant. In the event of such termination for convenience, Consultant's recovery against County shall be limited to that portion of the fee earned through the date of termination, together with any retainage withheld and any costs reasonably incurred by Consultant that are directly attributable to the termination, but Consultant shall not be entitled to any other or further recovery against County, including, but not limited to, anticipated fees or profits on work not required to be performed.

8.4. Upon termination, the Consultant shall deliver to the County all original papers, records, documents, drawings, models, and other material set forth and described in this Contract.

8.5. The County shall have the power to suspend all or any portions of the services to be provided by Consultant hereunder upon giving Consultant two (2) calendar days prior written notice of such suspension. If all or any portion of the services to be rendered hereunder are so suspended, the Consultant's sole and exclusive remedy shall be to seek an extension of time to its schedule in accordance with the procedures set forth in Article Four herein.

ARTICLE NINE
PERSONNEL

9.1. The Consultant is, and shall be, in the performance of all work services and activities under this Contract, an Independent Contractor, and not an employee, agent, or servant of the County. All persons engaged in any of the work or services performed pursuant to this Contract shall at all times, and in all places, be subject to the Consultant's sole direction, supervision, and control. The Consultant shall exercise control over the means and manner in which it and its employees perform the work, and in all respects the Consultant's relationship and the relationship of its employees to the County shall be that of an Independent Contractor and not as employees or agents of the County.

9.2. The Consultant represents that it has, or will secure at its own expense, all necessary personnel required to perform the services under this Contract. Such personnel shall not be employees of or have any contractual relationship with the County, nor shall such personnel be entitled to any benefits of the County including, but not limited to, pension, health and workers' compensation benefits.

9.3. All of the services required hereunder shall be performed by the Consultant or under its supervision, and all personnel engaged in performing the services shall be fully qualified and, if required, authorized or permitted under state and local law to perform such services.

9.4. Any changes or substitutions in the Consultant's key personnel, as may be listed in Consultant's statement of qualifications, must be made known to the County's Representative

and written approval must be granted by the County's Representative before said change or substitution can become effective, said approval for which shall not unreasonably be withheld.

9.5. The Consultant warrants that all services shall be performed by skilled and competent personnel to professional standards applicable to firms of similar local and national reputation.

9.10 The Consultant warrants that it fully complies with all Federal Executive Orders, statutes and regulations regarding the employment of undocumented workers and others and that all employees performing work under this Agreement meet the citizenship or immigration status requirements set forth in Federal Executive Orders, statutes and regulations. Consultant shall indemnify, defend and hold harmless the County, its officers and employees from and against any sanctions and any other liability which may be assessed against the Consultant in connection with any alleged violation of any Federal statutes or regulations pertaining to the eligibility for employment of any persons performing work hereunder.

9.11 The employees and agents of each party, shall while on the premises of the other party, comply with all rules and regulations of the premises, including, but not limited to, security requirements.

ARTICLE TEN
SUBCONTRACTING

10.1. Consultant shall not subcontract any services or work to be provided to County without the prior written approval of the County's Representative. The County reserves the right to accept the use of a subcontractor or to reject the selection of a particular subcontractor and to inspect all facilities of any subcontractors in order to make a determination as to the capability of the subcontractor to perform properly under this Contract. The County's acceptance of a subcontractor shall not be unreasonably withheld. The Consultant is encouraged to seek minority and women business enterprises for participation in subcontracting opportunities.

ARTICLE ELEVEN
FEDERAL AND STATE TAX

11.1. The County is exempt from payment of Florida state sales and use taxes. The Consultant shall not be exempted from paying sales tax to its suppliers for materials used to fulfill contractual obligations with the County, nor is the Consultant authorized to use the County's tax exemption number in securing such materials.

11.2. The Consultant shall be responsible for payment of its own and its share of its employees' payroll, payroll taxes, and benefits with respect to this Contract.

ARTICLE TWELVE
OWNERSHIP OF DOCUMENTS

12.1. Upon completion or termination of this Contract, all records, documents, tracings, plans, specifications, maps, evaluations, reports, computer assisted design or drafting disks and other technical data, other than working papers, prepared or developed by Consultant under this Contract shall be delivered to and become the property of County. Consultant, at its own expense, may retain copies for its files and internal use.

12.2. The County and the Consultant shall comply with the provisions of Chapter 119, Florida Statutes, pertaining to public records. Consultant assumes no liability for the use of such documents by the County or others for purposes not intended under this Contract.

ARTICLE THIRTEEN
MAINTENANCE OF RECORDS & PUBLIC RECORDS

13.1. Consultant will keep adequate records and supporting documentation which concern or reflect its services hereunder. The records and documentation will be retained by Consultant for a minimum of three (3) years from the date of termination of this Contract or the date the Project is completed, whichever is later. County, or any duly authorized agents or representatives of County, shall have the right to audit, inspect and copy all such records and documentation as often as they deem necessary during the period of this Contract and during the three (3) year period noted above; provided, however, such activity shall be conducted only during normal business hours.

13.2 Consultant must comply with the public records laws, Florida Statute chapter 119, specifically Consultant must:

a) Keep and maintain public records required by the County to perform the service.
b) Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in chapter 119 Florida Statutes or as otherwise provided by law.
c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Consultant does not transfer the records to the County.
d) Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the Consultant or keep and maintain public records required by the County to perform the service. If the Consultant transfers all public records to the public agency upon completion of the contract, the Consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Consultant keeps and maintains public records upon completion of the contract, the Consultant shall meet all applicable requirements for retaining the public records. All records stored electronically must be provided to the public agency, upon the request from the public agency's custodian of public records, in a format that is compatible with

the information technology systems of the public agency.

IF THE CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT OKALOOSA COUNTY RISK MANAGEMENT DEPARTMENT 5479 OLD BETHEL ROAD CRESTVIEW, FL 32536 PHONE: (850) 689-5977 riskinfo@co.okaloosa.fl.us.

13.3 The County reserves the right to unilaterally cancel this Contract for refusal by the Consultant or any contractor, sub-contractor or materials vendor to allow public access to all documents, papers, letters or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received in conjunction with this Contract unless the records are exempt.

ARTICLE FOURTEEN
INSURANCE

14 CONTRACTORS INSURANCE

1. The Contractor shall not commence any work in connection with this Agreement until he has obtained all required insurance and such insurance has been approved by the Okaloosa County Risk Manager or designee.

2. All insurance policies shall be with insurers authorized to do business in the State of Florida.

3. All insurance shall include the interest of all entities named and their respective officials, employees & volunteers of each and all other interests as may be reasonably required by Okaloosa County. The coverage afforded the Additional Insured under this policy shall be primary insurance. If the Additional Insured have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the company's liability under this policy shall not be reduced by the existence of such other insurance.

4. Where applicable, the County shall be shown as an Additional Insured with a Waiver of Subrogation on the Certificate of Insurance.

5. The County shall retain the right to reject all insurance policies that do not meet the requirement of this Agreement. Further, the County reserves the right to change these insurance requirements with 60-day notice to the Contractor.

6. The County reserves the right at any time to require the Contractor to provide copies of any insurance policies to document the insurance coverage specified in this Agreement.

7. The designation of Contractor shall include any associated or subsidiary company which is involved and is a part of the contract and such, if any associated or subsidiary company involved in the project must be named in the Workers' Compensation coverage.

8. Any exclusions or provisions in the insurance maintained by the Contractor that excludes coverage for work contemplated in this agreement shall be deemed unacceptable and shall be considered breach of contract.

WORKERS' COMPENSATION INSURANCE

1. The Contractor shall secure and maintain during the life of this Agreement Workers' Compensation insurance for all of his employees employed for the project or any site connected with the work, including supervision, administration or management, of this project and in case any work is sublet, with the approval of the County, the Contractor shall require the Subcontractor similarly to provide Workers' Compensation insurance for all employees employed at the site of the project, and such evidence of insurance shall be furnished to the County not less than ten (10) days prior to the commencement of any and all sub-contractual Agreements which have been approved by the County.

2. Contractor must be in compliance with all applicable State and Federal workers' compensation laws, including the U.S. Longshore Harbor Workers' Act or Jones Act, if applicable.

3. No class of employee, including the Contractor himself, shall be excluded from the Workers' Compensation insurance coverage. The Workers' Compensation insurance shall also include Employer's Liability coverage.

BUSINESS AUTOMOBILE LIABILITY

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than $1,000,000 combined single limit each accident. If the contractor does not own vehicles, the contractor shall maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Policy. Contractor must maintain this insurance coverage throughout the life of this Agreement.

COMMERCIAL GENERAL LIABILITY INSURANCE

1. The Contractor shall carry other Commercial General Liability insurance against all other Bodily Injury, Property Damage and Personal and Advertising Injury exposures.

2. All liability insurance (other than Professional Liability) shall be written on an occurrence basis and shall not be written on a claims-made basis. If the insurance is issued with an aggregate limit of liability, the aggregate limit of liability shall apply only to the locations included in this Agreement. If, as the result of any claims or other reasons, the available limits of insurance reduce to less than those stated in the Limits of Liability, the Contractor shall notify the County representative in writing. The Contractor shall purchase additional liability insurance to maintain the requirements established in this Agreement. Umbrella or Excess Liability insurance can be purchased to meet the Limits of Liability specified in this Agreement.

3. Commercial General Liability coverage shall include the following:
4.

    1.) Premises & Operations Liability

    2.) Bodily Injury and Property Damage Liability

    3.) Independent Contractors Liability

    4.) Contractual Liability

    5.) Products and Completed Operations Liability

4. Contractor shall agree to keep in continuous force Commercial General Liability coverage for the length of the contract.

LIMITS OF LIABILITY

The insurance required shall be written for not less than the following, or greater if required by law and shall include Employer's liability with limits as prescribed in this contract:

			LIMIT
1.	Worker's Compensation		
	1.)	State	Statutory
	2.)	Employer's Liability	$500,000 each accident

2.	Business Automobile	$1M each accident (A combined single limit)
3.	Commercial General Liability	$1M each occurrence for Bodily Injury & Property Damage
		$1M each occurrence Products and completed operations
4.	Personal and Advertising Injury	$1M each occurrence

NOTICE OF CLAIMS OR LITIGATION

The Contractor agrees to report any incident or claim that results from performance of this Agreement. The County representative shall receive written notice in the form of a detailed written report describing the incident or claim within ten (10) days of the Contractor's knowledge. In the event such incident or claim involves injury and/or property damage to a third party, verbal notification shall be given the same day the Contractor becomes aware of the incident or claim followed by a written detailed report within ten (10) days of verbal notification.

INDEMNIFICATION & HOLD HARMLESS

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of this contract.

Note: For Contractor's convenience, this certification form is enclosed and is made a part of the bid package.

CERTIFICATE OF INSURANCE

1. Certificates of insurance indicating the job site and evidencing all required coverage must be submitted not less than 10 days prior to the commencement of any of the work. The certificate holder(s) shall be as follows: Okaloosa County, 5479A Old Bethel Road, Crestview, Florida, 32536.

2. The contractor shall provide a Certificate of Insurance to the County with a thirty (30) day notice of cancellation; ten (10 days' notice if cancellation is for nonpayment of premium).

3. In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of the contractor to provide the proper notice. Such notification shall be in writing by registered mail, return receipt requested, and addressed to the Okaloosa County Purchasing Department at 5479-A Old Bethel Road, Crestview, FL 32536.

4. In the event the contract term goes beyond the expiration date of the insurance policy, the contractor shall provide the County with an updated Certificate of insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The County reserves the right to suspend the contract until this requirement is met.

5. The certificate shall indicate if coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the certificate will show a retroactive date, which should be the same date of the initial contract or prior.

6. All certificates shall be subject to Okaloosa County's approval of adequacy of protection and the satisfactory character of the Insurer. County reserves the right to approve or reject any deductible/SIR above $10,000. The Certificates of Insurance shall disclose any and all deductibles or self-insured retentions (SIRs).

7. All deductibles or SIRs, whether approved by Okaloosa County or not, shall be the Contractor's full responsibility. In particular, the Contractor shall afford full coverage as specified herein to entities listed as Additional Insured.

8. In no way will the entities listed as Additional Insured be responsible for, pay for, be damaged by, or limited to coverage required by this schedule due to the existence of a deductible or SIR. Specific written approval from Okaloosa County will only be provided upon demonstration that the Contractor has the financial capability and funds necessary to cover the responsibilities incurred as a result of the deductible or SIR.

GENERAL TERMS

Any type of insurance or increase of limits of liability not described above which, the Contractor required for its own protection or on account of statute shall be its own responsibility and at its own expense.

Any exclusions or provisions in the insurance maintained by the contractor that excludes coverage for work contemplated in this contract shall be deemed unacceptable and shall be considered breach of contract.

The carrying of the insurance described shall in no way be interpreted as relieving the Contractor of any responsibility under this contract.

Should the Contractor engage a subcontractor or sub-subcontractor, the same conditions will apply under this Agreement to each subcontractor and sub-subcontractor.

The Contractor hereby waives all rights of subrogation against Okaloosa County and its consultants and other indemnities of the Contractor under all the foregoing policies of insurance.

UMBRELLA INSURANCE

The Contractor shall have the right to meet the liability insurance requirements with the purchase of an umbrella insurance policy. In all instances, the combination of primary and umbrella liability coverage must equal or exceed the minimum liability insurance limits stated in this Agreement.

ARTICLE FIFTEEN
INDEMNIFICATION

15.1. The Consultant shall indemnify and hold harmless the County, and its officers and employees, from liabilities, damages, losses, and costs, including, but not limited to, reasonable attorneys' fees, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Consultant and other persons employed or utilized by the Consultant in the performance of the Contract.

15.2 The first ten dollars ($10.00) of remuneration paid to Consultant under this Contract shall be in consideration for the indemnification provided for in this section.

ARTICLE SIXTEEN
SUCCESSORS AND ASSIGNS

16.1. The County and the Consultant each binds itself and its successors, executors, administrators and assigns to the other party of this Contract and to the successors, executors, administrators and assigns of such other party, in respect to all covenants of this Contract. Except as above, neither the County nor the Consultant shall assign, sublet, convey or transfer its interest in this Contract without the written consent of the other. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of the County which may be a party hereto, nor shall it be construed as giving any rights or benefits hereunder to anyone other than the County and the Consultant.

ARTICLE SEVENTEEN
REMEDIES

17.1. This Contract shall be governed by the laws of the State of Florida. Any and all legal action necessary to enforce the Contract shall be held in Okaloosa County. No remedy herein conferred upon any party is intended to be exclusive of any other remedy, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder or now or hereafter existing at law or in equity or by statute or otherwise. No single or partial exercise by any party of any right, power, or remedy hereunder shall preclude any other or further exercise thereof.

ARTICLE EIGHTEEN
CONFLICT OF INTEREST

18.1. The Consultant represents that it has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with the performance of services required hereunder, as provided for in the Code of Ethics for Public Officers and Employees (Chapter 112, Part III, Florida Statutes). The Consultant further represents that no person having any interest shall be employed for said performance.

18.2. The Consultant shall promptly notify the County Representative, in writing, by certified mail, of all potential conflicts of interest for any prospective business association, interest or other circumstance which may influence or appear to influence the Consultant's judgment or quality of services being provided hereunder. Such written notification shall identify the prospective business association, interest or circumstance, the nature of work that the Consultant may undertake and request an informed determination from the County Representative as to whether the association, interest or circumstance would be viewed by the County Representative as constituting a conflict of interest if entered into by the Consultant. The County Representative agrees to notify the Consultant of its opinion by certified mail within thirty (30) days of receipt of notice by the Consultant. Such determination may be appealed to the Board of County Commissioners by the Consultant within thirty (30) days of the County Representative's notice to the Consultant. If, in the opinion of the County Representative or County, the prospective business association, interest or circumstance would not constitute a conflict of interest by the Consultant, the County Representative or County shall so state in the notice and the Consultant shall, at its option, enter into said association, interest or circumstance and it shall be deemed not in conflict of interest with respect to services provided to the County by the Consultant under the terms of this Contract.

ARTICLE NINETEEN
DEBT

19.1. The Consultant shall not pledge the County's credit or make it a guarantor of payment or surety for any contract, debt, obligation, judgment, lien or any form of indebtedness. The Consultant further warrants and represents that it has no obligation or indebtedness that would impair its ability to fulfill the terms of this Contract.

ARTICLE TWENTY
NONDISCRIMINATION

20.1. The Consultant warrants and represents that all of its employees are treated equally during employment without regard to race, color, religion, disability, sex, age, national origin, ancestry, marital status, or sexual orientation.

20.2 Additionally, (As per Executive Order 11246) Consultant may not discriminate against any employee or applicant for employment because of age, race, color, creed, sex, disability or national origin. Consultant agrees to take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their age, race, color, creed, sex, disability or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship.

ARTICLE TWENTY-ONE
ENFORCEMENT COSTS

21.1. If any legal action or other proceeding is brought for the enforcement of this Contract, or because of an alleged dispute, breach, default or misrepresentation in connection with any provisions of this Contract, the successful or prevailing party or parties shall be entitled to recover reasonable attorney's fees, court costs and all expenses (including taxes) even if not taxable as court costs (including, without limitation, all such fees, costs and expenses incident to appeals), incurred in that action or proceeding, in addition to any other relief to which such party or parties may be entitled.

ARTICLE TWENTY-TWO
NOTICE

22.1. All notices required in this Contract shall be sent by certified mail, return receipt requested to the Consultant's Representative and the County Representative at the addresses shown in Articles One and Three hereof.

ARTICLE TWENTY-THREE
MODIFICATION OF SCOPE OF WORK

23.1. It is the intent of this Contract that County shall from time to time issue Notice to Proceeds for Consultant to perform work. Notice to Proceeds shall be duly approved by the County prior to issuance. Consultant shall expediently perform such work within the schedule indicated in the work order in accordance with Article Four above. Consultant shall timely cooperate with County Representative in negotiating the cost and schedule of said work orders

prior to submission to the County for approval. The County reserves the right to make changes in the Scope of Work, including alterations, reductions therein or additions thereto. Upon receipt by the Consultant of the County's notification of a contemplated change, the Consultant shall, in writing: (1) provide a detailed estimate for the increase or decrease in cost due to the contemplated change, (2) notify the County of any estimated change in the completion date, and (3) advise the County if the contemplated change shall effect the Consultant's ability to meet the completion dates or schedules of this Contract.

23.2. If the County so instructs in writing, the Consultant shall suspend work on that portion of the Scope of Work or work order affected by a contemplated change, pending the County's decision to proceed with the change. Consultant shall be entitled to invoice County for that portion of the work completed prior to receipt of the written notice.

23.3. If the County elects to make the change, the County shall initiate a Contract Amendment and the Consultant shall not commence work on any such change until such written amendment is signed by the Consultant and the County.

ARTICLE TWENTY-FOUR
MODIFICATION

24.1. The County and the Consultant agree that this Contract together with the Exhibits hereto, sets forth the entire agreement between the parties, and that there are no promises or understandings other than those stated herein. None of the provisions, terms and conditions contained in this Contract may be added to, modified, superseded or otherwise altered, except by written instrument executed by the parties hereto in accordance with Article Twenty Three - Modification of Scope of Work. In the event of any conflict or inconsistency between this Contract and the provisions in the incorporated Exhibits, the terms of this Contract shall supersede and prevail over the terms in the Exhibits.

ARTICLE TWENTY FIVE
MISCELLANEOUS

25.1. Consultant, in representing County, shall promote the best interest of County and each party agrees to assume toward the other party a duty of good faith and fair dealing.

25.2. No modification, waiver, suspension or termination of the Contract or of any terms thereof shall impair the rights or liabilities of either party.

25.3. This Contract is not assignable, in whole or in part, by Consultant without the prior written consent of County.

25.4. Waiver by either party of a breach of any provision of this Contract shall not be deemed to be a waiver of any other breach and shall not be construed to be a modification of the terms of this Contract.

25.5. The headings of the Articles, Schedules, Parts and Attachments as contained in this Contract are for the purpose of convenience only and shall not be deemed to expand, limit or change the provisions in such Articles, Schedules, Parts and Attachments.

25.6. This Contract, including the referenced Schedules and Attachments hereto, constitutes the entire agreement between the parties hereto and shall supersede, replace and nullify any and all prior agreements or understandings, written or oral, relating to the matter set forth herein, and any such prior agreements or understanding shall have no force or effect whatever on this Contract.

25.7 Consultant, acknowledges that it shall comply with all applicable Federal law, regulations, executive orders, State laws and regulations and local laws, ordinances and regulations as it pertains to services being rendered under this contract.

25.8 Consultant acknowledges that some federal funds may be utilized in the course of services being performed under this agreement, as such, consultant agrees that it shall adhere to all necessary federal regulations, including those as set forth in Exhibit "C". Further, the Consultant acknowledges that the Federal government is not a party to this agreement and is not subject to any obligations or liabilities to the non-Federal entity, Consultant, or any other party pertaining to any matter resulting from this Contract.

ARTICLE TWENTY SIX
MINORITY/WOMEN"S BUSINESS ENTERPRISES

26.1 The Consultant must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible, in accordance with 2CFR 200.321. If subcontracts are to be let, prime Consultant will require compliance by all sub-contractors. Prior to contract award, the Consultant shall document efforts to utilize M/WBE firms including what firms were solicited as suppliers and/or subcontractors as applicable and submit this information with their bid submittal. Information regarding certified M/WBE firms can be obtained from:

Florida Department of Management Services (Office of Supplier Diversity)
Florida Department of Transportation
Minority Business Development Center in most large cities and
Local Government M/DBE programs in many large counties and cities

ARTICLE TWENTY SEVEN
PROCUREMENT OF RECOVERED MATERIALS

27.1 Consultant must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable,

consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

ARTCLE TWENTY EIGHT
ENVIORNMENTAL AND ENERGY POLICIES

28.1 The Consultant shall comply with mandatory standards and policies relating to energy efficiency, stating in the state energy conservation plan issued in compliance with the Energy Policy and Conservation act. (Pub. L. 94-163, 89 Stat. 871) [53 FR 8078, 8087, Mar. 11, 1988, as amended at 60 FR 19639, 19645, Apr. 19, 1995].

28.2 Clean Air Act.

a. The Consultant agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

b. The Consultant agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to the State of Florida, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

c. The Consultant agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance under this Contract.

28.3 Federal Water Pollution Control Act.

a. The Consultant agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

b. The Consultant agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to the State of Florida, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

c. The Consultant agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance under this Contract.

ARTICLE TWENTY NINE
FEDERAL SUSPENSION AND DEBARMENT

29.1 This Agreement may be covered in part as transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the Consultant is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

a. The Consultant must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

b. This certification is a material representation of fact relied upon by the County. If it is later determined that the Consultant did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the State of Florida and the County, the Federal Government may pursue available remedies, including but not limited to suspension and/ or debarment.

c. The Consultant agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The Consultant further agrees to include a provision requiring such compliance in its lower tier covered transactions.

ARTICLE THIRTY
LOBBYING

30.1 Byrd Anti-Lobbying Amendment. Consultant who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

ARTICLE THIRTY ONE
THIRD PARTY BENEFICIARIES

31.1 It is specifically agreed between the parties executing this Contract that it is not intended by any of the provisions of any part of the Contract to create in the public or any member thereof, a third party beneficiary under this Contract, or to authorize anyone not a party to this Contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Contract.

ARTICLE THIRTY TWO
SEVERABILITY

32.1. If any term or provision of this Contract, or the application thereof to any person or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of this Contract, or the application of such term or provision, to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected, and every other term and provision of this Contract shall be deemed valid and enforceable to the extent permitted by law.

ARTICLE THIRTY THREE
REPRESENTATION OF AUTHORITY TO CONTRACT/SIGNATORY

33.1 The individual signing this Contract on behalf of Taylor Engineering, Inc. represents and warrants that he or she is duly authorized and has legal capacity to execute and deliver this Contract. The signatory represents and warrants to the County that the execution and delivery of this Contract and the performance of Taylor Engineering, Inc. obligations hereunder have been duly authorized and that the Agreement is a valid and legal agreement binding on the Consultant and enforceable in accordance with its terms.

ARTICLE THIRTY FOUR
COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS

34.1 The Consultant and all its agents shall comply with all federal, state and local regulations, including, but not limited to, nondiscrimination, wages, social security, workers' compensation, licenses, and registration requirements. The Consultant shall include this provision in all subcontracts issued as a result of this Agreement.

34.2 No person, on the grounds of race, creed, color, religion, national origin, age, gender, or disability, shall be excluded from participation in, be denied the proceeds or benefits of, or be otherwise subjected to discrimination in performance of this Agreement.

34.3 This Agreement shall be governed by and construed in accordance with the laws of the State of Florida.

34.4 Any dispute concerning performance of this Contract shall be processed as described herein. Jurisdiction for any damages arising under the terms of this Contract will be in the courts of the State of Florida, and venue will be in the Second Judicial Circuit, in and for Leon County. Except as otherwise provided by law, the parties agree to be responsible for their own attorney fees incurred in connection with disputes arising under the terms of this Contract.

IN WITNESS WHEREOF, the parties hereto have set their hands and official seals the day and year first above written.

TAYLOR ENGINEERING, INC.

Jonathan Armbruster — 8/7/2018

Authorized Representative — Date

JONATHAN ARMBRUSTER

(Printed)

BOARD OF COUNTY COMMISSIONERS OF OKALOOSA COUNTY, FLORIDA

Graham W. Fountain — 9/7/18

Date

Gary J. Stafford

J.D. Peacock II, Clerk

EXHIBIT A

SCOPE OF PROFESSIONAL ENGINEERING SERVICES
East Pass Sediment Impoundment Basin
Feasibility Study

Overview

Okaloosa County has requested that Taylor Engineering provide a scope of work and cost proposal for performing a feasibility study to evaluate various sediment impoundment basin design alternatives in East Pass to facilitate and enhance bypassing of sediment to the adjacent eroding beaches. The project goal is to support State of Florida inlet management objectives by lessening the net inlet capture of sand, increasing sand bypass opportunities, and maintaining safe navigation conditions. The project will comply with Florida Department of Environmental Protection's (FDEP) East Pass Inlet Management Implementation Plan, specifically Strategy #4 to investigate availability and feasibility of supplemental inlet sediment excavation outside the federal navigation channels to help mitigate gulf-front beach erosion that exceeds the bypassing quantities obtained from maintenance of the federal navigation channels.

This scope of work describes the necessary actions for extensive field data collection; numerical model setup, calibration and verification; preliminary environmental assessment; solicitation of stakeholder input; alternatives evaluation; and final recommendations within a decision document.

Task 1. Field Measurements

Tide- and wave-induced currents entrain and transport littoral sediment within, offshore and beyond East Pass. These currents continue to transport sediments inshore and offshore until the flow velocities decrease below a critical value, at which point the sediments fall out of suspension and deposit on the bottom. An evaluation of the baseline hydraulics and sediment transport in the inlet requires an in-depth understanding of the combined effect of currents and waves on the erosion and deposition processes. To that end, Taylor Engineering will conduct detailed field measurements of water surface elevation (tides), current (flow velocity), waves, winds, and suspended sediment concentration during normal tide conditions. We will also collect bathymetry and topographic data within the inlet and nearby areas. The data will provide necessary information for hydrodynamic, wave, and sediment transport modeling (Task 2 and Task 6).

Tide Measurement and Wind Data Collection

We will install four tide gages in the East Pass vicinity – near Harris/Narrows in Santa Rosa Sound, in Choctawhatchee Bay, East Pass, and in the nearshore area of the Gulf of Mexico. The tide gages will record tide levels for a period of one to two months. We will survey the water elevation — referenced to established vertical datums at the nearest published datum station — of each installed tide gage. At the end of the period of record, we will retrieve the tide gages, download the recorded data, and post-process the data to provide a time series of the recorded tide at each gage. The measured tide data will provide the calibration data for the hydrodynamic modeling of East Pass and nearby areas.

We will collect wind data from nearby airports or wind stations to characterize the wind conditions during the period of record of the tide, current, and wave measurements. The wind data also helps estimate offshore wave conditions (for wave modeling) and wind characteristics should we need to include wind stress for current estimations.

Current and Suspended Sediment Measurement

We will measure and analyze current and suspended sediment concentration at discrete points along a 3–5 ft vertical distance from the inlet bed. We assume the bulk of the suspended sediment moves within 5 ft from the bottom. If initial measurements suggest otherwise, we will adjust the height of the instruments accordingly to measure the bulk of the suspended sediment.

We will make four velocity measurements at or near the locations of the proposed sediment impoundment basins during daylight hours one day during spring tides. To minimize the data collection instrumentation costs, we will deploy a single instrument set at the stations alternately, as opposed to multiple instrument sets deployed simultaneously. The instrument set will consist of an Acoustic Doppler Current Profiler (ADCP) or Acoustic Doppler Profiler (ADP) to record flow velocity along the water column.

To reduce the cost of the suspended sediment measurements, concurrently with the boat-mounted ADCP or ADP current measurements, we will make suspended sediment concentration (flux) measurements at select locations near the proposed sediment impoundment basins during daylight hours one day during spring tides. We will use suitable instruments like an Aquascat sediment concentration profiler to measure sand concentration from the suspended sediment transport active portion of the water column. Instruments will be mounted to a two-meter tall frame that will be lowered from an anchored boat with the frame on the bottom collecting data for 10 – 30 minutes. We will collect sediment grab samples at select locations and provide the samples to an accredited laboratory for sediment size and density analysis.

The measured velocity data will provide calibration data for the hydrodynamic modeling, and the suspended sediment concentration data will provide calibration data for the sediment transport modeling. The sediment size and density data will define the sediment properties for the sediment transport modeling.

We will prepare a data collection plan to determine the location and dates of deployment. The dates of deployments for the velocity and suspended sediment concentration measurements will occur within the period of record of tide and wave measurements. Notably, the proposed data collection may also require regulatory permitting for installing the proposed fixed instrumentation.

Wave Measurement

For a period of two months and simultaneous with the tide measurements, we will measure currents and waves at a nearshore station and an offshore station in the Gulf of Mexico. Current and wave measurements include recording of current magnitude, current direction, wave height, wave period, and wave direction nearshore and offshore of East Pass. The current data will provide flow velocity data to

support hydrodynamic model validation. The wave data will directly support wave modeling for East Pass and surrounding areas by providing offshore wave boundary conditions and nearshore validation data to the wave model. Instrumentation will include two ADCPs or Acoustic Wave and Current Profilers (AWAC) — one at each station — capable of providing both high-resolution directional wave spectra and current profiles.

Bathymetric Survey

Following discussions with Okaloosa County Coastal Management Coordinator, Taylor Engineering assumes Okaloosa County or one of their consultants will subcontract a Florida-licensed surveyor to conduct a bathymetric survey of the East Pass vicinity. We have preliminarily identified the following areas for the survey, which will preferably occur during the summer season concurrent with the other coastal field data collection:

- Survey East Pass bathymetry at approximate 200-ft transect intervals along a distance approximately 5,000 ft north (inlet throat) and 2,200 ft south of the East Pass entrance (ebb shoal vicinity).
- Survey the general Crab Island bathymetry at approximate 400-ft transect intervals along a distance approximately 4,000 ft north of the Hwy 98 (Marler) Bridge.

To reduce survey costs, we propose to utilize the 2017 beach profile surveys of the east and west beach areas (within 10,000 ft east and west of East Pass), or more recent updated surveys provided by the County if available.

Task 2. Baseline Model Setup, Calibration, and Validation

Task 2 will focus on developing and validating MIKE models to simulate the existing (baseline) hydraulics and sediment transport patterns in the inlet and adjacent beaches. The MIKE system includes the flexibility needed to examine the coastal processes relevant to morphological evaluations. Specifically, the MIKE modeling system provides an integrated and fully dynamic two- or three-dimensional hydrodynamic, wave, sediment transport, and morphology (bed change) model application to simulate the behavior of the water surface elevation, flow velocity, waves, bed and suspended sand transport, erosion, and deposition. The morphology model provides dynamic feedback of bed elevation change to the hydrodynamic and wave models. As such, the MIKE system provides the best methodology to evaluate the baseline conditions and the effects of basin design alternatives. Additionally, both the FDEP and USACE accept the MIKE modeling system for coastal structures, dredging, and morphological analyses.

Task 2 will transform an existing RMA2 or ADCIRC hydrodynamic model mesh to a MIKE hydrodynamic model mesh. We will start the hydrodynamic model setup by building upon information from previous hydraulic models setup by Taylor Engineering for various modeling projects at East Pass. In defining the domain of the new model, we will include bathymetry data from recently surveyed beach profiles, recent inlet bathymetric surveys, previous hydrodynamic models, NOAA nautical charts, and U.S. Army Corps of Engineers (USACE) survey data. The model domain includes East Pass, Destin

Harbor, Santa Rosa Sound, Choctawhatchee Bay, and portions of the Gulf of Mexico. We will construct baseline versions of the MIKE hydrodynamic, wave, and sediment transport models. We will refine the model domain(s) to an appropriate resolution to examine the relevant physical processes and limit any unintended boundary effects for the scenarios considered.

The measured offshore and inshore tides and inlet velocity data (Task 1) will provide the calibration and verification data for the baseline hydrodynamic model. The tide level data offshore of East Pass and near Harris in Santa Rosa Sound, and available streamflow data in Choctawhatchee Bay will provide the baseline hydrodynamic model boundary conditions. The tide and current data measured at or near the inlet will provide the hydrodynamic calibration and verification data.

We will setup a baseline MIKE wave model to estimate the wave height, period, and direction of wind generated waves in the nearshore area. Measured wave data from an offshore wave gauge or buoy station (e.g., available data from National Oceanic and Atmospheric Administration (NOAA) Buoy Station 42039 or Wave Information Study (WIS) Stations 73176, 73354, and 73355) will provide the wave model boundary. If necessary, we will use available wind data to apply a constant wind field in the wave model for the wave model limited calibration.

We will setup a baseline MIKE sediment transport model to estimate the sand movement through the inlet and nearby areas. The sediment transport model will include morphological computations that will estimate accretion and erosion in the inlet — specifically, the shoaling rate in sediment basin design alternatives (Task 6). We will use measured sediment data to describe sediment characteristics in the inlet and its immediate vicinity and use measured suspended sediment concentration to further refine the sediment transport model parameters. We will use data from previous bathymetry surveys to compare actual and model computed sediment transport patterns.

We will setup a baseline MIKE particle tracking model to evaluate the baseline sediment transport pathways and fate of dredge material plume(s). The particle transport model simulates the transport, erosion, and deposition of multi-class sediments from stationary or moving sources and sinks. The model uses the same model mesh as the MIKE hydrodynamic model. The particle tracking model uses the flow velocity field calculated by the hydrodynamic model to compute the movement of suspended and deposited sediment particles and simulates the fate of the sediment plume. The particle tracking model can also determine the likely sources and sinks of the sediment transport process. In conjunction with the hydrodynamic, wave, and sediment transport model results and considering the geotechnical information from nearby sediments, the particle tracking model can also provide information on the relative sediment trapping performance of various sediment basin designs.

Task 3. Geotechnical Investigation

In Task 3, we will direct and coordinate a subsurface geotechnical investigation of the proposed sediment impoundment basin area to obtain data on the quality of the in-situ material, specifically, data necessary for determining whether the material is beach-compatible in accordance with Fla. Admin. Code r. 62B-41.007. Notably, the sampling plan presented below has been reviewed and accepted by the FDEP, specifically to ensure that the volume of data collected during initial investigations will be sufficient for

future permitting of any potential recommended impoundment basin alternative configuration. The following sections detail individual subtasks of the geotechnical investigation.

Field Investigation

a) Vibracoring: A total of fifteen (15) vibracore borings will be collected from the project area. The vibracore borings will be driven 20 feet deep, using a mechanical vibracore operated from a 35-foot research vessel. The acceptable recovery for each boring will be a minimum of 80%.

b) Positioning: All boring locations will be documented utilizing a Trimble Differential Global Positioning System (sub-meter accuracy) interfaced with HYPACK for horizontal positioning, and a calibrated Furuno fathometer (verified by lead line) for gathering water depths. Data will be reported using the North American Datum of 1983 (NAD83) Florida North with elevations referenced to the North American Vertical Datum of 1988 (NAVD88).

c) Photographing and Logging: The borings will be photographed in 2.5 to 6-foot sections and logged by a licensed Florida Professional Geologist. Samples for lab analysis will be selected at 2.5-foot intervals or whenever the lithology changes.

Laboratory Testing

Laboratory tests will be conducted on approximately 120 sediment samples as summarized in **Table 1** below. Gradation Analysis per ASTM D 6913 and visual shell analysis will be performed on all samples. All sample material will be logged and described by a Florida-registered professional geologist including determining the USCS classification and Munsell color. One sample from each core will be analyzed for carbonate using the non-ASTM (acid-digestion) method with re-sieving and one sample from each core will be analyzed for organic content per ASTM D 2974.

Table 1. Laboratory Testing Summary

DESCRIPTION	QTY
Sieve Analysis (Using Sieve Sizes No. 3/4", 3/8", 3.5, 4, 5, 7, 10, 14, 18, 25, 35, 45, 60, 80, 120, 170, 200, 230), ASTM D 6913	120
Visual Percent Shell	120
Munsell Color	120
Carbonate content, Non-ASTM Method	15
Organic Content ASTM D 2974	15

Deliverables

a) Boring Logs and Laboratory Data: Boring logs and laboratory data will be submitted in gINT format, utilizing the most recent USACE or FDEP provided gINT template.

b) Report: A geotechnical report will be submitted that includes the following:
- Boring location map showing the actual boring locations with an appropriate scale;
- Summary tables of all boring and laboratory information;
- Boring logs of each boring, including the final boring coordinates and elevations;
- Photographs of borings; and,

- Laboratory data: grain-size distribution curves and granulometric reports.

Task 4. Environmental Evaluation

The feasibility of constructing a sediment impoundment basin within the East Pass area rests in part on the potential environmental impacts of such a feature. Impacts could occur as a result of construction (direct and indirect impacts), operation, and the combined results of past, current, and future activities associated with the proposed project (cumulative impacts). The potential permanent impacts and the feasibility of mitigating for those impacts will in part determine the likelihood of obtaining state and federal environmental regulatory approvals. To identify the potential impacts and regulatory constraints for this project, Taylor Engineering will complete a preliminary environmental evaluation using existing, readily available information to identify potential regulatory hurdles associated with the impoundment basin alternatives. The desktop analysis will include compilation and review of existing reports, data, Geographic Information System (GIS) coverages, and other information on the biological, ecological, and environmental conditions within the project area (construction area) and potentially-affected areas outside of the project area. Taylor Engineering will evaluate the project alternatives potential effects on state- and federally-listed and managed species, essential fish habitat (EFH), and special aquatic sites (Outstanding Florida Waters, Aquatic Preserves, etc.) located in or near the project area. Taylor Engineering will also evaluate potential mitigation concepts should the evaluation identify a likely requirement for compensatory mitigation. The results of the environmental evaluation will be compiled and inserted as a subsection of the final report (Task 7).

Task 5. Solicitation of Stakeholders Inputs

We will solicit input and comments on the proposed project from the following agencies and the public.

- Okaloosa County & City of Destin – to further review short- and long-term inlet and coastal management goals and discuss project costs and budget(s). Also discuss navigability concerns associated with the channel and maintenance dredging frequency changes with the sand trap.
- Dredging contractors – to discuss suitable dredging methods (Hopper vs. pipeline) and desirable dimensions to improve dredging operations.
- U.S. Coast Guard – to discuss navigability matters and concerns.
- USACE – to discuss federal navigation channel regulations, maintenance dredging funding and operational issues, and lessons learned with dredging within and near East Pass.
- FDEP – to discuss navigation channel maintenance authorizations, inlet management practices and goals, and available funding for follow-on final design, permitting, and construction.
- Eglin AFB – to discuss uses within East Pass and potential disposal areas/needs west of East Pass.
- Public Workshop – we will attend a local public workshop to inform and educate the interested public and receive and record their opinions regarding the project.

The input received from project stakeholders and the public will be compiled and documented in the final report (Task 7).

Task 6. Basin Alternatives Analysis

Task 6 will establish a realistic range for each basin design variable considering geotechnical, environmental, and operational constraints as determined from earlier tasks. The basin design variables include overall location, depth, width, length, and elevation.

We will modify the baseline models to include each alternative basin design and to evaluate the performance of the basin design under normal tides and select storm surge conditions. We assume we will analyze up to two different sediment basin design alternatives to determine each basin's sediment trapping capacities, trapping efficiency, and potential impacts. We will evaluate the ability of each sediment deposition basin to impound a sufficient volume of sediment to meet sand bypassing requirements as well as provide a surplus of material to nourish adjacent eroding beaches. We will apply the particle tracking model to determine the sediment transport pathways (e.g., locations of sediment sources and sinks), confirm the basin's capability to trap sediments, and potentially evaluate the fate of dredge material plume(s). We will develop a comprehensive package of model documentation to submit to the FDEP to meet grant funding requirements as well as to support potential future design and permitting initiatives. The model documentation will include a written summary of the modeling approach and results as well as summary graphics and animations. We will evaluate and rank each design alternative with regards to ability to trap sediments, costs and possibly other variables. As part of the ranking, we will develop estimated construction and maintenance costs for each alternative.

Task 7. Final Report

We will submit a final report based on the Task 1 – 6 deliverables and FDEP and County review comments. The report will include the results of the field measurements and the key input data for the modeling; model development and validation; and the results of the geotechnical investigation, environmental assessment, stakeholders inputs, and analysis of basin alternatives. We will compile the report deliverables, address relevant comments, and submit the final report.

Task 8. Preparation of Decision Document

We will prepare a concise decision document to guide Okaloosa County and project stakeholders in making informed decisions to implement or modify the project. The document will provide (1) project constraints such as physical, environmental, geotechnical, operational, institutional, and economic constraints, (2) recommended basin design, (3) cost estimates for project construction, maintenance, and monitoring, and (4) discussion on funding commitments (short and long term) for all relevant agencies. The document will clearly state the commitments (operational and funding) required from the USACE, State of Florida, and Okaloosa County should the project move forward.

Task 9. Presentation of Project Results and Recommendations

We will make one presentation to the Okaloosa County Board of County Commissioners and one presentation at a local public workshop of the results and recommendations of our study.

Task 10. Project Coordination and Project Management

The single most important activity during the feasibility study process is the establishment and maintenance of a clear line of communications between Taylor Engineering and Okaloosa County. To that end, Taylor Engineering will actively coordinate with County staff and project stakeholders throughout the feasibility study process.

We will also meet regularly with Okaloosa County staff to inform them of the details of the proposed study and plans, and to get their concurrence on the plans' elements. This task also includes the preparation of monthly status updates and reports as required by the County and the FDEP grant.

EXHIBIT B

Deliverable and Budget Schedule
for
East Pass Sediment Impoundment Basin Feasibility Study

Task Name	Deliverables		Deliverable Date	Budget Amount ($)
Task 1 – Field Measurements	1.A	Summary report of data collection and results	60 Days from Field Data Collection Completion	$103,198.00
Task 2 – Baseline Model Setup, Calibration, and Validation	2.A	Summary report of baseline model setup, calibration, and validation efforts and our findings	60 Days from Field Data Report Completion	$99,434.00
Task 3 – Geotechnical Investigation	3.A	Geotechnical Report	60 Days from Field Data Collection	$67,767.50
Task 4 – Preliminary Environmental Assessment	4.A	Prelim. Environmental Assessment	30 Days from completing Task 6	$10,276.00
Task 5 – Solicitation of Stakeholders Inputs	5.A	Summary report of stakeholder comments	30 Days from completing final stakeholder input activities	$21,624.00
Task 6 – Basin Alternatives Analysis	6.A	Model documentation summary report describing the results of the alternatives analysis	120 Days from completing Task 2	$70,252.00
Task 7 – Final Report	7.A	Summary report discussing all phases of the project (data collection, modeling, stakeholder input, alternatives analysis, etc.)	60 Days from completing Task 6	$23,768.00
Task 8 – Preparation of Decision Document	8.A	Decision document providing project constraints, cost estimates, recommendations and potential project funding.	30 Days from completing Task 7	$11,572.00
Task 9 – Presentation of Project Results and Recommendations	9.A	Copies of presentations and summary of comments from BOCC presentation and public workshop	30 Days from completing public presentations	$9,144.00
Task 10 – Project Coordination and Project Management	10.A	Summary of coordination and management efforts, including periodic progress reports, meeting minutes, email correspondence, etc.	30 Days from completing Task 9	$8,535.00

Total $425,570.50

EXHIBIT "C"

REQUEST FOR QUALIFICATIONS (RFQ) & RESPONDENTS ACKNOWLEDGEMENT

RFQ TITLE:
EAST PASS INLET SUPPLEMENTAL SEDIMENT EXCAVATION STUDY

RFQ NUMBER:
RFQ TDD 01-18

LAST DAY FOR QUESTIONS: January 15th, 2018 3:00 P.M. CST

RFQ DUE DATE & TIME: January 22nd, 2018 3:00 P.M. CST

NOTE: QUALIFICATIONS RECEIVED AFTER THE REQUEST FOR QUALIFICATIONS OPENING DATE & TIME WILL NOT BE CONSIDERED.

Okaloosa County, Florida solicits your company to submit a qualifications on the above referenced goods or services. All terms, specifications and conditions set forth in this RFQ are incorporated into your response. Qualifications will not be accepted unless all conditions have been met. All qualifications must have an authorized signature in the space provided below. All envelopes containing sealed qualifications must reference the "RFQ Title", "RFQ Number" and the "RFQ Due Date and Time". Okaloosa County is not responsible for lost or late delivery of qualifications by the U.S. Postal Service or other delivery services used by the respondent. Neither faxed nor electronically submitted documents will be accepted. Qualifications may not be withdrawn for a period of sixty (60) days after the opening of qualifications unless otherwise specified.

RESPONDENT ACKNOWLEDGEMENT FORM BELOW MUST BE COMPLETED, SIGNED, AND RETURNED AS PART OF YOUR QUALIFICATIONS. QUALIFICATIONS WILL NOT BE ACCEPTED WITHOUT THIS FORM, SIGNED BY AN AUTHORIZED AGENT OF THE RESPONDENT.

COMPANY NAME: Taylor Engineering, Inc.

MAILING ADDRESS: Headquarters: 10151 Deerwood Park Blvd., Bldg 300, Ste 300
Destin Office: 4300 Legendary Drive, Suite C246, Destin, FL 32541

CITY, STATE, ZIP: Jacksonville, FL 32256

FEDERAL EMPLOYER'S IDENTIFICATION NUMBER (FEIN): 59-2850478

TELEPHONE NUMBER: 904-731-7040 / 850-460-7040 EXT: _____ FAX: 904-731-7040 / 850-460-7042

EMAIL: **jmarino@taylorengineering.com**

I CERTIFY THAT THIS SUBMITTAL IS MADE WITHOUT PRIOR UNDERSTANDING, AGREEMENT, OR CONNECTION WITH ANY OTHER RESPONDENT SUBMITTING FOR THE SAME MATERIALS, SUPPLIES, EQUIPMENT OR SERVICES, AND IS IN ALL RESPECTS FAIR AND WITHOUT COLLUSION OR FRAUD. I AGREE TO ABIDE BY ALL TERMS AND CONDITIONS OF THIS SOLICITATION AND CERTIFY THAT I AM AUTHORIZED TO SIGN THESE DOCUMENTS FOR THE RESPONDENT.

AUTHORIZED SIGNATURE: _____ TYPED OR PRINTED NAME: **James N. Marino, P.E., D.CE**

TITLE: **President** DATE: 1/10/18

Rev: September 22, 2014

NOTICE TO RESPONDENTS
RFQ TDD 01-18

The Okaloosa County Board of County Commissioners request qualifications from interested respondents detailing their qualifications and experience to provide **East Pass Inlet Supplemental Sediment Excavation Study.**

Interested respondents desiring consideration shall provide an original and six (6) copies (total of 7 copies) of their Request for Qualifications (RFQ) response with the respondent's areas of expertise identified. Submissions shall be portrait orientation, unbound, and 8 ½" x 11" where practical.
All originals must have original signatures in blue ink.

Qualification documents are available for download by accessing the Okaloosa County website at http://www.co.okaloosa.fl.us/purchasing/home then accessing the link "View Current Solicitations" or by accessing the Florida Purchasing Group website at https://www.bidnetdirect.com/florida.

RFQs must be delivered to the Okaloosa County Purchasing Department at the address below no later than **3:00 p.m., January 22nd, 2018** in order to be considered. All qualifications received after the stated time and date will be returned unopened and will not be considered.

All qualifications must be in sealed envelopes reflecting on the outside thereof **"East Pass Inlet Supplemental Sediment Excavation Study".** Failure to mark outside of the envelope as set forth herein shall result in the submittal not being considered.

The County reserves the right to award to the firm with a resulting negotiated agreement that is most advantageous and in the best interest of Okaloosa County, and to waive any irregularity or technicality. Okaloosa County shall be the sole judge of the submittal and the resulting negotiated agreement that is in its best interest and its decision will be final.

NOTE: Crestview, FL is not a next day guaranteed delivery location by most delivery services. Respondents using mail or delivery services assume all risks of late or non-delivery.

All submittals should be addressed as follows:

East Pass Inlet Supplemental Sediment Excavation Study.
RFQ TDD 01-18
Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, FL 32536

Greg Kisela
Purchasing Director

Date

OKALOOSA COUNTY
BOARD OF COUNTY COMMISSIONERS

Carolyn N. Ketchel
Chairman

QUALIFICATION REQUIREMENTS

PROPOSAL #: RFQ TDD 01-18

PROPOSAL ITEM: East Pass Inlet Supplemental Sediment Excavation Study

General Scope of Work for East Pass Inlet Supplemental Sediment Excavation Study

The goal of the proposed study is to complete the implementation of the 4 recommended strategies as outlined in the *East Pass Inlet Management Implementation Plan (2013)* adopted by the State of Florida, July 24, 2013. Strategies 1-3 of the implementation plan are already in progress. The proposed study will address strategy #4:

> ***4) Investigate availability and feasibility of supplemental inlet sediment excavation*** *outside the federal navigation channels, exclusive of areas with submerged natural resources. Should gulf beach erosion, as determined in the monitoring protocol, exceed the bypassing quantities obtained from maintenance of the federal navigation channels, additional inlet sediment may be obtained as determined from its availability, feasibility, and impacts.*

The study will address, but not be limited to, the following areas of interest:

- As determined by numerical modelling (among other potential investigative approaches), what will be the physical impact of a dredged borrow area within the area of inlet shoaling and the ebb/flood shoal complex and adjacent shoreline areas. Address the time scale and/or the set of forcing over which to consider these potential impacts.
- What should be the appropriate dimensions of the borrow area, including depth?
- While the upper layers of sediment are likely beach quality, how deep does the beach quality material extend? How would this geotechnical investigation be accomplished?
- What would be the expected infilling rates?
- What volume of beach quality sand would be available for beach restoration?
- Would the dredged borrow area within the area of inlet shoaling decrease the frequency of maintenance dredging of the East Pass Federal Navigation Channel? By how much?

The selected respondent will be required to coordinate multiple Technical Advisory Committee meetings composed of representatives from Okaloosa County, the City of Destin, the Florida Department of Environmental Protection, the United State Army Corps of Engineers, Eglin Air Force Base and the United States Coast Guard.

The selected respondent will work with all or part of the Technical Advisory Committee to develop a detailed scope of work.

EVALUATION OF PROPOSALS

Evaluation of proposals and selection of a firm shall be at the sole discretion of Owner. This will be a qualifications based selection. Professional firms will be evaluated using the following criteria and respective weights. Firms submitting a proposal in response to the RFQ may be required to give an oral presentation to Owner representatives. The Owner's request for an oral presentation shall in no way constitute acceptance of a proposal or imply that an agreement is pending.

GRADING CRITERIA

1 Experience, as the principal investigator, in supplemental sediment excavation feasibility studies for south Atlantic and/or Gulf Coast inlets. **(45 points)**

2. Experience, as the principal investigator, in developing inlet management plans for Floridian inlets. **(20 points)**

3. Submittal demonstrates a past record of professional accomplishments directly related to the areas of work the firm is proposing to perform? **(15 points)**

4. Adequate qualifications, responsibilities and the relevant experience of the assigned personnel. **(15 points)**

5. Feedback from references, representative of past experience similar to the services described herein. **(5 points)**

TOTAL POSSIBLE POINTS: (100 points)

GRANT REQUIREMENTS:

In order to comply with federal grant regulations, additional rules and regulations will apply.
See **EXHIBIT B** and **EXHIBIT C.**

TERM OF CONTRACT:

The initial term of this contract shall be from completion of signatures by both parties and remain in effect until October 31, 2019, based on the grant guidelines.

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GENERAL SERVICES INSURANCE REQUIREMENTS

REVISED: 06/12/17

CONTRACTORS INSURANCE

1. The Contractor shall not commence any work in connection with this Agreement until he has obtained all required insurance and such insurance has been approved by the Okaloosa County Risk Manager or designee.

2. All insurance policies shall be with insurers licensed to do business in the State of Florida.

3. All insurance shall include the interest of all entities named and their respective agents, consultants, servants and employees of each and all other interests as may be reasonably required by Okaloosa County as Additional Insured. The coverage afforded the Additional Insured under this policy shall be primary insurance. If the Additional Insured have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the company's liability under this policy shall not be reduced by the existence of such other insurance.

4. The County shall be listed as Additional Insured by policy endorsement on all insurance contracts applicable to this Agreement except Workers' Compensation.

5. The County shall be furnished proof of coverage by certificates of insurance (COI) and endorsements for every applicable insurance contract required by this Agreement. The COI's and policy endorsements must be delivered to the County Representative not less than ten (10) days prior to the commencement of any and all contractual Agreements between the County and the Contractor.

6. The County shall retain the right to reject all insurance contracts that do not meet the requirement of this Agreement. Further, the County reserves the right to change these insurance requirements with 60-day notice to the Contractor.

7. The insurance definition of Insured or Additional Insured shall include Subcontractor, Sub-subcontractor, and any associated or subsidiary companies of the Contractor, which are involved, and which is a part of the contract.

8. The County reserves the right at any time to require the Contractor to provide certified copies of any insurance policies to document the insurance coverage specified in this Agreement.

9. The designation of Contractor shall include any associated or subsidiary company which is involved and is a part of the contract and such, if any associated or subsidiary company involved in the project must be named in the Workers' Compensation coverage.

10. All insurance policies shall include a clause to provide 30 days written notice to Okaloosa County for any changes, cancellations or non-renewal of the policy, with the exception of 10 day notice for cancellation due to non-payment of premium. Such notice shall be given directly to the County Representative.

WORKERS' COMPENSATION INSURANCE

1. The Contractor shall secure and maintain during the life of this Agreement Workers' Compensation insurance for all of his employees employed for the project or any site connected with the work, including supervision, administration or management, of this project and in case any work is sublet, with the approval of the County, the Contractor shall require the Subcontractor similarly to provide Workers' Compensation insurance for all employees employed at the site of the project, and such evidence of insurance shall be furnished to the County not less than ten (10) days prior to the commencement of any and all sub-contractual Agreements which have been approved by the County.

2. Such insurance shall comply with the Florida Workers' Compensation Law.

3. No class of employee, including the Contractor himself, shall be excluded from the Workers' Compensation insurance coverage. The Workers' Compensation insurance shall also include Employer's Liability coverage.

BUSINESS AUTOMOBILE AND COMMERCIAL GENERAL LIABILITY INSURANCE

1. The Contractor shall maintain Business Automobile Liability insurance coverage throughout the life of this Agreement. The insurance shall include Owned, Non-owned & Hired Motor Vehicle coverage.

2. The Contractor shall carry other Commercial General Liability insurance against all other Bodily Injury, Property Damage and Personal and Advertising Injury exposures.

3. All liability insurance (other than Professional Liability) shall be written on an occurrence basis and shall not be written on a claims-made basis. If the insurance is issued with an aggregate limit of liability, the aggregate limit of liability shall apply only to the locations included in this Agreement. If, as the result of any claims or other reasons, the available limits of insurance reduce to less than those stated in the Limits of Liability, the Contractor shall notify the County representative in writing. The Contractor shall purchase additional liability insurance to maintain the requirements established in this Agreement. Umbrella or Excess Liability insurance can be purchased to meet the Limits of Liability specified in this Agreement.

4. Commercial General Liability coverage shall be endorsed to include the following:

    1.) Premises – Operation Liability
    2.) Occurrence Bodily Injury and Property Damage Liability
    3.) Independent Contractors Liability
    4.) Products and Completed Operations Liability

5. Contractor shall agree to keep in continuous force Commercial General Liability coverage for the length of the contract.

LIMITS OF LIABILITY

The insurance required shall be written for not less than the following, or greater if required by law and shall include Employer's liability with limits as prescribed in this contract:

		LIMIT
1.	Worker's Compensation	
	1.) State	Statutory
	2.) Employer's Liability	$100,000 each accident
2.	Business Automobile	$1,000,000 each occurrence (A combined single limit)
3.	Commercial General Liability	$1,000,000 each occurrence (A combined single limit)
4.	Personal and Advertising Injury	$250,000
5.	Professional Liability (E&O)	$1,000,000 (claims made)

NOTICE OF CLAIMS OR LITIGATION

The Contractor agrees to report any incident or claim that results from performance of this Agreement. The County representative shall receive written notice in the form of a detailed written report describing the incident or claim within ten (10) days of the Contractor's knowledge. In the event such incident or claim involves injury and/or property damage to a third party, verbal notification shall be given the same day the Contractor becomes aware of the incident or claim followed by a written detailed report within ten (10) days of verbal notification.

INDEMNIFICATION & HOLD HARMLESS

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of this contract.

Note: For Contractor's convenience, this certification form is enclosed and is made a part of the bid package.

CERTIFICATE OF INSURANCE

1. Certificates of insurance, in duplicate, indicating the job site and evidencing all required coverage must be submitted to and approved by Okaloosa County prior to the commencement of any of the work. The certificate holder(s) shall be as follows: Okaloosa County, 5479A Old Bethel Road, Crestview, Florida, 32536.

2. All policies shall expressly require 30 days written notice to Okaloosa County at the address set out above, or the cancellations of material alterations of such policies, and the Certificates of Insurance, shall so provide.

3. All certificates shall be subject to Okaloosa County's approval of adequacy of protection and the satisfactory character of the Insurer. County reserves the right to approve or reject all deductible/SIR above $10,000. The Certificates of Insurance shall disclose any and all deductibles or self-insured retentions (SIRs).

4. All deductibles or SIRs, whether approved by Okaloosa County or not, shall be the Contractor's full responsibility. In particular, the Contractor shall afford full coverage as specified herein to entities listed as Additional Insured.

5. In no way will the entities listed as Additional Insured be responsible for, pay for, be damaged by, or limited to coverage required by this schedule due to the existence of a deductible or SIR. Specific written approval from Okaloosa County will only be provided upon demonstration that the Contractor has the financial capability and funds necessary to cover the responsibilities incurred as a result of the deductible or SIR.

GENERAL TERMS

Any type of insurance or increase of limits of liability not described above which, the Contractor required for its own protection or on account of statute shall be its own responsibility and at its own expense.

The carrying of the insurance described shall in no way be interpreted as relieving the Contractor of any responsibility under this contract.

Should the Contractor engage a subcontractor or sub-subcontractor, the same conditions will apply under this Agreement to each subcontractor and sub-subcontractor.

The Contractor hereby waives all rights of subrogation against Okaloosa County and its consultants and other indemnities of the Contractor under all the foregoing policies of insurance.

UMBRELLA INSURANCE

The Contractor shall have the right to meet the liability insurance requirements with the purchase of an umbrella insurance policy. In all instances, the combination of primary and umbrella liability coverage must equal or exceed the minimum liability insurance limits stated in this Agreement.

GENERAL QUALIFICATIONS CONDITIONS

1. **PRE-QUALIFICATION ACTIVITY -**

Addendum - Except as provided in this section, respondents are prohibited from contacting or lobbying the County, County Administrator, Commissioners, County staff, and Review Committee members, or any other person authorized on behalf of the County related or involved with the solicitation. All inquiries on the scope of work, specifications, additional requirements, attachments, terms and general conditions or instructions, or any issue must be directed in writing, by US mail or email to:

Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, FL 32536
Email: dmason@co.okaloosa.fl.us
(850)689-5960

All questions or inquiries must be received no later than the last day for questions (reference RFQ & Respondent's Acknowledgement form). Any addenda or other modification to the documents will be issued by the County five (5) days prior to the date and time of closing, as a written addenda distributed to all prospective respondents by posting to the Florida Online Bid System (Florida Purchasing Group) and the Okaloosa County Web Site.

To access the Florida Online Bid System go to: https://www.bidnetdirect.com/florida. To access the Okaloosa County Web Site go to: http://www.co.okaloosa.fl.us/purchasing/current-solicitations.

Such written addenda or modification shall be part of the RFQ documents and shall be binding upon each respondent. Each respondent is required to acknowledge receipt of any and all addenda in writing and submit with their documents. No respondent may rely upon any verbal modification or interpretation.

2. **PREPARATION OF QUALIFICATIONS** – Qualifications which contain any omissions, erasures, alterations, additions, irregularities of any kind, or items not called for which shall in any manner fail to conform to the conditions of public notice requesting qualifications may be rejected.

A. Qualifications submitted by a corporation shall be executed in the corporate name by the president or a vice president or other corporate officer who has legal authority to sign.

B. Qualifications submitted by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature). The official address of the partnership shall be shown below the signature.

C. Qualifications submitted by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

D. Qualifications submitted by an individual shall show the respondent's name and official address.

E. Qualifications submitted by a joint venture shall be executed by each joint venture in the manner indicated in the Request for Qualification. The official address of the joint venture must be shown below the signature.

F. All signatures shall be in blue ink. All names shall be typed or printed below the signature.

G. The submittal shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the form. The address and telephone # for communications regarding the submittal shall be shown.

H. If the respondent is an out-of-state corporation, the submittal shall contain evidence of respondent's authority and qualification to do business as an out-of-state corporation in the State of Florida.

3. **INTEGRITY OF QUALIFICATIONS DOCUMENTS** - Respondents shall use the original qualification documents provided by the Purchasing Department and enter information only in the spaces where a response is requested. Respondents may use an attachment as an addendum to the qualification documents t if sufficient space is not available. Any modifications or alterations to the original solicitation documents by the respondent, whether intentional or otherwise, will constitute grounds for rejection of submittal. Any such modifications or alterations that a respondent wishes to propose must be clearly stated in the respondent's response and the form of an addendum to the original documents.

4. **SUBMITTAL OF QUALIFICATIONS** – Qualifications shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or request for qualifications and shall be enclosed in an opaque sealed envelope plainly marked with the project title (and, if applicable, the designated portion of the project for which the qualifications are being submitted for), the name and address of the respondent, and shall be accompanied by the other required documents.

Note: Crestview is <u>not</u> a next day delivery site for overnight carriers.

5. **MODIFICATION & WITHDRAWAL OF SUBMITTAL** – Qualifications may be modified or withdrawn by an appropriate document duly executed in the manner that a submittal must be executed and delivered to the place where documents are to be submitted prior to the date and time for the opening of the solicitation.

If within 24 hours after qualifications are opened any respondent files a duly signed written notice with the County and promptly thereafter demonstrates to the reasonable satisfaction of the County that there was a material substantial mistake in the preparation of its submittal, that respondent may withdraw its submittal, and the respondent's security will be returned. Thereafter, if the work is a re- qualification, that respondent will be disqualified from 1) further purposing on the work, and 2) doing any work on the contract, either as a subcontractor or in any other capacity.

Note: Crestview, Florida is "<u>not a next day guaranteed delivery location</u>" by delivery services.

6. **QUALIFICATIONS DOCUMENTS TO REMAIN SUBJECT TO ACCEPTANCE** – All qualifications documents will remain subject to acceptance or rejection for sixty (60) calendar days after the day of the opening, but the County may, in its sole discretion, release any submittal and return the respondent's security prior to the end of this period.

7. **IDENTICAL TIE QUALIFICATIONS** - Preference shall be given to businesses with drug-free workplace programs. Whenever two or more qualifications which are equal with respect to price, quality and service are received by the County for the procurement of commodities, contractual services, a submittal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process (see attached certification form).

   Established procedures for processing tie qualifications will be followed if none of the tied vendors have a drug-free workplace program.

   Note: For respondent's convenience, this certification form is enclosed and is made a part of the qualification package.

8. **CONDITIONAL & INCOMPLETE QUALIFICATIONS** - Okaloosa County specifically reserves the right to reject any conditional submittal and qualifications which make it impossible to determine the true quality of services to be provided by respondent.

9. **ADDITION/DELETION OF ITEM** – The County reserves the right to add or delete any item from this qualification or resulting contract when deemed to be in the County's best interest.

10. **APPLICABLE LAWS & REGULATIONS** – All applicable Federal and State laws, County and municipal ordinances, orders, rules and regulations of all authorities having jurisdiction over the project shall apply to the qualifications throughout, and they will be deemed to be included in the contract the same as though they were written in full therein.

11. **DISQUALIFICATION OF RESPONDENTS** - Any of the following reasons may be considered as sufficient for the disqualification of a respondent and the rejection of its qualifications:

    a. Submission of more than one qualification for the same work from an individual, firm or corporation under the same or different name.

    b. Evidence that the respondent has a financial interest in the firm of another proposer for the same work.

    c. Evidence of collusion among respondents. Participants in such collusion will receive no recognition as respondents for any future work of the County until such participant has been reinstated as a qualified respondent.

    d. Uncompleted work which in the judgment of the County might hinder or prevent the prompt completion of additional work if awarded.

    e. Failure to pay or satisfactorily settle all bills due for labor and material on former contracts in force at the time of advertisement of qualifications.

    f. Default under previous contract.

g. Listing of the respondent by any Local, State or Federal Government on its barred/suspended vendor list.

12. **AWARD OF CONTRACT - Okaloosa County Review**: A selection committee will review all qualifications and will participate in the Recommendation to Award.

The County will award the contract to the most qualified respondent(s), and the County reserves the right to award the contract to the respondent(s) submitting the most responsive submittal with a resulting negotiated agreement which is most advantageous and in the best interest of the County, and to reject any and all qualifications or to waive any irregularity or technicality in qualifications received. Okaloosa County shall be the sole judge of the qualifications and the resulting negotiated agreement that is in its best interest and its decision shall be final.

Okaloosa County reserves the right to waive any informalities or reject any and all qualifications, in whole or part, to utilize any applicable state contracts in lieu of or in addition to this RFQ and to accept the submittal that in its judgment will best serve the interest of the County.

Okaloosa County specifically reserves the right to reject any conditional qualifications and proposals which make it impossible to determine the true quality of services to be provided by respondent.

13. **PAYMENTS** – The respondent shall be paid upon submission of invoices and approval of acceptance by Okaloosa County Board of County Commissioners, Finance Office, 302 N. Wilson St., #203, Crestview FL 32536, for the prices stipulated in the resulting agreement. Invoices must show Contract #.

14. **DISCRIMINATION** - An entity or affiliate who has been placed on the discriminatory vendor list may not submit qualifications for a contract to provide goods or services to a public entity, may not submit qualifications on a contract with a public entity for the construction or repair of a public building or public work, may not submit qualifications on leases of real property to a public entity, may not award or perform work as a contractor, supplier, subcontractor, or consultant under contract with any public entity, and may not transact business with any public entity.

15. **PUBLIC ENTITY CRIME INFORMATION** - Pursuant to Florida Statute 287.133, a respondent may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.

16. **CONFLICT OF INTEREST** - The award hereunder is subject to the provisions of Chapter 112, Florida Statutes. All respondents must disclose with their qualifications the name of any officer, director, or agent who is also a public officer or an employee of the Okaloosa Board of County Commissioners, or any of its agencies. Furthermore, all respondents must disclose the name of any County officer or employee who owns, directly or indirectly, an interest of five percent (5%) or more in the firm or any of its branches.

17. **REORGANIZATION OR BANKRUPTCY PROCEEDINGS** – Qualifications will not be considered from respondents who are currently involved in official financial reorganization or bankruptcy proceedings.

18. **INVESTIGATION OF RESPONDENT** – The County may make such investigations, as it deems necessary to determine the stability of the respondent to perform the work and that there is no conflict of interest as it relates to the project. The respondent shall furnish any additional information and financial data for this purpose as the County may request.

19. **CONE OF SILENCE CLAUSE** - The Okaloosa County Board of County Commissioners have established a solicitation silence policy **(Cone of Silence Clause)** that prohibits oral and written communication regarding all formal solicitations for goods and services issued by the Board through the County Purchasing Department. The period commences from the time of advertisement until contract award.

Note: For respondent's convenience, this certification form is enclosed and is made a part of this qualifications package.

20. **REVIEW OF PROCUREMENT DOCUMENTS** - Per Florida Statute 119.071(1)(b)2. sealed proposals, or replies received by an the County pursuant to a competitive solicitation are exempt from public disclosure until such time as the agency provides notice of an intended decision or until 30 days after opening the proposals, or final replies, whichever is earlier.

21. **COMPLIANCE WITH FLORIDA STATUTE 119.0701** - The Respondent shall comply with all the provisions of section 119.0701, Florida Statutes relating to the public records which requires, among other things, that the Respondent: (a) Keep and maintain public records; (b) Provide the public with access to public records on the same terms and conditions that the public agency would provide the records; (c) ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and (d) Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the respondent upon termination of the contract.

22. **PROTECTION OF RESIDENT WORKERS** – The Okaloosa County Board of County Commissioners actively supports the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verifications, and nondiscrimination. Under the INA, employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the U.S.) and aliens authorized to work in the U.S. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verifications. The respondent shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment. Okaloosa County reserves the right to request documentation showing compliance with the requirements.

23. **SUSPENSION OR TERMINATION FOR CONVENIENCE** - The County may, at any time, without cause, order Respondent in writing to suspend, delay or interrupt the work in whole or in part for such period of time as the County may determine, or to terminate all or a portion of the Contract for the County's convenience. Upon such termination, the Contract Price earned to the date of termination shall be paid to Respondent, but Respondent waives any claim for damages, including loss of profits arising out of or related to the early termination. Those Contract provisions which by their nature survive final acceptance shall remain in full force and effect. If the County orders a suspension, the Contract price and Contract time may be adjusted for increases in the cost and time caused by suspension, delay or interruption. No adjustment shall be made to the extent

that performance is, was or would have been so suspended, delayed or interrupted by reason for which Respondent is responsible; or that an equitable adjustment is made or denied under another provision of this Contract.

24. **FAILURE OF PERFORMANCE/DELIVERY** - In case of default by the respondent, the County after due notice (oral or written) may procure the necessary supplies or services from other sources and hold the respondent responsible for difference in cost incurred. Continuous instances of default shall result in cancellation of the contract and removal of the respondent from the vendor list for duration of one (1) year, at the option of County.

25. **AUDIT** - If requested, respondent shall permit the County or an authorized, independent audit agency to inspect all data and records of respondent relating to its performance and its subcontracts under this contract from the date of the contract through and until three (3) years after the expiration of contract.

26. **EQUAL EMPLOYMENT OPPORTUNITY; NON DISCRIMINATION** – Respondent shall not discriminate against any employee or an applicant for employment because of race, color, religion, gender, sexual orientation, national origin, age, familial status or handicap.

27. **NON-COLLUSION** – Respondent certifies that it has entered into no agreement to commit a fraudulent, deceitful, unlawful or wrongful act, or any act which may result in an unfair advantage over other respondents. See Florida Statute 838.22.

28. **UNAUTHORIZED ALIENS/PATRIOT'S ACT** – The knowing employment by respondent or its subcontractors of any alien not authorized to work by the immigration laws is prohibited and shall be a default of the contract. In the event that the respondent is notified or becomes aware of such default, the respondent shall take steps as are necessary to terminate said employment with 24 hours of notification or actual knowledge that an alien is being employed. Respondent's failure to take such steps as are necessary to terminate the employment of any said alien within 24 hours of notification or actual knowledge that an alien is being employed shall be grounds for immediate termination of the contract. Respondent shall take all commercially reasonable precautions to ensure that it and its subcontractors do not employ persons who are not authorized to work by the immigration laws.

29. **The following documents are to be submitted with the qualifications packet:**

A. Drug-Free Workplace Certification Form
B. Conflict of Interest
C. Federal E-Verify
D. Cone of Silence Clause Form
E. Indemnification and Hold Harmless
F. Company Data
G. Addendum Acknowledgement
H. Certification Regarding Lobbying
I. Governmental Debarment & Suspension
J. Recycled Content Form
K. Exhibit "B" General Grant Funding Conditions
L. Exhibit "C" Standard Additional Clauses

DRUG-FREE WORKPLACE CERTIFICATION

THE BELOW SIGNED RESPONDENT CERTIFIES that it has implemented a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under quote a copy of the statement specified in subsection 1.

4. In the statement specified in subsection 1, notify the employees that, as a condition of working on the commodities or contractual services that are under quote, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893, Florida Statutes, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in, drug abuse assistance or rehabilitation program if such is available in employee's community, by any employee who is convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

DATE: 1/10/18

SIGNATURE: 

COMPANY: **Taylor Engineering, Inc.**

NAME: **James N. Marino, P.E., D.CE**

(Typed or Printed)

ADDRESS: **10151 Deerwood Park Blvd., Bldg 300, Ste 300**
Jacksonville, FL 32256

TITLE: **President**

E-MAIL: **jmarino@taylorengineering.com**

PHONE NO.: **904-731-7040**

CONFLICT OF INTEREST DISCLOSURE FORM

For purposes of determining any possible conflict of interest, all respondents, must disclose if any Okaloosa Board of County Commissioner, employee(s), elected officials(s), or if any of its agencies is also an owner, corporate officer, agency, employee, etc., of their business.

Indicate either "yes" (a county employee, elected official, or agency is also associated with your business), or "no". If yes, give person(s) name(s) and position(s) with your business.

YES: _____ NO: X

NAME(S) **POSITION(S)**

_____

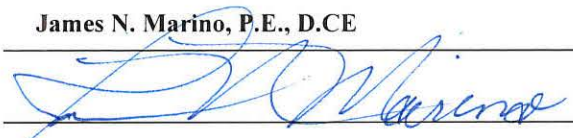
_____

_____

_____

FIRM NAME: **Taylor Engineering, Inc.**

BY (PRINTED): **James N. Marino, P.E., D.CE**

BY (SIGNATURE): 

TITLE: **President**

ADDRESS: **10151 Deerwood Park Blvd., Bldg 300, Ste 300**
Jacksonville, FL 32256

PHONE NO.: **904-731-7040**

E-MAIL: **jmarino@taylorengineering.com**

DATE: 1/10/18

FEDERAL E-VERIFY COMPLIANCE CERTIFICATION

In accordance with Okaloosa County Policy and Executive Order Number 11-116 from the office of the Governor of the State of Florida, Respondent hereby certifies that the U.S. Department of Homeland Security's E-Verify system will be used to verify the employment eligibility of all new employees hired by the respondent during the contract term, and shall expressly require any subcontractors performing work or providing services pursuant to the contact to likewise utilize the U.S. Department of Homeland Securities E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and shall provide documentation such verification to the COUNTY upon request.

As the person authorized to sign this statement, I certify that this company complies/will comply fully with the above requirements.

DATE: 1/10/18

SIGNATURE: 

COMPANY: **Taylor Engineering, Inc.**

NAME: **James N. Marino, P.E., D.CE**

ADDRESS: **10151 Deerwood Park Blvd.,**
Bldg 300, Ste 300
Jacksonville, FL 32256

TITLE: **President**

E-MAIL: **jmarino@taylorengineering.com**

PHONE NO.: **904-731-7040**

CONE OF SILENCE CLAUSE

The Board of County Commissioners have established a solicitation silence policy **(Cone of Silence Clause)** that prohibits oral and written communication regarding all formal solicitations for goods and services (formal bids, Request for Proposals, Requests for Qualifications) issued by the Board through the County Purchasing Department.

The period commences from the time of advertisement until contract award.

When the solicitation silence period is in effect, no oral or written communication is allowed regarding the solicitation between prospective respondents and members of the Board of County Commissioners the County Administrator, county employees or members of the Board Approved Review Committee. All questions or requests for information regarding the solicitation **MUST** be directed to the designated Purchasing Representative listed in the solicitation.

Any information thought to affect the committee or staff recommendation submitted after bids are due, should be directed to the Purchasing Director or an appointed representative. It shall be the Purchasing Director's decision whether to consider this information in the decision process.

Any violation of this policy shall be grounds to disqualify the respondent from consideration during the selection process.

All respondents must agree to comply with this policy by signing the following statement and including it with their submittal.

I _____ representing Taylor Engineering, Inc.
Signature Company Name

On this 10 day of January 2017 hereby agree to abide by the County's **"Cone of Silence Clause"** and understand violation of this policy shall result in disqualification of my proposal/submittal.

INDEMNIFICATION AND HOLD HARMLESS

To the fullest extent permitted by law, Respondent shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Respondent and other persons employed or utilized by the Respondent in the performance of this Agreement.

Taylor Engineering, Inc.	
Respondent's Company Name	Authorized Signature – Manual
4300 Legendary Drive, Suite C246, Destin, FL 32541	
Physical Address	**James N. Marino, P.E., D.CE**
	Authorized Signature – Typed
Headquarters: 10151 Deerwood Park Blvd., Bldg 300, Ste 300 Jacksonville, FL 32256	
Mailing Address	**President**
	Title
850-460-7040	**850-460-7042**
Phone Number	FAX Number
850-375-8651	**850-375-8651**
Cellular Number	After-Hours Number(s)
1/10/18	**mtrammell@taylorengineering.com**
Date	Email

COMPANY DATA

Respondent's Company Name:	**Taylor Engineering, Inc.**
Physical Address & Phone #:	**4300 Legendary Drive, Suite C246, Destin, FL 32541**
	Headquarters: 10151 Deerwood Park Blvd., Bldg 300, Ste 300
	Jacksonville, FL 32256
Contact Person (Typed-Printed):	**Matt Trammell, P.E.**
Phone #:	**850-460-7040**
Cell #:	**850-375-8651**
Email:	**mtrammell@taylorengineering.com**
Federal ID or SS #:	**FEIN: 59-2850478**
Respondent's License #:	**Professional Engineer #4815**
Respondent's DUNS #:	**15-156-1168**
Fax #:	**850-460-7042**
Emergency #'s After Hours, Weekends & Holidays:	**850-375-8651**

ADDENDUM ACKNOWLEDGEMENT

RFQ TDD 01-18

Acknowledgment is hereby made of the following addenda (identified by number) received since issuance of solicitation:

ADDENDUM NO.	DATE

NOTE: Prior to submitting the response to this solicitation, it is the responsibility of the respondent to confirm if any addenda have been issued. If such addenda have been issued, acknowledge receipt by noting number(s) and date(s) above.

LOBBYING - 31 U.S.C. 1352, as amended

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements
(To be submitted with each bid or offer exceeding $100,000)

The undersigned [Contractor] certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor, **Taylor Engineering, Inc.**, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq., apply* to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

James N. Marino, President Name and Title of Contractor's Authorized Official

1/10/18 Date

Government Debarment & Suspension

Instructions

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out in accordance with these instructions.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person(s) to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Orders 12549, at Subpart C of OMB 2 C.F.R. Part 180 and 3000.332. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the System for Award Management (SAM) database.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier Covered Transactions

The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552(a), as amended). This certification is required by the regulations implementing Executive Orders 12549, Debarment and Suspension, and OMB 2 C.F.R. Part 180, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880.

[READ INSTRUCTIONS ON PREVIOUS PAGE BEFORE COMPLETING CERTIFICATION]

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency;

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal

James N. Marino, P.E., D.CE, President

Printed Name and Title of Authorized Representative

Signature

1/10/18

Date

RECYCLED CONTENT FORM

RECYCLED CONTENT INFORMATION

1. Is the material in the above: Virgin _____ or Recycled _____ (Check the applicable blank). If recycled, what percentage _____%.

   Product Description: _____

2. Is your product packaged and/or shipped in material containing recycled content?

   Yes _____ No _____

   Specify: _____

3. Is your product recyclable after it has reached its intended end use?

   Yes _____ No _____

   Specify: _____

The above is not applicable if there is only a personal service involved with no product involvement.

***N/A: Professional Services Firm**

Name of Respondent: **Taylor Engineering, Inc.**

E-Mail: **jmarino@taylorengineering.com**

EXHIBIT B
GENERAL GRANT FUNDING SPECIAL PROPOSAL CONDITIONS

Either this solicitation is fully or partially Grant funded. Respondents shall comply with the clauses as enumerated below.

1. **Drug Free Workplace Requirements:** Drug-free workplace requirements in accordance with Drug Free Workplace Act of 1988 (Pub l 100-690, Title V, Subtitle D) All contractors entering into Federal funded contracts over $100,000 must comply with Federal Drug Free workplace requirements as Drug Free Workplace Act of 1988.

2. **Contractor Compliance**: The contractor shall comply with all uniform administrative requirements, cost principles, and audit requirements for federal awards.

3. **Conflict of Interest**: The contractor must disclose in writing any potential conflict of interest to the County or pass-through entity in accordance with applicable Federal policy.

4. **Mandatory Disclosures**: The contractor must disclose in writing all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award.

5. **Utilization of Minority and Women Firms (M/WBE):** The contractor must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible, in accordance with 2CFR 200.321. If subcontracts are to be let, prime contractor will require compliance by all sub-contractors. Prior to contract award, the contractor shall document efforts to utilize M/WBE firms including what firms were solicited as suppliers and/or subcontractors as applicable and submit this information with their bid submittal. Information regarding certified M/WBE firms can be obtained from:

   Florida Department of Management Services (Office of Supplier Diversity)
   Florida Department of Transportation
   Minority Business Development Center in most large cities and
   Local Government M/DBE programs in many large counties and cities

6. **Equal Employment Opportunity**: (As per Executive Order 11246) The contractor may not discriminate against any employee or applicant for employment because of age, race, color, creed, sex, disability or national origin. The contractor agrees to take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their age, race, color, creed, sex, disability or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship.

7. **Davis-Bacon Act:** If applicable to this contract, the contractor agrees to comply with all provisions of the Davis Bacon Act as amended (40 U.S.C. 3141-3148). Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. If the grant award contains Davis Bacon provisions, the County will place a copy of the current prevailing wage determination issued by the Department of Labor in the solicitation document. The decision to award a contract shall be conditioned upon the acceptance of the wage determination.

8. **Copeland Anti Kick Back Act:** If applicable to this contract, contractors shall comply with all the requirements of 18 U.S.C. § 874, 40 U.S.C. § 3145, 29 CFR Part 3 which are incorporated by reference to this contract. Contractors are prohibited from inducing by any means any person employed in the construction, completion or repair of public work to give up any part of the compensation to which he or she is otherwise entitled.

9. **Contract Work Hours and Safety Standards Act** (40 U.S.C. 3701–3708): Where applicable, all contracts awarded in excess of $100,000 that involve the employment of mechanics or laborers must be in compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor is required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

10. **Clean Air Act (42 U.S.C. 7401–7671q.)** and the Federal Water Pollution Control Act (33 U.S.C. 1251–1387): as amended—The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

11. **Debarment and Suspension** (Executive Orders 12549 and 12689): A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension. SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. The contractor shall certify compliance. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions and subcontracts.

12. **Byrd Anti-Lobbying Amendment** (31 U.S.C. 1352): Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award. The contractor shall certify compliance.

13. **Rights to Inventions Made Under a Contract or Agreement**: If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401,"Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

14. **Procurement of Recovered Materials**: Contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

15. **Access to Records and Reports:**
Contractor will make available to the County's granting agency, the granting agency's Office of Inspector General, the Government Accountability Office, the Comptroller General of the United States, Okaloosa County, Okaloosa County Clerk of Court's Inspector General, or any of their duly authorized representatives any books, documents, papers or other records, including electronic records, of the contractor that are pertinent to the County's grant award, in order to make audits, investigations, examinations, excerpts, transcripts, and copies of such documents. The right also includes timely and reasonable access to the contractor's personnel during normal business hours for the purpose of interview and discussion related to such documents. This right of access shall continue as long as records are retained.

16. **Record Retention:**
Contractor will retain of all required records pertinent to this contract for a period of three years, beginning on a date as described in 2 C.F.R. §200.333 and retained in compliance with 2 C.F.R. §200.333.

17. **Federal Changes:** Contractor shall comply with all applicable Federal agency regulations, policies, procedures and directives, including without limitation those listed directly or by reference, as they may be amended or promulgated from time to time during the term of the contract.

18. **Termination for Default (Breach or Cause):**
Contracts in excess of $10,000 – If Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the County may terminate the contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

19. **Safeguarding Personal Identifiable Information**
Contractor will take reasonable measures to safeguard protected personally identifiable information and other information designated as sensitive by the awarding agency or is considered sensitive consistent with applicable Federal, state and/or local laws regarding privacy and obligations of confidentiality.

20. **Prohibition on utilization of cost plus a percentage of cost contracts**: The County will not award contracts containing Federal funding on a cost plus percentage of cost basis.

21. **Prohibition on utilization of time and material type contracts:** The County will not award contracts based on a time and material basis if the contract contains Federal funding.

22. **Disputes:** Any dispute arising under this Agreement which is not settled by Agreement of the parties may be settled by mediation, arbitration, or other appropriate legal proceedings. Pending any decision, appeal

or judgment in such proceedings or the settlement of any dispute arising under this Agreement, shall proceed diligently with the performance of this Agreement in accordance with the decision of the County. This Agreement shall be construed under the laws of the State of Florida, and venue for any actions arising out of this Agreement shall be in the Circuit Court of Okaloosa County.

23. **Energy Policy and Conservation Act (43 U.S.C.§6201)**

All contracts except micro-purchases ($3000 or less, except for construction contracts over $2000). Contracts shall comply with mandatory standards and policies relating to energy efficiency, stating in the state energy conservation plan issued in compliance with the Energy Policy and Conservation act. (Pub. L. 94-163, 89 Stat. 871) [53 FR 8078, 8087, Mar. 11, 1988, as amended at 60 FR 19639, 19645, Apr. 19, 1995].

As the person authorized to sign this statement, I certify that this company complies/will comply fully with the above requirements.

DATE: 1/10/18

SIGNATURE: 

COMPANY: **Taylor Engineering, Inc.**

NAME: **James N. Marino, P.E., D.CE**

ADDRESS: **HQ: 10151 Deerwood Park Blvd.**
Bldg 300, Ste 300
Jacksonville, FL 32256

TITLE: **President**

E-MAIL: **jmarino@taylorengineering.com**

PHONE NO.: **904-731-7040**

Exhibit "C"

Title VI Clauses for Compliance with Nondiscrimination Requirements

Compliance with Nondiscrimination Requirements

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts And Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:

    a. Withholding payments to the contractor under the contract until the contractor complies; and/or

    b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt

by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by

discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The [*contractor* | *consultant*] has full responsibility to monitor compliance to the referenced statute or regulation. The [*contractor* | *consultant*] must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

E-VERIFY

Enrollment and verification requirements.

(1) If the Contractor is not enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall-

a. Enroll. Enroll as a Federal Contractor in the E-Verify Program within thirty (30) calendar days of contract award;

b. Verify all new employees. Within ninety (90) calendar days of enrollment in the E-Verify program, begin to use E-Verify to initiate verification of employment eligibility of all new hires of the Contractor, who are working in the United States, whether or not

assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); and,

c. Verify employees assigned to the contract. For each employee assigned to the contract, initiate verification within ninety (90) calendar days after date of enrollment or within thirty (30) calendar days of the employee's assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section.)

(2) If the Contractor is enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall use E-Verify to initiate verification of employment eligibility of

a. All new employees.

i. Enrolled ninety (90) calendar days or more. The Contractor shall initiate verification of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); or

b. Enrolled less than ninety (90) calendar days. Within ninety (90) calendar days after enrollment as a Federal Contractor in E-Verify, the Contractor shall initiate verification of all new hires of the contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section; or

ii. Employees assigned to the contract. For each employee assigned to the contract, the Contractor shall initiate verification within ninety (90) calendar days after date of contract award or within thirty (30) days after assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section.)

(3) If the Contractor is an institution of higher education (as defined at 20 U.S.C. 1001(a)); a State of local government or the government of a Federally recognized Indian tribe, or a surety performing under a takeover agreement entered into with a Federal agency pursuant to a performance bond, the Contractor may choose to verify only employees assigned to the contract, whether existing employees or new hires. The Contractor shall follow the applicable verification requirements of (b)(1) or (b)(2), respectively, except that any requirement for verification of new employees applies only to new employees assigned to the contract.

(4) Option to verify employment eligibility of all employees. The Contractor may elect to verify all existing employees hired after November 6, 2986 (after November 27, 2009, in the Commonwealth of the Northern Mariana Islands), rather than just those employees assigned to the contract. The Contractor shall initiate verification for each existing employee working in the United States who was hired after November 6, 1986 (after November 27, 2009, in the Commonwealth of the Northern Mariana Islands), within one hundred eighty (180) calendar days of-

i. Enrollment in the E-Verify program; or

ii. Notification to E-Verify Operations of the Contractor's decision to exercise this option, using the contract information provided in the E-Verify program Memorandum of Understanding (MOU)

(5) The Contractor shall comply, for the period of performance of this contract, with the requirements of the E-Verify program MOU.

i. The Department of Homeland Security (DHS) or the Social Security Administration (SSA) may terminate the Contractor's MOU and deny access to the E-Verify system in accordance with the terms of the MOU. In such case, the Contractor, will be referred to a suspension or debarment official.

ii. During the period between termination of the MOU and a decision by the suspension or debarment official whether to suspend or debar, the contractor is excused from its obligations under paragraph (b) of this clause. If the suspension or debarment official determines not to suspend or debar the Contractor, then the Contractor must reenroll in E-Verify.

iii. Web site. Information on registration for and use of the E-Verify program can be obtained via the Internet at the Department of Homeland Security Web site: http://www.dhs.gov/E-Verify.

Individuals previously verified. The Contractor is not required by this clause to perform additional employment verification using E-Verify for any employee-

(a) Whose employment eligibility was previously verified by the Contractor through the E-Verify program;

(b) Who has been granted and holds an active U.S. Government security clearance for access to confidential, secret, or top secret information in accordance with the National Industrial Seucirty Program Operating Manual; or

(c) Who has undergone a completed background investigation and been issued credentials pursuant to Homeland Security Presidential Directive (HSPD)-12. Policy for a Common Identification Standard for Federal Employees and Contractors.

Subcontracts. The Contractor shall include the requirements of this clause, including this paragraph € (appropriately modified for identification of the parties in each subcontract that-

(1) Is for-(i) Commercial and noncommercial services (except for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item, but for minor modifications), performed by the COTS provider, and are normally provided for that COTS item); or

(ii) Construction;

(2) Has a value of more than $3,500; and

(3) Includes work performed in the United States.

James N. Marino
President

QUALIFICATION SCORING SHEET

Date Submitted: _____

PROPOSAL#: RFQ TDD 01-18

PROPOSAL TITLE: East Pass Inlet Supplemental Sediment Excavation Study

RANKING CRITERIA			
Experience, as the principal investigator, in supplemental sediment excavation feasibility studies for south Atlantic and/or Gulf Coast inlets. (45 points)			
Experience, as the principal investigator, in developing inlet management plans for Floridian inlets (20 points)			
Submittal demonstrates a past record of professional accomplishments related to the areas of work the firm is proposing to perform? (15 points)			
Adequate qualifications, responsibilities and the relevant experience of the assigned personnel.(15 points)			
Feedback from references, representative of past experience similar to the services described herein. (5 points)			

TAYLOR ENGINEERING, INC.
Delivering Leading-Edge Solutions

January 22, 2018

Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, Florida 32536

Re: RFQ TDD 01-18: East Pass Inlet Supplemental Sediment Excavation Study

Dear Mr. Kisela:

Taylor Engineering, Inc. welcomes this opportunity to submit our qualifications to support Okaloosa County's East Pass Inlet supplemental sediment excavation study. With this submittal, we intend to demonstrate our experience in delivering leading-edge engineering and environmental solutions within inlet and coastal environments. We also intend to communicate our continued commitment to address Okaloosa County's long-term coastal and environmental needs — those that extend beyond that of a single contract. We proudly offer multiple representative projects throughout the submittal that reflect long-term client relationships with Okaloosa County and other government agencies for similar services.

We intend for this submittal to underscore a salient point — namely, that *no other company headquartered in Florida can match Taylor Engineering's depth and breadth of corporate experience in this field of practice.* Specifically to Okaloosa County and East Pass, no other engineering firm can show the same level of experience on County or inlet projects or match the understanding of local areas as exemplified by our native Destin office leader and project manager Mr. Matthew Trammell, P.E.

Granted, other companies will make claims similar to ours. They will emphasize their extensive experience, personnel with specialized expertise, and familiarity with the local area. However, we contend that few companies, if any, can match Taylor Engineering's combination of assets: our proven ability to design constructible and cost-effective inlet and coastal projects; our superb working relationship with local, regional, state, and federal agency personnel; and our strength in construction engineering and administration. Our coastal, marine, and dredging engineers and environmental scientists work only on projects in the water or near the water's edge. This true specialization demands we succeed on every project to survive as a company, and that success leads to our client's success.

Taylor Engineering's six core values — integrity, service, excellence, responsibility, commitment, and teamwork — guide our everyday activities and relationships and support our vision of "delivering leading-edge solutions to challenges in the water environment." Our commitment to these values results in clients' high regard for Taylor Engineering. Ninety percent of Taylor Engineering's annual revenues derive from repeat business. No higher compliment exists in our field.

Taylor Engineering is an employee-owned company. Therefore, every employee has a stake in maintaining our reputation and ensuring that the quality of our work meets and exceeds the standards of practice. Employee ownership also means that accountability rests in our Jacksonville, Destin, Sarasota, and West Palm Beach offices. In addition, I am proud to say that for every dollar of revenue earned, Taylor Engineering pays all of its corporate taxes to the United States and to Florida. Those same tax dollars go back into local government-sponsored projects. We have sought no convenient tax shelter elsewhere in the world. No decision made in London, Toronto, Pasadena, Dublin, New York, or Baton Rouge determines our level of commitment to our client. Our ability to remain both flexible and responsive is without equal. We are proud to serve Florida and the nation, and to remain accountable right here at home.

To address the additional services requested in the RFQ, we have enlisted the assistance of two other firms: Athena Technologies, Inc. (geotechnical services and vibracoring) and Gustin, Cothern, & Tucker, Inc. (nearshore and inland surveying). Notably, Taylor Engineering has a successful history working with these subconsultants. Both subconsultants have knowledge of key project issues within Okaloosa County and East Pass, and direct project experience with coastal and environmental projects in Okaloosa County, Destin and the Florida panhandle. Further, Taylor Engineering and Gustin, Cother, & Tucker, maintain *local offices* in Okaloosa County, and are readily available to respond to the County's immediate needs.

Taylor Engineering will administer and manage the East Pass work from its local Destin office:

Taylor Engineering, Inc.
4300 Legendary Drive, Suite C246
Destin, FL 32541
Phone (850) 460-7040
Fax (850) 460-7042

Matthew Trammell, P.E. will serve as the project manager for this contract. Mr. Trammell has lived in Okaloosa County for over 34 years and, like our other Destin employees, is intimately familiar with East Pass and adjacent coastlines, Choctawhatchee Bay and other natural areas. Mr. Trammell descends from three generations of commercial fishermen and lives a very active "waterman" lifestyle, including surfing, fishing, scuba diving, and swimming. This constant interaction with the offshore, beach, and bay systems provides him with a unique understanding, perspective, and appreciation for the natural systems within Okaloosa County and the surrounding areas, and specifically East Pass. Mr. Trammell is actively involved and committed to the local community. He serves on the Destin Harbor and Waterways Board, is a member of the Choctawhatchee Basin Alliance, volunteers for the I Love Science program at Destin Elementary and Destin Middle School, and attends local government meetings (BCC, TDD, City Council, etc.) to stay abreast of local and regional issues. Mr. Trammell regularly volunteers his time and professional expertise to the community to enhance the public's understanding of the natural areas within Okaloosa County; foster innovation, sustainability, and environmental responsibility; and advance local ecosystem restoration and shoreline protection. The County will not find a more knowledgeable and dedicated project manager.

If you have any questions about this submittal, please contact me at (904) 731-7040 or *jmarino@taylorengineering.com*, or Mr. Trammell at (850) 460-7040 or *mtrammell@taylorengineering.com.* I appreciate this opportunity to present our qualifications and look forward to providing the highest quality services to Okaloosa County.

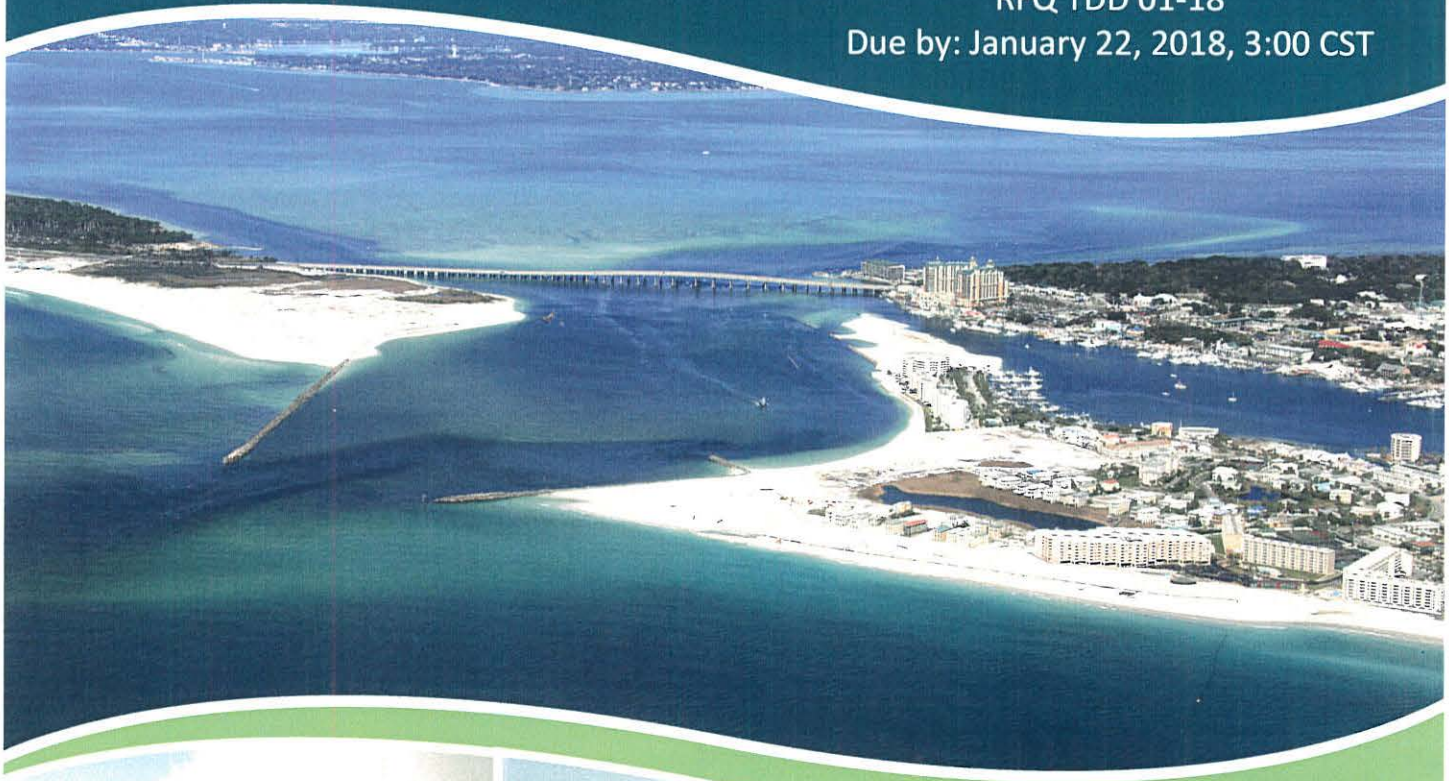
Sincerely,

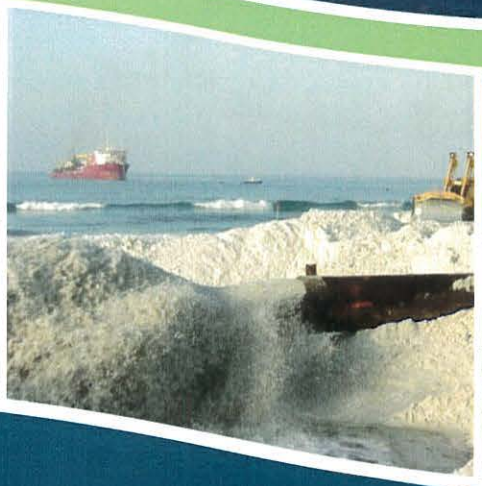
James N. Marino, P.E., D.CE
President

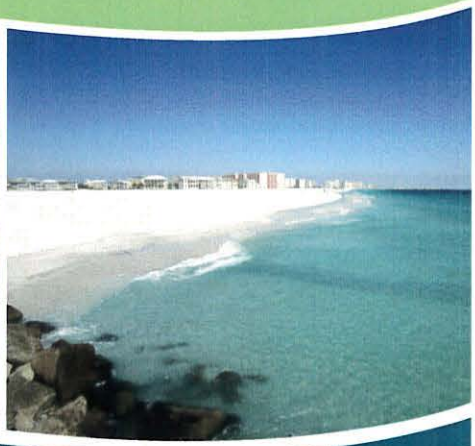
ORIGINAL

Okaloosa County
East Pass Inlet Supplemental Sediment Excavation Study

RFQ TDD 01-18
Due by: January 22, 2018, 3:00 CST







TAYLOR ENGINEERING, INC.

Tab 1. Experience in Supplemental Sediment Excavation Feasibility Studies for South Atlantic and Gulf Coast Inlets

Taylor Engineering has conducted all aspects of inlet management and associated beach restoration projects, including but not limited to: ***feasibility studies***; management plan formulation; geotechnical investigations; engineering and dredging design; federal, state, and local permitting; surveying; physical monitoring; aerial photography; development of plans and specifications; bid administration assistance; construction observation and management; post-construction monitoring and reporting; long-term inlet management and administration; and economic elements.

We have performed these services as the principal investigator for local governments, state and federal agencies, and numerous special taxing districts responsible for port or inlet management throughout Florida and the southeastern United States. Examples of Taylor Engineering's project experience related to inlet sediment excavation feasibility studies as the principal investigator are listed below, followed by brief summaries of the work performed for each project to highlight our specific experience and expertise related to the proposed work at East Pass.

- East Pass Inlet
- Fort Pierce Inlet
- Ponce de Leon Inlet
- Matanzas Inlet
- St. Augustine Inlet
- St. Lucie Inlet
- JaxPort Deepening
- Mexico Beach Inlet

Destin/Walton Beach Project Borrow Area

East Pass Inlet

In support of the East Pass Inlet Management Plan, Taylor Engineering conducted a ***comprehensive feasibility study*** that included a detailed literature review (i.e., documented the history of East Pass, local geology, environmental considerations, and physical processes within the inlet and surrounding shorelines), detailed coastal data collection and analysis (tidal, wave, and current measurements), survey data collection and analysis to calculate historic shoreline and erosion/accretion trends, hydrodynamic modeling to accurately represent the flood and ebb tidal current patterns and storm surge, inlet stability and hydraulic characteristics analyses, wave refraction and translation analyses, sediment budget calculations, numerical modeling to calculate pre- and post-stabilization sediment transport and trapping rates, and environmental assessments. The study assessed various management alternatives including navigation channel and inlet dredging alternatives (e.g., channel relocations, various dredging templates) and structural alternatives to further stabilize the inlet, adjacent beaches and Norriego Point. In summary, the plan recommended mechanically bypassing (via navigation channel dredging) the calculated long-shore transport volume to the adjacent eroding beach, stabilizing Norriego Point, and implementing a comprehensive monitoring program to provide the data necessary for potential future modifications including increased sediment excavation, channel realignments, or alternative placement locations.

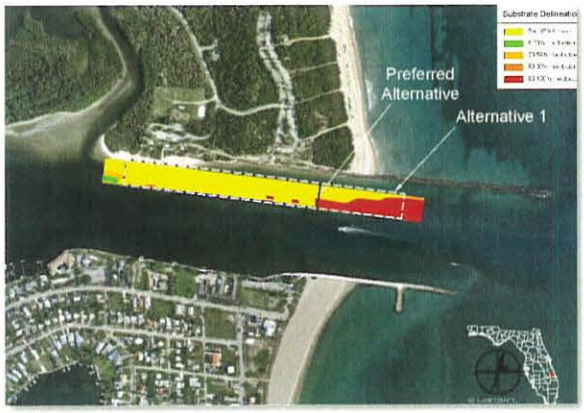
In addition to the East Pass Inlet Management Plan, Taylor Engineering also conducted ***East Pass Inlet excavation feasibility studies*** in support of the 2006 Destin/Walton Beach Restoration Project. The project targeted the offshore (inactive) portion of the East Pass ebb shoal as the borrow source for the approximately seven-mile long beach restoration project. The study included detailed numerical modeling

Destin/Walton Beach Project Borrow Area

of the inlet and adjacent shorelines to verify that the proposed borrow dredging would not adversely impact inlet stability, induce erosion along the adjacent shorelines, or cause other harmful conditions within East Pass or Choctawhatchee Bay (e.g., increased storm surge). The innovative design prompted FDEP scientists and engineers to thoroughly scrutinize Taylor Engineering's work. Ultimately, FDEP granted authorization for the pioneering project. Given the advanced and innovative design uncommon to the panhandle or Florida inlets, FDEP required annual monitoring of the ebb shoal system and adjacent beaches for five years following project construction as well as additional mitigation to offset any potential impacts. As originally predicted by Taylor Engineering's analyses, the annual post-dredge monitoring indicated the ebb shoal system and the adjacent beaches remained stable. Following completion of the required monitoring, Taylor Engineering documented the monitoring results in a report and successfully requested FDEP to remove the mitigation requirements from the permit, providing significant savings to Okaloosa, Destin, and Walton Counties (on the order of about $1 million).

Fort Pierce Inlet

Taylor Engineering conducted a multi-phase investigation — including feasibility study, design, and permitting — for a sediment impoundment basin within Fort Pierce Inlet to help bypass sand to the downdrift (adjacent eroding) beach. During 2008–2009, Taylor Engineering conducted preliminary investigations that began with a detailed field data collection effort including wind and tide measurements, bathymetric and topographic surveys, inlet tidal flow velocity measurements, inlet sediment flux and suspended sediment concentration, and offshore wave measurements. Inlet sediment characteristics provided validation data on sediment size, concentration, and vertical distribution and, together with measured flow velocities, provided an understanding of the mechanisms involved in inlet sediment transport. These data helped confirm and refine assumptions in determining the feasibility of a sediment basin in the inlet. Completed in February 2009, the preliminary study recommended: 1) numerical modeling of the hydraulics, sediment transport, and morphology of the study area to estimate shoaling rates and basin evolution after construction and refine basin design alternatives; 2) subsurface geotechnical investigation of the project area to accurately characterize the horizontal and vertical distribution of materials required for basin excavation; and 3) preparation of an environmental assessment to provide information necessary for permit applications to state and federal regulatory agencies.



Benthic Habitat Map for Proposed Sand Trap

In the subsequent phase, Taylor Engineering applied the MIKE modeling system to evaluate various sand trap alternatives and identified a preferred design that minimizes project impacts on hardbottom while providing

operational efficiency and adequate impoundment capacity. The study also assessed existing conditions, applied three different methodologies to estimate shoaling rates, and developed two conceptual designs for a sediment deposition basin. The following design and permitting phase further refined the design, determined project impacts, and developed a hardbottom mitigation plan that included siting and preliminary design of an artificial reef within the inlet. FDEP issued a permit for basin construction in 2016 and has provided partial funding for final design, bid, and construction phase services. Taylor Engineering has commenced preparations for an updated final design bathymetry survey and development of construction plans, technical specifications, and contract documents. ***As the Fort Pierce project represents one of the most recent sediment excavation projects performed in the state, we are intimately familiar with the State's current requirements for inlet sediment excavation feasibility studies and permitting.***

Of note, Taylor Engineering also helped administer a sediment tracer study, cost-shared between FDEP and St. Lucie County, at Fort Pierce Inlet. The study was designed to (1) better understand actual sand transport pathways, rates of movement, and the fate of material in the inlet vicinity and (2) to help validate the numerical modeling conducted for the sediment impoundment basin design and the potential performance of the basin. The independent study results indicated that Taylor Engineering's numerical modeling results correctly identified the most suitable location for the basin.

Ponce de Leon Inlet

Ponce de Leon Inlet and Flood Shoal

Over the past 24 years, Taylor Engineering has provided Volusia County, Florida, with a wide variety of coastal engineering services focusing on the management of Ponce de Leon Inlet and Volusia County's beaches to the south. Efforts at the inlet began in 1994 with an inlet management feasibility study and development of one of the first inlet management plans adopted by the FDEP (further discussed in Tab 2). Taylor Engineering numerically modeled inlet hydrodynamics, sediment transport, and shoreline changes to evaluate the effects of various alternatives on inlet hydraulics, shoaling, and ocean and inlet interior shorelines. Final recommendations included a 1,000-foot south jetty seaward extension and a 2,350-foot north jetty landward extension. Taylor Engineering also conducted a study to quantify the benefits of jetty improvements on inlet maintenance dredging and north jetty maintenance requirements. The U.S. Army Corps of Engineers (USACE) constructed the north jetty extension between 2000 and 2002. In 2005, Taylor Engineering addressed concerns regarding potential effects to the surfing wave climate — following additional tidal hydrodynamics and wave modeling — by realigning the south jetty's proposed extension from a dogleg to a straight orientation. Volusia County ultimately abandoned pursuit of the south jetty extension due to lack of federal funding.

To further improve inlet management and support sand bypassing efforts, Taylor Engineering also completed an updated sediment budget and flood shoal removal feasibility study. The flood shoals at Ponce de Leon Inlet contain significant amounts of sand and, as such, act as potential borrow areas for beach management activities. The feasibility study investigated the impacts of flood shoal removal on the inlet hydraulics and sedimentation/erosion characteristics of Ponce de Leon Inlet. A sediment exploration and analysis program evaluated the sediment characteristics within the flood shoals to help determine compatibility with native beach sand. Taylor Engineering employed numerical modeling to determine the

Salt Run Channel Leading into the Inlet

calculating dredging volumes for each alignment at each of three proposed depths; quantifying the variation of sediment quality with dredging depth; using hydrodynamic modeling techniques, evaluating the impact of each alternative on existing patterns of tidal circulation and sedimentation; and evaluating alternative techniques of dredging and material handling and detailing a preferred dredging and dredged material management plan appropriate to the specific requirements of the project. After federal Coastal Barrier Resources Act issues prevented further consideration of a federal channel, Taylor Engineering completed the permitting, final plans, and specifications based on the results of the engineering appendix for a locally constructed and maintained channel sponsored by the City of St. Augustine. Additionally, given our first-hand experience with the inlet, Taylor Engineering served as a key member of the St. Augustine Inlet Management Plan update Technical Advisory Committee during the most recent FDEP-led plan update.

St. Lucie Inlet

Dredging records indicate that the Okeechobee Waterway (OWW) Cut 1, inside St. Lucie Inlet, requires maintenance dredging on average every 3.3 years. To reduce the frequency and costs of maintenance dredging, the Florida Inland Navigation District (FIND) tasked Taylor Engineering to conduct a feasibility study to identify and analyze the features, hydrodynamics, and sediment characteristics of the OWW Cut 1 area and to determine whether alternatives exist that would reduce sediment inflow into OWW Cut 1. To understand the dominant coastal processes that affect sediment transport at the St. Lucie Inlet, St. Lucie River, OWW, and adjacent waterways, Taylor Engineering measured tides and currents and reviewed existing data, which provided an historical perspective on past efforts and allowed Taylor Engineering to document and assess existing data and identify data gaps. Taylor Engineering set up, validated (using field measured data), and applied an integrated MIKE hydrodynamic, wave, sediment transport, and morphology model to evaluate the short-term and long-term sediment trapping performance of various sediment basin alternatives. The alternative basins varied in locations, size, shape, and depths. Evaluations of long-term shoaling indicated that one alternative can improve the maintenance dredging interval to every five years on average. From the related cost analysis, this alternative also provides an annual savings of approximately $154,000 when compared with the current maintenance dredging equivalent uniform annual cost.

St. Lucie Inlet Numerical Model Domain

JaxPort Deepening

The 2016 completion of expansion works at the Panama Canal allows larger ships to transit between Asia and the U.S. east coast. This event provides a unique high-economic-value opportunity for the Port of

Jacksonville to become one of the few ports on the U.S. east coast capable of serving the larger ships traversing the canal. Monetizing this opportunity requires expansion of the federally authorized Jacksonville Harbor Navigation Project. To that end, the U.S. Army Corps of Engineers (USACE) Jacksonville District has been working with the local sponsor — the Jacksonville Port Authority — to develop and implement the National Economic Development alternative, the channel redesign which produces the highest net benefit to the nation.

JaxPort Deepening Numerical Model

During its studies, USACE enlisted the assistance of Taylor Engineering multiple times as the project evolved from the general reconnaissance and planning phase in 2009 to the complex plan formulation phase — documented in a General Reevaluation Report (GRR) and an Environmental Impact Statement (EIS) — that was completed in 2014. The reports investigated channel depth alternatives ranging from 40 to 50 feet from the river mouth upstream a distance of 20 miles.

In the first task order, Taylor Engineering collected wave, current, water surface elevation, and salinity and suspended sediment concentration data with a variety of mobile and stationary measurement instrumentation — side- and bottom-facing ADPs, ADCPs, ADVs, water level gages, CTDs, and LISST. The instruments deployed for periods ranging from six to 90 days. These data supported the calibration of numerical models for circulation, salinity, sediment transport, and ecological parameters. In a succeeding task order, Taylor Engineering applied the ADCIRC model to develop and provide oceanic and estuarine boundary conditions for the use of nearshore models RMA, CMS, and EFDC.

In response to later requests from USACE, Taylor Engineering conducted hydrodynamic and salinity modeling with the Environmental Fluid Dynamics Code (EFDC) model (a refined and recalibrated St. Johns River Water Management District (SJRWMD) model), ecological modeling with tools developed by SJRWMD, and water quality modeling with the CE-QUAL-ICM model. These models provided information for inclusion in the Jacksonville Harbor Navigation Project GRR Phase 2 and EIS. The modeling provided the means to assess the direct impacts of channel modifications on river salinity and the cumulative impacts of other factors, including the U.S. Navy Mayport Deepening Project, Mile Point Improvement Project, other navigational improvements, sea level rise, and freshwater withdrawals from the St. Johns River. The domain of the EFDC model encompassed the lower St. Johns River, the river's mouth (St. Johns River Inlet), and adjacent Atlantic Ocean. The study area also included Chicopit Bay, White Shells Bay, Mill Cove, major tributaries, and sections of the Intracoastal Waterway, and extended about 120 miles upstream through Crescent Lake and Lake George. Taylor Engineering refined the EFDC model mesh to provide improved resolution in the federal channel to capture channel modification alternatives accurately. Results from the EFDC model provided input for ecological models to evaluate channel modification effects on plankton, submerged aquatic vegetation, wetlands, benthic macroinvertebrates, and fishes and for the CE-QUAL-ICM to estimate effects on dissolved oxygen and chlorophyll.

Taylor Engineering developed and applied a fine-grid MIKE21 model to assess channel modification effects on salinity in numerous salt marshes and river tributaries — Timucuan salt marsh, Ortega River, Cedar River, Julington Creek, and Durbin Creek. Proudly, Taylor Engineering met the accelerated schedule (14 months ahead of schedule made possible with our use of in-house supercomputer), the Chief of Engineers

effects of numerous dredging alternatives on tidal hydraulics, sediment transport, and associated maintenance dredging requirements. The feasibility study results indicated several promising dredging alternatives; the dredging improved the flow distribution and navigation conditions across the inlet entrance and alleviated the hydraulic pressure on the north jetty while causing minimal effects on the flow patterns, sediment transport, and adjacent shoreline in the inlet interior. Funding issues and changing county priorities lead to a delay in project implementation. Of note, Taylor Engineering is currently revising the sediment budget incorporating updated data for the Ponce De Leon Inlet area of influence.

Matanzas Inlet

Matanzas Inlet

Matanzas Inlet, a natural inlet in southern St. Johns County, captures some of the littoral sediment and directs the captured sediments to the Intracoastal Waterway (ICWW), thus requiring the USACE and Florida Inland Navigation District (FIND) to frequently conduct maintenance dredging operations to maintain navigable ICWW depths. Unlike virtually all other inlets on Florida's east coast, no agency maintains the inlet for navigation and no inlet management program exists at Matanzas Inlet to manage the littoral material introduced through the inlet to interior channels. Thus, FIND retained Taylor Engineering in 2007 to perform a feasibility study to identify, quantify, and analyze the existing features, wave climate, hydrodynamics, and sediment characteristics of Matanzas Inlet to determine whether any alternatives exist that would reduce sediment inflow into the ICWW channel and other adjacent waterways. Taylor Engineering conducted field measurements of flow velocity and water level to validate and apply state-of-the-art modeling tools — the MIKE suite of hydrodynamic, spectral wave, and sand transport models — to evaluate the existing sediment transport mechanisms and various alternatives to reduce sediment inflow into the ICWW. These models provided a realistic simulation of inlet and waterway sediment transport and morphological changes through integrated and fully-dynamic feedbacks between sediment transport forcing mechanisms and waterway bed elevation changes. Interestingly, the study revealed that the scenarios investigated would not provide economically feasible results. Ultimately, this saved further expenditure of funds by FIND on an ineffective project.

St. Augustine Inlet

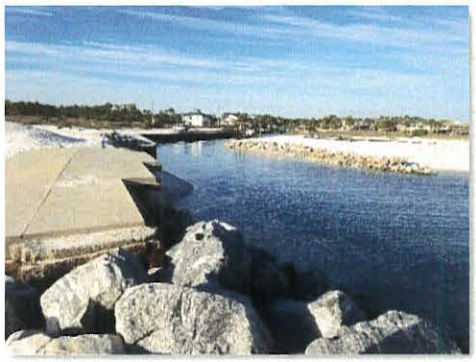
Taylor Engineering has served as the St. Augustine Port, Waterway and Beach District's engineer continuously since 1991. Early on, the District commissioned Taylor Engineering to develop a District Master Plan, a vehicle to establish clear and realistic District goals and objectives. With the Master Plan as a backdrop, other projects followed, including the state-adopted St. Augustine Inlet Management Plan (further discussed in Tab 2).

Taylor Engineering prepared the Engineering Appendix for a U.S. Army Corps of Engineer's Jacksonville District section 107 Feasibility Study for a federal navigation channel in Salt Run, a shallow embayment that extends southward from the St. Augustine Harbor Inlet entrance channel. Specific responsibilities included analysis of existing bathymetry, patterns of sedimentation, shoaling rates, sediment characteristics, and tidal circulation within Salt Run; designing three alternative channel alignments and

signed the Jacksonville Harbor Deepening Project report, and the U.S. Congress authorized the project as part of the Water Resources Development Act of 2014.

Mexico Beach Inlet

As discussed further in Tab 2, Taylor Engineering conducted an ***inlet management feasibility study*** resulting in the ***inlet management plan*** for Mexico Beach Inlet in Bay County. The study consisted of four phases: (1) literature review, (2) identification of the inlet's physical characteristics including developent of a sediment budget, (3) identification and evaluation of alternatives for sediment management strategies, and (4) a recommended plan of action to implement the optimum sand bypassing alternative. Through collective results of the four phases, Taylor Engineering 1) developed an understanding of the processes governing the inlet's behavior and their impacts on environmental and physical conditions and 2) developed an inlet management plan designed to mitigate the negative impacts identified.



Mexico Beach Inlet

In addition to Taylor Engineering's direct invovlement with Mexico Beach Inlet, Taylor Engineering's proposed project manager Mr. Trammell, while working at a previous employer, was the lead numerical modeler and one of the key investigators for the Mexico Beach Feasibility Study and Beach Management Plan. The plan included coastal processes analysis of the Mexico Beach coastal system (including the inlet), risk assessment of upland structures and infrastructure, beach and inlet management alternatives analysis, funding options, and recommendations. The alternatives analysis included sand bypassing modifications (including a sand trap and modified dredge templates), and beach and dune restoration. Building upon the previous work performed by Taylor Engineering, the beach management plan recommended implementing Taylor's previous alternatives – jetty structure modifications and additional sediment excavation area (sand trap) to enhance sand bypassing operations and provide additional beach-quality sand for eroding shorelines further down-drift from the inlet. During follow-on phases of the project, Mr. Trammell performed the coastal engineering design for the inlet jetties and sediment bypassing system to transfer material from the inlet and sand trap to down-drift eroding beaches. Mr. Trammell was involved in nearly all phases of this project from preliminary investigations and design, through regulatory permitting and ultimately the preparation of construction documents.

Related Expertise

In addition to the inlet-specific feasibility studies above, our experience with other related services — including inlet bypassing, navigation, channel deepening, and other dredging studies; coastal processes, modeling, and analysis; borrow area design and sand compatibility; and beach planning, design, and construction — further demonstrate our comprehensive understanding of the in-depth analyses and coordination that will be required to successfully implement Okaloosa County's East Pass management initiatives. The following sections summarize our experience providing the above services. Tab 3 provides descriptions for select projects that further demonstrate our experience with these services.

Inlet Bypassing, Navigation, Channel Deepening, and other Dredging Studies

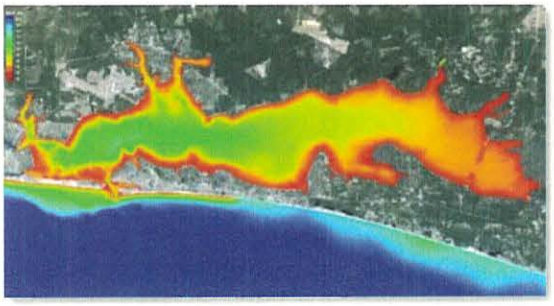
Taylor Engineering has been the principal investigator in numerous other sediment excavation studies and construction projects to bypass sand at inlets and to modify channel locations, increase authorized

navigation channel depths, or widen authorized channels to reduce maintenance dredging requirements, increase the volume of sand placed on open-coast beaches, and enhance navigation. These projects generally all required the same level of investigations and engineering design as will the County's East Pass Inlet feasibility study (e.g., data collection; numerical hydrodynamic, wave and sediment transport modeling; geotechnical investigations; regulatory/TAC/public stakeholder coordination; alternatives analysis; cost estimating; etc.). For most of these projects, Taylor Engineering performed further follow-on tasks including final engineering design, regulatory permitting, construction administration, and post-construction monitoring. The following list includes a select few projects Taylor Engineering has completed at or near Florida's Atlantic coast inlets:

1. FIND OWW Sediment Study – sediment basin feasibility study
2. FIND Dania Canal Deepening – channel deepening project
3. FIND ICWW Broward Deepening – channel deepening project
4. FIND ICWW Palm Beach Dredging – channel deepening project
5. Sebastian Inlet – channel completion permitting, design, and construction
6. Jupiter Inlet – long-term services including inlet maintenance dredging/bypassing
7. Caxambas Pass – inlet borrow area design and permitting, excavation impact analysis

Coastal Processes, Modeling, and Analysis

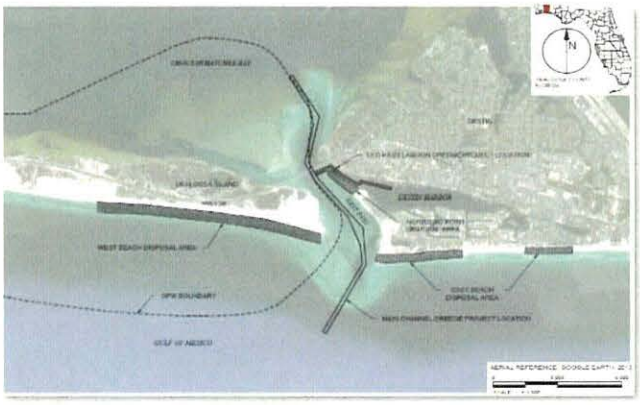
Understanding an inlet's coastal processes and the inlet's effects on the local and regional coastal system is a crucial element of inlet management, coastal engineering, and associated beach restoration projects. Taylor Engineering has extensive experience in every aspect of coastal processes analyses including inlet shoreline and volume changes, empirical orthogonal analyses, sediment budgets, littoral transport, wave modeling, tidal hydrodynamics modeling, beach morphology modeling, storm effects, storm damage assessments, inlet management, and sand bypassing. We apply in-house wave transformation and sediment transport models to analyze inlet shoaling, assess the effects of structures and navigation channels on adjacent shorelines and shoal systems, estimate sediment transport within inlets or the littoral zone, design coastal structures, investigate borrow site or inlet mining impacts on fronting beaches, analyze the effects of hardbottom on nearshore beach behavior, and provide input to shoreline change and dune erosion models. Taylor Engineering has performed all of these services in support of numerous inlet excavation studies and projects, including East Pass in Okaloosa County (see Tab 3). ***We have existing, in-house hydrodynamic, wave, and sediment transport numerical models for the Gulf of Mexico, East Pass Inlet, and Choctawhatchee Bay shorelines of Okaloosa County.*** These existing resources will allow Taylor Engineering to quickly and cost-effectively respond to any inlet and coastal management needs as they arise. Given our existing modeling resources and experience, USACE contracted us directly to perform the wave transformation and beach modeling for the Panama City Limited Re-Evaluation Report (LRR). Additionally, FDEP contracted us directly to value engineer, prepare construction documents and manage the Norriego Point Stabilization Project. The project was previously designed by another consultant; however, given our local knowledge, experience and existing resources, we were able to revise the project and save the City of Destin and State millions of dollars which allowed the project to move forward expeditiously with the available NRDA funding.



East Pass and Choctawhatchee Bay System

Borrow Area Design & Sand Compatibility

Taylor Engineering and Athena Technologies have conducted several inlet geotechnical and sand source investigations, and Taylor Engineering has designed and permitted borrow areas for various government entities including Okaloosa County, City of Destin, Eglin AFB, Walton County, Palm Beach County, Martin County, St. Lucie County, and the USACE. The projects include reconnaissance and detail-phase sub-bottom seismic surveys, bathymetric surveys, cultural resource surveys, and vibracore collection. Engineering evaluations include characterization of native beach sand and potential borrow material, overfill analysis, design of borrow area dredging templates, preparation of borrow area conservation plans, and borrow area excavation impact (modeling) analyses. Most notably, Taylor Engineering designed and permitted the highly-innovative borrow site for the 2006 Destin/Walton Beach Restoration Project that provided over 3,000,000 cubic yards of beach quality sand for over 7 miles of critically-eroded beaches in Okaloosa and Walton Counties. Recently, we permitted East Pass navigation channel dredging and alternative disposal areas for the City of Destin allowing material to be placed on Norriego Point and the eroding beaches of West Destin and Holiday Isle – areas not authorized under prior permits. From our vast experience in the Florida panhandle, ***we are keenly aware of the area's high quality, sugar-white beaches; the strict requirements for sand compatibility; and the high-quality offshore sand required to preserve these precious resources.***



Authorized East Pass Dredging and Placement Areas

Beach Planning, Design, and Construction

Outside of inlet management, Taylor Engineering has also performed numerous regional- and project-level feasibility studies and plan formulation documents for various state and local government clients in support of large and small-scale beach restoration and shoreline stabilization projects. While many of these studies did not include inlet excavation, nearly all of them involved very similar services to those required for the County's East Pass work, and are directly related given the primary purpose of the proposed inlet excavation is to assist in managing adjacent beach resources.

Specifically to Okaloosa County, Taylor Engineering conducted a ***comprehensive regional feasibility study*** of 32 contiguous miles of shoreline in Okaloosa (Destin) and Walton counties. The study integrated engineering, environmental, and economic elements and ultimately recommended, as a top priority, a seven-mile beach restoration project in eastern Destin and Walton County to mitigate prior storm erosion and to protect upland property and infrastructure. Following these recommendations, we performed additional geotechnical investigations, designed a highly-innovative borrow area surrounding the East Pass ebb shoal, and designed, permitted and administered the construction of the 3,000,000-cy project. At key project milestones, Taylor Engineering conducted meetings with technical review committees, citizens' advisory councils, and public workshops to receive community input and to facilitate public education. The regional partnership allowed for significant cost savings for the individual participants and resulted in a larger, more resilient beach restoration project. Following project construction, Taylor

Destin/Walton Beach Restoration

Engineering produced annual and biennial post-construction physical monitoring reports of the beach and East Pass inlet ebb shoal and adjacent beach as required by FDEP permits. The monitoring results indicate the project exceeded performance expectations with no adverse impacts. In conjunction with the post-construction monitoring, Taylor Engineering also conducted extensive historical shoreline and volume change analyses demonstrating the project did not cause undue erosion or interruption of littoral transport within the vicinity of the East Pass ebb shoal system. Consequently, Taylor Engineering successfully requested FDEP remove specific permit requirements to place an additional 50,000 cy of sand west of East Pass, eliminating the financial burden on the City of Destin, Okaloosa and Walton County. Notably, the ***American Shore & Beach Preservation Association (ASBPA) named the project a 2008 Best Restored Beach.***

Western Destin Beach Restoration Project

During construction of the Destin/Walton Beach Restoration Project, we commenced the second phase of the above-mentioned comprehensive beach management plan with design and permitting of the Western Destin Beach Restoration Project. Taylor Engineering expedited the project permitting; however, petitions from upland property owners and administrative hearings significantly delayed permit issuance. Due to these delays, Taylor Engineering permitted and managed construction of an emergency beach fill project along Holiday Isle in 2010 to mitigate severe storm impacts from Hurricane Ida and a second beach project for Eglin AFB immediately west of East Pass. Taylor Engineering expedited construction documents, assisted with bid administration, administered construction, prepared post-construction certification, and performed post-construction monitoring. The following year, FDEP issued the Western Destin permit following the recommendations of the administrative law judge. Taylor Engineering modified the FDEP and USACE permits per the City's request, prepared construction drawings and technical specifications, assisted with bid administration, and managed project construction. Both the Holiday Isle and Western Destin projects were constructed within very short windows (7 days for Holiday Isle and 28 days for Western Destin) to avoid impacts to the tourist season, and ***both large-scale projects were constructed on time and under budget with no change orders.*** Since construction, Taylor Engineering has collected physical survey data, performed data analysis, and prepared monitoring reports documenting project performance for both the Eglin AFB and West Destin projects per FDEP permit requirements. Both projects continue to exceed performance expectations and the West Destin project was awarded a ***Best Restored Beach by ASBPA.***

Taylor Engineering also prepared a beach management feasibility study for Okaloosa Island, which included a literature review, physical characteristics and natural resource investigation, regional coastal processes evaluation, risk analyses of shorefront development, identification and feasibility analysis of beach management alternatives, and recommendations. In addition, Taylor Engineering has performed post-storm beach assessments and provided design, permitting, and construction administration services for emergency dune restoration projects within Destin and other panhandle counties following severe

storms such as Hurricanes Ivan (2004) and Dennis (2005). Taylor Engineering has also provided design, permitting and construction-phase assistance to USACE in support of numerous federal beach restoration projects, including the Walton County Hurricane Storm Damage Reduction Project. We also continue to provide project support to Okaloosa County for its potential federal feasibility study.

Given our commitment to the life-cycle approach, we encourage regional planning and resource management. For example, in 2007 we facilitated a partnership between Okaloosa County, Destin, and Eglin AFB for regional beach and offshore sand resource management affording these stakeholders significant time and cost savings during design, permitting and construction. Taylor Engineering was also responsible for the regional partnership planning of the Destin/Walton Beach Restoration Project which extended the design life of both projects and saved the project partners significant time and substantial costs during planning, design, permitting, and construction phases of the project.

Summary

In summary, Taylor Engineering has been involved with the State and County's inlet management program for over 20 years. Additionally, we maintain a library of reference materials and reports related to Okaloosa County's inlet and coastal management efforts and maintain databases of County inlet, navigation channel, ebb shoal and beach surveys; coastal processes; numerical models and supporting data; and, environmental data. ***Our unsurpassed experience, together with these in-house resources, provides a unique advantage over other consultants by allowing us to most rapidly and cost-effectively respond to the County's inlet and coastal management needs.*** Further, from our experience and intimate familiarity with all East Pass inlet management initiatives, we know exactly the work required for the East Pass study and are prepared to begin immediately to expedite the project scoping and feasibility study process to facilitate completion of the required grant work on time and within budget. To further detail our understanding of the work requested in the RFQ, we provide the following bullet-list of items that will be required as a first step for developing the scope of work with the County, FDEP, and project stakeholders.

- Preliminary scope development and coordination with tac and project stakeholders
- Field measurements and data collection to support updated numerical modeling
- Baseline numerical model setup, calibration and validation
- Geotechnical investigations, including sub-surface vibracoring
- Environmental assessment document preparation
- Stakeholder input
- Sediment excavation basin and navigation channel alternatives analysis
- Feasibility report preparation
- Decision document
- Presentation of project results and recommendations

From our long-term experience with the Florida inlet management program combined with our very recent experience with a nearly identical project in Fort Pierce, we know specifically the work and deliverables required for implementing successful inlet management initiatives at East Pass. Our work products and supporting documents (e.g. geotechnical investigation reports, environmental assessments, decision documents) will provide the specific information necessary to support follow-on work such as preliminary engineering design and regulatory permitting to avoid costly delays and repeated work.

East Pass and Norriego Point Stabilization & Restoration Project

Tab 2. Experience in Developing Inlet Management Plans for Floridian Inlets

East Pass Inlet

We believe Taylor Engineering's inlet-related experience is second to none in the coastal engineering field. ***We have thoroughly modeled Okaloosa County's East Pass Inlet*** (including Destin Harbor and Choctawhatchee Bay) as well as all major inlets in the Florida panhandle. We have also modeled every Atlantic Ocean inlet from the North Carolina/South Carolina border south through Key West, Florida as part of our detailed regional modeling work for FEMA. Beyond that, we have completed detailed sediment transport studies of multiple inlets on Florida's panhandle, east and west coasts. Since the 1990's, Taylor Engineering has authored or updated five state-adopted inlet management plans, ***including the original East Pass plan***. All of these plans involved close coordination with local sponsors, technical advisory committees, project stakeholders, FDEP, and USACE Jacksonville or Mobile Districts. Coupled with our numerical wave and sediment transport models, we also apply tidal hydrodynamic models to compute storm surge; design inlet jetties; assess inlet impacts on adjacent beaches; define inlet dredging templates by examining impacts on inlet shoaling, navigation, and adjacent beaches; and examine flushing and water quality for various beach and estuary restoration projects. The state-adopted inlet management plans or updates authored by Taylor Engineering included the following inlets:

- East Pass Inlet
- Mexico Beach Inlet
- Fort Pierce Inlet
- Ponce de Leon Inlet
- St. Augustine Inlet

Taylor Engineering staff also have experience, either through direct project work or technical advisory committee participation, with inlet management plan development for the following inlets:

- Jupiter Inlet
- St. Andrews Inlet
- Pensacola Inlet
- Sebastian Inlet
- South Lake Worth Inlet
- Big Sarasota Pass
- Sarasota County Comprehensive Inlet Management Plan (Big Pass/New Pass)
- Lake Worth Inlet
- St. Lucie Inlet
- Venice Inlet

Brief summaries of these studies are provided below to further document our experience with the development of inlet management plans as well as the follow-on implementation and administration of management initiatives.

East Pass Inlet Management Plan

East Pass Inlet

The first project Taylor Engineering performed directly for Okaloosa County was the development of a comprehensive inlet management plan (as the principal investigator) to improve the sand bypassing capabilities of ***East Pass*** (1999 East Pass Inlet Management Plan). The project included documentation and analysis of the physical characteristics of the inlet, beaches, and sea bottom within the area of inlet influence and assessed pre-project (1967) and existing (1996) inlet conditions, jetty configuration modifications, navigation channel realignment and relocation alternatives (including additional dredging/excavation), structural alternatives, and potential breaching of Norriego Point. This work addressed littoral processes; inlet hydraulics; effects of existing and proposed structures and channel maintenance operations; historic changes in beaches, bathymetry and shoreline positions; wind and wave characteristics; littoral sediment characterization; development of a sediment budget; and identification and evaluation of various management alternatives. The sediment budget provided a means to evaluate inlet impacts on sand bypassing and to determine inlet management alternatives for mitigation of detrimental impacts. The project also involved stakeholder outreach and regular project updates with the technical advisory committee formed with members from Okaloosa County, City of Destin, FDEP, USACE, Eglin AFB, and the U.S. Coast Guard — notably ***the same technical advisory members proposed for the current study.*** Following evaluations of environmental and physical impacts and construction costs to determine feasibility, Taylor Engineering recommended a specific, cost-effective management plan that addressed the concerns of all the plan participants. Notably, the 1999 plan recommendations included the need for stabilizing Norriego Point and placing the additional sand excavated from East Pass on adjacent eroding beaches.

From our design and post-construction monitoring of the Eglin AFB, West Destin, and Destin/Walton Beach Restoration Projects, ***Taylor Engineering has detailed local knowledge and a comprehensive understanding of the ebb shoal system and the inlet's effect on adjacent beaches***, providing us the information necessary to make updated recommendations regarding East Pass inlet (and adjacent beach) management. Furthermore, during the development of the Norriego Point Stabilization Project, our local project manager attended all Norriego Point blue ribbon panel (design) meetings. Our project manager provided numerous design recommendations for increased Destin Harbor protection and cost savings based on his local knowledge and experience, and presented project alternatives for increased funding opportunities that were ultimately selected as the preferred solution. Taylor Engineering's local Destin staff also reviewed the previous Norriego Point design (prepared by another consultant), performed value-engineering services, and provided recommendations to Okaloosa County for a potential "Phase I" project to reduce the chronic erosion and maintenance dredging. Taylor Engineering has also managed numerous dredging projects within Destin Harbor and East Pass. We maintain a database of past navigation channel dredging projects and surveys within East Pass which give us a significant advantage for quickly assessing shoaling patterns, past dredging efforts and potential future inlet management (dredging) initiatives. We also supported the County with its federal Section 204 study (beneficial use of dredged material) by providing support and oversight services to ensure the USACE-supported study's effectiveness regarding County inlet issues.

While Taylor Engineering has not been directly retained by the County or the City of Destin to manage East Pass, Taylor Engineering has managed or been involved with nearly all East Pass management inititives. Specifically, these initiatives have included:

- Comprehensive inlet, ebb shoal and beach monitoring (since 2005) – performed in support of the Destin-Walton, Eglin AFB, Holiday Isle, and West Destin beach restoration projects
- Destin Harbor dredging (4 separate projects since 2013)
- USACE Section 204 study to review beneficial use of dredge material within East Pass
- Norriego Point phase I (emergency stabilization) project in 2015
- Norriego Point stabilization and restoration project – selected by FDEP to value engineer the stabilization of Norriego Point (previously prepared by separate consultant). Currently performing construction administration services for the stabilization which includes structural improvements and navigation channel dredging within East Pass.
- East Pass navigation channel dredging permit authorization for the City of Destin (this task also include numerous detailed environmental resource surveys, most recenlty in 2017, documenting the locaion and density of seagrass beds adjacent to navigaton channels within East Pass)
- USACE Mobile District support for East Pass navigation channel dredging and FDEP regulatory authorization

Taylor Engineering also closely followed the FDEP-sponsored 2010 inlet management plan update that addressed recent changes to the inlet occurring from the 2004 and 2005 hurricane seasons. During the development of the updated plan, Taylor Engineering staff remained heavily involved given our local knowledge and project experience within the inlet and along the adjacent beaches, and attended numerous technical advisory committee and other local stakeholder meetings. Taylor staff provided support information and monitoring data from our recent beach and inlet projects, thoroughly reviewed the plan and numerical modeling and beach disposal alternatives proposed within the 2010 inlet management plan update, and provided technical comments and review to the technical advisory committee, specifically FDEP engineering staff, Okaloosa County and the City of Destin prior to the plan's adoption. Given our familiarity with the inlet, Norriego Point, and our work on adjacent beach restoration projects (Western Destin, Eglin AFB, and Walton/Destin Beach Restoration Projects), Taylor Engineering initially recommended the State and City investigate additional sediment excavation within the inlet to provide additional beach-quality sand to adjacent eroding beaches. This approach could potentially save the City, County, and State millions of dollars by providing a nearby, high-quality sand source for adjacent eroding beaches (including the West Destin and Eglin AFB beach restoration project areas). This recommendation was ultimately included in the final inlet management plan update and associated implementation plan. Given the lack of federal funding for USACE maintenance of the East Pass federal avigation channel, identifying additional excavation areas may also potentially reduce the maintenance dredging frequency within East Pass, saving the local and federal governments significant costs as well.

Following the 2010 inlet management plan update, FDEP adopted the *East Pass 2013 Summary of Findings Report and Update Inlet Management Implementation Plan*, which outlines four strategies for managing East Pass. Given our unsurpassed local knowledge and experience, Taylor Engineering has been selected by various entities to implement the majority of these strategies. The strategies and our involvement are summarized below.

1. Implement a comprehensive beach and inlet monitoring program – Taylor Engineering has monitored the East Pass ebb shoal and adjacent beaches for over 12 years and maintains a database of all survey data. From our work on Norriego Point and numerous dredging projects within East Pass and Destin Harbor, we also maintain a database of the navigation channel surveys. These data will be critical for identifying areas of sediment accumulation and determining appropriate sediment excavation areas from the inlet's ebb shoal and interior throat.
2. Modify the inlet sand transfer protocol to allow sand placement both east and west of East Pass – We recently obtained FDEP and USACE permits that authorize the City of Destin to dredge material from the inlet and place material east or west of the inlet per state statute. The disposal location will be determined from the monitoring protocols established by Taylor Engineering and approved by FDEP. We also assisted the USACE Operations Division with modifying its existing authorization for the same activity, and we continue to provide permitting and monitoring support.
3. Complete the stabilization of Norriego Point – As previously mentioned, Taylor Engineering is FDEP's project engineer for designing and managing the Norriego Point stabilization project. The project is currently on schedule and under budget with an estimated completion in May 2018.
4. investigate availability and feasibility of supplemental inlet sediment excavation – In support of this strategy, we provided technical data and information to the County in support of the approved funding request to FDEP for performing the proposed feasibility study. The project ranked 2nd in the State's overall inlet budget plan and was ultimately funded and approved by the State legislature.

With our local knowledge and comprehensive understanding of the East Pass Inlet, Choctawhatchee Bay and Destin Harbor areas, coupled with our experience with the past and present inlet management plans, Destin Harbor dredging projects, and the current Norriego Point Stabilization Project, ***Taylor Engineering is most qualified to assist the County with any future East Pass inlet and beach management initiatives.*** Additionally, we have a tremendous amount of work experience with each of the proposed technical advisory committee members, and we are the most qualified to work efficiently with these individuals to ensure an advanced, non-biased, and justifiable/methodical plan that addresses the concerns of all plan participants and provides cost-effective alternatives. Finally, as a Destin native and avid boater, fisherman, and diver who frequently navigates East Pass, Project Manager Matthew Trammell's practical knowledge of East Pass is second to none among coastal engineering practitioners.

Mexico Beach Inlet Management Plan

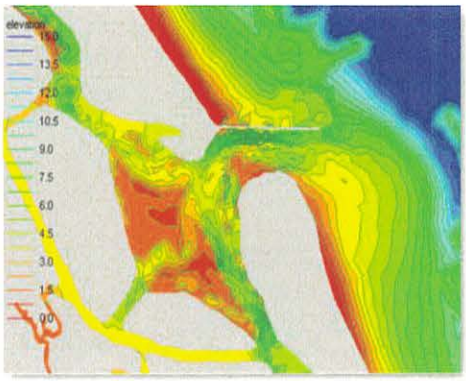
Mexico Beach Inlet

In 1997, FDEP, Division of Beaches and Shores, retained Taylor Engineering to prepare an inlet management plan for Mexico Beach Inlet in Bay County. The work was performed as part of the Post-Opal Recovery Program managed by FDEP. Taylor Engineerng developed the plan for FDEP and Bay County but also worked very closely with the City of Mexico Beach and USACE throughout the plan development to ensure all stakeholder concerns were addressed. The Plan consisted of four phases: (1) literature review, (2) identification of the inlet's physical characteristics including developent of a sediment budget, (3) identificaton and evaluation of alternatives for sediment management strategies, and (4) a recommended plan of action to implement the optimum sand bypassing alternative. The scope

of work, mutually developed and agreed upon by FDEP, Taylor Engineering, and the project stakeholders, defined each phase, building upon previous phases and following the state-mandated inlet management plan guidelines. Through collective results of the four phases, Taylor Engineering 1) developed an understanding of the processes governing the inlet's behavior and their impacts on environmental and physical conditions and 2) developed an inlet management plan designed to mitigate the negative impacts identified. Notably, the plan assessed various bypassing alternatives including modified placement areas, sand traps (inlet excavation), inlet structure (jetty) modifications, and various dredging methodolgies. The recommended plan included relocating the sand bypassing placement (disposal) area to reduce back-passing (return of sediment into the inlet), replacing the jetty structures, annual maintenance dredging operation plan, and implementation of a comprehensive monitoring plan that would provide the information and data necessary for potential future modifications.

Ponce de Leon Inlet Management Plan

Taylor Engineering has assisted Volusia County with management of Ponce de Leon Inlet since 1994. As discussed in more detail in Tab 1, our efforts began with an inlet management feasibility study and development of one of the first inlet management plans adopted by the FDEP. Taylor Engineering numerically modeled inlet hydrodynamics, sediment transport, and shoreline changes to evaluate the effects of various alternatives on inlet hydraulics and shoaling and ocean and inlet interior shorelines. Final inlet management plan recommendations included a 1,000-foot south jetty seaward extension and a 2,350-foot north jetty landward extension. Taylor Engineering has also conducted follow-on studies as recommended by the plan. We completed an updated sediment budget and flood shoal removal feasibility study in 2003 and are currently performing another sediment budget update for the Ponce de Leon Inlet area of influence.



Ponce de Leon Inlet Numerical Model

St. Augustine Inlet Management Plan


St. Augustine Inlet (circwiki.info)

St. Augustine Inlet is a federally maintained inlet and, as such, brings the USACE in as a key partner in inlet management along with the Florida Department of Environmental Protection and the St. Augustine Port, Waterway and Beach District (Port District). Taylor Engineering has worked closely with each of these agencies over the last 30 years focusing on efficient management of sediment resources in the area.

Taylor Engineering developed the original St. Augustine Inlet Management Plan in 1997 under contract to the Port District. Formally adopted by the State of Florida on August 31, 1998, the plan established a target bypassing volume of 510,000 cy from the ebb shoal complex to be placed on the beaches south of the inlet. The bypassing volume has served as the borrow source for the St. Johns County Shore Protection Project since its construction in 1999. The USACE touts the combined federal projects (inlet and SPP) as the most successful example of regional sediment management in the nation.

In subsequent years, Taylor Engineering supported the 2012 inlet management plan update as a key member

of the project's technical advisory committee. Representing the Port District, Taylor Engineering staff met on multiple occasions and provided technical and administrative support to the USACE team that developed an updated sediment budget. Revised bypassing measures include both a bypassing goal (placement to the south) and a back-passing goal (placement to the north) to address the erosion occurring along both sides of the inlet.

Related Expertise

In addition to the inlet management plans Taylor Engineering has authored, Tab 1 provides further detail regarding additional inlet management plan studies and related services to further demonstrate our comprehensive understanding of inlet management within Florida and specifically, the in-depth analyses and coordination that will be required to successfully implement Okaloosa County's desired East Pass management initiatives. The remainder of this section provides brief summaries of the inlet management plans Taylor Engineering staff have been involved with either through direct project work or technical advisory committee participation. While Taylor Engineering may not have been the principal investigator on these specific studies or plans, our involvement with a significant number of inlets further supports our unsurpassed knowledge of inlet management plan development and familiarity with follow-on implementation and administration of management initiatives within Florida. Project descriptions providing further detail and demonstrating our experience with these specific services can be found in Tab 3.

Jupiter Inlet

Taylor Engineering has served as engineer to the Jupiter Inlet District since 2002. We routinely serve as engineer-of-record for the annual sand trap dredging project that has successfully met the bypassing requirements developed in the original inlet management plan. Taylor Engineer also routinely manages physical monitoring of the inlet and adjacent shorelines in accordance with FDEP authorizations and inlet management plan recommendations.

St. Andrew's (Panama City) Inlet Management and Bay County East Pass

Dr. Cliff Truitt, P.E. (while working at Coastal Technology Corporation) was one of the principal investigators on the feasibility and design investigations of the effects of St. Andrew's Bay Entrance (SABE) on adjacent beaches. Dr. Truitt also led the team to design a series of segmented breakwaters along the western shoreline of St. Andrews Pass to protect a freshwater lake (Gator Lake) heavily used by migrating birds within St. Andrew's State Park. He was also one of the principal investigators and QA/QC officer performing a feasibility study and developing the plan to dredge East Pass in Bay County, a natural inlet along the eastern shoreline of Shell Island that slowly began to close following the hardening and deepening of SABE by USACE. The Bay County East Pass inlet was re-opened in 2001; however, increased storm activity closed the inlet within a year. Over the following years, Dr. Truitt managed a detailed monitoring program (including physical surveys and ecological monitoring of adjacent lagoons) and prepared monitoring reports to provide the data necessary to support future inlet initiatives, including future dredging and potential structures (e.g., jettys).

Additionally, Mr. Trammell, while working at a previous employer, was the lead numerical modeler for reviewing and refining the Gator Lake shoreline stabilization breakwaters and alternatives. He performed coastal conditions analyses, developed hydrodynamic, wave and sand transport models, and made design modification recommendations. He also assisted with regulatory permitting, final coastal engineering design, and final plans preparation.

Pensacola Inlet Management Plan
The Pensacola Inlet Management Plan was originally developed by the University of Florida. Ten members of Taylor Engineering's staff attended the University of Florida's coastal and oceanographic engineering program and many of these individuals while in the graduate or doctorate programs, studied this inlet and the surrounding beaches and contributed to numerous follow-on investigations researching inlet and adjacent shoreline littoral processes and beneficial use of dredged material disposal projects to stabilize the adjacent beaches.

Sebastian Inlet
Multiple Taylor staff members assisted with development of a revised sediment budget including wave modeling and empirical orthogonal function analysis. We provided expert witness testimony during litigation in support of the Sebastian Inlet Tax District.

South Lake Worth Inlet
Taylor Engineering staff served on the technical advisory committee representing the interests of the Town of Manalapan. Our staff provided multiple suggested improvements to the proposed physical monitoring program as well as the technical analyses supporting the proposed (and ultimately adopted) management options.

Big Sarasota Pass
In 2014, Dr. Truitt completed a comprehensive independent technical review of a USACE design and modeling study proposing the use of Big Sarasota Pass shoals as a sand source for the Lido Key Federal Shore Protection Project; the review assessed sediment budgets, morphology, and potential impacts to the shoal and adjacent shorelines.

Sarasota County Comprehensive Inlet Management Plan
In 2010/11, Mr. Marino and Dr. Truitt led a team of consultants and performed QA/QC reviews for development of a comprehensive integrated inlet management plan for Big Sarasota Pass and New Pass. Goals were to: 1) determine the extent to which inlets cause erosion on adjacent beaches and provide for mitigation of the erosive impact, 2) develop a sand management strategy, and 3) provide for safe and efficient navigation. The work was conducted in two phases and included peer reviews of technical approach and products by three independent firms.

Lake Worth Inlet
Taylor Engineering staff (while working for another firm) participated in the development of the original inlet management plan through development of a wave refraction study which helped determine a preferred location for the local sediment bypassing, fixed-plant discharge pipe.

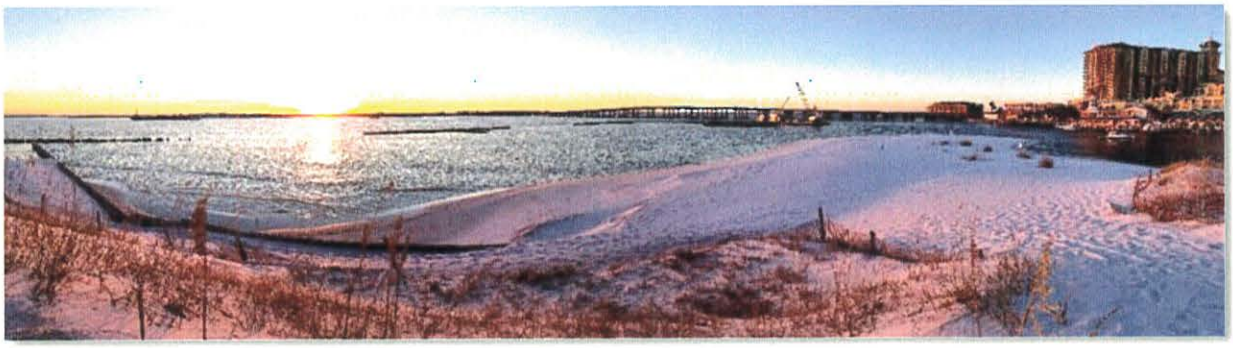
St. Lucie Inlet
Taylor Engineering staff (while working for another firm) participated in the development of the original inlet management plan through development of a wave refraction study and vegetation planting plan.

Venice Inlet
Dr. Truitt was one of the lead investigators on the initial feasibility study, as well as the development of the management and implementation plan.

Tab 3. Past Record of Professional Accomplishments

As outlined in the solicitation, the proposed East Pass Inlet Supplemental Sediment Excavation Study will require a number of critical engineering capabilities. The project's key specific requirements include:

- Coastal data collection and analysis
- Numerical modeling (including hydrodynamic/storm surge, wave transformation, and sediment transport modeling)
- Inlet and navigation channel shoaling analyses
- Navigation channel and borrow area alternatives analysis
- Dredging and borrow area impact analyses
- Inlet and beach management
- Inlet and navigation channel dredging
- Beach and dune restoration
- Geotechnical investigations and engineering
- Project management
- Surveying
- Technical advisory committee and stakeholder coordination and community relations
- Regulatory permitting (specifically related to navigation channel and borrow area dredging, inlet management, and beach restoration)
- Environmental assessments and impact analyses
- Federal navigation and channel dredging management experience
- Engineering cost estimates



East Pass and Norriego Point

The following pages provide project description summary sheets for specific projects representative of the Taylor Engineering team's experience with the type of work required under this Request for Qualifications. The project description summary sheets highlight our team's experience and accomplishments with similar projects and the scope elements listed above, as well as direct ***Inlet and Navigation Channel Dredging Project Management*** services. Each summary includes a narrative description highlighting our experience with key elements that will be required for the East Pass study, photographs, and client contact information. A quick review of the projects indicates Taylor Engineering's enduring commitment to highly successful coastal and environmental engineering projects within Okaloosa County and that our work is intensely focused on engineering for county and municipal entities, state and federal government, and other public agency clients. We are particularly proud of our record of

service to these sectors within Okaloosa County. Our strong relationships with Okaloosa County, regulatory agencies, and the East Pass stakeholders will provide great benefit to the County for future projects.

Extent of Repeat Business

Taylor Engineering's six core values — integrity, service, excellence, responsibility, commitment, and teamwork — guide our everyday activities and relationships and support our vision of "delivering leading-edge solutions to challenges in the water environment." We meet negotiated deadlines. We communicate actively and effectively and respond to every reasonable request. Our commitment to these values results in clients' high regard for Taylor Engineering. Ninety percent of Taylor Engineering's annual revenues derive from repeat business. In our industry, no higher compliment exists. Nearly every project example provided results from or has resulted in follow-on work. A selection of our long-standing clients (with beginning date of service in parentheses) includes:

- Okaloosa County (1995); Walton County (1997); St. Johns County (1999), Volusia County (1988), St. Lucie County (1996), and Martin County (1995)
- Federal Emergency Management Agency (1984);
- Florida Inland Navigation District (1986);
- St. Augustine Port, Waterway, and Beach District (1991);
- Jupiter Inlet District (2002);
- South Florida Water Management District (1994);
- U.S. Army Corps of Engineers (2001)

As demonstrated, Taylor Engineering's commitment to customer satisfaction results in repeat business. One indicator of customer satisfaction is FIND's indefinite-term selection (now spanning 31 years) to provide engineering and environmental services to develop and implement its long-term dredged material management program. Another indicator is the firm's repeated selection to perform coastal engineering, water resources planning, hydrology and hydraulics, environmental, and GIS services for numerous county and municipal government agencies, USACE, FEMA, several port authorities, FDOT and SCDOT, and the FDEP. Specifically related to inlet management, we have provided engineering services to the St. Augustine Port, Waterway and Beach District since 1991, the Jupiter Inlet District since 2002, and Okaloosa County since 1995.

Taylor Engineering has a proud history of client satisfaction. This satisfaction results, in part, from our outstanding communication skills, project management, organizational approach, quality assurance and quality control procedures, and our oversight capabilities. These procedures and controls ensure cost control throughout projects, prompt responsiveness to clients' needs, and high-quality final products.

Leadership Councils/Professional Organizations

The table below lists project staff affiliations and appointments to national and international professional organizations.

Jim Marino, P.E., D.CE	PIANC, U.S. Commissioner ASCE COPRI, Board of Governors, President ASCE Technical Region Governing Board Member ACOPNE Governing Board AIWA, Past Board Member ASBPA Past Director

Matthew Trammell, P.E.	ASCE and COPRI Member PIANC, U.S. Young Professional Representative for Recreational Navigation Commission
Jonathan Armbruster, P.E.	ASCE COPRI Ports and Harbor Committee Member PIANC, U.S. Principal Representative for Recreational Navigation Commission
Christopher Bender, Ph.D., P.E., D.CE	ASCE COPRI Coastal and Estuarine Hydroscience Committee, Secretary ACOPNE Applicant Review Committee for Coastal Engineering Diplomates
Lori Brownell, P.E.	ASCE COPRI Governing Board, Treasurer NSPE Honor Awards Task Committee
Ken Craig, P.E.	ASCE COPRI Coastal Zone Management Committee, Chair ASCE COPRI Coastal Council, Chair ASBPA Board of Directors ASBPA 2017 National Coastal Conference, Chair ASBPA Science and Technology Committee ASBPA Student and New Professional Committee
Duncan Greer, P.E.	ASCE and COPRI Member
Jenna Phillips, E.I.	ASCE COPRI Policy Committee, Chair ASBPA Science and Technology Committee ASCE Energy, Environmental, and Water Government Relations Policy Committee

Okaloosa County Project Awards

In 2015, the Western Destin Beach Restoration Project in Destin, Florida was selected one of the ***Best Restored Beaches for 2015*** by the American Shore & Beach Preservation Association. Extensive beach erosion from hurricanes Ivan (2004) and Dennis (2005) prompted the Florida Department of Environmental Protection (FDEP) to approve emergency funding for design and permitting of erosion control measures along the western Destin shoreline. The resulting Western Destin Beach Restoration Project, a protective measure that reduces the risk of storm damage to upland property while providing a healthy and wide beach, increases recreational opportunities to citizens, promotes tourism, and increases revenue streams to local businesses, and provides significant environmental habitat to marine, terrestrial, and avian wildlife. Completed in February 2013, the project resulted in placement of approximately 634,000 cubic yards of sand along two shoreline segments totaling over 1.2 miles. The construction template, designed to achieve pre-Hurricane Opal beach widths, advanced the shoreline seaward 120 – 200 feet and provides protection to upland structures from 50-year storm events.

The American Shore and Beach Preservation Association also awarded the previously discussed 2006-2007 Destin/Walton County Beach Restoration Project as a ***Best Restored Beaches for 2008.***

State and Federal Funding Experience

Taylor Engineering has also successfully lead or provided assistance with efforts to obtain state and federal grants for inlet management planning, construction, and follow-on monitoring. In fact, the technical supporting information provided by Taylor Engineering was instrumental in Okaloosa County's successful application for the FDEP grant funds for the pending work at East Pass. We have also provided assistance and support services to Okaloosa County on numerous occasions for federal funding for East Pass management initiatives.

Highlighted Project Examples

The following project descriptions highlight a select few projects Taylor Engineering has completed at or near Florida's Gulf and Atlantic coast inlets. These include:

1. East Pass Inlet Management Plan – inlet management plan development
2. Fort Pierce Inlet – long-term services including sediment budget update and feasibility study
3. Jupiter Inlet – long-term services including inlet maintenance dredging and sand bypassing
4. Ponce de Leon Inlet – long-term services including inlet management plan development
5. St. Augustine Inlet – long-term services including inlet management plan development
6. Matanzas Inlet – inlet and waterway sediment transport study for FIND
7. Sebastian Inlet – channel completion permitting, design, and construction
8. Caxambas Pass — inlet borrow area design and permitting, excavation impact analysis
9. FEMA Detailed Regional Modeling – numerical modeling including all Florida east coast inlets
10. St. Johns River Entrance/Jacksonville Harbor – federal harbor and inlet deepening study
11. FIND ICWW Broward Deepening – channel deepening project
12. Port Everglades Inlet – sediment transport study in support of channel deepening
13. FIND Dania Canal Deepening – channel deepening project
14. FIND OWW Sediment Study – sediment basin feasibility study
15. USACE IRL Sediment Strategies – development of regional sediment strategies
16. FDEP Norriego Point – shoreline stabilization within East Pass
17. Walton-Destin Beach Management Study Combo – beach management feasibility study
18. Destin Harbor Dredging – harbor dredging with beneficial use placement on Norriego Point
19. Okaloosa County Federal Project Support – federal feasibility study support
20. Okaloosa County Beach Monitoring – beach restoration performance monitoring
21. Western Destin Beach Restoration – beach restoration project
22. Okaloosa County Beach Feasibility – beach management feasibility study
23. Holiday Isle Emergency Beach Project – beach restoration within East Pass area of influence
24. Eglin AFB Beach Restoration Project – beach restoration within East Pass area of influence

East Pass Inlet Management Plan

City of Destin and Okaloosa County, Florida

Client
Okaloosa County

Contact
Gary Bowden
Okaloosa County Public Works
1759 South Ferdon Blvd.
Crestview, FL 32536
(850) 689-5772

Key Elements
- Shoreline Erosion Analyses
- Inlet Hydrodynamic Modeling
- Hurricane Surge Modeling
- Wave Transformation Modeling
- Inlet Sand Trap Investigations
- Sand Trap Mitigation
- Dredging Investigations
- Jetty Impacts
- Project Management
- Planning
- Community Relations
- Cost Estimating

Completion Date
2000

Fees
$ 145,394

East Pass Inlet and neighboring Holiday Isle to the east

Taylor Engineering developed a comprehensive management plan to improve the sand bypassing capabilities of East Pass, Florida. Part of a statewide initiative to develop and implement such plans for all Florida tidal inlets and navigational entrances, the project included detailed documentation and analysis of the physical characteristics of the inlet, beaches, and sea bottom within the area of inlet influence. This work addressed littoral processes; inlet hydraulics; effects of structures and channel maintenance operations; historic changes in beaches, bathymetry, and shoreline positions; wind and wave characteristics; littoral sediment characterization; development of a sediment budget; and identification / evaluation of various management alternatives.

Critical to plan development was the use of digital terrain modeling techniques and historical hydrographic survey data to calculate volumes of erosion and accretion; the use of historical shoreline position data to determine eroding and accreting shorelines and inlet influence; the use of historical beach profiles to document subaerial sand volume changes; and the use of wave climate hindcasts for 1956 – 1993 to determine long-term littoral drift in the inlet vicinity. The study included the setup, calibration, verification, and application of a two-dimensional hydrodynamic model to simulate pre-project (1967) and existing (1996) inlet hydraulic conditions. Modelers also used the two-dimensional hydrodynamic model to simulate inlet stability and circulation effects from project modifications (changes in jetty configurations, channel relocation, etc.) and from a potential breach and opening of a channel through an interior spit (Norriego Point) separating the inlet throat from Destin Harbor. The modeling contributed to a better understanding of the inlet's behavior. The results from the above-described analyses helped determine the long-term (1974 – 1996) sediment budget for the study area. This sediment budget provided a means to evaluate inlet impacts on sand bypassing and to determine inlet management alternatives for mitigation of potential impacts. Following evaluations of environmental and physical impacts and construction costs to determine feasibility, Taylor Engineering recommended a specific management plan that addressed the concerns of all the plan participants.

Fort Pierce Beach Coastal Engineering Services

St. Lucie County, Florida

Client
St. Lucie County

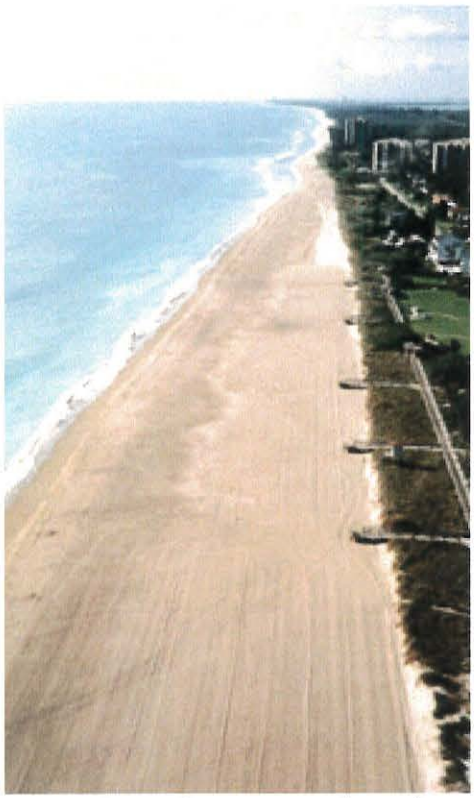
Contact
Richard A. Bouchard, P.E.
Coastal Engineer
St. Lucie County Erosion District
3150 Will Fee Road
Ft. Pierce, FL 34928
(772) 462-1710

Key Elements
- Erosion Control
- Beach Nourishment
- Dredging
- Jetties
- Hardbottom Impact Mitigation
- Storm Impact Assessment
- Inlet/Coastal Processes
- Coastal Structures
- Shallow and Deep Draft Navigation
- Section 111 Impacts
- Economic Analyses
- Planning, Design, & Permitting
- Bid Documents, Construction Administration, and Monitoring
- Environmental Restoration
- NEPA/ESA/NHPA Compliance
- Microstation/AutoCAD
- ArcInfo/ArcMap/GIS/ Beach-fx
- Federal Reports
- Cost Estimates
- Public Coordination

Completion Date
Ongoing

Fees
Over $6 million (to date)

Since 1996, Taylor Engineering has assisted St. Lucie County with its coastal erosion problems along a 2.3-mile stretch of Fort Pierce Beach. Initial tasks assessed the local coastal processes and environmental concerns, applied numerical models to characterize the effect of the Fort Pierce Inlet deep water federal navigation project on the beach; revised the inlet sediment budget; achieved local, state, and federal governmental consensus on responsibilities and funding; defined the offshore sand source in the Atlantic Ocean; secured perpetual public-use easements; and established beach fill templates to minimize hardbottom and other environmental impacts.



Nourishment of Fort Pierce Beach provides storm damage reduction benefits to St. Lucie County

Taylor Engineering obtained state environmental permits and water quality certifications to restore the beach in 1999, 2003, 2004, 2005, 2007, 2009, 2012, 2013, 2014, 2015, 2017 and 2018 with over 4,000,000 cubic yards of sand dredged primarily from the Capron Shoal complex, located about three miles offshore, as well as the Fort Pierce Harbor navigation channel (2014) and the Intracoastal Waterway (2017). Taylor Engineering has monitored the physical and biological aspects of the dredging and beach nourishment project since 1999. Biological aspects include annual sea turtle nesting and nearshore hardbottom monitoring and shorebird activity during project construction.

In 2002, St. Lucie County and USACE became concerned about: 1) the chronic erosion, due to navigation project effects, experienced by the northernmost 2,200 feet of the project beach and 2) the approaching end date, 2020, of the federal government's participation in the shore protection project. In response, the County engaged Taylor Engineering to prepare a Design Documentation Report addressing the erosional hot spot. Evaluation of erosion mitigation alternatives considered engineering, environmental, permitting, and cost factors. Later, Taylor Engineering prepared a Limited Reevaluation Report (LRR) to update project economics, change the nourishment interval, and include Section 111 inlet impacts in project cost-share allocations. Applying USACE's planning model Beach-fx, Taylor Engineering completed a draft General Reevaluation Report (GRR) incorporating T-groins as project features and seeking federal participation for a new 50-year period. As a first in the nation effort, we submitted the GRR directly to the Assistant Secretary of the Army, bypassing District, Division, and Headquarter review, by following guidance in WRDA1986 (Section 203) and WRDA2014 (Section 1014(a)).

The county also contracted Taylor Engineering to conduct a feasibility study of sand bypassing alternatives to supplement the federal shore protection project. During 2008–2010, Taylor Engineering conducted a preliminary study to assess existing conditions and developed conceptual designs for a sediment deposition basin in Fort Pierce Inlet. With approval from the Florida Department of Environmental Protection (FDEP), the preliminary study began with a detailed field data collection effort including wind and tide data; tide level measurements; bathymetry and topography; inlet flow velocity, inlet sediment flux, inlet suspended sediment concentration; and offshore wave measurements. Inlet sediment characteristics provided validation data on sediment size, concentration, and vertical distribution and, together with measured flow velocities, provided an understanding of the mechanisms involved in inlet sediment transport. These data helped confirm and refine assumptions in determining the feasibility of a sediment basin in the inlet.

Completed in February 2009, the preliminary study recommended: 1) numerical modeling of the hydraulics, sediment transport, and morphology of the study area to estimate shoaling rates and basin evolution after construction, and refinement of the basin design alternatives; 2) subsurface geotechnical investigation of the project area to provide sufficient information to accurately characterize the horizontal and vertical distribution of materials required for basin excavation; and 3) preparation of an environmental assessment to provide information necessary for permit applications to state and federal regulatory agencies. In the final study, Taylor Engineering applied the MIKE modeling system to evaluate various sand trap alternatives and identified a preferred design that minimizes project impacts on hardbottom while providing adequate operational efficiency and impoundment capacity. The study also assessed existing conditions, applied three different methodologies to estimate shoaling rates, and developed two conceptual designs for a sediment deposition basin. FDEP issued a permit for basin construction in 2016 and has provided partial funding for final design, bid, and construction phase services. Taylor Engineering has commenced preparations for a final design survey and development of construction plans, technical specifications, and contract documents.

Jupiter Inlet District General Engineering Services

Palm Beach County, Florida

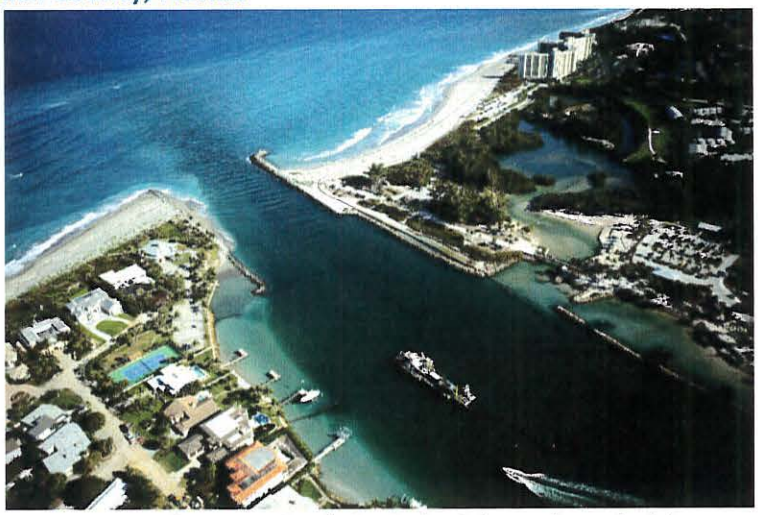
Client
Jupiter Inlet District

Contact
Michael J. Grella
Executive Director
Jupiter Inlet District
400 North Delaware Blvd.
Jupiter, FL 33458
(561) 746-2223

Key Elements
- Dredging
- Dredged Material Management
- Beach Nourishment
- Environmental Permitting
- Agency Coordination
- Bid Assistance
- Construction Documents
- Construction Observation
- Contract Administration

Completion Date
Ongoing

Fees
$ 2.18 million (to date)



Beach construction during Jupiter Inlet sand trap dredging

Annually, since 2002, Taylor Engineering has provided the Jupiter Inlet District (JID) with inlet management, engineering design, permitting, bidding assistance, and construction-phase services for the Jupiter Inlet sand trap maintenance dredging and associated beach nourishment. Approximately every third year we also assist the JID in partnering with the Florida Inland Navigation District (FIND) to maintain the adjacent areas of the Intracoastal Waterway at the same time as the sand trap maintenance. Through an Interlocal cost sharing agreement both agencies realize significant cost savings by sharing mobilization, production, and construction administration costs. The project removes accumulated sand from the sand trap inside Jupiter Inlet, and the adjacent Intracoastal Waterway section, and places the sand on the beach south of the inlet in accordance with FDEP-approved inlet management practices. Taylor Engineering regularly prepares project construction drawings, technical specifications, and contract documents in accordance with environmental permit requirements. The firm also coordinates the project with permitting agencies, manages permit modifications, and oversees necessary monitoring activities as required by the regulatory agencies (e.g., physical monitoring/surveys, detailed sand QAQC testing to ensure ICWW sediments meet beach-quality standards).

Taylor Engineering's bid administration services include distributing bid packages, overseeing the bid opening, and reviewing bids. Construction-phase services include establishing owner-engineer-contractor lines of communication, conducting the pre-construction conference, reviewing contractor submittals and pay applications, observing construction progress on a regular basis, and certifying project completion in accordance with project specifications and permits.

Taylor Engineering provided the above services on thirteen dredging projects with an average dredge volume of about 67,000 cubic yards. Most recently, Taylor provided construction administration services for the spring 2017 combined JID and FIND maintenance dredging and beach nourishment project which was **completed on time and under budget.**

In addition to the above sand trap work, Taylor Engineering staff oversee a wide variety of activities including maintenance of the north and south jetties (including all associated infrastructure) as well as the functionality of all aids-to-navigation under JID control. Taylor Engineering performs annual Loxahatchee River seagrass surveys, performs monthly jetty observations, and attends monthly board meetings.

In 2007, JID completed a substantial reconstruction of both the north and south jetties. For the project, Taylor Engineering developed a detailed design, acquired environmental permits from the Florida Department of Environmental Protection and U.S. Army Corps of Engineers, coordinated bidding, and provided construction observation services. The project placed nearly 12,000 tons of granite armor stone.

Taylor Engineering also oversees navigation-related issues within the Loxahatchee River on behalf of JID. Services include periodic dredging of the main channel; design, installation, and periodic maintenance of aids-to-navigation; and design and permitting of a new navigation channel along the central embayment's south shoreline. Taylor Engineering provided expert witness testimony in support of JID's administrative appeal of a new dock permit within the central embayment. Support included calculation of tidal elevation frequency curves to determine percentage of time sufficient water depth was available along paths within the embayment.

Taylor Engineering has supported other JID projects including the restoration of the Moonshine Creek oxbow on the Loxahatchee River's northwest fork and protection of the last remaining mangrove island within the central embayment. We recently completed a two-year study of boat traffic in the vicinity of the Florida East Coast railroad bridge that documented over 150,000 separate vessel crossings under the bridge's draw span during the two-year study.

Ponce de Leon Inlet Coastal Engineering Services

Volusia County, Florida

Client
Ponce de Leon Inlet & Port District

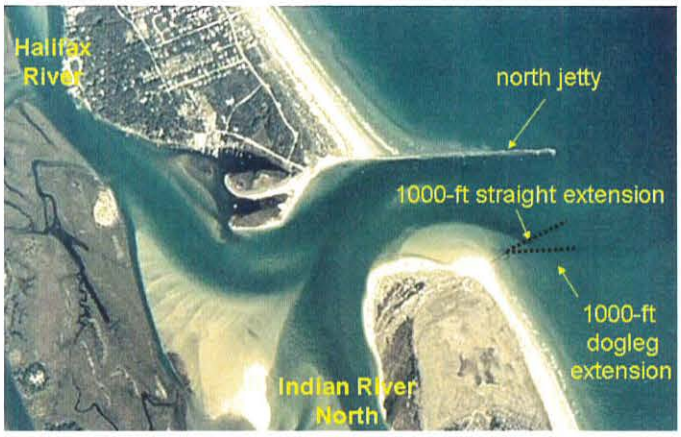
Contact
Joe Nolin
Ponce de Leon Inlet & Port District
515 S. Atlantic Ave
Daytona Beach, FL 32118
(904) 248-8072

Key Elements
- Ponce DeLeon Inlet Management Plan
- Assistance with USACE Feasibility Study
- Hydrodynamics, Waves, Shoreline, Sediment Transport Modeling
- Beach and Dune Restoration
- Sand Bypassing
- Planning, Feasibility, Design, Permitting, Construction Management Services
- North and South Jetty Extensions
- Coordination with the Jacksonville District USACE, CHL, FDEP, Volusia County, and the Public

Completion Date
Ongoing

Fees
Over 2 million (to date)

Over the past 22 years, Taylor Engineering has provided Volusia County, Florida, with a wide variety of coastal engineering services focusing on the management of Ponce de Leon Inlet and Volusia County's beaches to the south.



1,000-foot straight and jetty dogleg extension alternatives

Inlet: Efforts at the inlet began in 1994 with development of one of the first inlet management plans adopted by the Florida Department of Environmental Protection (FDEP). Taylor Engineering numerically modeled inlet hydrodynamics, sediment transport, and shoreline changes to evaluate the effects of various alternatives on inlet hydraulics and shoaling and ocean and inlet interior shorelines. Final recommendations included a 1,000-foot south jetty seaward extension and a 2,350-foot north jetty landward extension. Taylor Engineering also conducted a study to quantify the benefits of jetty improvements on inlet maintenance dredging and north jetty maintenance requirements. The U.S. Army Corps of Engineers (USACE) constructed the north jetty extension between 2000 and 2002. In 2005, Taylor Engineering addressed concerns regarding potential effects to the surfing wave climate — following additional tidal hydrodynamics and wave modeling — by realigning the south jetty's proposed extension from a dogleg to a straight orientation. Volusia County ultimately abandoned pursuit of the south jetty extension due to lack of federal funding. To further support sand bypassing efforts, Taylor Engineering prepared an updated sediment budget and flood shoal removal feasibility study in 2003. Currently, Taylor Engineering is performing another sediment budget update.

Beaches: In 1999, Taylor Engineering prepared the county's first long-range management plan for the 41 miles of sandy beach in Volusia County. Taylor Engineering next authored a regional beach management feasibility study for the 11-mile beach between the Ponce de Leon Inlet and the Canaveral National Seashore. We also prepared Volusia County's annual long-range budget request for FDEP grant funding in support of the County's beach and inlet management initiatives. Following impacts from the 2004 hurricane season, Taylor Engineering designed, permitted, prepared bid documents, and provided construction observation services for an emergency dune restoration project placing 800,000 cubic yards of sand along six miles of beach south of the inlet. Material offloaded from a Florida Inland Navigation District dredged material management area provided sand for the project. We also completed the majority of design and permitting tasks for a nine-mile beach restoration project south of the inlet before the county stopped work due to local funding constraints.

Other projects have included siting, design, and permitting a number of artificial reef sites within state waters, engineering analysis and design of improvements to vehicular access points for beach driving, and engineering and environmental support for periodic maintenance dredging of the federal channels at the inlet and the Intracoastal Waterway.

Engineering Consulting Services

St. Johns County, Florida

Client
St. Augustine Port, Waterway, & Beach District

Contact
Jerry Dixon
St. Augustine Port, Waterway & Beach District
P.O. Box 4512
St. Augustine, FL 32085-4512
(904) 824-0113

Key Elements
- St. Augustine Inlet
- Coastal Engineering Services
- Hydrographic Surveys
- Historic Site Restoration
- Public/Interagency Coordination
- Marking System Design and Installation
- Dredging and Dredged Material Management
- Environmental Permitting, Mitigation, & Design
- Marine Structures Design and Construction

Completion Date
Ongoing

Fees
Over 1.2 million (to date)

Historic St. Augustine Lighthouse

In 1991, the St. Augustine Port, Waterway, and Beach District selected Taylor Engineering to serve as its engineer. Early projects ranged from establishment of designated anchorages, design and permitting of a dinghy dock, repair of damaged lens prisms for the historic St. Augustine Lighthouse, a hydrographic survey of Salt Run, and new channel design.

In 1992, the District commissioned Taylor Engineering to develop a District Master Plan, a vehicle to establish clear and realistic District goals and objectives. With the Master Plan as a backdrop, other projects followed. These included, among others, the **state-mandated St. Augustine Inlet Management Plan**; design and installation of a marking system in Salt Run; a hydrographic survey of the Matanzas River; the installation of a no-wake zone in Salt Run; preparation of all engineering design, construction, and federal and state environmental permit documents required to dredge a shoal from the mouth of Salt Run; and preparation of the engineering appendix for a federal channel feasibility study of Salt Run.

Taylor Engineering also completed the permitting, final plans, and specifications based on the results of an engineering appendix for a federal channel feasibility study of Salt Run, a shallow embayment that extends southward from the St. Augustine Harbor Inlet Entrance Channel. Taylor Engineering was responsible for all aspects of preparing the Engineering Appendix in support of the U.S. Army Corps of Engineer's Jacksonville District's section 107 Feasibility Study. Specific responsibilities included analysis of existing bathymetry, patterns of sedimentation, shoaling rates, sediment characteristics, and tidal circulation within Salt Run; designing three alternative channel alignments and calculating dredging volumes for each alignment at each of three proposed depths; quantifying the variation of sediment quality with dredging depth; using hydrodynamic modeling techniques, evaluating the impact of each alternative on existing patterns of tidal circulation and sedimentation; and evaluating alternative techniques of dredging and material handling and detailing a preferred dredging and dredged material management plan appropriate to the specific requirements of the project.

Taylor Engineering served as a key member of the St. Augustine Inlet Management Plan update Technical Advisory Committee during the most recent FDEP-led plan update.

Matanzas Inlet Sediment Study

St. Johns County, Florida

Client
Florida Inland Navigation District

Contact
Mark Crosley
Executive Director, FIND
1314 Marcinski Rd.
Jupiter, FL 33477
(561) 627-3386
mcrosley@aicw.org

Key Elements
- Matanzas Inlet
- Hydrodynamic, Wave, Sediment Transport Modeling
- Field Measurements
- Coastal Processes Analysis
- Concept Design and Studies
- Dredging
- Stakeholder Outreach

Completion Date
2008

Fees
$ 195,161

Matanzas Inlet, St. Augustine, Florida

Previous studies suggest that the Matanzas Inlet, a natural inlet in southern St. Johns County, captures some of the bypassing littoral sediment and directs the captured sediments to inshore waterways, among them Florida's Intracoastal Waterway (ICWW). Some maintain that two primary reasons account for the severe shoaling within the nearby ICWW. First, the ICWW in this area lies relatively close to an exposed, active, and natural sandy inlet. Second, unlike virtually all other inlets on Florida's east coast, no agency maintains the inlet for navigation and no inlet management program exists at Matanzas Inlet to manage the littoral material introduced through the inlet to interior channels. Historical dredging records indicate that the ICWW requires costly maintenance dredging, on average, every 2.7 years. Each operation requires removal of over 175,000 cubic yards of sediment.

The Florida Inland Navigation District retained Taylor Engineering to identify, quantify, and analyze the existing features, wave climate, hydrodynamics, and sediment characteristics of the Matanzas Inlet to determine whether any alternatives exist that would reduce sediment inflow into the ICWW channel and other adjacent waterways. These alternatives would reduce the frequency and costs of dredging the ICWW channel. Additionally, feasible alternatives would preserve the environmental value and existing recreational use of the associated waterways. Taylor Engineering measured flow velocity and water level to validate and apply a state-of-the-art modeling tool — the MIKE suite of hydrodynamic, spectral wave, and sand transport models — to evaluate the existing sediment transport mechanisms and any alternatives to reduce sediment inflow into the ICWW. These models provided a realistic simulation of waterway sediment transport and morphological changes through integrated and fully-dynamic feedbacks between sediment transport forcing mechanisms and waterway bed elevation changes.

Sebastian Inlet Channel Completion

Indialantic, Florida

Client
Sebastian Inlet District

Contact
Martin Smithson
Administrator
Sebastian Inlet District
114 Sixth Avenue
Indialantic, FL 32903
(321) 724-5175
msmithson@sitd.us

Key Elements
- Dredging Design
- Regulatory Permitting
- Species and Habitat Consultations
- Environmental Surveys
- Seagrass Impacts
- Bathymetric Surveying
- Hydrodynamics, Water Quality, and Sediment Transport Modeling
- Digital Terrain Model
- Sedimentation and Stability
- Geotechnical Investigations
- Liaison/Coordination with Regulatory Agencies
- Boat Safety
- Public Workshops
- Risk Assessment
- Cost Estimating
- Preparation of Construction Plans, Specifications, and Bid Documents
- Construction Documents
- Construction Administration

Completion Date
2007

Fees
$ 560,482

Sebastian Inlet

The Sebastian Inlet District contracted Taylor Engineering to design, permit, and oversee construction of a 1,320-foot dredged channel to provide safe navigation through the inlet flood shoal to the Atlantic Intracoastal Waterway. The project area lies wholly within the Indian River Aquatic Preserve (an Outstanding Florida Water), within an important manatee area, and partially within the Pelican Island National Wildlife Refuge. This location and the associated issues resulted in numerous unsuccessful attempts to gain approval for the project. Natural resource issues include seagrass impact and mitigation, creation of a seagrass shoal by open water sand placement, and development of a comprehensive natural resource management plan acceptable to a wide variety of public agencies. Taylor Engineering designed and implemented a plan to meet all the environmental concerns and engineering design challenges. Public petitions, letters from private citizens and resolutions of support from two counties, a local marina owner survey, and an inlet boating activity survey provided project need and justification. Environmental Fluid Dynamics Code three-dimensional water quality modeling compared a variety of parameters for with and without project conditions. Historic environmental data review and summaries supported extensive biological fieldwork for seagrass and benthic invertebrate communities at impact and mitigation sites.

The completed channel crosses the Indian River Lagoon in an aquatic preserve, with manatee habitat, shellfish waters, and seagrass beds, before intersecting the Intracoastal Waterway. Mitigation plans included seagrass restoration, seagrass protection, and funding for a proposed stormwater treatment facility in the local area. The project was constructed in late summer 2007.

Caxambas Pass Borrow Area Design & Impact Analysis

Collier County, Florida

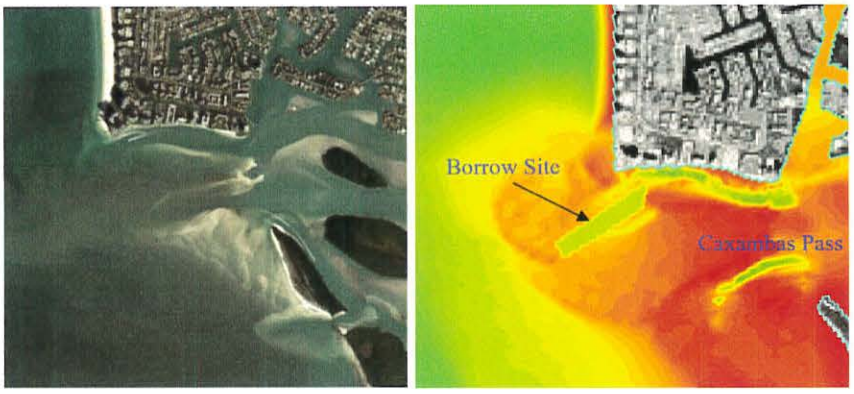
Client
Collier County

Contact
Gary McAlpin, Manager
Coastal Zone Management
2685 South Horseshoe Drive
Unit 103
Naples, FL 34104
(239) 252-5342

Key Elements
- Shoreline Protection
- Beach Restoration
- Channel Deepening Feasibility
- Inlet Dredging Impact Analysis
- Numerical Modeling
- Design and Permitting
- Contract Document Preparation
- Plans and Specifications
- Bid Administration

Completion Date
2006

Fees
$ 282,837



Caxambas Pass Borrow Area

In support of the 2006 South Marco Island Beach Renourishment Project, Collier County contracted Taylor Engineering for design and permitting assistance followed by preparation of construction plans and technical specification and bid administration assistance. The borrow area for the nourishment project, which places fill along 0.83 miles of beach at the southern end of Marco Island, lies within Caxambas Pass, adjacent to the southern end of the project area.

Taylor Engineering's work commenced with a review of existing literature and the side-scan and magnetometer surveys of the inlet to characterize environmental and cultural resources in the project area. Borrow area design included collection and analysis of geotechnical data (vibracores) to ensure the borrow materials met State of Florida sediment compliance specifications for beach fill material. Additionally, updated side-scan and magnetometer surveys were required to ensure the newly designed borrow area would not impact historic and cultural resources. Given the proximity of the inlet borrow area to the adjacent shorelines, including the Rookery Bay Aquatic Preserve south of the inlet, we conducted a physical impact assessment of the effects of sand removal from the borrow area. We applied a wave propagation model to simulate the effects of changing bottom depths on the nearshore wave climate by accounting for refraction, diffraction, shoaling, and breaking. Similarly, we applied a tidal hydrodynamics model to simulate the effects of dredging on tidal currents. Our model results indicated borrow area dredging was not expected to cause any negative impacts to neighboring areas or the natural sand bypassing across the inlet. The Florida Department of Environmental Protection issued a permit for the project in 2005, and the County successfully awarded the construction contract in 2006.

Advanced Storm Surge & Nearshore Wave Modeling

Georgia and Florida's Atlantic Coast

Client
FEMA Region IV

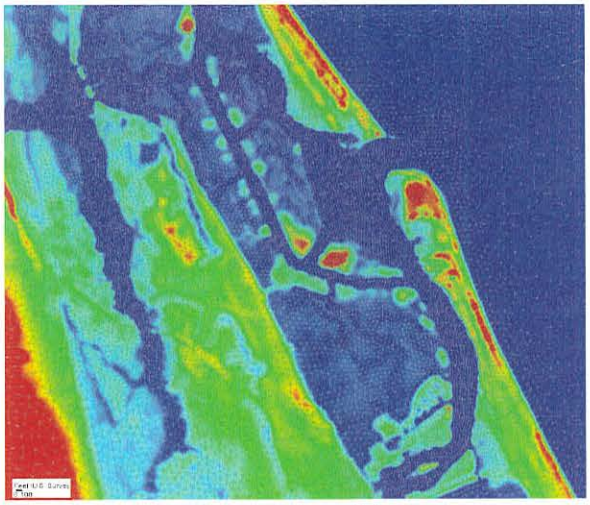
Contact
Mark Vieira, P.E.
3003 Chamblee-Tucker Road
Suite 146
Atlanta, Georgia 30341
(770) 220-5450

Key Elements
- Floodplain Management
- FEMA Flood Insurance Study
- RiskMAP Meetings and Products
- State-of-the-art Coastal Flood Risk Analyses
- Evaluation of Coastal and Marine Structures
- Design and Certification Requirements for Levees and Floodwalls
- Comprehensive Watershed Evaluations
- Shoreline Stabilization
- Coupled Hydrodynamic (ADCIRC) and Wave (SWAN/STWAVE) Modeling
- Hydrodynamic Modeling, 2-D
- Wave Modeling, 2-D
- 1-D Wave and Wave Setup Modeling at Levees
- Coastal Processes Analyses
- Supercomputer and High-Performance Computing Applications
- GIS Programming, Application, and Tool Development
- ArcInfo/ArcMap/GIS
- QA/QC
- Coordination with Multiple Team Members (including USACE, FEMA, GADNR, FDEP)
- Stakeholder Outreach

Completion Date
Ongoing

Fees
Over 5 million (to date)

Taylor Engineering's state-of-the-art modeling work identifies accurate coastal flood hazards required for floodplain management and levee design and certification.



Ponce de Leon Inlet

Taylor Engineering is currently developing ADCIRC and SWAN coupled models to establish hurricane surge levels along the entire Atlantic coastlines of Georgia and Florida (through the Keys) including all 19 Atlantic Ocean inlets in Florida from St. Marys River Entrance on the Georgia line to Government Cut in Miami-Dade County. The overall effort consists of three separate studies — Georgia and northeast Florida (started 2010) including Volusia County; east-central Florida (started 2011); and the east coast of south Florida including Monroe County (started 2013). For each study, Taylor Engineering performs a needs assessment, reconnaissance to identify key coastal features and flood protection systems, mesh development (>7.5M total nodes), evaluation and selection of validation storms, model validation to tides and storms, and execution and review of the production run storm suite. For these studies, coastal engineers are evaluating optimal mesh structure, computational requirements, and SWAN+ADCIRC code requirements. Mesh development tasks include field reconnaissance of important coastal features and structures, examination of aerial photography, and discussions with local stakeholders. Proper representation of important study area features including the St. Johns River and Indian River Lagoon complex prove critical to model performance and require local knowledge to develop proper representation in the model. Review and application of land classification data in the study area allows detailed representation of land and vegetation features within the model.

Validation efforts include tests to document model sensitivity to important parameters and comparisons to measured tide and storm water and wave levels. After model development and validation, each study enters a second phase that includes full production of storm surge values by a team of experts lead by Taylor Engineering. Given the size of the computational domains, the studies require the use of supercomputer systems that allow parallel processing of model simulations.

Detailed representation of important coastal features allows the SWAN+ADCIRC hydrodynamic and nearshore wave model to accurately reproduce measured tidal and storm surge water levels.

Study results allow FEMA to update its flood insurance studies in the study area counties. These updates will result in sound floodplain management practices, fairer application of flood insurance rates, and the development of sustainable communities.

Jacksonville Harbor Deepening Project

Duval County, Florida

Client
U.S. Army Corps of Engineers
Jacksonville District

Contact
Steven Bratos, (904) 232-1824
Paul Stodola, (904) 232-3271
USACE Jacksonville District
701 San Marco Blvd.,
Jacksonville, FL 32207

Key Elements
- St. Johns River Inlet
- 2-D and 3-D Hydrodynamic Modeling (MIKE21 and EFDC)
- Salinity/Water Quality Modeling (EFDC)
- Ecological Modeling
- Coastal and Navigation Project
- Evaluation of Dredging and other Navigation Improvements
- Sea Level Rise Analysis
- Storm Surge Modeling (ADCIRC+SWAN)
- NEPA Document Preparation
- Supplemental Environmental Impact Statement
- Environmental Effects Analysis
- Salinity Impacts and Environmental Consequences
- Air Quality Analysis, Current and Projected Loads
- GIS Analyses

Completion Date
2014

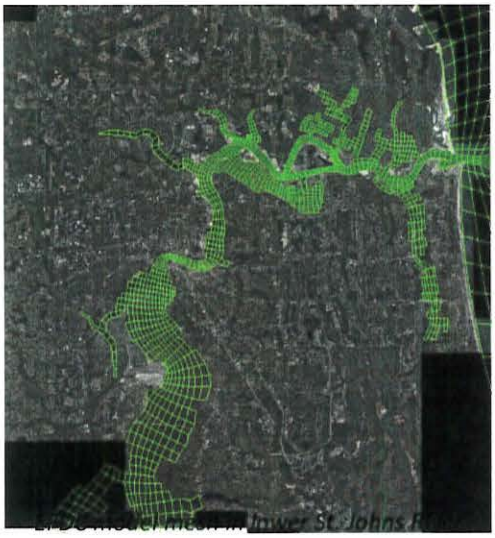
Fees
$ 2,449,445

Jacksonville Harbor

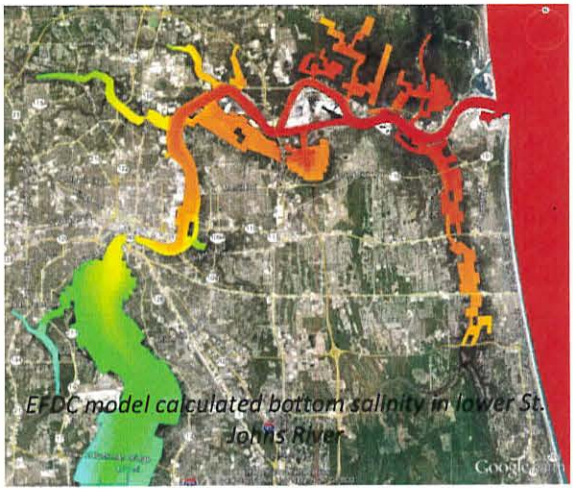
The 2016 completion of expansion works at the Panama Canal allows larger ships to transit between Asia and the U.S. east coast. This event provides a unique high-economic-value opportunity for the Jacksonville Port to become one of the few ports on the U.S. east coast capable of serving the larger ships traversing through the canal. Monetizing this opportunity requires expansion of the federally authorized Jacksonville Harbor Navigation Project. To that end, the U.S. Army Corps of Engineers (USACE) Jacksonville District has been working with the local sponsor — the Jacksonville Port Authority — to develop and implement the National Economic Development alternative, the channel redesign which produces the highest net benefit to the nation.

During its studies, USACE enlisted the assistance of Taylor Engineering multiple times as the project evolved from a general reconnaissance/planning phase in 2009 to the complex plan formulation process — documented in a General Reevaluation Report (GRR) and an Environmental Impact Statement (EIS) — that was completed in 2014. The plans investigated depth alternatives ranging between 40 and 50 feet from the river mouth upstream a distance of 20 miles.

In the first task order, Taylor Engineering collected wave, current, water surface elevation, and salinity and suspended sediment concentration data with a variety of mobile and stationary measurement instrumentation — side- and bottom-facing ADPs, ADCPs, ADVs, water level gages, CTDs, and LISST. The instruments deployed for periods ranging from six to 90 days. These data supported the calibration of numerical models for circulation, salinity, sediment transport, and ecological parameters. In a succeeding task order, Taylor Engineering applied the ADCIRC model to develop and provide oceanic and estuarine boundary conditions for the use of nearshore models RMA, CMS, and EFDC.



In response to later requests from USACE, Taylor Engineering conducted hydrodynamic and salinity modeling with the Environmental Fluid Dynamics Code (EFDC) model (a refined and recalibrated St. Johns River Water Management District model [SJRWMD]), ecological modeling with tools developed by SJRWMD, and water quality modeling with the CE-QUAL-ICM model. These models provided information for inclusion in the Jacksonville Harbor Navigation Project GRR Phase 2 and EIS. The modeling effort provided the means to assess the direct impacts of channel modifications on river salinity and the cumulative impacts of other factors, including the U.S. Navy Mayport Deepening Project, Mile Point Improvement Project, other navigational improvements, sea level rise, and freshwater withdrawals from the St. Johns River. The domain of the EFDC model encompassed the lower St. Johns River, the river's mouth (St. Johns River Inlet), and adjacent Atlantic Ocean. The study area also included Chicopit Bay, White Shells Bay, Mill Cove, major tributaries, and sections of the Intracoastal Waterway, and extended about 120 miles upstream through Crescent Lake and Lake George. Taylor Engineering refined the EFDC model mesh to provide improved resolution in the federal channel to capture channel modification alternatives accurately. Results from the EFDC model provided input for ecological models to evaluate channel modification effects on plankton, submerged aquatic vegetation, wetlands, benthic macroinvertebrates, and fishes and for the CE-QUAL-ICM to estimate effects on dissolved oxygen and chlorophyll.



EFDC model calculated bottom salinity in lower St. Johns River

Taylor Engineering developed and applied a fine-grid MIKE21 model to assess channel modification effects on salinity in numerous salt marshes and river tributaries — Timucuan salt marsh, Ortega River, Cedar River, Julington Creek, and Durbin Creek.

Proudly, Taylor Engineering met the accelerated schedule (14 months ahead of schedule), the Chief of Engineers signed the Jacksonville Harbor Deepening Project report, and the U.S. Congress authorized the project as part of the Water Resources Development Act of 2014.

Broward Intracoastal Waterway Deepening

Broward County, Florida

Client
Florida Inland Navigation District

Contact
Mark Crosley
Executive Director, FIND
1314 Marcinski Road
Jupiter, FL 33477
(561) 627-3386

Key Elements
- Navigation Dredging Design
- Construction Administration and Observation
- Construction Documents
- Cost Estimating
- Project Certification
- Bathymetric Surveys
- Environmental Resource Surveys
- Port Everglades, U.S. Coast Guard, Florida Department of Transportation, and Subaqueous Utility Coordination
- Regulatory Coordination
- Environmental Permitting

Completion Date
2017

Fees
$ 603,245

Mechanical dredge on the Intracoastal Waterway

The Florida Inland Navigation District (FIND) project deepened ±11,250 linear feet (ft) of the Intracoastal Waterway (ICWW) to a depth of -17 feet (project depth of -15 feet and 2-foot allowable over-dredge) Mean Low Water (MLW) — from the 17th Street Bridge to just north of Las Olas Boulevard in Ft. Lauderdale, Broward County, Florida. Pre-construction depths in this ICWW segment, part of the federally authorized channel, were limited to -10 ft MLW. The project mechanically dredged 180,000 cy of material, deposited it in a self-contained barge (with rails to hold the dredged material and prevent return water from reentering surface waters), and transported and offloaded it for temporary storage at a ±6-acre dredged material management area in Port Everglades.

The project need stemmed from the growth in the number of vessels that require channel depths greater than -10 ft for safe navigation. Based on a 2011 FIND economic review of local city, county, and industry groups, implementation of the project will result in a minimum economic benefit of approximately $7 million for vessels 160-180 ft length overall (LOA), $74 million for vessels 180-240 ft LOA, and $187 million for vessels 240-280 ft LOA.

Taylor Engineering initiated permitting of the project in 2006, revised the project design in 2010, and acquired the Broward County, Florida Department of Protection, and Department of Army permits for construction between 2011 and 2014. Technical issue resolution and ultimate permit acquisition focused on clearly addressing regulatory agency concerns, garnering public support from the local marina and service facility industry, and developing a channel engineering design that minimized initial and maintenance dredging, environmental impacts, and mitigation requirements. Construction commenced in May 2016 with substantial completion in April 2017.

Port Everglades Deepening and Widening

Broward County, Florida

Client
Port Everglades

Contact
David Miller, P.E.
David Miller & Associates
410 Pine Street SE
Suite 210
Vienna, VA 22180
(703) 225-1300
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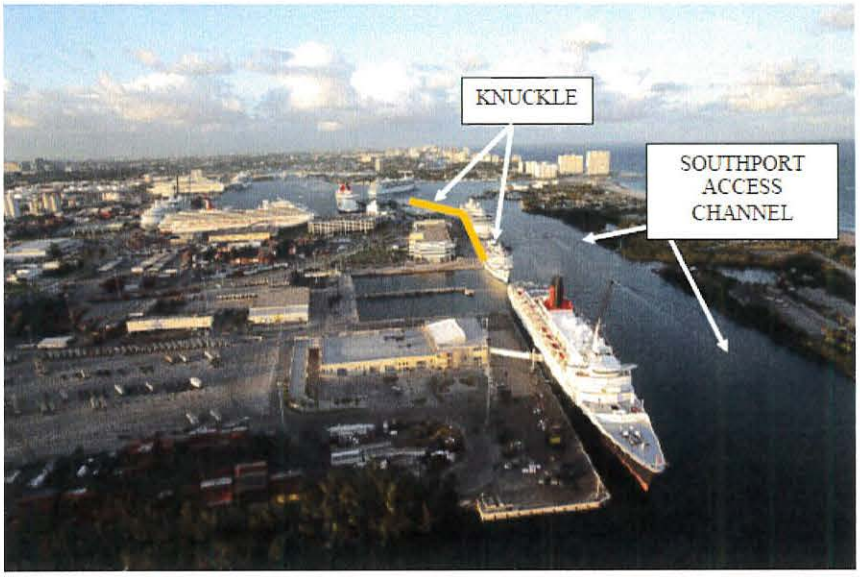
Key Elements
- Feasibility Study
- Technical Review
- Hydrodynamic Modeling
- Planform Optimization
- Bulkhead Structural Design
- Construction Drawings and Specifications
- Environmental Permitting
- Bid Support

Completion Date
Ongoing

Fees
$ 77,986 (feasibility activities)
$ 256,012 (sediment transport)
$ 726,027 (bulkhead)



Southport access channel (view looking north)

Port Everglades is one of Florida's deepest ports and covers over 448 acres of submerged land and 1,742 acres of upland territory. The entrance channel itself is a 500 ft wide, with a 45-foot deep stretch that runs 1.7 miles due west, passing between north and south jetties at either side of the inlet entrance, and into the main turning basin. The main basin measures 1,200 feet from east to west and 2,450 feet north to south. Mean lower low water depth in the basin is 42 feet. Beyond the main basin, Port Everglades is divided into three main regions, Northport, Midport, and Southport, with a total of 33 active berths.

In 2013, Taylor Engineering provided independent technical review of dredging, dredged material management area issues, and the engineered portion of artificial reef construction contained within the U.S. Army Corps of Engineers' feasibility study on the deepening and widening of Port Everglades. The feasibility study's Tentatively Selected Plan includes: (1) extending the outer entrance channel; (2) deepening the inner entrance channel, main turning basin, turning notch, and southport access channel; (3) shifting and widening the southport access channel; and (4) environmental mitigation.

Beginning in 2016, Taylor Engineering is providing engineering support for preliminary and final design on the southport access channel environmentally-friendly bulkhead which will consist of a system of sheet pile topped with a sloped riprap revetment that is designed to allow for tidal flushing of upland mangroves and other habitat. Taylor Engineering's scope of work includes: hydrodynamic modeling for planform optimization and load evaluation, final engineering, and development of construction drawings and specifications as necessary to carry the project from its existing preliminary design through development of final construction documents and bidding support.

Dania Cutoff Canal Deepening

Broward County, Florida

Client
Florida Inland Navigation District

Contact
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Executive Director, FIND
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(561) 627-3386

Key Elements
- Regulatory Permitting
- Environmental Resources Surveys
- Bathymetric Survey Oversight
- Geotechnical Engineering
- Dredged Material Management
- Port Everglades Coordination
- Contract Documents and Technical Specifications
- Construction Cost Estimating
- Construction Administration

Completion Date
2014

Fees
$ 847,023

Mechanical Dredge within the Dania Cutoff Canal

The Florida Inland Navigation District (FIND) retained Taylor Engineering to permit, design, and provide construction administration services for a deepening project within a portion of the Dania Cutoff Canal (DCC) in Broward County, Florida. FIND formulated the project to provide mega-yachts and commercial vessels safer and deeper access to the boatyards and shipping facilities on the canal.

This technically challenging project, with in-water dredging activities occurring between July 2012 and April 2013, involved removal of approximately 91,000 cubic yards of weathered limestone, via an environmental clamshell bucket, along a ±4,700-ft section of the canal that extends from the southwestern end of Port Everglades. Temporary material placement and dewatering occurred in a 6-acre dredged material management area (DMMA) on the Port Everglades property. Final disposal of material occurred within local commercial-zoned construction projects. Construction activities ceased in January 2014 with removal of the dewatered dredged material and restoration of the temporary DMMA.

Partnerships between project stakeholders and environmental regulatory agencies — including the FIND administration and Board of Commissioners, Port Everglades, Broward County, state and federal permitting agencies, local boating and commercial industry groups, as well as Taylor Engineering and the dredging contractor ultimately led to a successful project outcome. FIND estimates that the successful completion of this project has increased marine economic output by the addition of 24 – 38 new jobs and $3.6 – $9.2 million per year into the local economies. FIND strongly believes these economic benefits justify the construction cost of $7.2 million.

Okeechobee Waterway Cut 1 Sediment Basin Feasibility Study

Martin County, Florida

Client
Florida Inland Navigation District

Contact
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Key Elements
- St. Lucie Inlet
- Hydrodynamic, Wave, Sediment Transport Modeling
- Field Measurements
- Coastal Processes Analysis
- Concept Design and Studies
- Dredging
- Stakeholder Outreach

Completion Date
2015

Fees
$ 110,053

MIKE model flexible mesh and bathymetry of OWW Cut 1 in St. Lucie River

Dredging records indicate that Okeechobee Waterway (OWW) Cut 1 requires maintenance dredging on average every 3.3 years. To reduce the frequency and costs of maintenance dredging, the Florida Inland Navigation District (FIND) tasked Taylor Engineering to conduct this study to identify and analyze the existing features, hydrodynamics, and sediment characteristics of the OWW Cut 1 area and to determine whether alternatives exist that would reduce sediment inflow into OWW Cut 1. Developing the alternatives to reduce sediment inflow into OWW Cut 1 requires an understanding of the dominant coastal processes that affect sediment transport at the St. Lucie Inlet, St. Lucie River, and adjacent waterways. To understand ongoing processes in the area of interest, this study measured tides and currents and reviewed existing data covering the inlets, river, lagoon, and adjacent waterways. The review provided an historical perspective on past efforts and allowed Taylor Engineering to document and assess existing data and identify data gaps. The measured data provided input information in the MIKE model development, model application, and analyses of various alternatives to reduce OWW Cut 1 shoaling.

Taylor Engineering setup, validated (using field measured data), and applied an integrated MIKE hydrodynamic, wave, sediment transport, and morphology model to evaluate the short-term and long-term sediment trapping performance of various sediment basin alternatives. The alternative basins varied in locations, size, shape, and depths. Evaluations of long-term shoaling show that one alternative can provide a maintenance dredging interval on average every 5 years. This alternative also provides an annual savings of approximately $154,000 when compared with the current maintenance dredging equivalent uniform annual cost.

Indian River Lagoon North Sediment Management Strategies

Volusia, Brevard, and Indian River Counties, Florida

Client
U.S. Army Corps of Engineering
Jacksonville District

Contact
Jose Sanchez
USACE Jacksonville District
701 San Marco Blvd.
Jacksonville, FL 32207-8175
(904) 232-1381

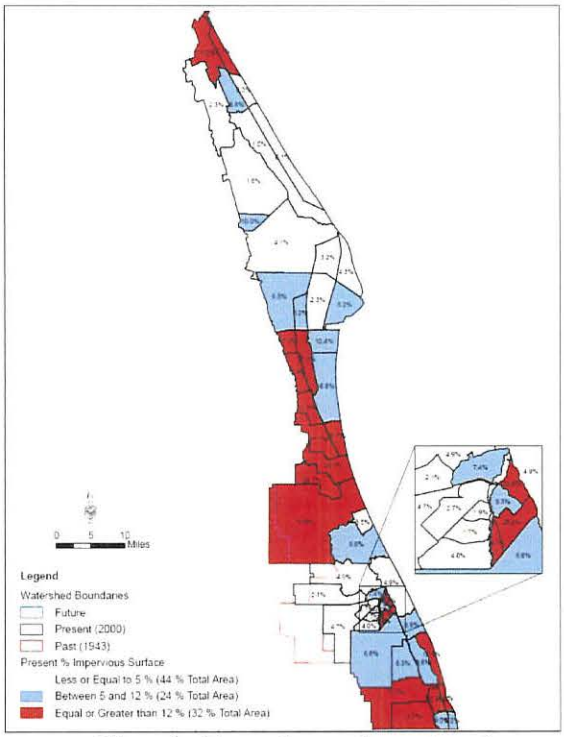
Key Elements
- Basin-wide Watershed-Based Analysis of Sediment Sources and Sinks
- Data and Literature Review
- Watershed-level GIS Analyses of Past, Present, and Future Sediment Loading, Impervious Surface Changes, and Analysis of Historic Shoreline Changes
- Review of Long-Term Dredging Needs
- Comprehensive Review of Sediment Best Management Practices, Dredging Technologies, and Dredged Material Management Methods and Technologies
- Watershed Management and Estuarine Dredging Priorities
- Performance Measures for Sediment Management Strategies
- Environmental Feasibility Studies
- Watershed Management and Planning
- Water Quality Studies and Modeling
- Dredging

Completion Date
2005

Fees
$ 194,811

Taylor Engineering developed strategies and implementation tools for sediment management in the 130-mile Indian River Lagoon North (IRL-N), an estuary reaching south along the Florida east coast from Ponce de Leon Inlet to the southern border of Indian River County. The United States Army Corps of Engineers (USACE) IRL-N Feasibility Study, which supported the project, defines strategies for ecological restoration of the lagoon.

Taylor Engineering based the IRL-N management strategies on estimates of sediment loads from 54 watersheds in three coastal counties that contribute sediments to the Indian River Lagoon; comparisons of watershed-level past, present, and future loading estimates; changes in impervious surface areas; and the distribution of sediments.



Watershed impervious surface categories: past, present, and future

Taylor Engineering also reviewed sediment best management practices (BMPs), dredging technologies, and dredge material management technologies likely applicable to the watersheds and surficial sediment deposits.

Taylor Engineering developed a priority list for lagoon and upland sediment management activities by linking watershed loading changes to the Indian River Lagoon surface sediment distribution. Priority rankings also accounted for sediment contaminants and sediment sources internal to the lagoon (e.g. spoil island erosion and shoaling activity). Comparisons of final priority rankings to Florida public agency dredging priorities provided the USACE an understanding of the relationship of proposed rankings and state agency restoration plans.

Norriego Point Shoreline Restoration & Stabilization

Okaloosa County, Florida

Client
Florida Department of Environmental Protection

Contact
Pearce Barrett III
FDEP Bureau of Design and Recreation
3540 Thomasville Road
Tallahassee, FL 32308
(850) 488-3539

Key Elements
- Coastal Conditions Analysis
- Value Engineering
- Rock Structures Design
- Bulkhead/Seawall Design
- Final Design
- Dredge Design Permitting
- Submerged Aquatic Vegetation Surveys
- Conceptual Upland Recreational Design
- Construction Drawings and Specifications
- Bid Administration
- Construction Administration
- Stakeholder Coordination

Completion Date
Ongoing

Fees
$ 302,823

Norriego Point During Construction (December 2017)

Located on the northwestern tip of Holiday Isle within East Pass in Destin, Norriego Point suffers continual erosion. Taylor Engineering has been involved with Norriego Point restoration and stabilization efforts since 1998 when the City of Destin (City) and Okaloosa County retained the firm to prepare the East Pass Inlet Management Plan which included stabilization recommendations and alternatives for Norriego Point. Since then, the City retained Taylor for assistance with interim stabilization and dredging projects. Currently, Taylor provides engineering and environmental services to the Florida Department of Environmental Protection (FDEP) for Norriego Point shoreline stabilization, beach restoration, and recreational amenities to be implemented with Natural Resource Damage Assessment (NRDA) funding.

Working towards anticipated construction in the fall of 2017, Taylor Engineering's services included state and federal regulatory coordination and permit modifications authorizing Norriego Point beach restoration with sand from the East Pass navigation channel dredging, value engineering and final engineering design, construction drawings and specifications for all restoration and stabilization project components (e.g., rock structures, seawalls, dredging, grading), bid administration support services, and construction-phase services. Specific services for the recreational improvement project component included site assessments and characterizations, program planning, stakeholder outreach, and conceptual design.

Notably, a separate consultant conducted the original design and permitting of the Norriego Point stabilization project; however, given high cost and concerns expressed by citizens, FDEP hired Taylor Engineering to perform detailed reviews of the previous design and regulatory authorizations, resulting in numerous recommendations regarding construction scheduling, design modifications, and regulatory authorizations. Our recommendations included obtaining authorization for East Pass and Destin Harbor Dredging to provide a nearby, cost-effective sand source, and value engineering design modifications that made significant reductions in construction costs and schedules and provided a more resilient design. We also successfully supported the City by applying for and receiving additional grant funding from FDEP. Specific challenges associated with the project include harsh coastal conditions affecting both the

structure design and construction operations, assessment and rehabilitation of deteriorated existing structures, limited construction budget requiring iterative and detailed value engineering design, and limited construction schedule (construction during the relatively short winter season to avoid impacts to the local tourism and fishing economy). Project construction began in August 2017 and is currently on schedule, within budget with no change-orders. In summary, the value-engineered project met the design goals and project budget, saved the FDEP and City millions of dollars allowing the project to move forward, and is resulting in a flagship project following inlet management recommendations. The project will not only provide substantially increased protection to Destin Harbor and greatly reduce maintenance dredging requirements, but will allow additional sands to be placed on Gulf-front eroding beaches.

Beach Management Feasibility Study

City of Destin and Walton County, Florida

Client
South Walton County Tourist Development

Contact
Lindey Chabot
Grants and Projects Manager
City of Destin
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Destin, FL 32541
(850) 837-4242

Brad Pickel
Seahaven Consulting
5A Market Street
Beaufort, SC 29906
(850) 687-9825

Key Elements
- Feasibility, Design and Permitting
- Coastal Processes Analyses
- Numerical Modeling
- Sediment Budgets
- Environmental Assessments
- Sand Source Investigations
- Marine Resources
- Storm Damage Reduction Benefits
- Public Workshops/ Coordination/Relations
- Expert Witness Testimony
- Erosion Control Line Establishment
- Cost Estimating
- Construction Drawings and Specifications
- Project Management
- Scheduling, Bid Administration, Observation
- Physical and Environmental Monitoring

Completion Date
2007

Fees
$ 1,007,912

Destin Beach project construction

In 2001, Walton County and the City of Destin (Okaloosa County), acting in partnership to facilitate regional beach management and realize significant cost savings, contracted Taylor Engineering to perform an integrated study for their combined 32-mile long beach along the Gulf of Mexico. The coastal processes analysis portion of the study documented shoreline changes over the past 128 years, beach volume changes over the past 25 years, and overwash volumes during hurricanes Opal and Georges. Analyses of decades of wave and wind data provided input for wave- and wind-driven longshore and cross-shore sand transport models. These analyses form the long- and short-term sediment budgets.

Taylor Engineering applied size, content, and color criteria to investigate the Gulf bottom between the 20- and 50-foot water depth contours for locating borrow areas with sufficient beach compatible sand. This sand source investigation consisted of seismic profiles; vibracores; and side scan, magnetometer, and bathymetric surveys. The East Pass shoal system was selected as the designated borrow source. The innovative borrow site required extensive numerical modeling analysis to ensure neighboring shorelines would not be affected by borrow area dredging. A key element of the project was a sequence of meetings with technical review committees, citizens' advisory councils, and public workshops at key project milestones to receive community input and to facilitate public education during the course of the project.

Integrating engineering, environmental, and economic elements, the feasibility study recommended beach and dune restoration along seven miles of beach in Western Walton County and Destin as the first course of action. Following the study's recommendations, Taylor Engineering designed, permitted, and administered the construction of the beach and dune restoration project — placing about 3,000,000 cubic yards of sand along seven miles of shoreline. Recent monitoring results show excellent project performance — nearly 80% of the sand remained within the system as of July 2014. The American Shore & Beach Preservation Association named the Beaches of South Walton and Destin as one of the **2008 Best Restored Beaches.**

Destin Harbor Emergency Dredging / Norriego Point Phase I

City of Destin and Okaloosa County, Florida

Client
Okaloosa County

Contact
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David Campbell
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Destin, FL 32541
(850) 837-4242

Key Elements
- Shoreline Protection
- Dredging Design
- Project Planning
- Natural Resource Evaluation
- Engineering Design
- Environmental Permitting
- Cost Estimating
- Coastal Structure Design
- Surveying
- Project Management
- Scheduling

Completion Date
2014

Fees
$ 32,098

Destin Harbor Emergency Channel Dredging (May 2013)

Ongoing erosion of Norriego Point produced large sand shoals immediately beyond the northwest tip of the Point. Wave and tidal forces transport a portion of these shoals further to the north into the Destin Harbor (Old Pass Lagoon) entrance channel, causing impassable conditions and ship groundings during low tide. These hazardous navigation conditions prompted the City of Destin (City) and Okaloosa County (County) to perform emergency maintenance dredging to provide safe navigation and reduce the impact to the local fishing fleet, harbor economy, and recreational boaters.

Taylor Engineering provided emergency design, permitting and construction administration services to the City and County to expedite the emergency dredging operation. Specific tasks included pre-dredge data collection (bathymetric surveys) to define existing conditions, engineering analysis to develop dredging templates and quantify volumes, emergency regulatory permitting (FDEP and USACE), construction drawings and specifications including the channel dredging area and dredged material management area (DMMA), and post-construction surveys and volume calculations to determine payment quantities. Taylor Engineering prepared permit drawings and application packages within 10 days after receiving work authorization and, through close coordination with regulatory agencies, received the FDEP permit within two weeks following the application submittal. Taylor Engineering assessed numerous dredging templates and DMMA sites to maximize the dredging volume and minimize costs, and concurrently prepared construction drawings and specifications to expedite project bidding. Construction commenced in early May 2013 and ended prior to the busy Memorial Day weekend.

Following, in 2014 Taylor Engineering provided the City regulatory permitting assistance to collect survey data and modify the existing Destin Harbor Maintenance dredging permit in accordance with the East Pass Inlet Management Plan. The permit modification allows the City to place dredge spoil along Norriego Point and the beaches adjacent to the inlet.

In conjunction with the permit modification, Taylor Engineering also reviewed the Norriego Point Stabilization Project design and has made recommendations regarding the first phase of construction to reduce channel shoaling, future maintenance dredging requirements, and overall construction costs. The City of Destin retained Taylor Engineering to provide engineering design and construction-phase services for the proposed first-phase of the stabilization project, which included dredging the harbor channel, nourishing the shoreline, and installing a composite sheetpile wall to reconnect the flanked T-Groin structure. Phase 1 was completed in July 2014.

Okaloosa County Federal Project Support

Okaloosa County, Florida

Client
Okaloosa County

Contact
Jim Trifilio
Coastal Management Coordinator
Okaloosa County Tourist Development Council
1540 Miracle Strip Parkway, SE
Fort Walton Beach, FL 32549
(850) 651-7131

Key Elements
- Shoreline Protection
- Beach Restoration
- Dredging
- Environmental Restoration
- Beneficial Use of Dredged Material
- Maintenance Dredging Review
- Project Planning
- Natural Resources Evaluation
- Federal Project Coordination
- Community Relations

Completion Date
Ongoing

Fees
$ 25,000

Eroding shoreline along Norriego Point

The U.S. Army Corps of Engineers (USACE) completed a Section 905(b) Analysis, or reconnaissance study (Okaloosa County, Florida Storm Damage Reduction, Beach Protection, and Restoration), that determined the necessity of further planning in the form of a feasibility study. Subsequently, USACE developed a Project Management Plan (PMP) outlining the scope of work for the feasibility study. During the next project phase, USACE will assess the feasibility of providing shoreline erosion control, beach nourishment, storm damage reduction, environmental restoration and protection, and related improvements along Okaloosa County's Gulf of Mexico coast and will recommend appropriate implementable solution(s). Additionally, USACE initiated a Section 204 analysis to investigate "beneficial use" projects in association with USACE dredging projects. The Section 204 analysis primarily focused on the East Pass navigational channel dredging but also considered all inshore and offshore USACE dredging projects within the panhandle region.

In support of the County's ongoing and potential federal projects, Taylor Engineering is facilitating the federal studies. Specific work tasks include review and comment on federal reports, solicitations, and other documents provided by USACE (project management plans); federal project coordination to ensure effective utilization of past work products (e.g. sand source and feasibility study results, existing dredging permits, etc.); preparing and reviewing planning assistance to state proposals; identifying potential federal partnerships; leading local meetings and workshops to discuss federal projects/partnerships; general oversight of studies and their effectiveness regarding county interests; and identifying potential beneficial use projects (e.g., Norriego Point stabilization and borrow dredging) within East Pass. Additionally, working with Okaloosa County and USACE staff and County lobbyists, Taylor Engineering has also been leading an effort to investigate regional federal project partnership amongst the Florida panhandle counties – Escambia, Santa Rosa, Okaloosa, Walton, Bay, and Gulf counties. Taylor Engineering staff are also working with Jacksonville and Mobile District staff, as well as regional planning offices, to implement regional sediment management planning along the Florida panhandle and Gulf Coast region.

Okaloosa County Beach Monitoring

Okaloosa County, Florida

Client
Okaloosa County

Contact
Jim Trifilio
Coastal Management Coordinator
Okaloosa County Tourist Development Council
1540 Miracle Strip Parkway, SE
Fort Walton Beach, FL 32549
(850) 651-7131

Key Elements
- Data Collection
- Surveying
- Coastal Processes Analyses
- Physical Monitoring
- Storm Damage Assessments
- Shorefront Encroachment
- Public Workshops / Community Relations
- Beach Management Recommendations

Completion Date
Ongoing

Fees
Over $ 500,000 (to date)

Okaloosa County beach monitoring areas

Okaloosa County, the City of Destin, and Eglin Air Force Base have contracted Taylor Engineering to provide comprehensive beach restoration monitoring services in accordance with regulatory authorizations that include physical monitoring and reporting. Beach monitoring consists of collection and analysis of topographic and bathymetric data within the project and control areas, as well as the offshore borrow area(s) associated with each project. With the monitoring data, Taylor Engineering analyzes mean high-water shoreline changes and compartmentalized volume changes along the beach to evaluate littoral sand transport processes (e.g., erosional and accretional trends). The monitoring reports assess beach restoration project performance, providing a basis for future project planning, and also provide crucial data for future inlet and beach management initiatives given the close proximity to East Pass. The monitoring data may also document pre-storm conditions to support FEMA reimbursements following severe storms.

Taylor Engineering has or currently performs the following beach monitoring or data collection in support of permit requirements and proactive coastal management. The list below provides a summary of the beach monitoring services provided within Okaloosa County since 2007.

- Destin/Walton County Beach Restoration (2007, 2008, 2009, 2010, 2012, 2014)
- Eglin Air Force Base Beach Restoration (2010, 2011, 2012, 2013, 2015)
- Holiday Isle Emergency Beach Restoration (2010, 2011, 2012, 2013)
- Western Destin Beach Restoration (2013, 2014, 2015, 2016, 2017)
- Destin/Walton Potential Impact Monitoring Summary (2013)
- Okaloosa Island Monitoring (2016)
- East Destin Beach Monitoring (2017)
- East Pass Ebb Shoal and Adjacent Beach Monitoring (2017)

In addition to individual monitoring reports, Taylor Engineering maintains databases of organized beach monitoring data as well as historical survey data of the County's shoreline to cost-effectively and efficiently assist the County with future beach assessment and planning needs.

Western Destin Beach Restoration Project

Okaloosa County, Florida

Client
440 W. Condominum Associaton

Contact
Jim Trifilio
Coastal Management Coordinator
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Development Department
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Fort Walton Beach, FL 32549
(850) 651-7131

Lindey Chabot
Contracts and Grants Manager
City of Destin
4200 Indian Bayou Trail
Destin, FL 32541
(850) 837-4242

Key Elements
- Coastal Processes Analyses
- Numerical Modeling
- Environmental Assessments
- Beach Restoration
- Shoreline Protection
- Sand Source Investigations
- Marine Resources
- Storm Damage Assessment
- Public Workshops/ Coordination/Public Relations
- Erosion Control Line Establishment
- Cost Estimating
- Engineering Design
- Dredging Design
- Surveying
- Expert Witness Testimony
- Construction Drawings and Specifications
- Project Management
- Scheduling, Bid Administration, Observation
- Physical and Environmental Monitoring

Completion Date
2013

Fees
$ 407,981

Western Destin Beach Restoration project under construction (February 2013)

Extensive beach erosion from hurricanes Ivan (2004) and Dennis (2005) prompted the Florida Department of Environmental Protection (FDEP) to approve emergency funding for design and permitting of erosion control measures along the western Destin shoreline. The resulting Western Destin Beach Restoration Project reduced the risk of storm damage to upland property while providing a healthy and wide beach, increased recreational opportunities to citizens, promoted tourism and increased revenue streams to local businesses, and provided environmental habitat to marine, terrestrial, and avian wildlife.

The original project design covered a 3.2-mile stretch of shoreline extending from East Pass to Henderson Beach State Park to capture the upland areas most susceptible to storm damage. However, due to funding limitations, the project area was later reduced to include only the FDEP-designated critically eroded area eligible for state cost-sharing. Taylor Engineering designed the project and submitted a joint coastal permit application to FDEP and U.S. Army Corps of Engineers (USACE). FDEP published the Notice of Intent to Issue in December 2009; however, a petition for an administrative hearing was filed and delayed the project approximately two years. During that time, Taylor Engineering continued to provide project support through expert witness testimony, numerical modeling of various project alternatives, permit modifications, and borrow area inspections following the Deepwater Horizon oil spill in 2010. Taylor Engineering also provided thorough review of regulatory authorizations and requested several permit condition waivers that resulted in significant time and cost savings. During construction, Taylor Engineering's project manager handled numerous incidents —including a dolphin carcass washing ashore, reports of oil being pumped onshore, and sand quality issues — without incurring schedule delays or change orders.

The project, completed in February 2013, placed approximately 634,000 cubic yards of sand along two shoreline segments totaling over 1.2 miles. The construction template, designed to achieve pre-Hurricane Opal beach widths, advanced the MHW shoreline seaward 120–200 feet and provided over 50-year storm protection to upland structures. Taylor Engineering continues to provide annual monitoring services to document project performance and provide supporting data for adjacent inlet management activities. The American Shore & Beach Preservation Association named Western Destin Beach as one of the **2015 Best Restored Beaches.**

Beach Management Feasibility Study, Sand Source Investigation, Design, & Permitting Services

Sarasota County, Florida

Client
Okaloosa County

Contact
Jim Trifilio
Coastal Management Coordinator
Okaloosa County Tourist Development Council
1540 Miracle Strip Parkway, SE
Fort Walton Beach, FL 32549
(850) 651-7131

Key Elements
- Data Collection
- Surveying
- Coastal Processes Analyses and Modeling
- Natural Resource Evaluations
- Marine Resources
- Storm Damage Assessments
- Shorefront Encroachment
- Conceptual Design and Studies
- Shoreline Protection
- Cost Estimating
- Public Workshops / Community Relations
- Beach Management Recommendations
- Environmental Restoration
- Beach Nourishment Design
- Sand Source Investigations
- Dredging Design
- Project Management

Completion Date
2012

Fees
$ 882,561

Okaloosa County retained Taylor Engineering to perform a regional-scale beach management study for its Okaloosa Island beaches. Devastation of the study area from hurricanes Ivan in 2004 and Dennis in 2005 brought a sense of urgency to the study. By conducting the analysis of coastal processes on a regional basis, this broad approach afforded the opportunity to assess beach behavior, causative mechanisms, and management opportunities on both large and small scales. A key element of the study included meetings with citizens' groups to receive community input and to facilitate public education regarding the study efforts.

Okaloosa Island beach

The coastal processes analysis portion of the study documented shoreline changes and beach volume changes over a 34-year period to understand the long- and short-term beach behavior of Okaloosa Island. Analysis of 20 years of wave and wind data provided input to model wave- and wind-driven longshore and cross-shore sand transport. Results of these analyses formed the basis of a sediment budget. Application of a dune erosion model derived the storms' effects to upland structures. An environmental review identified marine and terrestrial fauna of special concern in the study area. Additionally, Okaloosa County contracted Taylor Engineering to concurrently conduct a regional sand source investigation, jointly sponsored by Eglin Air Force Base and the City of Destin, to identify a suitable offshore borrow source of high-quality beach sand. The concurrent, regional approach provided significant time and cost savings to Okaloosa County and identified a high-quality sand source that will provide over 10 million cubic yards of sand — enough material for the initial construction of all Okaloosa County beach projects as well as multiple nourishment events.

The study evaluated numerous beach management alternatives and ultimately recommended beach and dune restoration for the critically eroded portion of Okaloosa Island based on the degree of protection offered, project performance, maintenance requirements, environmental impacts, and project costs.

Following the feasibility study, Okaloosa County retained Taylor Engineering to provide coastal engineering design and permitting services for the recommended 2.9-mile beach restoration project. Work included completing an environmental assessment to characterize the native beach and nearshore resources, designing the beach fill and borrow area construction templates, completing a Joint Coastal Permit application for state and federal permits, assisting with establishment of an Erosion Control Line, conducting public workshops, and coordinating with state and federal regulatory and commenting agencies. Following the issuance of the Notice of Intent to Issue from FDEP, an administrative challenge was filed by individuals living on Okaloosa Island. Taylor Engineering provided expert witness testimony to support our engineering and environmental analyses, and FDEP issued the 5-year authorization February 2012.

Holiday Isle Emergency Beach Fill Project

Okaloosa County, Florida

Client
City of Destin

Contact
Lindey Chabot
Contracts and Grants Manager
City of Destin
4200 Indian Bayou Trail
Destin, FL 32541
(850) 837-4242

Key Elements
- Coastal Processes Analyses
- Surveying
- Storm Damage Assessment
- Numerical Modeling
- Environmental Assessments
- Beach Restoration / Shoreline Protection
- Shoreline Protection
- Sand Source Analytical Investigations
- Marine Resources
- Public Relations
- Mean High Water Line Establishment
- Cost Estimating
- Engineering Design
- Dredging Design
- Expert Witness Testimony
- Construction Drawings and Specifications
- Project Management
- Scheduling, Bid Administration, Observation
- Physical and Environmental Monitoring

Completion Date
2010

Fees
$ 106,612

Holiday Isle pre-construction conditions

In response to the severe erosion caused by Hurricane Ida in November 2009, Taylor Engineering performed a post-storm assessment of the project area shorelines and provided emergency design, permitting, and construction-phase services for the Holiday Isle Emergency Beach Fill Project. Taylor Engineering had completed a beach restoration engineering design and permit application for the project area (Western Destin Beach Restoration Project); however, permit authorizations were still under judicial proceedings. Furthermore, the emergency order from the State limited the allowable volume of beach fill material, thus requiring additional data collection and engineering analyses to design a feasible project that complied with the restrictions. Taylor Engineering conducted the work in short order, submitted an emergency Joint Coastal Permit (JCP) application to the FDEP, and coordinated with both the FDEP and USACE to obtain state and federal project authorizations.

Holiday Isle post-construction conditions

A major project challenge included the accelerated schedule driven by the expiration date of the State's emergency project authorization. Additionally, the BP oil spill occurred shortly before project construction, resulting in additional project delays. Taylor Engineering developed an innovative borrow area sampling plan, funded by the State of Florida, that provided sufficient evidence that the borrow site and project area remained free and clear of oil contamination, thus allowing project construction to commence. Project construction occurred in September 2010 with placement of approximately 140,000 cy of sand over 2,600 ft of beach in 7 days. The extremely short construction window presented numerous project management challenges, requiring continuous construction oversight and extensive coordination with the contractor. In summary, the project was constructed in accordance with contract document, on-time and within budget.

Eglin Air Force Base Beach Restoration Project

Okaloosa County, Florida

Client
Eglin Air Force Base

Contact
Taylor Tidwell
Water Quality Program Manager
Eglin Air Force Base
(850) 882-7655

Key Elements
- Beach Restoration
- Marine Resources / Natural Resources Evaluation
- Dredging / Borrow Area Design
- Geotechnical / Sand Source Investigations
- Project Planning
- Coastal Structure Design
- Environmental Restoration
- Engineering Cost Estimates
- Shoreline Protection
- Surveying
- Federal and Regional Project Coordination
- Environmental Permitting
- Project Management
- Construction Drawings and Specifications
- Project Certification Support
- Project Monitoring

Completion Date
Construction – 2010
Monitoring – 2014

Fees
$ 950,110

Eglin AFB Site A-3 pre-construction condition

Several strong storms — most notably hurricanes Ivan and Dennis in 2004 and 2005 — impacted the shoreline of Eglin Air Force Base (AFB) along Santa Rosa Island. Extensive erosion devastated the natural dune system and caused substantial shoreline retreat, threatening several mission-critical structures at Sites A-3, A-6, A-13, and A-13B, located approximately 3, 6, and 13 miles respectively west of East Pass. Seawalls at A-3 and A-13 were severely damaged or destroyed during the storms, prompting Eglin AFB to construct emergency structures for short-term protection. Taylor Engineering provided coastal engineering design (wave loads and scour calculations) for the seawall reconstruction and provided design and permitting services for the Eglin AFB Beach Restoration Project to protect the mission-critical structures and re-establish the habitat.

Taylor Engineering coordinated a regional sand source investigation among Eglin AFB, Okaloosa County, and City of Destin and planned to jointly permit the Eglin AFB and Okaloosa Island beach restoration projects to realize significant cost savings for the project sponsors and extend the design life of both projects; however, administrative challenges delayed permitting of the Okaloosa Island project. The first phase of the Eglin AFB project, constructed during summer 2010, included the most critically-eroded portion (Site A-3 located between East Pass and Beasley Park) and a short stretch of shoreline at Site 13B near the western border of Okaloosa County. Taylor Engineering performed annual project monitoring, which has shown the project design has performed as predicted. Through close coordination with regulatory staff, Taylor Engineering obtained permit waivers which resulted in substantial cost savings for Eglin AFB. The monitoring data also supports future inlet and beach management initiatives given the close proximity to East Pass.

Eglin AFB Site A-3 during construction

Tab 4. Qualifications, Responsibilities, and Experience of Assigned Personnel

The Taylor Engineering team includes highly qualified personnel experienced in the major tasks and technical abilities outlined in the RFQ. As evidenced throughout this submittal, our team has unmatched experience working on inlet and coastal projects within Okaloosa County and the Florida panhandle and has the capacity to perform all services as described in the RFQ. Previous sections detail Taylor Engineering's technical capabilities and project experience and clearly indicate our qualifications to perform the requested services. This section contains additional information on Taylor Engineering's team and the capacity to perform the required work.

Our team includes two subconsultants to provide complementary services, should the need arise.

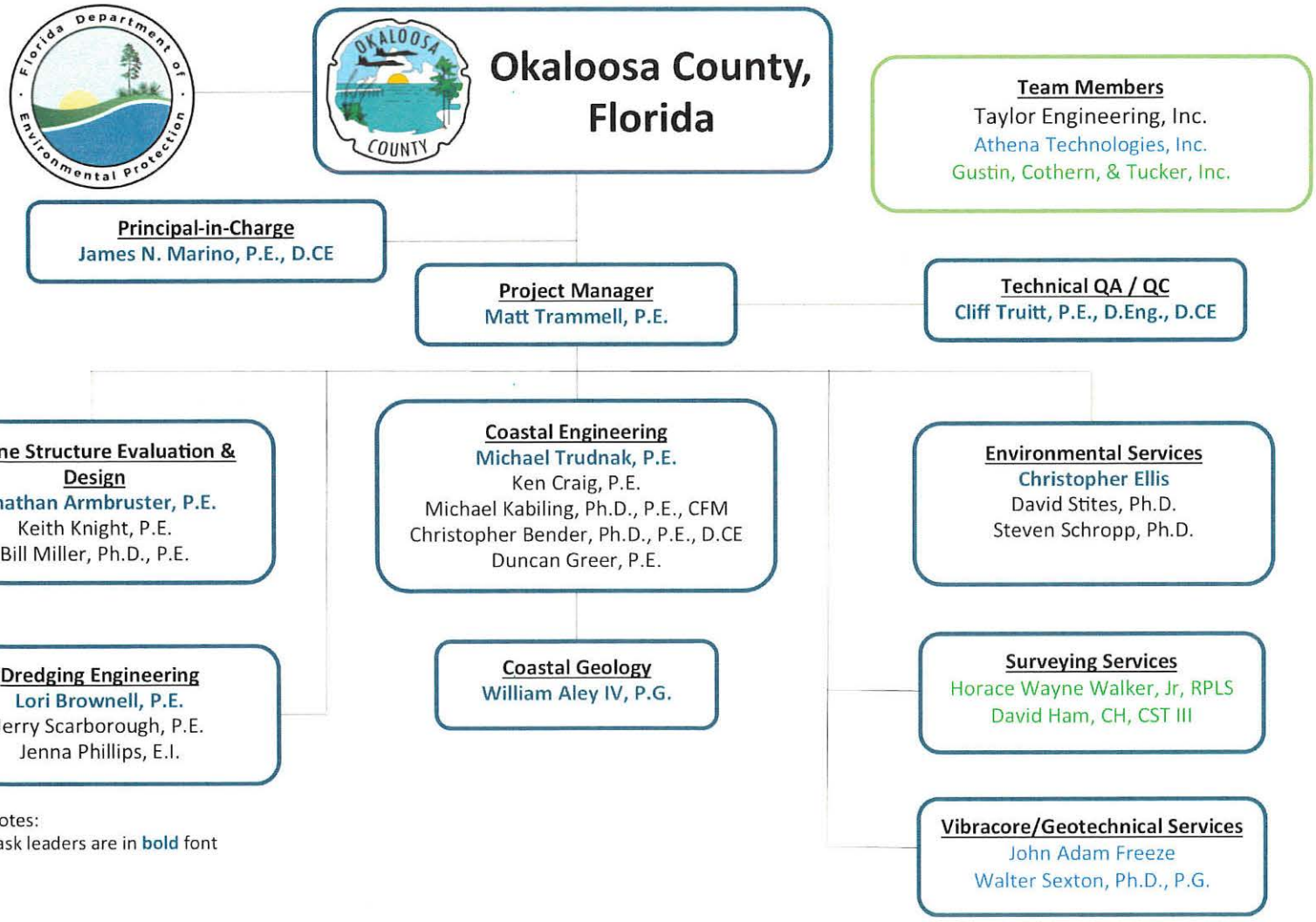
- **Athena Technologies, Inc.** (Athena) will provide vibracore services. Athena is a small business incorporated in South Carolina in 1987. Athena is comprised of a tenured staff (average 9-years tenure) with each performing multiple functions. They have a well-rounded crew of geologists, captains, and technicians with extensive experience performing geotechnical projects for navigation, inlet management, and beach placement studies with specific experience along the Florida Panhandle, Gulf Coast, and Southeastern United States. All personnel are technically oriented and capable of operating, troubleshooting, and repairing equipment in the field.
- **Gustin, Cothern & Tucker, Inc.** (GCT), a veteran-owned small business, maintains a full-service surveying office in Niceville and has been in Okaloosa County since 1982. GCT will provide bathymetric and land surveying and mapping services. GCT possesses vast knowledge of local conditions in addition to extensive tools, equipment and personnel to provide efficient surveying and mapping services. GCT provided surveying services to Taylor Engineering on the Destin Harbor Navigation Channel Dredging Project, Norriego Point Stabilization Project, and many other beach and dune restoration projects in the local area.

Notably, we selected these firms and individuals based on their extensive local experience and knowledge of key project issues. Additionally, these firms have all performed services for Taylor Engineering in support of inlet, beach and coastal restoration projects within Florida and the Southeastern United States.

In summary, Taylor Engineering and its project team provides comprehensive knowledge of the solicited services. Specifically, the Taylor Engineering project team provides unsurpassed knowledge of and experience with East Pass and associated Okaloosa County beach restoration projects. Based on our extensive experience with local County projects and background knowledge of the project areas, ***Taylor Engineering will provide the County with the most economical and expedient solution for the requested inlet feasibility and management, and associated follow-on services.***

The organizational chart on the following page identifies our project leadership structure and proposed key personnel for this contract. Included at the end of this section are key personnel resumes. Together, the organizational chart and key personnel resumes evidence the Taylor Engineering team's comprehensive qualifications, experience, and professional abilities to address challenges associated with the requested inlet excavation study and management services.

Notably, all proposed personnel have vast experience within Okaloosa County, understand the unique inlet and coastal environment, and are highly proficient in the services described in the RFQ.

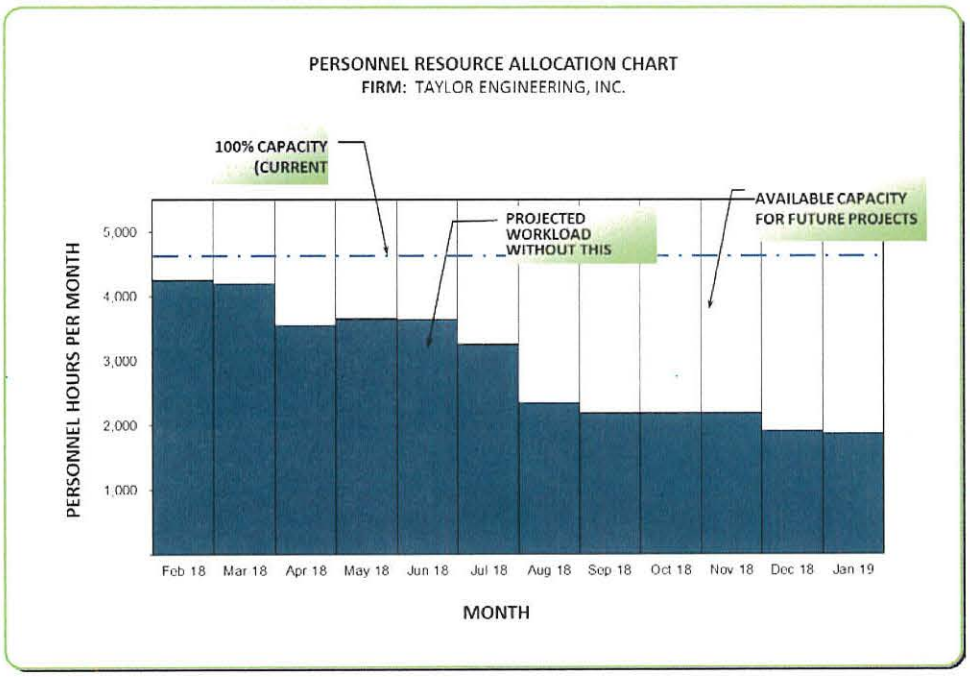


Notes:
Task leaders are in **bold** font

With 59 employees, Taylor Engineering is the largest Florida-based marine, coastal, and water resources engineering firm. Our staff includes 42 engineers and scientists, of whom 18 specialize in coastal engineering; 11 are civil, structural, marine structures, and environmental engineers; 5 are biologists or aquatic ecologists; and 2 are geologists. In addition, Taylor Engineering's six hydrologists and water resources engineers bring specialized expertise related to the water environment in the areas of hydrologic and water resource modeling, planning, permitting, and design.

Specialized disciplines encompass coastal engineering; coastal restoration design; hydraulic, morphological, and hydrodynamic modeling; coastal, riverine, and estuarine processes; hydrology and hydraulics; structural engineering; civil engineering; and construction administration, observation, and certification. Several senior staff members bring additional years of experience working in key coastal engineering divisions of federal and state agencies.

As evidenced by the chart below, Taylor Engineering's available work capacity exceeds its present and anticipated workload. ***Staff will be consistently available to provide service to Okaloosa County and Taylor Engineering commits to providing the human resources necessary for this contract.***



We stand prepared to allocate professional resources effectively and prosecute multiple projects concurrently. As an example, Taylor Engineering managed the $8 million Western Destin Beach Restoration while concurrently designing, permitting, and providing bid administration for the 3-mile-long Okaloosa County Dune Restoration and Beach Access Management Project. During this time, Okaloosa County and the City of Destin requested Taylor Engineering provide expedited design and permitting services for the Destin Harbor Emergency Dredging Project. Sufficient professional staff and skilled project management allowed Taylor Engineering to obtain survey data, design the project, and submit permit applications within 10 days following authorization. Through close coordination with state regulators, the FDEP permit was issued within two weeks following submittal. We performed the Destin Harbor emergency dredging work while concurrently managing the two ongoing, large-scale projects. Notably, all

projects were completed on-time and within budget. Additionally, nearly all the Okaloosa County and panhandle projects mentioned in this solicitation have been managed by our Destin office clearly demonstrating our track record for successfully managing numerous large- and small-scale projects concurrently and our commitment to unmatched service to Okaloosa County. Finally, should a financial windfall (e.g., RESTORE ACT) occur within the County or panhandle area or a major storm event impact the region, ***Taylor Engineering is fully committed to meeting the potential workload demand from the County***.

Taylor Engineering's technology department maintains a fully integrated local network and a virtual private network (VPN) that links the company's five full-service offices — Destin, Jacksonville, Sarasota, Tampa and West Palm Beach — and four local-service area offices (Orlando, FL; Austin, TX; Charlottesville, VA; and the Capitol Region). Daily backup of our servers protects against catastrophic data loss.

Taylor Engineering maintains the equipment, coastal engineering and water resources software, models, specialty GIS processing products, personnel, and computing capacity required to perform the required services for the County's projects. Taylor Engineering owns a 512 core-supercomputer to facilitate modeling efficiency. Relevant models that the Taylor Engineering team frequently applies, and those we expect to apply for this project, include:

- **Coastal Engineering Models** — MIKE21 & MIKE3 (Hydrodynamic, Spectral Wave, Boussinesq Wave, Transport, Particle Tracking, Littoral Process, Sediment Transport, Shoreline Morphology), ADCIRC, SWAN, CMS-FLOW, CMS-Wave, WHAFIS, GENESIS, RMA-2, RMA-4, SBEACH, CCCL, EDUNE, Beach-fx, STWAVE, REFDIF, CGWAVE, TRANQUAL, DELFT3D (Hydrodynamic, Wave, Transport), ADH, EFDC (Hydrodynamic, Wave, Sediment Transport), SWAN+ADCIRC, ACES design package
- **Hydrology and Hydraulics Models** — SWMM, EFDC, HEC-HMS, HEC-RAS, HEC-Res-Sim, AdICPR, MIKE11, MIKE21, MIKE FLOOD, MIKE-SHE, XP-SWMM
- **Groundwater Modeling** – MODFLOW, MODPATH, MT3DMS, FEMWATER, SEEP2D, MODRET
- **Stormwater Design Models** — StormCad, ASAD, SWMM
- **Geotechnical Engineering and Design Models** – GeoStudio and GiNT
- **Structural Design Models** – SPW911, Support IT, STAAD Pro, L-Pile
- **Federal Cost Estimating** – MCACES
- **CAD and GIS Software** — Taylor Engineering's CADD and CAD-related capabilities include Bentley Systems' MicroStation XM, AutoDesk AutoCad Civil Design and Civil 3D (Release 2018), AutoDesk Raster Design 2018, and AutoDesk Map 3D 2018, ArcGIS Desktop/Server/Explorer, and other ESRI GIS tools.

Taylor Engineering's survey equipment includes a Sokkia SET6E total station and Trimble ProXR and ProXT GPS with integral differential correction referenced to U.S. Coast Guard differential beacons for surveying and mapping. Environmental field sampling gear includes numerous small to mid-size vessels, which provide access to freshwater, estuarine, and offshore sites for data collection. Sampling equipment includes stainless steel ponar and gravity core samplers for sediment samples, stainless steel augers for soil samples, peristaltic pump, numerous water level, current, and flow meters, and YSI water quality meters for water samples, and acrylic beta bottles for surface water samples. The company also maintains both standard and underwater high-quality still, video, and digital cameras.

In October 2017 Taylor Engineering opened our coastal and marine geosciences Laboratory in Jacksonville, Florida. The main function of the lab is to collect and analyze sediment samples for many purposes

including borrow area design, dredging project planning, emergency response, dredged material management area offloading, and beach nourishment. The lab specializes in analysis of sediment samples and cores collected from beaches, navigation channels, and dredged material management areas. Through this laboratory Taylor Engineering oversees and performs collection, classification, sampling, sieve analysis, data management and interpretation, and reporting of sediment samples. The laboratory is currently in the process of receiving AASHTO and USACE accreditation.

All offices have adequate space for current staff and room for expansion expected over the next few years. Again, ***Taylor Engineering commits to providing the County with the human resources, equipment, and facilities necessary for this project.***

Matthew A. Trammell, P.E.

Senior Engineer/ Destin Office Manager

Education

M.S./Coastal and Oceanographic Engineering, University of Florida

B.S./Civil Engineering, University of Florida

Registration

Professional Engineer — FL, LA

Years of Experience

Total	With Firm
12	6

Affiliations

American Shore and Beach Preservation Association
American Society of Civil Engineers
Association of Coastal Engineers
Choctawhatchee Basin Alliance
Destin Elementary School I Love Science Program Volunteer
Florida Engineering Society
Florida Shore and Beach Preservation Association
Society of American Military Engineers

Background/Responsibilities

Mr. Trammell is experienced in a broad range of coastal engineering works including the preparation of feasibility studies, beach management plans, coastal assessments, dredging and coastal structure design, numerical modeling, engineering design, and regulatory permitting. He manages projects, prepares construction drawings and specifications, and performs construction oversight and monitoring for large and small coastal engineering works. Mr. Trammell works on all aspects of beach nourishment projects, including sand source investigations, numerical wave, sediment transport, and storm impact analysis, borrow area impact analyses, project design, contract administration, construction observation, and monitoring. His coastal structure experience includes assessment and analysis for inlet and jetty structures, revetments, and habitat restoration breakwater structures. Mr. Trammell's extensive data collection experience includes performing fieldwork for water and sediment quality assessments, data collection in support of numerical model calibration and verification, and wave and storm surge measurement. His current responsibilities include managing beach, dune, and environmental restoration projects along the Florida panhandle and assisting with coastal restoration and protection work along the Gulf Coast states.

Project Experience

- Lincoln Park Shoreline Stabilization, Valparaiso, FL (Ongoing) – Senior QA review for preliminary engineering design, permit application preparation and submittal, and regulatory agency coordination for a rock revetment to protect the park shoreline along Boggy Bayou.

- Longwood/Poquito Bayou Park Shoreline Stabilization, Shalimar, FL (Ongoing) – Senior QA review for regulatory approval of emergency shoreline stabilization and for preliminary design, permit applications, regulatory agency coordination for long-term shoreline stabilization with living shoreline features and boat dock extension with wave attenuator.

- Cat Point Living Shoreline, Franklin County, FL (Ongoing) – Project Manager providing engineering and environmental services, including field investigations and reporting, in support the Department of Environmental Protection's plan to construct breakwaters and create salt marsh habitat at Cat Point in Apalachicola Bay. Project included bathymetric and boundary surveys, natural resource investigations, preliminary engineering design and permit drawings, environmental permits acquisition, final design and construction documents, and bidding and construction administration services.

- Okaloosa Island Beach Monitoring, Okaloosa County, FL (Ongoing) – Project manager for collection and analyses of beach and offshore profile surveys to determine shoreline position and beach volume changes occurring since Hurricane Opal in 1989 and the most recent surveys in 2007. The work also established beach baseline conditions before the 2016 hurricane season.

- St. George Island Causeway Shoreline Stabilization, Franklin County, FL (2016) – Project manager for preliminary engineering design analyses for shoreline stabilization structures at six critically eroding areas along the causeway. Engineering analyses included structural details, storm protection levels, and cost opinions. Prepared final preliminary design for permitting.

- Boggy Bayou Headwaters Restoration, Okaloosa County, FL (Ongoing) – Project manager for evaluation of alternatives to improve water quality, restore aquatic and estuarine habitat and enhance recreational opportunities through sediment removal, marsh and living shoreline creation, exotic vegetation removal, and boardwalk and kayak launch construction. Project included hydrodynamic modeling to assess circulation and flushing and preparation of engineering designs and permit drawings.

- Heron's Nest Marina Consultation, Destin, Florida (Ongoing) – Project manager providing conceptual planning and regulatory consultation for a proposed marina along the Choctawhatchee Bay shoreline.

- Norriego Point Shoreline Stabilization and Recreational Improvements, Destin, FL (Ongoing) – Project manager on the design of shoreline stabilization and recreational improvements on Norriego Point within East Pass. Services include submerged aquatic vegetation surveys, dredging permit modification, conceptual upland recreational design, coastal conditions analysis, value and final engineering design, construction drawings and specifications, and bid administration.

- Coastal and Environmental Services, Walton County, FL (Ongoing) – Providing on-call coastal and environmental services to Walton County that include feasibility studies, project development and oversight, permitting assistance, construction observation, meeting attendance, and presentations.

- Coastal Management Services, Walton County, FL (Ongoing) – Providing on-call coastal management services to Walton County that include beach nourishment project assistance, meeting attendance, presentations, and lobbyist activities.

- Hurricane and Storm Reduction (HSDR) Project, Walton County, FL (Ongoing) – Providing on-call engineering support services for the continuing HSDR project. Tasks include meeting and workshop attendance, presentations, technical support, permitting assistance, managing grant agreements, and monitoring.

- East Pass and Destin Harbor Maintenance Dredging Permitting, City of Destin, Okaloosa County, FL (2014) – Senior engineer responsible for maintenance dredging and disposal area template design, preparation of permit drawings, preparation of a joint coastal permit application and supporting information/documentation, and state and federal regulatory permitting coordination.

- Okaloosa County Watershed Project Assistance, Okaloosa County, FL (Ongoing) —Assisting Okaloosa County in identifying projects to improve the Choctawhatchee Bay area's water quality and quantity for long-term environmental and economic sustainability and enhanced tourism opportunities. The goals are to restore and conserve habitat, restore/maintain water quality, enhance living coastal resources, create and preserve tourism opportunities, and enhance community resilience. Example projects include oyster reef restoration and living shorelines with enhanced water access for the general public.

- Okaloosa County Project Baywalk (Living Shorelines), Okaloosa County, FL (Ongoing) – Current services include data collection, natural resource surveys, preliminary engineering design and permitting for a 2,500-linear foot living shorelines project. Planning services include cost estimating, permitting/construction schedules, and identifying project stakeholders/partners. Follow-on services will include final design and construction-phase services.

- Okaloosa County Federal Project Assistance, Okaloosa County, FL (2015) – Assisted Okaloosa County and the U.S. Army Corps of Engineers in the facilitation of the Okaloosa County Section 204 Study. Identifying potential beneficial uses of dredged material for shoreline protection, habitat restoration, and storm damage reduction.

- Fort Pierce Shore Protection Project (SPP), USACE General Reevaluation Report (GRR), St. Lucie County, FL (2013) – In preparation of the GRR that was filed in September 2013, Mr. Trammell compiled inputs for, and ran, Beach-fx to evaluate the economic benefits of the Fort Pierce SPP in St. Lucie County. This included economic analysis of the local area, and extensive use of SBEACH to generate the storm response database.

- Eglin Air Force Base (AFB) Beach Restoration Project, Project Monitoring, Okaloosa County, FL (Ongoing) – Project engineer conducting coastal analyses to fulfill annual monitoring requirements and evaluate project performance of a segmented beach restoration project on Eglin AFB.

- Beach Restoration Bid Administration, Construction Observation Services, and Monitoring, Various Locations, FL (Ongoing) – Assisting various government entities with bid administration and construction observation of their beach restoration projects. Projects include the St. Joseph Peninsula Beach Restoration Project, Walton County/Destin Beach Restoration Project, Holiday Isle 2011 Emergency Fill Project, Eglin Air Force Base Beach Restoration, and Western Destin Beach Restoration Project. Work responsibilities include preparation of contract documents, construction plans, and technical specifications; overseeing daily construction observations services, conducting pre-bid and project progress meetings and substantial completion and final inspections; sediment and protected species monitoring programs; reviewing contractor submittals, pay applications, and project surveys; project certification; collection and analysis of monitoring surveys; and preparation and submittal of post-construction reports.

- Norriego Point Stabilization Project, Okaloosa County, FL (2014) – As senior engineer, reviewed existing data/literature, documented coastal conditions, assessed existing structures/design, reviewed proposed structure design, developed design

criteria, and recommended structural alternatives with costs. Provided design and construction phase services for the first phase of construction – Destin Harbor dredging and sheet pile wall installation.

- Destin Harbor Emergency Dredging, Walton County, FL (2013) – Senior engineer, provided emergency maintenance dredging permitting services, performed dredge and dredge material management area design, and prepared construction drawings and specifications. Additional construction-phase services included managing post-construction bathymetric and topographic surveys, data review/acceptance, and quantification of dredge material volumes.

- Western Destin Beach Restoration Project, Okaloosa County, FL (2013) – Project/senior engineer, provided expert witness testimony in support of the proposed beach restoration project permit. Performed numerical modeling to assess performance of various project alternatives. Provided permit modification support and construction phase services (construction drawings/specs, bid administration, construction administration/observation and certification).

- Beach Management Feasibility Studies, Florida Panhandle (2013) – Conducted beach management feasibility studies for various government entities in the Florida panhandle to evaluate the feasibility of implementing shoreline restoration and beach management projects along Windmark Beach, St. Joseph Peninsula, and Mexico Beach. Work included evaluation of present and historic beach conditions, field inspections, analysis of local littoral processes, data collection, characterization of native beach sediments, development of a sediment budget, cross-shore erosion and long-shore sediment transport modeling, shorefront development storm damage risk assessment, development of a list of feasible beach management projects for the project areas, and final reporting.

- Beach Restoration Design and Permitting Services, Various Locations, FL (2013) – Directed the completion of permit applications to obtain Florida Department of Environmental Protection and/or U.S. Army Corps of Engineers permits or permit modifications for the Walton County S.R. 30A Corridor Beach Restoration Project, St. Joseph Peninsula Beach Restoration Project, Western Destin Beach Restoration Project, Okaloosa Island Beach Restoration Project, Eglin Air Force Base Beach Restoration Project, and Holiday Isle Emergency Beach Fill Project. Work included beach and borrow area design, numerical wave and sediment transport modeling of various alternatives, geotechnical investigations and analyses, sand compatibility analyses, environmental impact analyses, local, state, and federal agency coordination; development of project plans and specifications, conducting public workshops, and expert witness testimony.

- Walton County Hurricane and Storm Damage Reduction Project, Walton County, FL (2012) —Provided design and permitting services in support of the 13.5 mile, S.R. 30A beach restoration project.

- Holiday Isle Emergency Beach Fill Project, Okaloosa County, FL (2011) – Project engineer, provided final permitting services and prepared construction drawings and specifications in support of the emergency beach fill project to protect upland properties damaged from the impacts of Hurricane Ida. Additional services included pre- and post-construction administration, construction observation, post-construction certification, and monitoring as required by regulatory permits. Also assisted the City of Destin with FEMA reimbursement following the impacts of Hurricane Isaac.

- Jupiter/Carlin Section 934 Study, Palm Beach County, FL (2011) – Project engineer, performed Beach-fx modeling to evaluate the economic benefits of the Jupiter/Carlin beach nourishment project in Palm Beach County.

- Walton County/Destin Beach Restoration Project, 2010 Monitoring, Walton and Okaloosa Counties, FL (2010) – Coastal/project engineer, conducted coastal analyses to fulfill annual monitoring requirements and evaluate the performance of the 7-mile Walton County/Destin Beach Restoration Project. Beach topographic and hydrographic survey data analysis included preparation of comparative plots of beach profiles, computation of shoreline position changes, quantification of beach volume changes, and identification of areas of accretion and erosion between successive dates of available surveys. Borrow area analysis included the comparison of surface data to determine erosion/accretion deposition patterns.

James N. Marino, P.E., D.CE

President

Education

M.E./Coastal and Oceanographic Engineering, University of Florida

B.S./General Engineering, U.S. Military Academy at West Point

Graduate Certificate, U.S. Army Command & General Staff College

Registration

Professional Engineer — FL, VA, LA, TN, NC

Diplomate of Coastal Engineering – U.S.

Honors

USACE, de Fleury Medal Recipient

Years of Experience

Total	With Firm
39	6

Background/Responsibilities

Mr. Marino has more than 39 years of experience, including 20 years as an officer in the U.S. Army Corps of Engineers (USACE). He has served in an executive management role for a broad range of engineering projects, providing comprehensive staff and project management, development, and oversight for public works, coastal, port and harbor, transportation, and environmental projects.

Mr. Marino managed a multi-million dollar research and development program while stationed at the U.S. Army Engineer Research and Development Center Coastal Engineering Research Center. He served as Director of Public Works, U.S. Army, Japan and as Director of Public Works and Deputy County Manager for Seminole County, Florida. He also served as vice president of an 8,000-member multidisciplinary international consulting firm specializing in maritime planning, engineering, and management; vice president of a 500-member international consulting firm specializing in coastal engineering, transportation design, port and harbor planning and engineering, and urban waterfront design; chief operating officer of a multi-disciplined consulting firm specializing in planning, engineering, management, and environmental compliance in the coastal zone; and associate vice president responsible for the strategic planning, development and integration of federal services projects within the southeast division of a 3,000-member architectural, engineering, and planning firm.

Project Experience

- Review of Mississippi River Sediment Diversion Proposals, Various Parishes, LA (Ongoing) – Principal-in-charge for technical reviews of proposals submitted to the National Fish and Wildlife Federation for the Mid-Barataria and Mid-Breton sediment diversion projects and for the Mid-Basin diversions project management. Reviews focused on scope of work, program management plan, procurement delivery methods, and cost estimates for each proposal.

- Fort Pierce Shore Protection Project General Reevaluation Report, St. Lucie County, FL (Ongoing) – Principal-in-charge supporting St. Lucie County's efforts to complete a GRR by providing regulatory coordination and consultation with various levels within the U.S. Army Corps of Engineers and the Florida Department of Environmental Protection. This is necessary since the GRR will be submitted directly to the Assistant Secretary of the Army for approval – an untested approach recently authorized by the U.S. Congress.

- Wetland Reserve Plans of Operation (WRPOs), Various Locations, FL (Ongoing) – Principal-in-charge on four WRPOs that total more than 10,000 acres in Hendry, Highlands, and Putnam Counties, Florida. The WRPOs will restore former agriculture lands to pre-development wetland conditions. Under contract to USACE and in close cooperation with the Natural Resources Conservation Service (NRCS), project tasks include observing and characterizing the site, establishing restoration targets, applying hydrologic and hydraulic models, identifying restoration alternatives, preparing construction documents, and acquiring environmental permits.

- FPL St. Lucie Nuclear Power Plant and Turkey Point Nuclear Power Plant Projects, St. Lucie County and Dade County, FL (Ongoing) – Principal-in-charge on the below projects:
  - St. Lucie Nuclear Power Plant, Discharge Canal Headwall Stabilization Project
  - St. Lucie Nuclear Power Plant, Sea Turtle Excluder Panel Test Tank and Apparatus Engineering
  - St. Lucie Nuclear Power Plant, Sea Turtle Barrier Structure
  - St. Lucie Nuclear Power Plant, Dune Restoration
  - Turkey Point Nuclear Power Plant, Cooling Canal System Dredging Program and Sediment Management Plan
  - Turkey Point Nuclear Power Plant, Cooling Canals Freshwater Recharge

- Eagle LNG Terminal Design, Jacksonville, FL (Ongoing) – Principal-in-charge on the design of a new liquefied natural gas (LNG) marine terminal located on the north bank of the St. Johns River. Tasks include analyses of ship berthing loads, environmental (wind and current) loads, ship mooring loads, and structural loads. The conceptual design will include marine structures, fender design/layout, bollard sizing/layout, and dredging engineering.

- Dredging of Waterways, Brevard County Natural Resources Department, Brevard County, FL (Ongoing) – Serves as principal-in-charge in the development and implementation of a multi-phase project to dredge roughly 400,000 cubic yards of muck sediments from Brevard County waterways. Taylor Engineering is providing dredged material management area design, environmental permitting, and technical team coordination for dredging, dewatering, and disposing of sediments from tributaries located within Brevard County.

- Review of Storm Surge Hazards at Coastal Nuclear Power Plant Facilities, Various Locations in the United States (Ongoing) – Providing managerial and QA/QC oversight for Taylor Engineering's independent and confirmatory tsunami, surge, and seiche analyses to support the U.S. Nuclear Regulatory Commission's hydrology safety reviews. The reviews will examine and comment on Flood Hazard Evaluation Reports completed by operating nuclear power plants.

- Dredged Material Management Plans for the Intracoastal (ICWW) and Okeechobee Waterways (OWW), FL (Ongoing) – Principal-in-charge in the development and implementation of 50-year management plans for maintenance of the 406 miles of federal navigation channels that comprise the ICWW in Florida, as well as the 98 miles of the OWW within Martin and Palm Beach counties. Under contract to the Florida Inland Navigation District (FIND), Taylor Engineering staff members have completed the plans' development and implementation phases (Phases I and II) for the ICWW in all 12 coastal counties that comprise FIND as well as 15 miles of the OWW east of the St. Lucie Lock.

- Professional Services for the St. Augustine Port, Waterway, and Beach District (District) (Ongoing) – Principal-in-charge for engineering and environmental support to the District for dredging, navigation, and waterways access projects. The contract with this client has been active for 26 years.

- Jupiter Inlet District (JID) General Engineering Services, Palm Beach County, FL (Ongoing) – As principal-in-charge, oversees a wide variety of activities including monthly inspection of the north and south jetties (including all associated infrastructure), maintenance of the jetties and all aids-to-navigation under JID control, coordination of annual sand trap dredging activities, and performance of annual Loxahatchee River seagrass surveys.

- Big Pass Borrow Plan Peer Review, Sarasota County, FL (2017) – Principal-in-charge for independent peer review of coastal engineering planning documents for Big Sarasota Pass borrow area and Lido Key groins.

- Martin County Boat Traffic Study at the St. Lucie River Railroad Bridge, Stuart, FL (2016) – Principal-in-charge on a boat traffic study to help Martin County understand the level of boat traffic passing through the bridge to determine potential navigation impacts resulting from implementation of the All Aboard Florida commuter train system.

- Spoil Island Management Plan, Duval County, FL (2015) – Principal-in-charge of the preparation of a management plan for 18 spoil islands owned by the North Florida Land Trust on Big Talbot Island.

- FEMA Region IV Coastal Risk Analysis, FL (2015) – Principal-in-charge for this $11 million coastal risk analysis study along Brevard, Indian River, St. Lucie, and Martin counties, Florida. Work included wave, surge/hydrodynamic modeling, statistical analysis, and risk mapping for overall assessment of storm surge elevations along the entire coastline.

- Northeast Florida/Georgia Coastal Storm Surge Study, FEMA Region IV, FL and Georgia (2015) – Principal-in-charge on a storm surge and overland wave study spanning northeast Florida (north of Indian River County) to the Georgia border and the entire coastal portion of Georgia. The study area included both coastal and interior counties (grid up to the 40-foot contour). The study determined the 100-year return period storm surge and wave conditions in the study domain with the ADCIRC and SWAN models. Taylor Engineering applied 100-year water levels to complete overland wave analysis (WHAFIS), calculate dune erosion and wave runup, develop work maps, and complete other tasks, including community outreach.

Affiliations

ASBPA, Past Director
AIWA, Past Director
American Society of Civil Engineers (ASCE)
ASCE Coasts, Oceans, Ports & Rivers Institute (COPRI), Vice Chairman, Board of Directors
COPRI, Ports and Harbor Committee
PIANC, U.S. Commissioner World Association for Waterborne Transport Infrastructure
UNF, Taylor Engineering Research Institute, Board of Directors
UNF, Dean's Leadership Council

Michael E. Trudnak, P.E.

Senior Coastal Engineer

Education

M.S./Coastal Engineering, University of Florida

B.S./Geosciences, Pennsylvania State University

Registration

Professional Engineer — FL, TX

Years of Experience

Total	With Firm
20	20

Background/Responsibilities

Mr. Trudnak specializes in coastal process analyses and their impacts on major shore protection projects. He works on all aspects of beach nourishment projects including feasibility studies, sand source investigations, borrow area impact analyses, project design, permit application preparation, regulatory agency coordination, and bid and construction administration. In addition to his beach-related experience, Mr. Trudnak has accumulated extensive inlet-based knowledge through development of inlet management plans and other studies throughout Florida. He examines sand bypassing mechanisms, analyzes wave refraction/diffraction models near inlets, and develops recommendations to improve both sand bypassing and navigation at numerous tidal inlets.

Project Experience

▪ Fort Pierce Shore Protection Project Annual Physical Monitoring, St. Lucie County, FL (Ongoing) – Senior coastal engineer for annual physical monitoring (2011–2017) which includes beach profile surveys and aerial photography, beach fill performance evaluation, and compilation and submittal of all monitoring information to the FDEP.

▪ Coastal Engineering Services, St. Johns County, FL (Ongoing) – Project manager for county-wide coastal engineering support including coastal engineering advisory and expert services; storm impact assessment; grant applications and documentation; and meeting, workshop, and presentation participation.

▪ Fort Pierce Shore Protection Project General Reevaluation Report, St. Lucie County, FL (Ongoing) – Project manager for preparation of a General Reevaluation Report (GRR) to extend the shore protection project's authorization 50 years to 2070 and develop project design that decreases non-uniformity of shoreline erosion and increase the project nourishment interval. This was the first GRR in the nation prepared by the non-federal interest for direct submission to the Secretary of the Army under authorization of Section 203 of the Water Resources Reform and Development Act (WRRDA) of 2014.

▪ Letter of Map Revision (LOMAR) for Beachfront Residence Improvements, Ponte Vedra Beach, FL (Ongoing) – Project manager for dune erosion, wave height, and wave runup analyses; preparation and submittal of FEMA LOMAR application; and coordination with St. Johns County and FEMA staff.

▪ Rollover Pass Closure Construction Assistance, Galveston County, TX (Ongoing) – Senior coastal engineer for plans and specifications revision and construction assistance for the Texas General Land Office project to close Rollover Pass on the Bolivar Peninsula.

▪ Fort Pierce Shore Protection Project Permitting, St. Lucie County, FL (Ongoing) – Project manager for a Joint Coastal Permit Application for the shore protection project south of Fort Pierce Inlet and follow-up regulatory agency coordination.

▪ Beach Restoration Bid Administration, Construction Observation Services, and Monitoring, Various Locations, FL (Ongoing) – As project manager and/or lead coastal engineer, assisted and currently assisting various local governments with bid administration and construction observation of their beach restoration projects. Work responsibilities include preparation of contract documents, construction plans, and technical specifications; overseeing daily construction observations services, conducting pre-bid and project progress meetings and substantial completion and final inspections; reviewing contractor submittals, pay applications, and project surveys; project certification; collection and analysis of monitoring surveys; and preparation and submittal of post-construction reports.

- Martin County Shore Protection Project Physical Monitoring, Martin County, FL (Ongoing) – Project manager for annual to biennial (2010–2017) evaluation of beach fill performance from county-provided beach surveys and preparation of the annual physical monitoring report.

- Beach Nourishment Design and Permitting Services for Vilano Beach and South Ponte Vedra Beach, St. Johns County, FL (Ongoing) – Project manager providing design and permitting services for the St. Augustine Port, Waterway and Beach District to facilitate placement of dredged material on beaches north of the St. Augustine Inlet.

- Fort Pierce Inlet Deposition Basin Design and Permitting, St. Lucie County, FL (Ongoing) – As project manager and lead coastal engineer, currently directing the final design and permitting phase for the construction of a deposition basin within the inlet to supplement the sand bypassing volume requirements across the inlet. The study includes numerical modeling of tides, currents, sediment concentrations, and waves in support of the final design configuration; collection of sub-bottom seismic and geotechnical data to characterize the sediments; collection of side-scan sonar data to identify hardbottom and help develop a mitigation plan; dynamic stability analysis of the basin vicinity; and consideration of recreational and safety concerns.

- Fort Pierce Inlet Sand Tracer Study, St. Lucie County, FL (ongoing) – Project manager for study to identify sand transport via fluorescent tracers released in the inlet and adjacent beaches. Study included sediment sampling and analysis to recover the tracers and document spatial and temporal patterns of sand transport. Study results will help validate sediment transport numerical modeling for the site to improve beach and inlet management and help evaluate the potential performance of a proposed sediment impoundment basin within the inlet.

- Beach Restoration Design and Permitting Services, Various Locations, FL (Ongoing) – Directed the completion of applications to obtain Florida Department of Environmental Protection and/or U.S. Army Corps of Engineers permits or permit modifications for the South Marco Island 2006 Beach Nourishment Project, Walton County/Destin Beach Restoration Project, Fort Pierce Shore Protection Project (2006, 2013, and 2017), Fort Pierce 2011 Emergency Beach Fill, Martin County Shore Protection Project (2002, 2005, 2013, and 2017), Walton County S.R. 30A Corridor Beach Restoration Project, Western Destin Beach Restoration Project, Okaloosa Island Beach Restoration Project, Eglin Air Force Base Beach Restoration Project, Holiday Isle Emergency Beach Fill, Summer Haven Beach Maintenance Project, Summer Haven River Restoration Project, South Ponte Vedra/Vilano Beach Restoration, and St. Lucie County Intracoastal Waterway Reach I Dredging. Work included beach and borrow area design; geotechnical analyses; sand compatibility analyses; environmental impact analyses; local, state, and federal agency coordination; development of project plans and specifications; and conducting public workshops. Completed projects restored approximately 20 miles of beach, and proposed projects will restore approximately 22 miles of beach.

- St. Lucie County Intracoastal Waterway Reach I Dredging, St. Lucie County, FL (2017) – Lead coastal engineer for design, permit acquisition, and construction administration for maintenance dredging 12 miles of the Intracoastal Waterway.

- Post-Hurricane Assessment and Recovery Efforts, Various Locations, FL (2005 – 2016) – Assisted various government entities throughout Florida in the assessment of hurricane impacts and design, permitting, and construction of emergency restoration projects. Designed the Martin County Emergency Dune Restoration Project in 2005 following hurricanes Francis and Jeanne and assisted the County with design and costs issues associated with FEMA-approved projects. Assisted Walton County and the City of Destin following Hurricanes Ivan and Dennis with post-storm beach assessments and design and permitting of dune restoration projects in 2005. Assisted Martin and St. Lucie counties with post-storm beach assessments following hurricanes Sandy (2012) and Matthew (2016), and assisted St. Johns county and St. Augustine Port, Waterway & Beach District with closing a barrier island breach caused by Hurricane Matthew at Summer Haven. Responsibilities included analysis of pre- and post-storm MHW shoreline positions and beach volume calculations; development of project plans and specifications, bid administration assistance; construction observation services; and local, state, and federal agency coordination.

- Sand Source Investigations, Various Locations, FL (2014) – Conducted several sand source investigations for various government entities throughout Florida. Studies included the Fort Pierce Shore Protection Project (2013 – 2014), Eglin Air Force Base/Okaloosa County/Destin Sand Source Investigation (2006 – 2010), Walton County Sand Source Investigation (2005 – 2007), Walton County\Destin Sand Source Investigation (2002 – 2003), and Venice Beach Sand Source Investigation (2001 – 2002). Projects included development of geophysical and geotechnical data collection and analysis programs to locate beach quality sand reserves for future beach management activities. Fieldwork included reconnaissance and detail phase sub-bottom seismic and bathymetric surveys, cultural resource surveys (side-scan, magnetometer, and sub-bottom seismic surveys), and vibracore collection. Projects included characterization of native beach sand and potential borrow material, overfill analysis, design of borrow area dredging templates, and preparation of borrow area conservation plans. Projects collected and analyzed hundreds of cores and identified over 25,000,000 cubic yards of beach compatible sand.

Clifford Truitt, P.E., D.Eng, D.CE

Chief Engineer

Education

Doctor of Eng./Engineering, Texas A&M University

M.E./Ocean Engineering, Texas A&M University

B.S./Physical Oceanography, Florida Institute of Technology

Registration

Professional Engineer — AL, FL, LA

Diplomate of Coastal Engineering – U.S.

Honors

FSBPA, Jim Purpura/TY Chiu Engineering Award, 1998

FSBPA, Per Bruun Distinguished Service Award, 2016

Years of Experience

Total	With Firm
42	2

Affiliations

American Society of Civil Engineers (ASCE)

Coastal, Oceans, Ports, and Rivers Institute (COPRI), ASCE

Florida Chapter, ASCE

Diplomate, Academy of Coastal, Ocean, Ports, and Navigation Engineers (ACOPNE)

Member, Sarasota County Coastal Advisory Committee

Background/Responsibilities

As chief engineer, Dr. Truitt focuses on all aspects of coastal engineering and dredging projects including planning, design, environmental, permitting, and construction.

Dr. Truitt's background includes over 40 years of experience in coastal processes, coastal structure design, and dredging with consulting firms, and state and federal government. During his tenure as a bureau chief in the Division of Beaches and Shores at the Florida Department of Environmental Protection, he was responsible for the review, evaluation, and impact assessment of every coastal structure proposed for construction in Florida at that time.

Dr. Truitt also served as the principal investigator and research hydraulic engineer at the U.S. Army Corps of Engineers' (USACE's) Engineer Research and Development Center, Coastal Engineering Research Center. He coordinated the work of 12 engineers and scientists in the Coastal Structures and Evaluation Branch and was personally involved in the design and monitoring of coastal erosion projects including conventional breakwaters, revetments and jetties, and a number of innovative technologies. He also assisted USACE district offices by designing and tailoring dredging operation specifications to meet specific regulatory and environmental needs.

Project Experience

- Venice Beach Renourishment, 2016 Physical Monitoring, Venice, FL (Ongoing) – Oversight and Technical QA for engineering analyses of beach profile surveys and preparation of report documenting performance of the 2015 Venice Beach renourishment.

- Gulf Intracoastal Waterway Dredged Material Management Plan, Southwest FL (Ongoing) – Direct staff in preparation of dredged material management plan for the GIWW in the West Coast Inland Navigation District. The plan included projections of maintenance dredging volume for a 50-year period, inventory of the District's dredged management area property and easements, and discussion of possible storm impacts on the waterway.

- Norriego Point Shoreline Stabilization and Recreational Improvements, Destin, FL (Ongoing) – Technical QA review of design for shoreline stabilization and recreational improvements on Norriego Point within East Pass. Services include submerged aquatic vegetation surveys, dredging permit modification, conceptual upland recreational design, coastal conditions analysis, value and final engineering design, construction drawings and specifications, and bid administration.

- Canal Dredging Feasibility Study, Longboat Key, FL (Ongoing) – Project manager for feasibility study of maintenance dredging up to 60 residential canals within the Town of Longboat Key. Work includes providing Town with GIS database summarizing canal and upland property characteristics as part of long-term monitoring and funding program.

- Naples Bay Oyster Bed Restoration, Collier County, FL (Ongoing) – Engineer of Record for scientific and engineering services to analyze existing data, perform wave modeling calculations, perform field reconnaissance, permitting assistance, and prepare shovel-ready construction drawings for restored oyster habitat.

- Ted Sperling Park Boardwalk Replacements, Sarasota County, FL (Ongoing) – Providing QA/QC on the replacement of three aging timber boardwalks within Ted Sperling Park located on the south end of Lido Key.

- Review of Mississippi River Sediment Diversion Proposals, Various Parishes, LA (2017) – Provided the National Fish and Wildlife Federation (NFWF) with independent technical reviews of grant proposals for Mid-Barataria and Mid-Breton sediment diversion projects and for the Mid-Basin diversions project management. Reviews addressed the scope of work, program management plan,

procurement delivery methods, and cost estimates of each proposal and provided NFWF with guidance for proposal evaluation.

- Big Pass Borrow Plan Peer Review, Sarasota, FL (2017) – Provided independent peer review of City of Sarasota coastal engineering planning documents for Big Sarasota Pass borrow area and Lido Key groins.
- Dauphin Island East End Beach and Barrier Island Restoration, Dauphin Island, AL (2016) – As senior engineer, provided construction phase services for repurposing existing rock groins and placement of approximately 320,000 cubic yards of fill from an offshore borrow area on 0.93 miles of eroded beach.
- Value Engineering of the Olmsted Dam River Dikes Project, Ohio River, IL and KY (2015) – Technical expert on dredging/underwater construction, participated in a value engineering study of USACE's plan to install 14 dikes on the Ohio River to control river velocities and minimize long-term channel dredging.

Previous Experience

- USACE Engineer Research and Development Center, Disposal Operations Technical Support (DOTS), Improvement of Operations and Maintenance Techniques (IOMT), and Environmental Effects of Dredging (EED) – Dr. Truitt was a team member on several dredging-related projects in freshwater environments including:
  - USACE Chicago District – Assisted in the examination of potential resuspension during maintenance work in the Calumet and Chicago rivers. This included field monitoring of dredging operations.
  - USACE Chicago District – Study team member who evaluated potential use of contaminated sediment disposal from Indiana Harbor.
  - USACE Rock Island District – Evaluated confined disposal facility/dredged material management area (DMMA) options including site dewatering and dike raising.
  - USACE New England District – PCB remediation in the Acushnet River in Massachusetts
  - USACE Seattle District – Disposal options for Everett Harbor and Duwamish Waterway in Washington
  - USACE Baltimore District – DMMA operations at Hart-Miller and Poplar Island
- Lido Key Technical Review, City of Sarasota, FL (2014) – Completed a comprehensive independent technical review of a USACE design and modeling program proposing the use of Big Sarasota Pass shoals as a sand source for the Lido Key Federal Shore Protection Project; review assessed sediment budgets, morphology, and potential impacts to the shoal and adjacent shorelines.
- Venice Beach Outfalls, City of Venice, FL (2014) – Engineer-of-record for innovative design modifications to two existing beach stormwater discharge pipes. Project installed pumps and treatment swales to divert low-flow volumes from older piping system that was suspected of contributing to water quality issues; also assisted with permits and grant follow-up.
- Bird Key Park Shoreline Stabilization, City of Sarasota (City), FL (2012) – Engineer-of-record for the City's Bird Key shoreline restoration project involving the design and construction of an articulated concrete mat revetment, seawall, non-motorized boat launch ramps and an "ADA-friendly" floating kayak pier. All elements were part of a broader multi-use recreation trail system.
- Riverine Sand Mining, Scofield Island, LA (2013) – Served as QA officer and conducted internal peer review of consulting team's borrow area design, proposed transport routes/methods, and island/marsh design; developed settlement monitoring procedure adopted by client for several projects.
- Sarasota County Comprehensive Inlet Management Plan, Sarasota County, FL (2011) – Project manager/team leader for development of a comprehensive integrated inlet management plan (IMP) for Big Sarasota Pass and New Pass. Goals were to: 1) determine the extent to which inlets cause erosion on adjacent beaches and provide for mitigation of the erosive impact, 2) develop a sand management strategy, and 3) provide for a safe and efficient navigation strategy. The work was conducted in two phases and included peer review of technical approach and products by three outside firms.
- Bonita Beach/Lovers Key Beach Restoration Maintenance, Lee County, FL (2015) – Engineer-of-record for design and permitting beach fill maintenance project on two distinct, previously restored shoreline segments. Managed borrow area investigation, cultural resources work, modeling assessment, and preparation of final design documents. Subsequently as subconsultant to different firm, assisted with construction phase services and final certifications.
- Town of Longboat Key (Town) Professional Services, FL (1992 – 2006) – For almost 15 years, Dr. Truitt served as an independent technical advisor to the Town. He assisted the commission, town staff, and design consultants on a wide range of projects and issues including development, implementation, and monitoring of the Town's beach erosion control project, the first Town-wide canal dredging project, and updates to elements of the comprehensive plan and land use code.

Kenneth R. Craig, P.E.

Vice President of Coastal Engineering

Education

M.E./Coastal and Oceanographic Engineering, University of Florida

B.S./Civil Engineering, University of Florida

Registration

Professional Engineer — FL, AL, LA, Puerto Rico

Years of Experience

Total	With Firm
23	21

Affiliations

ASCE COPRI
- Chair, National Coastal Zone Management Committee
- Chair, National Coastal Council

ASBPA
- Chair, 2017 National Coastal Conference
- Member, Board of Directors
- Member, Science and Technology Committee
- Member, Student and New Professional Committee

FSBPA
- Member, Board of Directors (2017)

AIWA Past Board Member)

WEDA

Florida Engineering Society
- Past Northeast Florida Chapter Board of Directors
- Fellow member

FICE

SAME

Background/Responsibilities

As vice president of coastal engineering, Mr. Craig holds overall responsibility for the company's coastal engineering operations. He possesses a unique, experience-based skill set that spans a broad range of coastal zone issues. Mr. Craig provides managerial oversight on many of the company's largest coastal engineering projects. Mr. Craig's formal academic training focused on coastal process analyses (i.e., shoreline evolution and sediment transport, wave and hydrodynamic modeling) and their impacts on major shore protection projects. He frequently acts as project liaison to local, state, and federal agencies regarding project related issues such as design, permitting, and funding options.

Project Experience

- Coastal Engineering Services, Flagler County, FL (Ongoing) – Principal-in-charge and lead engineer for post-Hurricane Matthew recovery plan development and implementation, seawall design, bid development, CCCL and DOA permitting, and post-design services.

- Post-Matthew Coastal Engineering Services, Volusia County, FL (Ongoing) – Assisted county with initial damage assessment via LiDAR data processing to calculate spatial distribution of storm-induced erosion. Assisted with post-disaster FEMA coordination.

- Loxahatchee River Main Cannel Dredging, Palm Beach County, FL (Ongoing) – Principal-in-charge and Engineer-of-Record for agency coordination, engineering design, bid administration and construction observation of the Jupiter Inlet District's 2017 channel dredging project.

- Jupiter Inlet Sand Trap and Intracoastal Waterway Dredging, Palm Beach County, FL (Ongoing) – Principal-in-charge of engineering, environmental and construction administration services for joint Jupiter Inlet District and Florida inland Navigation District joint 2017 dredging project.

- Fort Pierce Shore Protection Project General Reevaluation Report, St. Lucie County, FL (Ongoing) – Principal-in-charge of preparing a General Reevaluation Report (GRR) to extend the shore protection project's authorization 50 years to 2070 and develop project design that decreases non-uniformity of shoreline erosion and increase the project nourishment interval. This is the first GRR in the nation prepared by the non-federal interest for direct submission to the Assistant Secretary of the Army under authorization of Section 203 of the Water Resources Reform and Development Act (WRRDA) of 2014.

- Port Everglades Sediment Transport Modeling, Broward County, FL (Ongoing) – Principal-in-charge of modeling to support USACE and Port Everglades planning for navigation channel deepening by determining the fate of dredged material released into the water column.

- Martin County Shore Protection Project 2016 Monitoring, Martin County, FL (Ongoing) – Principal-in-charge of beach fill performance evaluation and annual physical monitoring report preparation.

- Fort Pierce Shore Protection Project Permitting, St. Lucie County, FL (Ongoing) – Principal-in-charge of obtaining state and federal permits for the federal shore protection project south of Fort Pierce Inlet.

- Fort Pierce Shore Protection Project Monitoring, St. Lucie County, FL (Ongoing) – Senior review and quality control for physical monitoring which included beach profile surveys, aerial photography, marine turtle nest monitoring, beach fill performance evaluation and annual physical monitoring report preparation. Compiled and submitted all monitoring information to the FDEP.

- Norriego Point Shoreline Stabilization and Recreational Improvements, Florida Department of Environmental Protection, Destin, FL (Ongoing) – Principal-in-charge for the design of shoreline stabilization and recreational improvements on Norriego Point within East Pass. Services include submerged aquatic vegetation surveys, dredging permit modification, conceptual upland recreational design, coastal conditions analysis, value and final engineering design, construction drawings and specifications, and bid administration.

- Summer Haven River Restoration, St. Johns County, FL (Ongoing) – Principal-in-charge on the final design, preparation of construction drawings, bid administration, and construction administration to excavate approximately 300,000 cy of sand from the infilled river and place it on the adjacent beach and dune system. Project included addressing impacts from Hurricane Matthew when a substantial breach occurred near the south end of the placement area. Breach was closed via mechanical sand placement during a period of relatively low tidal and wave energy.

- Beach Nourishment Design and Permitting Services for Vilano Beach and South Ponte Vedra Beach, St. Johns County, FL (Ongoing) – Principal-in-charge of design and permitting services to facilitate placement of dredged material in areas north of the St. Augustine Inlet.

- Fort Pierce Inlet Sediment Impoundment Basin, St. Lucie County, FL (Ongoing) – Senior advisor and QA/QC lead for the completed feasibility study and the ongoing design and permitting phase of a sand trap inside the Fort Pierce Inlet in St. Lucie County, Florida. Project includes public workshops, detailed numerical modeling with the MIKE21 system, report preparation, project design, and state and federal permitting services.

- Review of Storm Surge Hazards at Coastal Nuclear Power Plants, Various Locations, U.S. (Ongoing) – Providing managerial and QA/QC oversight for Taylor Engineering's independent and confirmatory tsunami, surge, and seiche analyses to support the U.S. Nuclear Regulatory Commission's hydrology safety reviews. The reviews will examine and comment on Flood Hazard Evaluation Reports completed by operating nuclear power plants.

- Jupiter Inlet District General Engineering Services, Palm Beach County, FL (Ongoing) – Principal-in-charge and lead engineer overseeing a wide variety of activities including maintenance of the north and south jetties (including all associated infrastructure) as well as the functionality of all aids to navigation under JID control. Coordinates annual sand trap dredging activities, annual seagrass surveys of the Loxahatchee River, monthly jetty inspections, and attends monthly Board meetings at the JID offices.

- Fort Pierce Inlet Sand Tracer Study, St. Lucie County, FL (2016) – Principal-in-charge for this project that introduced tracer sediments in and around Fort Pierce Inlet to determine sediment transport pathways based on evaluation of physical processes, extensive sampling, and numerical modeling.

- Jupiter Inlet Sand Trap Dredging, Palm Beach County, FL (2016) – Principal-in-charge on the preparation of construction drawings and technical specifications, and construction phase services for the dredging and beach placement of material permitted for removal from the Jupiter Inlet sand trap.

- Rollover Pass Closure Feasibility Study, Galveston County, TX (2013) – Developed demolition plans and specifications and provided general QA/QC support. Project sought to physically close a man-made pass to alleviate adjacent beach erosion and the large dredging volume in the nearby Gulf Intracoastal Waterway.

- FPL St. Lucie Nuclear Power Plant Seawall, St. Lucie County, FL (2013) – Served in lead QA/QC role for this project to provide coastal and structural engineering design and environmental permitting for a seawall and breakwater/artificial reef to protect the nuclear power plant's discharge canal and headwall structure. Taylor Engineering staff members prepared design alternatives for the shoreline protection structure and reef.

- JAXPORT Conceptual Dredged Material Management Area (DMMA) Capacity Analysis, Jacksonville, Duval County, FL (2011) – Provided QA/QC oversight and client liaison services. Taylor Engineering developed a plan to address critically low available capacity in existing JAXPORT DMMAs through sequencing of upcoming dredging/disposal events and scheduling physical improvements to existing sites thereby providing a roadmap to develop expanded capacity to meet future projected needs. This project resulted in Intensive coordination with JAXPORT and U.S. Army Corps of Engnieers.

- Atlantic Intracoastal Waterway Dredged Material Management Plan, Norfolk, Virginia to St. Johns River, FL (2011) – Provided QA/QC oversight in the development of a Phase I dredged material management plan that identified disposal sites and assessed shoaling rates throughout the waterway. Coordinated efforts across five South Atlantic Division districts and five states.

Michael B. Kabiling, Ph.D., P.E., CFM

Senior Coastal/Water Resources Engineer

Education

Ph.D./Hydraulic & Coastal Engineering, Yokohama National University

M.E./Water Resources Engineering, Asian Institute of Technology

B.S./Civil Engineering, University of Philippines

Registration

Professional Engineer — FL, SC, GA, WA, Philippines

Certified Floodplain Manager – U.S.

Years of Experience

Total	With Firm
25	16

Affiliations

American Society of Civil Engineers (ASCE)
American Water Resources Association (AWRA)
Association of State Dam Safety Officials (ASDSO)
Association of State Floodplain Managers (ASFPM)
Florida Engineering Society (FES)
International Association of Hydraulic Engineering and Research (IAHR)
National Society of Professional Engineers (NSPE)
Philippine Institute of Civil Engineers (PICE)

Background/Responsibilities

Dr. Kabiling has more than 25 years of experience with advanced expertise in water resources, hydraulic and coastal engineering, numerical modeling, and climate change resiliency. His responsibilities at Taylor Engineering include providing project management, participating in business development, leading engineering studies, and developing the numerical modeling and climate change/sea level rise resiliency practice of the company. His project experience includes the application of one-, two-, and three-dimensional models such as the UNET, HEC-RAS, MIKE11, HEC-HMS, RMA2, RMA4, CGWAVE, and ADCIRC, EFDC, the MIKE21/MIKE3 model suites, and the ACES, STWAVE, REFDIF1, CGWAVE, and MIKE21 wave models. He has applied these models on more than 25 hydraulics and scour studies in Florida, South Carolina, and Louisiana and more than 65 numerical modeling projects in hydrology, hydrodynamics, waves, riverine and coastal flood, dam break, water quality, contaminant transport, sediment transport, morphology, and sea level rise.

Project Experience

- Fort Pierce Shore Protection Project General Reevaluation Report, St. Lucie County, FL (Ongoing) – Coastal engineer for developing, validating, and applying a hybrid shoreline morphology model to evaluate several beach nourishment schemes. Beach nourishment schemes for the General Reevaluation Report (GRR) include beach structures and nearshore structures to develop project design that decreases non-uniformity of shoreline erosion and increase the project nourishment interval. The GRR is the first GRR in the nation prepared by the non-federal interest for direct submission to the Secretary of the Army under authorization of Section 203 of the Water Resources Reform and Development Act (WRRDA) of 2014.

- Port Everglades Sediment Transport Modeling, Broward County, FL (Ongoing) – Project manager, hydraulic engineer, and coastal engineer supporting USACE and Port Everglades planning for navigation channel deepening and widening with sediment transport modeling to determine fate of dredged material released into the water column. Designed field measurement program of tides, currents, and waves to support model setup and validation. Developed and applied state-of-the-art modeling with integrated three-dimensional MIKE hydrodynamic, wave, and particle tracking models and. Model application includes dredged material plume modeling and deposition pattern for normal and extreme tides, waves, Florida Currents, and 25 dredging scenarios.

- Fort Pierce Inlet Sand Tracer Study, St. Lucie County, FL (Ongoing) – As coastal engineer developed and applied an integrated two-dimensional hydrodynamic, wave, and particle tracking model to simulate the transport of fluorescent tracer sediments in and around Fort Pierce Inlet and to determine sediment transport pathways. Evaluated sediment transport from physical processes analyses, extensive sampling, and numerical modeling.

- Crossroads Maintenance, Sediment Basin and Channel Realignment Dredging, Martin County, FL (2017) – As coastal engineer, set up and applied an integrated MIKE21 hydrodynamic and sediment transport model to estimate sediment transport and morphology and evaluate the performance of proposed channel re-alignments to provide naturally deep navigation channels in the Okeechobee Waterway. Performed economic analyses to estimate cost savings from channel re-alignment schemes.

- Port Angeles Pulp Mill Site Restoration, Rayonier A.M. Products, Clallam County, WA (2015) – Project manager on a preliminary hydraulic analysis to identify and understand the dominant mechanisms that will affect the long-term restoration of a closed pulp mill site and coastline. The property was subject to tides, storm surges, waves, and Ennis Creek's upstream rainfall flows.

- Indian River Lagoon Flushing Study Phase 2, St. Johns River Water Management District, Brevard County, FL (2015) – Project manager and hydraulic engineer for further evaluations of the top locations for local flushing to alleviate algal blooms in a study area covering the northern Indian

River Lagoon, Mosquito Lagoon, and Banana River. Tasks included individual site evaluations and preliminary numerical modeling and calculations.

- Feasibility Study of Sediment Basins near Cut 1 of Okeechobee Waterway, Martin County, FL (2014) – In addition to project management responsibilities, designed field measurement program to measure the tides, currents, and sediment properties at the project site. As hydraulic and coastal engineer, set up, validated, and applied an integrated MIKE21 hydrodynamic and sediment transport model to estimate sediment transport and morphology and evaluate the performance of proposed sediment basins to reduce maintenance dredging in the Okeechobee Waterway. Performed economic analyses to estimate cost savings from alternative maintenance dredging schemes.
- Environmental Impact Statement for Jacksonville Harbor Deepening, Northeast FL (2014) – As hydraulic engineer, estimated potential physical changes in geology and geomorphology, tides, navigation currents, sea level rise, water circulation, and salinity from the Jacksonville Harbor Deepening Project.
- Jacksonville Harbor Deepening Project Impact Assessment, Lower St. Johns River, FL (2013) – In addition to project management responsibilities, as river and coastal engineer supervised Environmental Fluid Dynamics Code (EFDC) model validation, model application for various harbor dredging scenarios, and provided QA/QC reviews of the EFDC modeling. Developed, validated, and applied the MIKE21 hydrodynamic and advection-dispersion model in river tributaries and marsh areas. The EFDC and MIKE modeling of the St. Johns River provided the means to evaluate the effect on river hydraulics, salinity, ecology, and water quality of: (1) channel deepening, channel widening at select locations, and construction of new turning basins; and (2) cumulative impacts of other projects including the Mayport Deepening Project for the U.S. Navy and freshwater withdrawals in the St. Johns River.
- Jordan Creek Feasibility Study Report and Environmental Assessment, Springfield Greene County, MO (2013) – As hydraulic and hydrological engineering expert, provided independent external peer review (IEPR) for the hydrology and hydraulic aspects of the Jordan Creek Feasibility Study Report and Environmental Assessment Report. Applied the U.S. Army Corps of Engineers' new IEPR charge guidance and SMART planning and principles in the review process.
- Florida Power and Light (FPL) Engineering and Permitting Services, St. Lucie County, FL (2012) – To protect the FPL plant discharge outlets, Taylor Engineering analyzed scenarios that included a seawall to minimize shoreline erosion and submerged breakwaters to dissipate erosive wave action in the nearshore area. An integrated hydrodynamic, wave, and sediment transport model provided the means to evaluate the impact of the seawall and breakwater along the beach. As the lead modeler, setup the integrated MIKE21 hydrodynamic, wave, and sediment transport model of the Florida east coast that includes St. Lucie County. Calibrated and verified the performance of the hydrodynamic and wave models using available hindcasted data. Evaluated the short-term and long-term performances of various submerged breakwater layouts and geometries to reduce shoreline erosion. Short-term and long-term performance evaluations included breakwater performance during 10- and 50-year storms and during average and high energy years.
- Assessment of Canal and Embankment Impacts on Hydraulics and Sediment Transport in the Atchafalaya Basin, LA (2012) – In addition to project management responsibilities, as lead investigator, supervised research for information and developed a conceptual modeling framework of the system to describe the morphological evolution of the system due to natural and man-made influences. Designed field measurements plan to gather velocity, sedimentation, bathymetric, topographic, and water quality data to support model development. Developed the approach for a detailed analysis to quantify the influence of specific structures. The analysis compared baseline conditions with conditions created by the structures to isolate the specific influence of the structure construction.
- Surge and Seiche Hazard Analysis Safety Review of the Salem-Hope Creek Early Site Permit Application, Salem County, NJ (2012) – As subject matter expert, provided an external review of the hydrologic and hydraulic study on an early site permit application for a new nuclear electric generating plant, required by the U.S. Nuclear Regulatory Commission. Reviewed hydrology, hydrodynamic modeling, and surge elevation estimations.
- Fort Pierce Inlet Sand Bypassing Feasibility Study, St. Lucie County, FL (2011) – In addition to project management responsibilities, as coastal engineer designed field measurement program, supervised and performed data evaluation and numerical modeling, supervised estimation of potential shoaling rates at proposed deposition basins, prepared technical report, and recommended future tasks for engineering design and permitting of the deposition basins. Evaluated the construction of a deposition basin within the inlet to supplement the sand bypassing volume requirements across the inlet. Assessed existing conditions, applied three different methodologies to estimate shoaling rates, and developed two conceptual designs for a sediment deposition basin. Numerical modeling and field measurements of bathymetry, tides, currents, sediment concentrations, sediment characteristics, and waves provided the means to validate assumptions applied in the evaluations.

Christopher J. Bender, Ph.D., P.E., D.CE

Senior Coastal Engineer

Education

Ph.D./Coastal Engineering, University of Florida

M.S./ Coastal Engineering, University of Florida

B.S./Ocean Engineering, University of Rhode Island

Registration

Professional Engineer — FL, MS

Diplomate of Coastal Engineering — U.S.

Years of Experience

Total	With Firm
14	14

Affiliations

American Society of Civil Engineers

American Society of Civil Engineers (ASCE) Academy of Coastal, Ocean, Port & Navigation Engineers (ACOPNE)

American Society of Civil Engineers (ASCE) Coasts, Oceans, Ports, Rivers Institute (COPRI)

Florida Engineering Society

Part-time Faculty Member — University of North Florida, School of Engineering

Coastal and Estuarine Hydroscience Committee – Secretary

Background/Responsibilities

Dr. Bender has taken a leading role in the simulation and evaluation of hurricane surge, wave mechanics and loading, littoral processes, shoreline protection, and sediment transport. Dr. Bender's coastal engineering experience includes use of the following assessment tools: STWAVE, SWAN, SWAN+ADCIRC, REF/DIF-1, MIKE21, SMS, ACES, Beach-fx, GENESIS, and SBEACH as well as numerous desktop assessment techniques. He has successfully applied these models to many Atlantic and Gulf Coast locations from New England to Texas. Dr. Bender teaches coastal engineering courses at the University of North Florida as a part-time faculty member.

Project Experience

▪ Broward County ADCIRC Flood Study (Ongoing) – As technical manager, develops and coordinates activities to examine the effect of alternative seawall configurations on coastal flooding for the USACE. Applies the SWAN+ADCIRC model to simulate tropical storms and various tide and sea level rise scenarios.

▪ Risk MAP Regional Production and Mapping Program Support, FEMA Regions Nationwide, U.S. (Ongoing) – As coastal engineering expert, provides coastal engineering technical support including Control Account Manager for Coastal Community of Practice meetings; assist and support coastal analyses, risk management; map production; and technical review. Specific tasks include analysis of South Florida Coastal Flood Study Lidar data and review of sensitivity analyses conducted to bet better understand factors important to the New York and New Jersey coastal storm surge analysis.

▪ Coastal Storm Flood Studies Technical Support, FEMA Region 4, U.S. (Ongoing) – As coastal engineering expert, provides coastal engineering support for FEMA Region 4, including QAQC of FIRMs, support of recent coastal storm surge study results, public outreach, and assistance with appeals.

▪ South Florida Coastal Storm Surge Study, FEMA Region 4, FL (Ongoing) — As project manager, coordinated, designed, and executed tasks necessary to complete a storm surge study along south Florida coast (Palm Beach County through Monroe County). Developed computational mesh necessary to evaluate storm surge and offshore and nearshore waves in the project area. Developed and implemented modeling system to evaluate storm surge including the influence of wave-induced water and current effects. Validated storm surge and wave model system with available data for historical storm events. Developed framework to execute modeling system for complete storm suite developed to produce return period water levels required by the study.

▪ Review of Storm Surge Hazards at Coastal Nuclear Power Plants, various locations, U.S. (Ongoing) — As project manager and subject matter expert, develops storm surge estimates at coastal nuclear power plants for the Nuclear Regulatory Commission. Develops and applies methodologies for very low probability water levels and associated wave conditions.

▪ External Peer Review of U.S. Army Corps of Engineers Fire Island to Montauk Point General Reformulation Report, NY (Ongoing) – As a subcontractor to Battelle Memorial Institute, Dr. Bender provided independent technical review services on the coastal engineering project aspects within the a 83-mile long Atlantic coast study area.

▪ Appeals Resolution Support for Risk MAP Projects, FEMA Region 6, U.S. (2017) – As coastal engineering expert, provided support to FEMA for resolution of Risk MAP project appeals, including technical evaluation; community, FEMA and stakeholder coordination; and reporting.

▪ External Peer Review of the U.S. Army Corps of Engineers Staten Island Coastal Storm Damage Reduction Feasibility Analysis, NY (2016) – As a subcontractor to Battelle Memorial Institute, Dr.

Bender provided independent technical review services on the coastal engineering project aspects of a 13-mile long study area with a tentatively selected plan of six miles.

- Central Florida Coastal Storm Surge Study, FEMA Region IV, FL (2015) — As project manager, coordinated, designed, and executed tasks necessary to complete a storm surge study along central Florida coast. Developed computational mesh necessary to evaluate storm surge and offshore and nearshore waves in the project area. Developed and implemented modeling system to evaluate storm surge including the influence of wave-induced water and current effects. Validated storm surge and wave model system with available data for historical storm events. Developed framework to execute modeling system for complete storm suite developed to produce return period water levels required by the study.

- Northeast Florida/Georgia Coastal Storm Surge Study, FEMA Region IV, FL and GA (2014) — As project manager, coordinated, designed, and executed tasks necessary to complete a storm surge study along northeast Florida and Georgia. Developed computational mesh necessary to evaluate storm surge and offshore and nearshore waves in the project area. Developed and implemented modeling system to evaluate storm surge including the influence of wave-induced water and current effects. Validated storm surge and wave model system to with available data for historical storm events. Developed framework to execute modeling system for complete storm suite developed to produce return period water levels required by the study.

- Jacksonville Harbor Deepening Storm Surge Modeling, Lower St. Johns River, FL (2013) — As project manager, coordinated, designed, and executed tasks necessary to complete simulations of 2% and 1% annual chance water levels near the Jacksonville Harbor. Simulated storm surge for existing conditions and for various dredging and sea level rise scenarios.

- M-5 Permitting and Design, Martin County, FL (2012) — As senior engineer, developed coastal engineering analysis and beach design for the permitting to offload approximately 365,000 cubic yards of material from the Florida Inland Navigation District's island dredged material management area.

- Jupiter/Carlin Section 934 Study, Palm Beach County, FL (2011) — As senior engineer, participated in effort to extend federal participation to the 50th year after the date of initial construction in the Jupiter/Carlin segment of the Palm Beach County Shore Protection Project. Developed representative profiles for cross-shore sediment transport (SBEACH) modeling and created input files necessary to execute models. Developed model inputs for economic model (Beach-fx) to evaluate project alternatives.

- Southeast Florida Regional Sediment Management Study, FL (2010) — As project manager for the U.S Army Corps of Engineers study, evaluated the long-term beach renourishment needs of sand sources available for shore protection projects within St. Lucie, Martin, Palm Beach, Broward, and Dade counties, Florida. Developed a comprehensive regional management plan to couple the resource needs and availability to address long-term beach renourishment strategies along the southeast Atlantic Coast. Compiled a complete inventory of all sources and their estimated volume of beach quality material, coupled with requirements of nourishment projects to aid in the planning of beach nourishment efforts in Florida.

- Coastal Engineering Services, National Grid, Long Island, NY (2010) — As senior engineer, evaluated the long-term and short-term changes to the nearshore system including Asharoken Beach, the National Grid Northport Power Station's intake, beach, and weir discharge, and the Crab Meadow area to the east. Developed sediment budgets that account for all sediment pathways and recent dredging and beach placement activities to evaluate sediment dynamics.

- Intracoastal Waterway (ICWW) Initiative, Gulf, Bay, and Walton Counties, FL (2008) — As project engineer, analyzed relevant data to develop a historical perspective of work performed on the ICWW since completion. Reviewed and analyzed historical U.S. Army Corps of Engineers dredging and disposal records within the ICWW and relevant waterways.

- Coastal Modeling Services for the Panama City Beach Shore Protection Project General Reevaluation Report (GRR), Bay County, FL (2007) — As senior engineer, performed tasks to develop and execute coastal engineering models to simulate nearshore waves and longshore transport in the project area. Performed historical and recent shoreline and volume change analyses as basis for project erosion rates and cross sections. Executed and evaluated cross-shore transport model SBEACH to develop database of shoreline change necessary for economic analyses. Calibrated the U.S. Army Corps of Engineers economic model Beach-fx to the recent shoreline behavior in the project area.

- Walton County Shore Protection Feasibility Study, Walton County, FL (2007) — As project manager, performed coastal analysis in preparation of feasibility report for the shore protection project. Developed, calibrated, and applied GENESIS model for Walton County to evaluate longshore transport. Applied recent data to update shoreline change trends, volume changes, and sediment budget within Walton County.

Duncan Greer, P.E.

Project Engineer

Education

M.S./Coastal Engineering, University of Florida

B.S./Civil Engineering, Florida State University

B.S./Environmental Engineering, Florida State University

Registration

Professional Engineer — FL

Years of Experience

Total	With Firm
4	4

Affiliations

American Society of Civil Engineers (ASCE)

Coasts, Oceans, Ports, & Rivers Institute (COPRI)

Background/Responsibilities

Mr. Greer performs coastal processes analyses and structure design including numerical modeling of waves, sediment transport and storm impacts; prepares feasibility studies, literature review, and data and statistical analysis; as well as conducts physical and environmental monitoring. Mr. Greer is adept with numerical coastal processes tools and many data processing techniques. His responsibilities include the design, monitoring, and permitting of various coastal engineering projects primarily located in the Florida panhandle.

Project Experience

- Longwood/Poquito Bayou Park Shoreline Stabilization, Shalimar, FL (Ongoing) – Project manager and engineer for regulatory approval of emergency shoreline stabilization and for preliminary design, permit applications, regulatory agency coordination for long-term shoreline stabilization with living shoreline features and boat dock extension with wave attenuator.

- Venice Beach Renourishment 2016 Physical Monitoring, Venice, FL (Ongoing) – Staff engineer for annual engineering analyses and of beach profile surveys and preparation of report documenting performance of the 2015 Venice Beach nourishment.

- Fort Pierce Shore Protection Project General Reevaluation Report, St. Lucie County, FL (Ongoing) – Staff engineer for the General Reevaluation Report (GRR) to extend the shore protection project's authorization 50 years to 2070 and develop project design that decreases non-uniformity of shoreline erosion and increase the project nourishment interval.

- Beach Restoration Project and Beach Monitoring, Okaloosa County, FL (Ongoing) – Conducts analyses of survey data, coastal processes, and borrow area bathymetry to assess volume and shoreline changes, project performance, and prepare reports in accordance with regulatory authorizations for numerous Florida beaches. Beach monitoring projects performed in Okaloosa County include the Holiday Isle Emergency, Eglin AFB, Walton/Destin, Okaloosa Island, and Western Destin Beach Restoration project areas. Also provided similar services for Venice Beach, Martin County, St. Lucie County, and St. Johns County.

- Fort Pierce Shore Protection Project 2016 Monitoring, St. Lucie County, FL (2016) – Analyzed beach and offshore profile surveys to evaluate beach fill performance and prepared annual physical monitoring report.

- Boggy Bayou Headwaters Restoration, Okaloosa County, FL (Ongoing) – Evaluated alternatives to improve water quality, restore aquatic and estuarine habitat and enhance recreational opportunities through sediment removal, marsh and living shoreline creation, exotic vegetation removal, and boardwalk and kayak launch construction. Performed hydrodynamic modeling to assess circulation and flushing. Prepared engineering designs and permit drawings for the recommended improvements.

- Norriego Point Shoreline Stabilization and Recreational Improvements, Florida Department of Environmental Protection, Destin, Florida (Ongoing) – Assisting the design of shoreline stabilization and recreational improvements on Norriego Point within East Pass. Services include submerged aquatic vegetation surveys, dredging permit modification, coastal conditions analysis, value and final engineering design, construction drawings and specifications, and bid administration, bid administration, and conceptual upland recreational design.

- Coastal Management Services, Walton County, FL (Ongoing) – Providing on-call coastal management services to Walton County that include beach nourishment project assistance, meeting attendance, presentations, and lobbyist activities.

- Hurricane and Storm Damage Reduction Project, Walton County, FL (2016) – Providing on-call engineering support services for the continuing HSDR project. Tasks include meeting and workshop attendance, presentations, technical support, permitting assistance, managing grant agreements, and monitoring.

- Grant Applications, City of Destin, FL (Ongoing) – Providing technical support and coordination to fulfill funding assistance requirements to maximize eligibility for potential cost-share opportunities with the Florida Department of Environmental Protection. Applications for project funding include those for the Norriego Point Stabilization Project, which received $4.5 million and beach nourishment monitoring.

- Okaloosa County Baywalk (Living Shorelines), Okaloosa County, FL (Ongoing) – Conducts coastal conditions analysis. Prepared design conditions and analysis of offshore breakwaters, dock expansion, and a floating access pier. Assists with hydrodynamic modeling, hydrodynamic data collection, wetland delineation, and seagrass surveys.

- Western Destin Post-Construction Services, Okaloosa County, FL (Ongoing) – Post-construction services include organizing data and conducting coastal processes analysis for the monitoring report, conducting lighting surveys and reports, and providing dune vegetation construction observation.

- Okaloosa Island Beach Monitoring, Okaloosa County, FL (2016) – Obtained and analyzed beach and offshore profile surveys to determine shoreline position and beach volume changes occurring since Hurricane Opal in 1989 and the most recent surveys in 2007. The work established beach baseline conditions before the 2016 hurricane season.

- St. George Island Causeway Shoreline Stabilization, Franklin County, FL (2016) – Provided preliminary engineering design analyses for shoreline stabilization structures at critically eroding areas along the 32-acre, 1.3-mile-long causeway. Analyses included structural details, storm protection levels, and cost opinions. Prepared final preliminary design for permitting.

- Calhoun Waterfront Development Hydrographic Assessment, Destin, FL (2015) – Staff engineer completed a hydrographic assessment (flushing study) for a proposed nine-slip dock with wave fence along the shoreline of the Choctawhatchee Bay. Project elements included field work to collect current velocities for model calibration and a letter report describing methods and results.

- Norriego Point Stabilization Phase 1 Construction Support, Okaloosa County, FL (2014) – Performed vessel- and land-based turbidity monitoring and completed reporting documents during dredging of Destin Harbor and placement on Norriego Point. Also provided breeding shorebird monitoring services in accordance with permit special conditions.

- St. Johns County Beach Nourishment Project, Post-Construction Monitoring, St. Johns County, FL (2014) – Prepared the monitoring report as required by regulatory permits. Services included analyses of survey data, coastal processes, borrow area bathymetry, and project performance of the nourished shoreline and adjacent control areas.

- Eglin Air Force Base (AFB) Beach Restoration Project, Project Monitoring, Okaloosa County, FL (2014) – Performed coastal analyses to fulfill annual monitoring requirements and evaluate project performance of a segmented beach restoration project on Eglin AFB. Tasks included survey data processing, analysis of accretion/erosion trends, and evaluation of project performance.

- Walton County / Destin Beach Restoration Project, Walton and Okaloosa Counties, FL (2014) – Performed coastal data analyses to assess potential borrow area impact.

- Okaloosa Island Dune Restoration Project, Okaloosa County, FL (2013) – Assisted with construction drawings and technical specifications, provided construction support including dune stake out, and provided construction observation for a large-scale dune restoration project on Okaloosa Island.

- Windmark Beach Feasibility Study, Gulf County, FL (2013) – Applied coastal processes techniques and the cross-shore model SBEACH to assist with assessment of the feasibility of shoreline restoration and beach management projects along Windmark Beach. Other tasks included literature review, historical survey data processing, and data collection.

- Holiday Isle Emergency Beach Fill Project, Okaloosa County, FL (2013) – Provided coastal analyses support and prepared report to fulfill the final regulatory monitoring requirements to evaluate project performance of the Holiday Isle Emergency Beach Fill Project. Tasks included survey data processing, volumetric calculation, analysis of accretion/erosion trends, and evaluation of project performance.

William (Bill) Aley IV, P.G.

Professional Geologist

Education

M.S./Geology, Florida Atlantic University

Minor, Invertebrate Zoology
Minor, Geographic Information Systems

Masters Certificate/Federal Acquisition Management

B.A./Geology, Florida Atlantic University

Registration

Professional Geologist — FL, CA

Years of Experience

Total	With Firm
12	2

Background/Responsibilities

Mr. Aley specializes in field geology and geotechnical evaluations; dredging; and civil works and water resources planning, permitting, design, and construction support. He leads the company's coastal and marine geosciences lab specializing in sediment quality evaluation for dredging and DMMA offloading projects throughout the state.

Project Experience

- Loxahatchee River Main Channel Dredging, Palm Beach County, FL (2017) – Provided project management, agency coordination, engineering design, bid and construction administration and construction observation for the Jupiter Inlet District's channel dredging project.

- DMMA M-8 Design and Permitting, St. Lucie County, FL (Ongoing) – Developed geotechnical scope of work and oversaw geotechnical drilling for engineering design and permitting for the Florida Inland Navigation District's M-8 dredged material management area. Provided project management of overall design, permitting, and bid administration.

- Jupiter Inlet Sand Trap and Intracoastal Waterway Dredging, Palm Beach County, FL (2017) – Project manager for engineering, environmental and construction administration services for joint Jupiter Inlet District and Florida Inland Navigation District 2017 maintenance dredging project. As a professional geologist, also performed geological evaluations and monitoring.

- Crossroads Maintenance, Sediment Basin and Channel Realignment Dredging, Martin County, FL (Ongoing) – Project manager for design and permitting maintenance, sediment basin, and widener dredging at the eastern end of Okeechobee Waterway Cut 1 ("The Crossroads"). Provided a feasibility evaluation of three channel realignment alternatives to realign the OWW Cut-1 and Cut-2 channel to utilize naturally deeper water to reduce future maintenance intervals and costs.

- Construction Administration for Intracoastal Waterway Deepening in Broward County, Broward County, FL (2017) – Professional geologist assisting in construction administration for deepening the Intracoastal Waterway from -10 ft to -15 ft mean low water.

- St. Lucie County Intracoastal Waterway Reach I Dredging, St. Lucie County (2017) – Professional geologist for the design, permit acquisition, and construction administration for maintenance dredging 12 miles of Intracoastal Waterway within St. Lucie County. Coordinated bathymetric, magnetometer, utility, geotechnical, and natural resource surveys; developed preliminary engineering design; prepared and submitted state and federal permit applications; and coordinated with regulatory agencies.

- Nassau County Intracoastal Waterway Reach I and Fernandina Harbor Maintenance Dredging, Nassau County, FL (Ongoing) – Project manager for design, permit acquisition, and bid administration assistance for harbor and Intracoastal Waterway maintenance dredging. Project included design and construction administration for weir replacement at the dredged material management facility.

- Review of Mississippi River Sediment Diversion Proposals, various parishes, LA (2017) – Provided "extension of staff" support to the National Fish and Wildlife Foundation (NFWF) for Mid-Barataria and Mid-Breton sediment diversion projects. Reviews and staff support involved review of the scopes of work, program management plans, procurement delivery methods, regulatory processes, contractor deliverables, programmatic reports, contractor scopes of work, and cost estimates.

Previous Experience

- U.S. Army Corps of Engineers Sacramento District, Folsom Dam Auxiliary Spillway Modifications, Sacramento, CA (2014 – 2015) – Project manager responsible for leading several multidisciplinary teams through various projects in design, engineering during construction, construction, commissioning, and operation and maintenance. Specifically, projects consisted of rock bolting and slope stabilization activities, local drainage evaluation and repair, heavy civil design and mass earthwork, several environmental restoration and mitigation components, overall site restoration, and completion of an operation and maintenance manual, filling plan, and commissioning plan for the new auxiliary spillway.

- U.S. Army Corps of Engineers Sacramento District, Folsom Dam Water Control Manual Update, Sacramento, CA (2014 – 2015) – Project manager for the revision of operation rules and criteria for the Folsom Dam and Reservoir (11,930 acres with a catchment area of 1,875 square miles). Key considerations in the development of the water control plan included dam safety requirements, Endangered Species Act requirements, water quality requirements, water supply, water rights permit terms and conditions, power generation, and recreational needs. Worked with modelers for reservoir routing applications and development of the reservoir operation sets.

- U.S. Department of Interior, Bureau of Reclamation, Biological Assessment on the Continued Long-term Operations of the Central Valley Project (CVP) and the State Water Project (SWP), CA (2013) – Project manager on various aspects of the biological assessment that was intended to provide a thorough analysis of the continued long-term operations of the CVP and SWP and the effects of those operations on listed species and designated critical habitat. A significant portion of the assessment was intended to articulate the assumptions made in the modeling used in the effects analysis. The CVP and SWP are two major inter-basin water storage and delivery systems that divert and re-divert water from the southern portion of the Sacramento-San Joaquin Delta (Delta). Both CVP and SWP include major reservoirs upstream of the Delta, and transport water via natural watercourses and canal systems to areas south and west of the Delta.

- U.S. Department of Interior, Bureau of Reclamation, San Luis Reservoir Expansion Appraisal Study, Merced County, CA (2013) – Project manager responsible for oversight and completion of an appraisal level evaluation for raising B.F. Sisk Dam, a 326-foot high, 3.5-mile long zoned earthen embankment dam which creates San Luis Reservoir, the largest offstream reservoir in the United States. This study included static and dynamic stability assessments of the embankment dam and all appurtenant structures as well as appraisal level costs for a 30-foot raise of the full embankment.

- U.S. Department of Interior, Bureau of Reclamation, Cost Allocation Report for Delta-Mendota Canal/California Aqueduct Intertie, Alameda County, CA (2013) – Project manager responsible for development of the cost allocation and subsequently, the repayment requirements for both construction and OM&R costs for the Delta-Mendota Canal/California Aqueduct Intertie, a pumped connection between the Central Valley Project's Delta-Mendota Canal and the State Water Project's California Aqueduct.

- U.S. Department of Interior, Bureau of Reclamation, Central California Area Office Invasive Mussel Monitoring Program, Various Counties, CA (2012) – Project manager responsible for oversight and implementation of the mid-Pacific Regional monitoring program for invasive Quagga and Zebra mussels. Monthly water samples were collected from regional reservoirs and subjected to multiple tests to determine whether microscopic mussel larvae were present. This testing included, Cross-polarized light microscopy, Scanning Electron Microscopy, and Polymerase Chain Reaction (PCR) and gene sequencing tests, to confirm the presence of mussel DNA.

- U.S. Army Corps of Engineers Jacksonville District, Jacksonville Harbor Navigation Projects, Duval County, FL (2011) – Planning technical leader responsible for oversight and completion of feasibility level assessments and dredged material management planning for the Jacksonville Harbor Navigation Project. This included work on upland and offshore disposal sites as well as studies to determine the most economical means of disposal for upcoming maintenance and deepening dredging work.

- U.S. Army Corps of Engineers Jacksonville District, Regional Sediment Management (RSM) Projects, Various Counties, FL (2011) – As planning technical leader, participated in multiple studies with the objective of optimizing the utilization of sediments and management of projects through a systems-based approach. The main focus of these studies was to better understand the regional sediment transport processes through integration of regional data and application of tools which improve our knowledge of the regional processes.

Jonathan T. Armbruster, P.E.

Vice President of Waterfront Engineering

Education

M.S./Environmental Hydrologic & Hydraulic Engineering, University of Illinois

B.E./Civil Engineering, The Cooper Union

Registration

Professional Engineer — AL, FL, NY

Years of Experience

Total	With Firm
19	15

Affiliations

American Society of Civil Engineers (ASCE)
ASCE Coasts, Oceans, Ports & Rivers Institute (COPRI)
COPRI, Ports and Harbor Committee
PIANC, U.S. Principal Representative to the Recreational Navigation Commission
Florida Engineering Society

Background/Responsibilities

As vice president of Taylor Engineering's waterfront engineering group, Mr. Armbruster oversees efforts across a spectrum of activities from feasibility analysis through final design and construction phase services for a range of projects including marine and waterfront facilities, marine structures, dredging projects, dredged material management facilities, hydraulic control structures, pile foundation structures, erosion control measures, and shore protection installations.

Project Experience

- U.S. Coast Guard Waterfront Facilities Inspections, various locations, U.S. (Ongoing) – Principal-in-charge and technical QA/QC review for above-water and underwater inspections of waterfront structures and preparation of inspection reports providing structural condition assessment and repair recommendations. Inspected structures included fixed and floating docks, piers, bulkheads, revetments, seawalls, boat ramps, and marine railways.

- Norriego Point Shoreline Stabilization and Recreational Improvements, Destin, FL (Ongoing) – Structural engineering task leader on the design of shoreline stabilization and recreational improvements on Norriego Point within East Pass.

- BV-24A Dredged Material Management Area (DMMA), Brevard County, FL (Ongoing) – Principal-in-charge on the design and permitting of the Florida Inland Navigation District's BV-24A DMMA, a 113-acre site west of the Indian River.

- Eagle LNG Terminal Design, Jacksonville, FL (Ongoing) – Project manager providing engineering design of a new liquefied natural gas (LNG) marine terminal located on the north bank of the St. Johns River. Tasks include analyses of ship berthing loads, environmental (wind and current) loads, ship mooring loads, marine structural engineering, and berth dredging engineering.

- Okeechobee Waterway (OWW) Cut 1 Sediment Basin, Martin County, FL (Ongoing) – Principal-in-charge on the dredging design and permitting of a sediment basin at the eastern end of OWW Cut 1. Also evaluating three channel realignment alternatives to realign the OWW Cut-1 and Cut-2 channel to use naturally deeper water to reduce future maintenance intervals and costs.

- Ted Sperling Park Boardwalk Replacements, Sarasota County, FL (Ongoing) – Principal-in-charge for the replacement of three aging timber boardwalks within Ted Sperling Park located on the south end of Lido Key. Evaluating the existing structures, developing a design for replacement of each structure, coordinating permitting, and conducting construction phase services.

- Maintenance Dredging Design of the Fernandina Harbor and Reach I of the Intracoastal Waterway, Nassau County, FL (Ongoing) – Principal-in-charge in the preparation of a dredging template, final design and construction documents, opinion of probable cost, permitting, and bidding assistance.

- Dredged Material Management Areas, Various Counties, FL (Ongoing) — Design and development of drawings and specifications for Florida Inland Navigation District's dredged material management areas. These sites, constructed at various locations along Florida's east coast, provide a 50-year storage capacity and facility life to support dredging of Florida's Intracoastal Waterway. Responsibilities include management oversight, technical QA/QC, site design, structural steel design for dredged effluent control structures, environmental permitting and mitigation design, island off-loading/dredging design, beach nourishment design, dike design, geotechnical stability and seepage analysis, and stormwater conveyance and pond design. Project tasks encompass preliminary and final design, construction document preparation, bidding, and construction oversight.

- Discharge Canal Headwall Stabilization Project, FPL St. Lucie Nuclear Power Plant, St. Lucie County, FL (Ongoing) — Project manager for marine structures and coastal engineering design and environmental permitting to protect the St. Lucie Nuclear Power Plant's discharge canal and headwall from severe coastal erosion. The project includes all phases of work from feasibility through final design of an ocean seawall and a series of offshore breakwaters. Completed feasibility assessment, engineering design, permitting, and construction phase engineering for the seawall. Completed coastal engineering modeling, design and permitting for offshore breakwaters. Ongoing work includes development of final breakwater construction drawings.

- Eau Gallie River and Elbow Creek Dredging Project, Brevard County, FL (Ongoing) – Project manager for the final design, bid package preparation, and bid assistance, and construction phase support for muck removal restoration dredging and all upland-related features (dredged management material area, road and rail pipeline crossings, and other pipeline corridor features).

- Sykes Creek Dredging Engineering and Permitting Services, Brevard County, FL (Ongoing) – Principal-in-charge for project providing design, permitting, construction drawings and specifications for the dredging of Sykes Creek to remove muck and provide environmental restoration. The project will deposit the dredged muck material within a refurbished dredged material management area.

- BV-4B Permanent Pipeline, Florida Inland Navigation District, Brevard County, FL (2017) – Project manager on the detailed design, permitting, and engineering of a seepage and saline control ditch and its outfall (permanent pipeline) to the Intracoastal Waterway for the BV-4B dredged material management area.

- Retirement Housing Foundation Bulkhead Replacement, Jacksonville, FL (2016) – Principal-in-charge of field observation and repair recommendations for a deteriorating bulkhead at a multi-unit residential building adjacent to the St. Johns River.

- San Sebastian River Dredging Pay Application Review, St. Augustine, FL (2016) – Project manager for work to review pay surveys and contractor's pay applications, and prepared pay recommendations for the City of St. Augustine dredging project.

- Review of Mississippi River Sediment Diversion Proposals, Various Parishes, LA (2016) – Provided the National Fish and Wildlife Federation (NFWF) with independent technical reviews of grant proposals for Mid-Barataria and Mid-Breton sediment diversion projects and for the Mid-Basin diversions project management. Reviews addressed the scope of work, program management plan, procurement delivery methods, and cost estimates of each proposal and provided NFWF with guidance for proposal evaluation.

- Dune Restoration, FPL St. Lucie Nuclear Power Plant (Plant), St. Lucie County, FL (2013) — Project manager for final engineering design and construction administration for restoration of a protective dune along the shoreline of the Plant property.

- Seawall and Shoreline Infrastructure Improvements, Florida School for the Deaf and the Blind, St. Augustine, FL (2015) — Project manager, directed team to mitigate shoreline erosion, design and construct protective shoreline seawalls, and improve campus shoreline infrastructure including perimeter roadway, stormwater systems, and student waterfront access features. Project included planning and landscape architecture, marine structures engineering, stormwater design, roadway design, and construction phase services.

- Guantánamo Bay Naval Base Shoreline Erosion Assessment, Guantánamo Bay, Cuba (2010) — Project manager, evaluated severity of and proposed potential repair solutions for eroding portions of naval base shoreline. Efforts included site reconnaissance and evaluation, coastal conditions assessment, and evaluation of erosion control and mitigation strategies.

- Miramar Beach Parking Structure, Walton County, FL (2009) — Project manager and engineer-of-record for design and permitting of a beachfront parking structure. The structure replaced traditional at-grade asphalt parking historically subject to severe damage by coastal storms. Project included construction of a single-level concrete parking structure supported by 175 prestressed concrete piles, installation of a sheet pile upland retaining bulkhead, and roadside utility relocations to develop storm resistant public access parking.

- Jacksonville Electric Authority (JEA) Flood Protection Feasibility Study, Duval County, FL (2009) — Project manager on a feasibility investigation to construct a flood control system around JEA's Northside Generating Station for protection against coastal storms and hurricanes. Project efforts included coastal modeling for evaluation of flooding risk and associated water levels. Project included evaluation and preliminary design for levee flood protection systems, internal stormwater system modifications and retrofits, concrete floodwalls, utility relocations, rapidly deployable flood projection gates, and environmental permitting assessment, as well as plant operations modifications and determination of an engineer's opinion of probable construction cost.

Keith A. Knight, P.E.

Senior Structural Engineer: Marine and Waterfront

Education

B.S./Civil Engineering, University of Florida

Registration

Professional Engineer – FL, GA, SC, TX, and Puerto Rico

Federal Highway Administration – 80-hour BITM 90 (Safety Inspection of In-Service Bridges)

Years of Experience

Total	With Firm
20	16

Background/Responsibilities

Mr. Knight has 20 years of experience in the design and construction of marine facilities and waterfront structures. His design experience includes ship terminals and port structures, waterfront parks, marinas, jetties, shoreline protection systems, dredging and dredged material management facilities, pedestrian bridges, vehicular bridges, and drainage control structures. His construction inspection experience includes port structures, dry docks, marinas, bridges, bulk material handling systems, dredged material management sites, shoreline protection systems, and seawall inspections, among others. Mr. Knight's structural experience includes designs with carbon steel, stainless steel, timber, wood composites, concrete, vinyl, fiberglass (FRP), and aluminum. Additional specific experience includes structural modeling, seismic analysis, wave and current loading on structures, mass concrete, high-performance marine concrete, durability of concrete in a marine environment, underwater concrete, prestress concrete, concrete sheet pile, corrosion of steel structures in a marine environment, duplex stainless steel, welding, underwater construction, adhesive concrete anchors, steel sheet pile, vinyl sheet pile, composite sheet pile, soil anchors, helical anchors, segmental retaining walls, driven pile foundations and quality control of driven pile foundations, embankment seepage and stability analysis, and soil-structure behavior under lateral loads.

Project Experience

- DMMA M-8 Design and Permitting, St. Lucie County, FL (Ongoing) – Design of Florida Inland Navigation District's M-8 dredged material management area. Project included earthen dike with toe-drain, steel box weirs, aluminum access walkway, access roads, site drainage, stormwater treatment pond, and permanent pipeline to discharge dredged material effluent back to the Intracoastal Waterway. Work includes cost estimate and contract documents/specifications.

- Rollover Pass Closure Construction Assistance, Galveston County, TX (Ongoing) – Construction assistance for the Texas General Land Office project to close Rollover Pass on the Bolivar Peninsula, near Galveston Texas. Project includes revised plans and specifications, submittal review, site observation, and general engineering-construction assistance. Provided engineer's cost estimate.

- Dredged Material Management Area BV-24A Design and Permitting, Brevard County, FL (Ongoing) – Design of dredged material management area BV-24A for the Florida Inland Navigation District. Design includes earthen dike, steel weirs, aluminum access walkway, access roads, drainage, stormwater treatment, discharge pipeline, etc. Work included all front end and technical specifications package plus engineer's cost estimate.

- Nassau County Intracoastal Waterway Reach I and Fernandina Harbor Maintenance Dredging, Nassau County, FL (Ongoing) – Engineer of record for Intracoastal Waterway maintenance dredging including alternative bid for Fernandina marina dredging.

- Dredged Material Management Area BV-4B, Brevard County, FL (Ongoing) – Design of dredged material containment site for the Florida Inland Navigation District. Project includes earthen dike with gravel blanket drain, steel weirs, aluminum walkway, settlement monitoring instrumentation, pipeline, access roads, drainage, and stormwater treatment.

- Eau Galle River and Elbow Creek Restoration Dredging, Brevard County, FL (Ongoing) – Design of a one million cubic yard muck dredging project in Brevard County. Work included a six-mile hydraulic dredging pipeline route incorporating an 18-inch diameter directional bore underneath a four-lane highway and a 36-inch jack and bore for underground pipeline crossings.

- U.S. Coast Guard Waterfront Facilities Inspections, various locations, U.S. (2017) – Performed structural load rating check for 50-year old, 300-ft long concrete pier at Coast Guard's Fort Macon facility. Work included review of inspection data, structural modeling, determination of berthing forces, and load rating of current structure.

- Norriego Point Shoreline Stabilization and Recreational Improvements, Destin, FL (2017) – Design of steel sheet pile barrier wall to stabilize channel banks and to prevent the filling of the channel by drifting sand.

- Eagle LNG Terminal Design, Jacksonville, FL (2016) – Prepared 50% design of LNG marine terminal located on the Saint Johns River in Jacksonville, Florida. Project included design of approximately 400 ft long pier, loading platform, mooring and berthing dolphins, ship gangway, berth dredging, and permanent dredged material management area. Work included calculation of berthing forces from ship berthing and mooring forces from wind loads, current loads, and passing ship effects. Terminal design accommodated small and mid-size LNG vessels up to 45,000 cbm (approximately 650 ft). Provided engineer's cost estimate.

- Dredged Material Management Area DU-9, Duval County, FL (2015) – Design for expansion of a dredged material containment site that included an earthen dike, access roads, pipeline, and drainage.

- Leesburg Seaplane Ramp and Waterfront Structures, Leesburg, FL (2015) – Structural engineer on the final design and construction drawings for a seaplane ramp and ancillary waterfront structures to service the Leesburg International Airport. Ancillary waterfront structures include a floating dock, gangway structures, and mooring buoys.

- Wooton Park Combination Seaplane/Boat Ramp Design, Lake County, FL (2014) – Design of 80-foot wide seaplane/boat ramp and dockage on Lake Dora in Tavares, Florida.

- FL-3 Dredged Material Management Area Construction Administration, Flagler County, FL (2014) – Construction administration of a 750,000 cubic yard capacity dredged material containment site. Work included project start-up, site observation, construction meetings, submittal review, payment application review, quality control, final inspection, and project closeout.

- Dredged Material Management Area NA-1, Nassau County, FL (2014) – Construction administration of $3.7 million dredged material containment site NA-1 on the Intracoastal Waterway near the Fernandina Beach Airport. Project included construction of an earthen berm with blanket and toe drains. Foundation preparation included installation of wick drains to speed settlement of dike over clay soils. Construction utilized dredged material taken from another containment site and transported by barge/truck to NA-1.

- Florida Power & Light (FPL) Seawall, St. Lucie County, FL (2014) – Structural design of steel sheet pile seawall to protect oceanfront facilities at FPL's nuclear power plant. Project included seawall design accommodating hurricane induced scour with wall penetration of a 12-foot diameter buried discharge pipe and analysis of different seawall material types.

- Dredged Material Management Area FL-3 Design and Permitting, Flagler County, FL (2013) – Design of dredged material containment site that included earthen dike slope stability analysis, dike drains, weir discharge system, weir access walkway, and access roads.

- Segmental Retaining Wall, St. Augustine, St. Johns County, FL (2013) – Design of approximately 300 linear feet of segmental wall along the Florida School for the Deaf and Blind campus shoreline. The design included helical piles to support wall foundation due to poor soils.

- Rollover Pass Restoration, Galveston County, Texas (2013) – Design of steel sheet pile wall and soil land bridge to block off tidal flow and fill a 200-foot wide manmade inlet on the Gulf of Mexico, thereby restoring the area to a natural state. Project included steel sheet pile walls, concrete armor unit coastal erosion protection, riprap erosion protection, and beach fill.

- Dredged Material Management Area O-7 Steel Box Weir, Martin County, FL (2013) – Design of two steel frame weirs 14 feet high with adjustable weir boards and timber access walkway. Work included structural steel design and modeling, design of concrete foundation to resist hydrostatic uplift forces, and design of an elevated timber access walkway.

- Dredged Material Management Area O-7 Concrete Bridges, Martin County, FL (2013) – Design of two concrete bridges required for construction access and future offloading of dredged material management area 0-7 in Martin County. Each bridge was an approximately 40-foot span and consisted of cast-in-place concrete deck supported by pre-stressed concrete girders with pile-supported abutments. Design work included 3-D structural modeling, determination of truck and vehicle loads, pre-stressed concrete pile design, concrete design and detailing, and preparation of drawings and specifications.

William Miller Jr., Ph.D., P.E.

Senior Coastal and Hydraulics Engineer

Education

Ph.D./Coastal and Oceanographic Engineering, University of Florida

M.S./Coastal and Oceanographic Engineering, University of Florida

B.S./Naval Architecture and Marine Engineering, University of Michigan

Registration

Professional Engineer — FL, GA

Years of Experience

Total	With Firm
22	13

Affiliations

American Society of Civil Engineers (ASCE)
ASCE Coasts, Oceans, Ports & Rivers Institute (COPRI)
COPRI, Ports and Harbor Committee
PIANC, U.S. Principal Representative to the Recreational Navigation Commission
Florida Engineering Society

Background/Responsibilities

Dr. Miller commands an advanced skill set for modeling and analysis of near shore and inlet hydrodynamics; hurricane surge; wave mechanics and loading; littoral processes; shoreline stability and protection; water quality in streams, estuaries, and marinas; sediment transport; and structure induced sediment scour, as well as engineering design of shore protection and navigation projects. His work includes the application of two-dimensional finite element models such as the U.S. Army Corps of Engineers' RMA2, RMA4, CGWAVE, and ADCIRC; the MIKE21 model suite; and the REFDIF, CGWAVE, and MIKE21 wave models. He has successfully applied these models for many locations throughout Florida (including applications for inlets, bridge hydraulic and flushing/circulation studies). Prior to joining Taylor Engineering, Dr. Miller served 21 years (active and reserve) as a Submarine Qualified, Nuclear Trained U.S. Naval Officer

Project Experience

▪ Risk MAP Regional Production and Mapping Program Support, FEMA Regions Nationwide, U.S. (Ongoing) – Lead coastal and hydraulics engineer for determination of FEMA flood levels and flood frequencies for the area around Lake Okeechobee due to Herbert Hoover Dike breaching. Conducted a statistical analysis and developed statistical procedures and programs to combine Herbert Hoover Dike fragility curves, Lake Okeechobee stage frequencies, and breach model results to determine Total Breach Rate for various lake stages and extrapolate flood levels for various return periods.

▪ Rayonier Mill Discharge Pipeline Replacement, Fernandina Beach, FL (Ongoing) – Lead coastal and hydraulics engineer. Developed hydraulic and wave model for the project site. Developed program to determine the hydraulic and wave loading on the discharge pipeline at Rayonier's Fernandina Beach plant.

▪ Canal Dredging Feasibility Study, Longboat Key, FL (Ongoing) – Advised and assisted in datum conversion and reconciliation for survey data based on tidal record and predictions.

▪ Norriego Point Shoreline Stabilization and Recreational Improvements, Destin, FL (Ongoing) – Senior coastal engineer to develop shoreline protection. The project includes revetment design and sheet pile wall wave load calculations.

▪ Cat Point Living Shoreline, Franklin County, FL (Ongoing) – Senior coastal engineer to develop shoreline protection. for engineering and environmental services, including field investigations and reporting, in support the Department of Environmental Protection's plan to construct breakwaters and create salt marsh habitat at Cat Point in Apalachicola Bay. Project included bathymetric and boundary surveys, natural resource investigations, preliminary engineering design and permit drawings, environmental permits acquisition, final design and construction documents, and bidding and construction administration services.

▪ South Florida Coastal Storm Surge Study, FEMA Region 4, FL (Ongoing) – Senior modeling advisor and reviewer for the FEMA Region IV storm surge study along the south Florida coast. Provided advice and conducted quality assurance reviews for the development and implementation of the computational mesh and modeling system to evaluate storm surge including the influence of wave-induced water and current effects, and for validation of storm surge and wave model system for historical storm events. Researched and advised on climate change issues as required.

▪ Dock Wave Load Calculations, Northeast FL (2017) – Project manager and lead engineer. Established a variety of typical wave and water level conditions for northeast Florida, estimated wave uplift and horizontal forces for a generic fixed dock, and estimated horizontal wave forces and

vertical deflections for a floating dock. Developed proprietary model to determine fixed-dock loading and floating-dock response curves and longitudinal stresses.

- Review of Storm Surge Hazards at Coastal Nuclear Power Plants, Various Locations, U.S. (2017) – Subject matter expert on Taylor Engineering's independent and confirmatory tsunami, surge, and seiche analyses to support the NRC's hydrology safety reviews. Specifically review storm surge methodology and wave runup applications and estimate current and wave forces on various structures at sites in Gulf of Mexico and U.S Atlantic Coast including Connecticut, Massachusetts, and New Hampshire.

- Port Tampa Bay Eastport Expansion Hydrodynamic Assessment, Hillsborough County, FL (2016) – Project manager, performed a hydrographic study/flushing analysis of the potential expansion of the Eastport cargo area in the Port of Tampa Bay. Tasks included developing hydrodynamic and transport models that capture tidal flows and river flows; and evaluating the flushing characteristics of up to three (3) alternative configurations for the cargo area.

- Naples Bay Oyster Bed Restoration, Collier County, FL (2016) – Through modeling, estimating wind-generated wave heights as a function of wind speed, fetch, and water depth as well as estimating boat wake waves. As a result, the conceptual restoration design will include engineered wave attenuation features.

- Central Florida Coastal Storm Surge Study, FEMA Region IV, FL (2015) – Senior modeling advisor and reviewer for the FEMA Region IV storm surge study along central Florida coast. Provided advice and conducted quality assurance reviews for the development and implementation of the computational mesh and modeling system to evaluate storm surge including the influence of wave-induced water and current effects, and for validation of storm surge and wave model system for historical storm events. Research and advise on climate change issues as required.

- Northeast Florida/Georgia Coastal Storm Surge Study, FEMA Region IV, FL and GA (2015) – Senior modeling advisor and reviewer for the FEMA Region IV storm surge study along the Georgia and Northeast Florida coast. Provided advice and conducted quality assurance reviews for the development and implementation of the computational mesh and modeling system to evaluate storm surge including the influence of wave-induced water and current effects; for validation of storm surge and wave model system for historical storm events; and for production model simulations for the project. Researched and advised on climate change issues as required.

- Elba Island LNG Facility Seawall Analysis, Savannah, GA (2014) – Project manager for the preparation of a letter report on the coastal conditions (design water levels, wave heights, and wave periods), recommended seawall crest elevation, estimated wave loads on the seawall, and maximum expected wave scour at the seawall.

- City of Jacksonville Fire Station Dock, Duval County, FL (2013) – Lead engineer and project manager to update coastal engineering design parameters for a pile-supported dock structure and determined dock design loads due to waves and currents. Developed special calculation methods for grated deck loads.

- South Carolina Coastal Storm Surge Study, Coastal Counties, SC (2012) – Project manager for a study to estimate surge flood levels along the coastal counties of South Carolina. Directed and coordinated hydrodynamic and wave model development, application, and evaluation to estimate final still-water levels. Conducted data and modeling methodology evaluations and presentation to federal and local agencies.

- Review of Surge Analysis, U.S. Nuclear Regulatory Commission (NRC) Proposed Salem Hope Creek Project Site, NJ (2011) – Conducted an expert review and evaluation of methods and analyses conducted for storm surge and seiche components of a proposed nuclear site application submitted to the NRC. Specifically, reviewed storm surge methodology and wave runup applications.

- Northeast Florida/Georgia Storm Surge Pre-Study, FEMA Region IV, FL and GA (2011) – Task manager for a study to collect data and evaluate storm surge model characteristics in preparation of conducting storm surge studies over Georgia and northeast Florida. Coordinated data collection, including identification of significant geographical features and identification of local points of contact. Directed and coordinated hydrodynamic model sensitivity studies to determine optimum mesh resolution.

- SLFPA-E T-Wall Scour Analysis, LA (2010) – Evaluated the wave scour susceptibility of a T-wall atop a levee system for the Southeast Louisiana Flood Protection Authority–East. The analysis considered multiple wave heights and surge levels and applied vertical wall scour equations to estimate the likely amount of scour at the T-wall.

- San Juan Waterfront Pier Design, San Juan, Puerto Rico (2010) – Task manager and lead engineer for the coastal conditions estimates (surge, waves, winds) for the waterfront redevelopment. Estimated the coastal conditions and current and wave forces on boat piers, shoreline revetments, and a pedestrian bridge within the harbor.

Lori S. Brownell, P.E.

Director of Waterfront Engineering

Education

M.S./Civil & Environmental Engineering, University of Wisconsin-Madison

B.S./Civil Engineering, University of Wisconsin-Madison

Dredging Engineering Short Course, Texas A&M University

Florida Engineering Leadership Institute

Registration

Professional Engineer — FL

OSHA HAZWOPER — U.S.

Transportation Worker Identification Credential — U.S.

Years of Experience

Total	With Firm
18	18

Affiliations

American Society of Civil Engineers (ASCE)

ASCE Coasts, Oceans, Ports, & Rivers Institute; Treasurer (2014-2018)

Florida Engineering Society

National Society of Professional Engineers; Honor Awards Task Force (2012-2017)

Society of American Military Engineers

Western Dredging Association

Background/Responsibilities

As director of the waterfront engineering group, Ms. Brownell leads a team dedicated to marine structures engineering, coastal structures, civil and dredging engineering, and waterfront facilities design. Ms. Brownell has hands-on planning, permitting, design, and construction administration experience for numerous waterfront, marine, and dredging-focused projects within the southeastern United States.

Project Experience

- Newton Park Access Channel Dredging and Muck Sediment Disposal, Lake Apopka, FL (Ongoing) – Project manager for engineering design and permitting for St. Johns River Water Management District project to dredge muck sediment from the park access channel and adjacent areas with the dredged sediment used to cap contaminated soil on nearby District-owned marsh.

- DU-9 Dredged Material Management Area (DMMA) Expansion Construction Administration, St. Johns County, FL (Ongoing) – Project manager and engineer-of-record for expansion of the Florida Inland Navigation District's DU-9 DMMA.

- Intracoastal Waterway Dredging in South Lake Worth Lagoon, Palm Beach County, FL (Ongoing) – Project manager and engineer-of-record to maintenance dredge 4.3 miles of the ICWW immediately south of Lake Worth Inlet. The project coordinated bathymetric, magnetometer, utility, geotechnical, and natural resource surveys; developed preliminary engineering design; prepared and submitted state and federal permit applications; and coordinated with regulatory agencies.

- DU-9 Dredged Material Management Area Permitting and Final Design, Duval County, FL (2017) – Project manager and engineer-of-record for the permitting, design, and construction administration of a 100-acre site that will have a storage capacity in excess of one million cubic yards of material.

- Permitting and Final Design of the BV-4B Dredged Material Management Area, Brevard County, FL (2015) – Assisted with the permitting, design, and construction administration of a 101-acre site that will have a storage capacity in excess of one million cubic yards of material.

- St. Lucie County Intracoastal Waterway Reach I Dredging, St. Lucie County, FL (2015) – Assisted with the development and implementation of a multi-phase project to permit, plan, and dredge 12 miles of Intracoastal Waterway in St. Lucie County.

- Dredged Material Management Plan (DMMP) Update, St. Johns and Flagler Counties, FL (2017) – Assisted with the update of the original St. Johns and Flagler counties' DMMPs, including review of historical documentation, dredging history and projections, and dredged material management strategies for maintenance of the 50-year storage requirement.

- Northeast Florida Dredged Material Management Plan (DMMP) Update, Nassau and Duval Counties, FL (2016) – Project manager for the update of the 1986 Nassau and Duval counties' DMMPs, including review of historical documentation, dredging history and projections, and dredged material management strategies for maintenance of the 50-year storage requirement. The Nassau DMMP update added the federal channel from the south end of the Fernandina Harbor project north to the Florida-Georgia state line to the AIWW management plan area and reset, for FIND planning purposes, mile 0 of the AIWW at the state line.

- Construction Administration for Intracoastal Waterway Deepening, Broward County, FL (Ongoing) – Project manager and construction administrator for the deepening an 11,200 ft long segment of the waterway from -10 feet to -15 feet mean low water. Dredging contractor removed approximately 180,000 cy of material, dewatered at a six-acre Port Everglades temporary dredged material management area, and offloaded material to local area commercial projects. Project

required coordination with multi-disciplined agencies. Project was completed approximately five months ahead of schedule and received an Award of Excellence from the Marine Industries of South Florida. Construction value totaled approximately $19.5 million.

- Intracoastal Waterway Deepening in Vicinity of the Port of Palm Beach, Palm Beach County, FL (2015) – Project manager and construction administrator for the permitting, final design, and construction administration of the deepening project in vicinity of the Port of Palm Beach. Project entailed the removal of approximately 131,000 cubic yards of material, transfer of material to the Peanut Island dredged material management area, and submerged natural resources mitigation. Total construction value of approximately $2 million.

- Dania Cutoff Canal Deepening, Broward County, FL (2013) – Project manager, engineer-of-record, and construction administrator for the removal of approximately 105,000 cubic yards of material from the Dania Cutoff Canal. Project required detailed coordination with the U.S. Army Corps of Engineers, Florida Department of Environmental Protection, Broward County, and Port Everglades. Total construction value of approximately $7.1 million.

- Crossroads Maintenance Dredging, Martin County, FL (2013) – Project manager, engineer-of-record, and construction administrator to hydraulically remove approximately 50,000 cubic yards of material and transfer to the existing M-5 dredged material management area. Total construction value of approximately $1.1 million.

- Intracoastal Waterway (ICWW) Maintenance Dredging in vicinity of Ponce de Leon Inlet, Volusia County, FL (2013) – Project manager, engineer-of-record, and construction administrator for the final design and construction administration of the hydraulic dredging project that involved the removal of approximately 200,000 cubic yards of material from the ICWW and transfer to the existing MSA 434 dredged material management area. Total construction value of approximately $1.5 million.

- NA-1 Permitting, Design, and Construction Administration, Nassau County, FL (2013) – Project manager for the permitting and design of an island 16-acre dredged material disposal area located immediately west of the Fernandina Beach Municipal Airport.

- Okeechobee Waterway Maintenance Dredging, Martin County, FL (2012) – Project manager, engineer-of-record, and construction administrator for the permitting, final design, and construction administration of the Okeechobee Waterway maintenance dredging project that involved the removal of approximately 8,500 cubic yards of material from Route 1 and Route 2 of Lake Okeechobee. Total construction value of approximately $500,000.

- O-7 Permitting and Design, Martin County, FL (2011) – Project manager for the permitting and design of an upland dredged material disposal area located on the north bank of the Okeechobee Waterway in Martin County.

- M-5 Permitting and Design, Martin County, FL (2011) – Project manager, engineer-of-record, and construction administrator for the permitting, design, and construction administration to offload approximately 365,000 cubic yards of material from an island dredged material management area for ultimate beach disposal.

- Borrow Pit Regulatory Coordination, Broward County, FL (2011) – Project manager for regulatory coordination and identification of issues for deposition of dredged material into upland/freshwater Broward County borrow pits.

- SJ-14 Assessment and Remediation, St. Johns County, FL (2011) – Project manager for the assessment and remediation of 43 acres of wetland impact resulting from a contractor spill of dredged material slurry outside the containment basin.

- Jupiter Intracoastal Waterway Dredging, Palm Beach County, FL (2011) – Project manager, engineer-of-record, and construction administrator for the maintenance dredging of approximately 66,000 cubic yards of sediment from the Intracoastal Waterway in vicinity of the Jupiter Inlet. The project involved detailed coordination with the Jupiter Inlet District and local area and state regulatory agencies.

- Atlantic Intracoastal Waterway Dredged Material Management Plan, Norfolk, Virginia to St. Johns River, FL (2011) – Assistant project manager (in close coordination with the U.S. Army Corps of Engineers, Wilmington District) to develop a dredged material management plan along the Atlantic Intracoastal Waterway, from Norfolk, Virginia to Jacksonville, Florida.

- Port Everglades Open-Water Dredged Material Disposal Site (ODMDS) Investigation, Broward County, FL (2011) – Taylor Engineering employed the Automated Dredging and Disposal Alternatives Modeling System (ADDAMS) to evaluate dredged material placed into the one square nautical mile ODMDS site located northeast of Port Everglades Harbor.

Jerry W. Scarborough, P.E.

Senior Advisor

Education

B.S./Civil Engineering, University of South Florida

Registration

Professional Engineer — FL

Honors

USACE, Superior Civilian Service Award, 2015
FSBPA, Richard Bonner Award, 2015
USACE, de Fleury Bronze Medal, 2012
USACE, Superior Civilian Service Award, 2009
USACE, EEO Supervisor of the Year, 2008
USACE Jacksonville District, Engineer of the Year, 1994

Years of Experience

Total	With Firm
35	1

Background/Responsibilities

Mr. Scarborough joined Taylor Engineering in February 2016 as a senior advisor to the waterfront group after 34 years of service with the U.S. Army Corps of Engineers (USACE) Jacksonville District. For the last 14 years of his USACE career, Mr. Scarborough was the Chief of the Water Resources Branch, Programs and Project Management Division. He was responsible for all navigation, coastal, and flood control projects in the Jacksonville District, including all operations and maintenance of USACE's navigation projects and dredging for the U.S. Navy and U.S. Marine Corps. At the time of his retirement in January 2016, he was providing oversight on 85 active planning, engineering, design, and construction projects for harbor improvements, dams, bridges, levees, and shoreline protection. The average annual value of projects totaled approximately $200 million.

Project Experience

- DU-9 Dredged Material Management Area (DMMA) Expansion Construction Administration, St. Johns County, FL (Ongoing) – Senior advisor for construction administration for the Florida Inland Navigation District's DU-9 DMMA expansion.

- Vilano/South Ponte Vedra Beach ICWW Maintenance Dredging Modification, St. Johns County, FL (2017) – Project Manager to facilitate and assist with coordination between FIND, USACE, FDEP and other entities to modify the maintenance dredging disposal area. In response to damage caused by Hurricane Matthew, the modification allowed placement of sand on eroded beaches north of St. Augustine Inlet.

- Dredged Material Management Area BV-24A Design and Permitting, Brevard County, FL (Ongoing) – Senior advisor for design, permitting, and bid assistance for the Florida Inland Navigation District's BV-24A dredged material management area.

- Crossroads Maintenance, Sediment Basin and Channel Realignment Dredging, Martin County, FL (Ongoing) – Senior advisor for design and permitting of maintenance, sediment basin, and widener dredging at the eastern end of Okeechobee Waterway Cut 1 (the Crossroads). Project included feasibility evaluation of three channel realignment alternatives to realign the OWW Cut-1 and Cut-2 channel to follow naturally deeper water to reduce future maintenance intervals and costs, and design of selected alternative..

- Nassau County Intracoastal Waterway Reach I and Fernandina Harbor Maintenance Dredging, Nassau County, FL (Ongoing) – Senior Advisor for engineeering design, permitting support, and project coordination for maintenance dredging this segment of the waterway.

- Construction Administration for Intracoastal Waterway Deepening in Broward County, Broward County, FL (Ongoing) – Senior Advisor in support of construction administration of this extensive navigation project.

- Jupiter Intracoastal Waterway Dredging, Palm Beach County, FL (2017) – Senior advisor for engineering and environmental services for the Intracoastal Waterway between County Road 707 and U.S. Hwy 1 bridges in Jupiter with dredged material placement on Atlantic Ocean beaches.

- Seagrass Mitigation Site Evaluation, Various Counties, FL (2016) – Senior advisor for identification of potential seagrass mitigation sites on FIND- and USACE-controlled properties.

- Intracoastal Waterway Dredging in South Lake Worth Lagoon, Palm Beach County, FL (Ongoing) – Senior advisor for engineering design and permitting support for maintenance dredging 4.3 miles of the ICWW immediately south of Lake Worth Inlet.

- St. Lucie County Intracoastal Waterway Reach I Dredging, St. Lucie County, FL (2017) – Senior Advisor for engineering design and permitting support for maintenance dredging the waterway near Fort Pierce Harbor and placing the sand on the beaches south of the harbor.

Previous Experience

Mr. Scarborough was actively involved in the oversight and implementation of the following projects while serving with USACE:

Navigation Projects – Ports and Harbors

- Miami Harbor Deepening – First navigation project in the southeast deepened to 50 feet in anticipation of the opening of the improved Panama Canal. The project Involved considerable rock dredging and environmental challenges.
- Jacksonville Harbor Deepening – Successful completion of a study leading directly to congressional authorization and design funding for a 13-mile deepening project. Also led efforts for the justification, approvals, funding, and construction completion of the deepening of the entire 20-foot channel to 40 feet.
- Jacksonville Harbor Mile Point – Successful completion of a study leading directly to congressional authorization and construction implementation of a much needed solution to navigation restrictions impeding the full utilization of Jacksonville Harbor.
- Canaveral Harbor – Assisted Port Canaveral in completing a study leading directly to congressional authorization for port deepening and widening. Led efforts for preparation and approvals of the first Section 1016 (Assumption of Maintenance) of WRDA 2014 agreement in the country.
- Manatee Harbor – Completion of channel deepening and widening including expanded turning basin. Successful in obtaining new start authorization for study of additional harbor improvements.
- Port Everglades Harbor – Successful completion of a study obtaining approval of deepening the project to 48 feet. Extremely intense negotiations with federal and state agencies over environmental issues. Obtained design funding to proceed directly into preparation of construction plans and specifications.
- Palm Beach Harbor (Lake Worth Inlet) – Successful completion of a study leading directly to congressional authorization of a 39-foot project.
- Fort Pierce Harbor – Successfully deepened and widened Fort Pierce Harbor to a project depth of 28 feet.

Navigation Projects – Ports and Harbors - Miscellaneous

- San Juan Harbor, Puerto Rico – Completion of channel deepening and widening. Successful in obtaining new start authorization for study of additional harbor improvements.
- Periodic maintenance of the following deep draft harbors to restore the channels to their authorized dimensions: Tampa, Jacksonville, San Juan, Canaveral, Palm Beach, Miami, Port Everglades, Manatee.
- Periodic maintenance of the following shallow draft harbors/inlets to restore the channels to their authorized dimensions: St. Augustine Harbor, Ponce De Leon Inlet, St. Lucie Inlet, Intracoastal Waterway, Gulf Intracoastal Waterway.
- Mayport, Florida – Completed deepening of the Mayport channel to 50 feet in support of national security and the Navy's efforts to bring in a nuclear carrier.
- Periodic maintenance of the following military channels in support of national security: Kings Bay, Mayport, Canaveral, Key West.
- Miami River – Successfully dredged the Miami River to remove contaminated sediments and dispose of the material in an environmentally acceptable manner after 20+ years of study efforts.

Shore Protection Projects

- Flagler County – Successful completion of study obtaining approvals to proceed with first beach nourishment.
- Nassau County – Completed construction of first nourishment of federally authorized beach project.
- Dade County – Completed periodic renourishments of federally authorized beach project. Actively participated in efforts to locate additional sand sources for depleted offshore borrow sites leading to study of southeast Florida domestic sources versus non-domestic sources.
- Completed periodic renourishments of federally authorized beach projects:
  - Duval County
  - St Johns County
  - Fort Pierce Beach
  - Martin County
  - Pinellas County
  - Sarasota County

Jenna Phillips, E.I.

Project Engineer/
Sarasota Office Manager

Education

M.S./Ocean Engineering, Florida Institute of Technology

B.S./Ocean Engineering, Florida Institute of Technology

Registration

Engineer Intern – FL

Open Water Certified Diver - National Association of Underwater Instructors (NAUI)

Years of Experience

Total	With Firm
11	2

Affiliations

American Shore & Beach Preservation Association – Science & Technology Committee Member

American Society of Civil Engineers (ASCE) – Energy, Environment, and Water Policy Committee Member

Coastal, Oceans, Ports, and Rivers Institute (COPRI), ASCE – Policy Committee Chair

Western Dredging Association (WEDA)

Background/Responsibilities

Ms. Phillips has more than ten years experience on projects involving coastal and waterfront structure design, development of coastal loads, structural assessment and rehabilitation, beach design and renourishment, dredging, and hydrodynamic modeling in the United States, Puerto Rico, and Caribbean. She manages projects, prepares construction drawings and specifications, and performs construction oversight and monitoring for large and small coastal and marine engineering works. Ms. Phillips has worked on a variety of living shoreline, artifiical reef and nature-based design projects.

Ms. Phillips is experienced with Microsoft Office and Project, ArcGIS, AutoCAD, and MATLAB software applications; CEDAS-GENSIS, Beach-fx, STWAVE, RMAP, SBEACH, ACES, and SMS models. She is also familiar with application of prevailing engineering codes and specifications such as the Florida Building Code, ASCE-7, ACI 318, AISC Steel Manual, and the National Design Specification for Wood Construction to engineering design and has extensive experience applying applications outlined in the U.S. Army Corps of Engineers Coastal Engineering Manual (CEM).

Project Experience

- Casey Key Shoreline Stabilization Study, Sarasota County, FL (Ongoing) – Project manager responsible for conducting forensic field investigation of shoreline along Casey Key Rd. and adjacent revetment fronting the Gulf of Mexico. The project includes extensive topside and underwater field investigation, development of interim emergency alternatives, permitting, long-term alternative assessment, design, and construction administration. The project requires stakeholder outreach and county commission meeting updates.

- Canal Dredging Feasibility, Design, Permitting, and Construction, Longboat Key, FL (Ongoing) – Project manager leading all aspects of canal dredging feasibility study and construction within the town of Longboat Key. Study evaluated 70 residential canals. Collected field data (to include bathymetric soundings, sediment samples) collection characterized the canal system existing conditions. Evaluated historical dredging records, determined dredging volumes, locations, disposal options and probable costs. Facilitated the creation of a GIS database with results of the study, property appraisal data, historic aerials, and other geo-referenced information for the Town's use in future project tracking. Lead efforts to coordinate stakeholder outreach meetings with the town and identified funding options. Responsible for natural resource surveys, project planning, dredging design, permitting, dredged material management design, and construction administration for dredging 16 priority canals identified in the feasibility study.

- Lido Beach Interim Emergency Fill Alternatives, Sarasota, FL (Ongoing) – Project manager responsible for evaluation of alternative designs, permitting requirements, and funding sources; preparation of final designs; and construction administration services for an emergency interim fill project on Lido Key Beach for the City of Sarasota.

- Greer Island Beneficial Use and Channel Stabilization, Longboat Key, FL (Ongoing) – Project manager leading field investigation, evaluation of alternatives, developing dredge cut volumes and design alternatives, permitting, and construction administration. Project entails maintenance of an existing interior channel and removal of portions of a sand spit that has migrated inland along the interior of Longboat Pass.

- Venice Beach Renourishment 2016 Physical Monitoring, Venice, FL (Ongoing) – Project manager for engineering analyses of beach profile surveys and preparation of report documenting performance of the 2015 Venice Beach Federal Beach Renourishment project.

- Venice Beach Renourishment Environmental Monitoring, Venice, FL (Ongoing) – Project manager for post-construction (2016-18) piping plover and marine turtle monitoring and reporting. Responsible for escarpment monitoring and beach tilling prior to start of turtle nesting season.

- Diamond Sands Marina Design and Engineering, St. Lucie County, FL (Ongoing) – Project manager for structural design and permitting assistance for a 45-slip marina on Hutchinson Island.
- U.S. Coast Guard Waterfront Facilities Inspections, various locations, U.S. (Ongoing) – Task manager leading a team of engineers and divers to conduct topside and underwater inspections of waterfront structures and preparation of inspection reports providing structural condition assessment and repair recommendations. Inspected structures included fixed and floating docks, piers, bulkheads, revetments, seawalls, boat ramps, breakwaters, pile supported concrete wharfs, and marine railways.
- 440 West Condominium Revetment Rehabilitation, Clearwater, FL (Ongoing) – Project manager providing engineering and permitting services to rehabilitate a rock revetment protecting the gulf-front condominium. Services included field condition assessment, repair design, permit acquisition, bid assistance and construction administration.
- Gulf Intracoastal Waterway Dredged Material Management Plan, Southwest FL (Ongoing) – Project manager responsible for preparation of dredged material management plan for the GIWW for the West Coast Inland Navigation District. The plan included projections of maintenance dredging volume for a 50-year period, inventory of the District's dredged management area property and easements, discussion of possible storm impacts on the waterway and adjacent inlets, and review of all existing Noticed General Permits and historic Regional Waterway Management System records to characterize potential impacts to secondary and tributary channels.
- Eau Gallie River and Elbow Creek Dredging Project, Brevard County, FL (Ongoing) – As task manager working directly under the engineer-of-record, involved in all facets of the project including planning, design, and implementation of a dredging template. The template reflects installation of a four-mile pipeline route, directional drilling locations, detailing of the dredged material management area (DMMA) for dredge material decant and treatment, and final disposal. Assisted with coordination with private land owners adjacent to the dredging, pipeline, and DMMA site through execution of land use agreements, dredging waivers for waterfront properties, and attendance at public stakeholder outreach meetings.
- Sykes Creek Dredging Engineering and Permitting Services, Brevard County, FL (Ongoing) –Project manager assisting project manager with design, permitting, construction drawings and specifications for the dredging of Sykes Creek to remove muck and provide environmental restoration. The project will deposit the dredged muck material within a refurbished dredged material management area.
- Ted Sperling Park Boardwalk Replacements, Sarasota County, FL (Ongoing) – Project manager for the replacement of three aging timber boardwalks within Ted Sperling Park located on the south end of Lido Key. Evaluating the existing structures, developing a design for replacement of each structure within the existing footprints, coordinating permitting exemptions, and conducting construction phase services.
- Naples Bay Oyster Bed Restoration, Collier County, FL (2017) – Project manager providing scientific and engineering services to analyze existing data, perform wave modeling calculations, perform field reconnaissance and reef siting analysis, permitting assistance, and prepare shovel-ready construction drawings for restored oyster habitat. The project includes design, permitting, and construction of a segmented breakwater to provide protection to newly constructed oyster reefs.
- Bayfront Park Living Shoreline Conceptual Design, Longboat Key, FL (2017) – Project manager for conceptual design, engineering design and permitting cost estimate, and supporting documentation for a living shoreline project grant application for the Town of Longboat Key's Bayfront Park on Sarasota Bay.
- Coastal Engineering and Environmental Services for City of Venice, Venice, FL (2017) – Project manager for on-call services related to the City's federal beach project, canal dredging, grant funding, and marine structures.
- Dredged Material Management Area BV-24A Field Investigation and Preliminary Design, Brevard County, FL (2016) – Assisted project manager in updating the DMMP, evaluated the dredged management material area (DMMA) for adequate volume capacity, designed an alternate pipeline route from the Intracoastal Waterway to the DMMA, and provided calculations for dewatering timeframes through the box weir system.

Christopher B. Ellis

Environmental Services Group Leader

Education

B.S./Environmental Science and Aquatic Resources, Virginia Polytechnic Institute and State University

Registration

Authorized Gopher Tortoise Agent

Years of Experience

Total	With Firm
18	18

Background/Responsibilities

Mr. Ellis leads the company's environmental services group. In addition he provides environmental expertise on a wide variety of projects including wetland delineation and habitat characterization, wetland mitigation design and monitoring, ecosystem restoration, state and federal permitting, threatened and endangered species consultation, National Environmental Policy Act (NEPA) documentation, submerged resource surveys, water and sediment sampling and data evaluation, and Phase I and II environmental site assessments.

Project Experience

- Summer Haven River Restoration, St. Johns County, FL (Ongoing) – Provided construction observation and agency coordination services during construction of a 7-acre beach nesting bird habitat creation area within spoil island MSA-233. Maintained solar-powered birdcall and electric fence systems designed to attract least terns and protect the nesting colony from mammalian predators. Provided post-construction shorebird and seabird monitoring services.

- Navigation Channel and Fender Design Under Alt A1A and Railroad Bridge, Palm Beach County, FL (Ongoing) – Project manager for the design and permitting of a new navigation channel and fender system under two bridges crossing the Loxahatchee River in Jupiter, Florida.

- King Street Over San Sebastian River Bridge Hydraulics Study, St. Augustine, FL (Ongoing) – Led field effort to install and retrieve tide gauges to record site-specific tidal data to support hydraulic model development.

- State Road 5 (US 17) Over Broward River Bridge Hydraulics Study, Duval County, FL (Ongoing) – Led field effort to install and retrieve tide gauges to record site-specific tidal data to support hydraulic model development.

- Chain of Lakes Blueway Trail Boat Bypass, Palm Beach County, FL (Ongoing) – Led field investigation comprising wetlands delineation, habitat evaluation, benthic survey including submerged aquatic vegetation, and listed species assessment. Developed planting to stabilize the shoreline and enhance wildlife habitat.

- Legendary Yacht Club Dredging Design and Permitting, Destin, FL (Ongoing) – Prepared evaluation of permitting requirements, including natural resources impact analyses and mitigation strategy, for navigation channel relocation.

- DMMA M-8 Design and Permitting, St. Lucie County, FL (Ongoing) – Led natural resources field investigation effort to support engineering design and permitting for Florida Inland Navigation District's M-8 dredged material management area. Tasks included habitat characterization, listed species assessment, gopher tortoise survey, endangered plant survey, and seagrass survey.

- Cat Point Living Shoreline, Franklin County, FL (Ongoing) – Providing environmental services oversight including field investigations and reporting in support the Department of Environmental Protection's plan to construct breakwaters and create salt marsh habitat at Cat Point in Apalachicola Bay. Project included bathymetric and boundary surveys, natural resource investigations, preliminary engineering design and permit drawings, and environmental permits acquisition.

- Fort Pierce Shore Protection Project General Reevaluation Report, St. Lucie County, FL (Ongoing) – Prepared a General Reevaluation Report (GRR) to extend the shore protection project's authorization 50 years to 2070 and develop project design that decreases non-uniformity of shoreline erosion and increase the project nourishment interval. This was the first GRR in the nation

prepared by the non-federal interest for direct submission to the Secretary of the Army under authorization of Section 203 of the Water Resources Reform and Development Act (WRRDA) of 2014.

- HellCat Bay Wetland Reserve Plan of Operation, Putnam County, FL (Ongoing) – Prepared Wetland Reserve Plan of Operation for an 835-acre Natural Resources Conservation Service Wetland Reserve Easement. The project restored marsh and swamp hardwoods and pine flatwoods communities on property which had been developed for timber production, cattle grazing, and game management.

- Canal Dredging Feasibility Study, Longboat Key, FL (Ongoing) – Senior scientist for feasibility study for maintenance dredging up to 60 residential canals within the Town of Longboat Key.

- Dredged Material Management Area BV-24A Design and Permitting, Brevard County, FL (Ongoing) – Environmental task leader for the permitting of the BV-24A DMMA, a 112.52-acre area approximately 1,400 feet west of the Indian River shoreline and east of the southeast leg of the Valkaria Missile Tracking Annex.

- Norriego Point Shoreline Stabilization and Recreational Improvements, Destin, FL (Ongoing) – Environmental task leader for the completion of submerged aquatic vegetation surveys needed for the design of shoreline stabilization and recreational improvements on Norriego Point within East Pass.

- Moonshine Creek Oxbow Permitting, Palm Beach County, FL (Ongoing) – Project manager in the securing of the necessary regulatory permits to restore natural oxbow through placement of rock and dredging in the upper reaches of the northwest fork in the Loxahatchee River.

- BV-4B Design and Permitting, Brevard County, FL (Ongoing) – Environmental task leader assisting with field investigations and permitting of a dredged management material area on a 101-acre abandoned citrus grove adjacent to the Intracoastal Waterway.

- Okaloosa Island Project Greenshores, Okaloosa County, FL (Ongoing) – As senior scientist, developing conceptual design alternatives to create a living shorelines project to protect and enhance a 2,500 linear foot eroding shoreline along Choctawhatchee Bay. Project features include oyster, saltwater marsh, and coastal strand habitat restoration and enhancement. Performed wetlands delineation and submerged resources (e.g., seagrass, oysters) survey. Providing state and federal environmental permitting services.

- Artificial Reef Program Development, Okaloosa and Walton Counties, FL (Ongoing) – Senior scientist, developing environmental permits and biological assessments for regulatory authorization to construct artificial reefs in nearshore and offshore waters of Okaloosa and Walton counties in the FL panhandle. Project also includes development of comprehensive, long-term reef management plans and grant application assistance.

- BV-4B Permanent Pipeline, FL Inland Navigation District, Brevard County, FL (2017) – Environmental task leader completing a submerged resources survey in the vicinity of the proposed permanent effluent discharge pipeline from the BV-4B dredged material management area to the Intracoastal Waterway.

- Fort Pierce Harbor Natural Resources Survey, Fort Pierce, FL (2016) – Performed wetland and submerged natural resources survey along 6,000 ft shoreline at Harbor Pointe and Fisherman's Wharf.

- Seagrass Mitigation Site Evaluation, Broward and Miami-Dade Counties, FL (2016) – Project manager for identification of potential seagrass mitigation sites on FIND- and USACE-controlled properties.

- WindMark Beach Submerged Aquatic Vegetation (SAV) Survey, Panama City Beach, FL (2015) – Completed a SAV survey along the WindMark Beach shoreline to assess presence of seagrass for future planning and design of shoreline stabilization.

- SJ-14 Continued Salinity and Water Level Monitoring and Additional Soil Investigations, FL Inland Navigation District, St. Johns County, FL (2016) – Environmental task leader for continued monitoring and additional soil investigations associated with this 43-acre dredged management material area that was impacted by a dredged material slurry spill in 2006. The additional soil investigations will be the basis for a soil sampling plan.

David L. Stites, Ph.D.

Senior Environmental Scientist

Education

Ph.D./Aquatic Ecology, Emory University

M.S./Applied Biology and Aquatic Ecology, Georgia Institute of Technology

B.S./Biology, Eckerd College

Years of Experience

Total	With Firm
33	13

Affiliations

American Society of Civil Engineers (ASCE)
ASCE Coasts, Oceans, Ports & Rivers Institute (COPRI)
COPRI, Ports and Harbor Committee
PIANC, U.S. Principal Representative to the Recreational Navigation Commission
Florida Engineering Society

Background/Responsibilities

During his career, Dr. Stites has successfully implemented and managed a wide range of environmentally-focused water resource projects including environmental feasibility evaluations, diagnostic and pilot project studies, wetland and lake restoration design and implementation, wetland impact evaluation, mitigation, design and monitoring, state and federal environmental permitting, and document support for National Environmental Policy Act (NEPA) coordination activities. He has extensive experience presenting such issues to technical and public audiences, as well as negotiating environmental regulatory issues. His expertise is in freshwater, estuarine, and marine environmental matters including wetland restoration, water quality, endangered species, and associated permitting processes in Florida and around the U.S. His experience includes design and permitting of artificial reefs along Florida's Gulf and Atlantic coasts. He provides support for resolution of regulatory issues to Taylor Engineering and their clients, expert witness testimony, and mentors junior environmental staff. He is an active member and serves on the publication board of the National Association of Environmental Professionals.

Project Experience

- Coastal Construction Control Line Permit Variance, St. Johns County, FL (2017) – Project manager for successful Petition for Variance from Florida Administrative Code on coastal construction to allow seawall construction on the Atlantic Ocean seaward of a "conforming" structure.

- Chain of Lakes Blueway Trail Boat Bypass, Palm Beach County, FL (2017) – Environmental scientist responsible for state / federal permit application package development. Project provides preliminary design and Joint ERP application package for transfer canal and boat lift to move recreational boats across the S-155 water control structure, two concrete fishing piers, and a kayak portage trail.

- DMMA M-8 Design and Permitting, St. Lucie County, FL (Ongoing) – Task manager for permitting on project providing engineering design and state and federal environmental permits for Florida Inland Navigation District's M-8 dredged material management area.

- Waterway Dredging in South Lake Worth Lagoon, Palm Beach County, FL (Ongoing) – Permit application task manager and senior environmental scientist for maintenance dredging 4.3 miles of the ICWW immediately south of Lake Worth Inlet. The project coordinated bathymetric, magnetometer, utility, geotechnical, and natural resource surveys; developed preliminary engineering design; prepared and submitted state and federal permit applications; and coordinated with regulatory agencies.

- Quality Assurance/Quality Control Supervisor for Taylor Engineering Environmental and Permitting Projects, various locations (Ongoing) – Includes state and water management district environmental resource permit (ERP) applications and U.S. Army Corps of Engineers dredge and fill permit applications, among others. Responsible for permit application negotiations, environmental impact and mitigation designs, and related issues.

- Artificial Reef Program Development, Okaloosa and Walton Counties, FL (Ongoing) – Task leader and senior scientist in the preparation of environmental permit applications and environmental assessments for permits to place artificial reefs in the nearshore and offshore of Okaloosa and Walton counties in the Florida panhandle. Project includes nearshore beach-accessible artificial reefs and reefs well offshore in the Gulf of Mexico.

- Eau Gallie River and Elbow Creek Restoration Dredging, Brevard County, FL (Ongoing) – Lead scientist on the final design of the dredging template and dredged material management area, permitting, and construction documents for the St. Johns River Water Management District.

- Sykes Creek Dredging Engineering and Permitting, Brevard County, FL (Ongoing) – Lead scientist on the final design of the dredging template, permitting, and construction documents.

- Economic and Natural Resources Benefits Studies, various locations, TX (2017) – Since 2007, served as task manager and lead scientist on several studies to develop benefit-cost analyses for Texas General Land Office estuarine wetland restoration projects along the Texas Gulf Coast. Projects assessed included creation and restoration of salt marsh wetlands, protection of wetlands through construction of improved levees along the Port Aransas Ship Channel, creation of additional mangrove habitat for roosting shorebirds lost to natural channel erosion, creation of wetland habitat lost to subsidence in West Galveston Bay, protection of eroding Texas City Prairie Preserve shoreline, home to one of the last two remaining populations of the federally endangered Attwater's Prairie Chicken. Work included characterization of wetlands, characterization of unit area impact rates, and benefit valuation of protected, created, and enhanced wetlands.

- Salt Run Dredging Permit Modification, St. Augustine, FL (2016) – Project Manager for permit modification request and regulatory agency coordination to increase channel dredging volume.

- Expert Witness Services for Jacksonville Harbor Deepening, northeast FL (2016) – Provided expert witness support to the U.S. Army Corps of Engineers, Jacksonville District in defending a challenge to the FDEP permit issued for the deepening project. Reviewed USACE permit application documents and prepared for deposition. Work ceased when petitioner withdrew challenge before depositions began.

- Review of Mississippi River Sediment Diversion Proposals, various parishes, LA (2016) – Provided the National Fish and Wildlife Federation (NFWF) with independent technical reviews of grant proposals for Mid-Barataria and Mid-Breton sediment diversion projects and for the Mid-Basin diversions project management. Reviews addressed the scope of work, program management plan, procurement delivery methods, and cost estimates of each proposal and provided NFWF with guidance for proposal evaluation.

- Summer Haven River and Barrier Island Restoration, St. Johns County, FL (2014) – Senior scientist for development of restoration plans for Summer Haven River, an estuarine river bordering a barrier island, that was filled as a result of a storm-created breach in the barrier island. The two-phase project involved a feasibility evaluation followed by design and permitting to restore the river and barrier island ecosystem. The permitted design restores 33 acres of open water and shallow water/marsh habitat and 2.4 acres of coastal dune, and least tern nesting habitat. Close coordination with the Friends of Summer Haven River, a local non-profit organization, occurred throughout the project, which received state and federal permits in 2014.

- Eau Gallie River and Elbow Creek Dredging Feasibility Evaluation, Brevard County, FL (2014) – Served as lead scientist in the development and implementation of a multi-phase project to determine the feasibility, permit, plan, and dredge roughly 625,000 cubic yards of muck sediments from the Eau Galle River and Elbow Creek in Brevard County.

- Lake Apopka Dredging Feasibility Evaluation, Lake and Orange Counties, FL (2013) – Served as lead scientist in the development and implementation of a multi-phase project to determine the feasibility, permit, plan, and dredge roughly 280,000 cubic yards of muck sediments from Lake Apopka. Taylor Engineering recommended shoreline dredging and channel dredging near the Newton Park boat ramp on Lake Apopka and completing the dredging in phases or increasing SJRWMD's project construction budget prior to dredging.

- Environmental Impact Statement (EIS) for Jacksonville Harbor Channel Deepening, northeast FL (2013) – Project manager in the preparation of an EIS for a proposed 13-mile channel deepening project. Tasks included development of existing conditions and environmental consequences chapters, the cumulative impact section, 404b(1) statement, and other components.

- Rollover Pass Closure Feasibility Study, Phases I and II, Galveston County, TX (2013) – Lead environmental scientist and task manager for natural resources habitat assessments and salinity impact assessments of East Bay wetlands, preparation of USACE dredge and fill permit application and biological assessment, and ESA Section 7 consultation support for piping plover habitat.

Steven J. Schropp, Ph.D.

Vice President/Senior Scientist

Education

Ph.D./Oceanography, Texas A&M University

M.S./Biology, Texas A&M University

B.S./Marine Biology, Texas A&M University

Years of Experience

Total	With Firm
32	26

Affiliations

National Association of Environmental Professionals

Background/Responsibilities

Dr. Schropp's experience includes environmental permitting, mitigation and restoration planning, regulatory agency coordination, National Environmental Policy Act (NEPA) document preparation, sediment quality sampling and data evaluation, dredged material management, and Phase I and II environmental site assessments. After serving as a Vice President from 2000 to 2014, Dr. Schropp now holds a dual role as vice president/senior scientist and provides technical review, advisory, and quality control services.

Project Experience

- Mississippi Land Acquisition Grant Proposal Review, Various Counties, MS (Ongoing) – Performing independent review for the National Fish and Wildlife Foundation of grant funding proposal to support conservation land acquisition by the state of Mississippi.

- Rollover Pass Closure Construction Assistance, Galveston County, TX (Ongoing) – Project manager for plans and specifications revision and construction assistance for the Texas General Land Office project to close Rollover Pass on the Bolivar Peninsula.

- Fort Pierce Beach Shore Protection Project General Reevaluation Report, St. Lucie County, FL (Ongoing) – Prepared hardbottom monitoring summary and applied monitoring data to estimate impacts of beach nourishment on nearshore hardbottom.

- U.S. Coast Guard Waterfront Facilities Inspections, various locations, U.S. (Ongoing) – Providing technical and editorial review of inspection reports.

- HellCat Bay Wetland Reserve Plan of Operation, Putnam County, FL (Ongoing) – Providing quality assurance review of Wetland Reserve Plan of Operation documents for an 835-acre Natural Resources Conservation Service Wetland Reserve Easement.

- Boggy Bayou Headwaters Restoration, Okaloosa County, FL (Ongoing) – Providing technical and quality assurance review of the restoration plan that included dredging, beneficial use of dredged sediment for marsh creation, living shorelines, and recreation enhancements.

- Intracoastal Waterway Dredging in South Lake Worth Lagoon, Palm Beach County, FL (Ongoing) – Providing quality assurance review of environmental and permitting documents for the 4.3-mile long ICWW maintenance dredging immediately south of Lake Worth Inlet.

- Bubba Mills Wetland Reserve Plan of Operation, Hendry County, FL (Ongoing) – Senior scientist and quality assurance reviewer for the development of a Wetland Reserve Plan of Operation (WRPO) for a 2,914-acre wetland restoration project that will restore sugar cane fields and pasture to pre-development wet prairie, marsh and upland hammock conditions.

- Lonesome Island Wetland Reserve Plan of Operation, Highlands County, FL (Ongoing) – Senior scientist and quality assurance reviewer for the development of a Wetland Reserve Plan of Operation (WRPO) for a 4,078-acre wetland restoration project that will restore diked and drained citrus groves to pre-development wet prairie and marsh conditions.

- Fort Pierce Beach Shore Protection Project Biological Monitoring, St. Lucie County, FL (Ongoing) – Senior review and oversight of marine turtle and hardbottom (including artificial reef) data collection and data analyses to fulfill physical and biological project monitoring requirements for over 16 years.

- Economic and Natural Resource Benefit Study, various locations, TX (2017) – Prepared benefit-cost evaluations to assess and quantify benefits associated with natural resource protection, enhancement, and restoration projects along the Texas coast.

- Review of Mississippi River Sediment Diversion Proposals, various parishes, LA (2016) – Provided quality assurance review of reports to National Fish and Wildlife Federation (NFWF) about independent technical reviews of grant proposals for Mid-Barataria and Mid-Breton sediment diversion projects and for the Mid-Basin diversions project management.

- Woerner South Wetland Reserve Plan of Operation, Highlands County, FL (2016) – Senior scientist for the development of a Wetland Reserve Plan of Operation (WRPO) for a 3,167-acre wetland restoration project that will restore a sod farm to pre-development wet prairie and marsh conditions.

- Seagrass Mitigation Site Evaluation, Various Counties, FL (2016) – Project manager or senior scientist for studies identifying potential seagrass mitigation sites for the Florida Inland Navigation District in Brevard, Indian River, St. Lucie, Martin, Palm Beach, Broward and Miami-Dade counties. The identified sites may serve future mitigation needs associated with Intracoastal Waterway maintenance.

- Dredged Material Management Plan Update, St. Johns and Flagler Counties, FL (2016) – Lead scientist on the update of the Florida Inland Navigation District's 1989 and 1993 dredged material management plans, including review of historical documentation, dredging history and projections, and dredged material management strategies for maintenance of the 50-year storage requirement.

- Economic and Natural Resource Benefits Study and Beach User Survey, CEPRA Cycles 7 and 8, Various Locations, TX (2015) – Senior review for benefit-cost analyses for selected Cycles 7 and 8 construction projects and for beach user survey report.

- Summer Haven River Restoration, St. Johns County, FL (2014) – Project manager for design and permitting of a project to restore an estuarine river and marsh system that filled with sediment following a barrier island breach. Project included preliminary restoration design, acquisition of state and federal environmental permits, and acquisition of a state least tern incidental take permit.

- Water Supply Impact Study User Manual, Lower St. Johns River, FL (2014) – Prepared technical chapters describing methods for using ecological models to evaluate submerged aquatic vegetation, wetlands, and phytoplankton communities in the lower St. Johns River in Florida.

- Environmental Impact Statement (EIS) for Jacksonville Harbor Channel Deepening, Northeast FL (2013) – Senior scientist for technical review of the EIS sections (development of existing conditions and environmental consequences chapters, the cumulative impact section, 404b(1) statement, and other components) for a proposed 13-mile channel deepening project in the lower St. Johns River.

- Ecological Modeling for Jacksonville Harbor Deepening Project Impact Assessment, Lower St. Johns River, FL (2014) – Project manager for ecological modeling that evaluated effects of the St. Johns River channel deepening on plankton, submerged aquatic vegetation, wetland, fish, and benthic macroinvertebrate communities. The modeling supported an environmental impact statement for this federal project.

- Northeast Florida Dredged Material Management Plan Update, Nassau and Duval Counties, FL (2017) – Lead scientist on the update of the Florida Inland Navigation District's 1986 Nassau and Duval counties dredged material management plans, including review of historical documentation, dredging history and projections, and dredged material management strategies for maintenance of the 50-year storage requirement.

- Professional Services for St. Augustine Port, Waterway, and Beach District (District), St. Augustine, FL (2014) – Program manager for engineering and environmental support to the District for dredging, navigation, and waterways access projects since 1991. Senior advisor to the District since early 2014.

- Volusia County Artificial Reef Program, Volusia County, FL (2014) – Senior review of artificial reef program management plan.

- Seawall and Shoreline Infrastructure Improvements, Florida School for the Deaf and the Blind, St. Augustine, FL (2014) – Senior review of permitting and mitigation components of project to mitigate shoreline erosion, design and construct protective shoreline seawalls, and improve campus shoreline infrastructure including perimeter roadway, stormwater systems, and student waterfront access features.

E. SUMMARY OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	h. a. TOTAL	h. b. WITH CURRENT FIRM
David Ham, CH, CST III **Hydrographic Project Manager**	**Survey Field Party** **(Certified Hydrographer)**	**26**	**25**

15. FIRM NAME AND LOCATION *(City and State)*
Gustin, Cothern, & Tucker, Inc. | 121 Hart Street | Niceville, Florida 32578

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
Niceville H.S. / 1988 / Niceville, FL	

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

NSPS Certified Hydrographer #283
NSPS Certified Survey Tech III, #0711-4338
Hypack Certified
Trimble Business Center Certified
First Aid/CPR Certified
OPUS Projects Certified
USACE Hydrographic Survey Certification
Standard Form 85P Clearance (Pittsburgh)
NGS Digital Level Training
NGS Pages & Adjust Software Training
Anti-Terrorism Awareness Training
MicroStation/Inroads Advanced Training
AutoCAD Civil 3D Training
OSHA 10 Construction Safety Training

19. RELEVANT PROJECTS

	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
a.	Norriego Point Bndy/Hydro/Topo (Taylor Engineering) Destin, FL	2015-2016	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Multibeam hydro survey via Hypack data collection, Terrestrial Scanning, RTK GPS, leveling, angle and distance measurements, boundary survey, Mean High Water Line location. ($22,500). Hydrographic Project Manager responsible for data processing using Hypack and QA/QC		
b.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
	Panama City Beach Construction (Weeks Marine) Bay County, FL	2017	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Single Beam Hydrographic & Topographic Survey, Volume Computations, GPS Control, MicroStation Dgn & Dtm, detailed Survey Report. ($125,540) Hydrographic Project Manager responsible for data processing using Hypack and QA/QC		
c.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
	Walton County Beach Surveys (Mobile COE) Walton County, FL	2013	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Single Beam Hydrographic & Topographic Survey, MultiBeam Hydrographic Survey of Offshore Borrow Area, GPS Control, MicroStation Dgn & Dtm, detailed Survey Report. ($149,825) Hydrographic Project Manager responsible for data processing using Hypack and QA/QC		
d.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
	Dade County Beach Construction (Jacksonville COE) Pinellas County, FL	2013-2014	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Single Beam Hydrographic & Topographic Survey, Volume Computations, GPS Control, MicroStation Dgn & Dtm, detailed Survey Report. ($225,855) Hydrographic Project Manager responsible for data processing using Hypack and QA/QC		
e.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
	North Light Marina Mobile Mapping/Multibeam Survey Niceville, FL	2014	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Multibeam hydro survey, Mobile LiDAR, Terrestrial Scanning, RTK GPS, leveling, angle and distance measurements, AutoCAD Civil 3D, Point cloud, detailed Survey Report. ($18,500) Hydrographic Project Manager responsible for data processing using Hypack and QA/QC		

E. SUMMARY OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Horace Wayne Walker, Jr, RPLS **Vice-President/Contracts Manager**	**Professional Land Surveyor**	**38**	**36**

15. FIRM NAME AND LOCATION *(City and State)*
Gustin, Cothern, & Tucker, Inc. | 121 Hart Street | Niceville, Florida 32578

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
Banks H.S./1979/Birmingham, AL	**PLS: AL #19528/1993, AR #1736/2012, FL #5029/1991, KY #3981/2011, MS #02698/1997, MO #2013000047/2013, TX #6419/2013, WV #2338/2016**

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

NSPS Certified Federal Surveyor (CFedS) #1582
Trimble Business Center Certified
First Aid/CPR Certified
OPUS Projects Certified
USACE Hydrographic Survey Certification
Anti-Terrorism Awareness Training
Standard Form 85P Clearance (Pittsburgh)
NGS Digital Level Training
NGS Pages & Adjust Software Training
MicroStation/Inroads Advanced Training
AutoCAD Civil 3D Training
OSHA 10 Construction Safety Training

19. RELEVANT PROJECTS

	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
a.	Norriego Point Bndy/Hydro/Topo (Taylor Engineering) Destin, FL	2015-2016	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Multibeam hydro survey via Hypack data collection, Terrestrial Scanning, RTK GPS, leveling, angle and distance measurements, boundary survey, Mean High Water Line location. ($22,500). Contract/Project Manager in charge of Task Order Negotiation and daily project management		
b.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
	Panama City Beach Construction (Weeks Marine) Bay County, FL	2017	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Single Beam Hydrographic & Topographic Survey, Volume Computations, GPS Control, MicroStation Dgn & Dtm, detailed Survey Report. ($125,540) Contract/Project Manager in charge of Task Order Negotiation and daily project management		
c.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
	Walton County Beach Surveys (Mobile COE) Walton County, FL	2013	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Single Beam Hydrographic & Topographic Survey, MultiBeam Hydrographic Survey of Offshore Borrow Area, GPS Control, MicroStation Dgn & Dtm, detailed Survey Report. ($149,825) Contract/Project Manager in charge of Task Order Negotiation and daily project management		
d.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
	Dade County Beach Construction (Jacksonville COE) Pinellas County, FL	2013-2014	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Single Beam Hydrographic & Topographic Survey, Volume Computations, GPS Control, MicroStation Dgn & Dtm, detailed Survey Report. ($225,855) Contract/Project Manager in charge of Task Order Negotiation and daily project management		
e.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROF. SERVICES	CONST., IF APPLICABLE
	North Light Marina Mobile Mapping/Multibeam Survey Niceville, FL	2014	
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm Multibeam hydro survey, Mobile LiDAR, Terrestrial Scanning, RTK GPS, leveling, angle and distance measurements, AutoCAD Civil 3D, Point cloud, detailed Survey Report. ($18,500) Contract/Project Manager in charge of Task Order Negotiation and daily project management		

Summary of Qualifications

Name: John Adam Freeze
Title: Vice-President/Geologist

Education:

- B.A. Geology and Environmental Geosciences
  College of Charleston
  December 2005
  Major GPA 3.47; Overall GPA: 3.24

Professional Qualifications:

- OSHA 40-Hour HAZWOPER Training (October 2006)
- OSHA 8-Hour HAZWOPER Refresher Training (March 2017)
- OSHA 30-Hour Construction Safety Training (June 2016)
- First Aid/CPR/AED (January 2016)
- PADI Open Water Certification (August 2010)

Professional Experience:

Mr. Freeze joined Athena Technologies, Inc. (Athena) as a geologist in 2009. Prior to joining Athena, Mr. Freeze worked for 3 years as staff geologist for Golder Associates, Inc. and Handex Consulting & Remediation – SE, LLC. Since 2009, Mr. Freeze's role at Athena has evolved from a purely scientific role to a broader role which now includes the following responsibilities: directing and coordinating field crews (which are often comprised of both Athena employees and external clients); ensuring compliance with project-specific health and safety requirements; managing federal and private sediment sampling projects with contract values ranging from less than $20,000 to greater than $375,000; conducting quality assurance reviews of deliverables (e.g., reports, cost proposals, etc.); and geological data evaluation and reporting. Additionally, Mr. Freeze has exhibited proficiency with regards to the operation of field equipment and subsequent data manipulation using the following instruments and software programs: Champion TKO Global Navigation Satellite Systems, CEE Echo Dual-Frequency Fathometer, Trimble Differential Global Positioning Systems, Hypack Survey, RockWare LogPlot 7, Earthsoft EQuIS Professional, and gINT Professional.

Mr. Freeze also plays a key role in coordinating and facilitating a week-long field course (led by Dr. Walter Sexton) titled *Modern Clastic Depositional Environments*. The field course, which draws international and domestic professional geoscientists, presents modern analogues to ancient oil and gas reservoirs. During the course, the following geomorphological/depositional environments are visited and discussed: fluvial/floodplain, mixed-energy deltaic, barrier island and back-barrier, cuspate foreland, and estuarine. Mr. Freeze's role during the field course requires an in-depth understanding of coastal and fluvial processes, and the factors that can affect sedimentation in various environments.

Walter J. Sexton, Ph.D, P.G., Coastal Geologist/Sedimentologist

Dr. Sexton is a geologist/sedimentologist with 38 years of broad based professional experience and is the president and founder of Athena Technologies. His areas of expertise include marine sedimentation, pre-dredge environmental and geotechnical studies, modern stratigraphic studies, groundwater pollution, geomorphology, mineral exploration, shoreline erosion/nourishment, oil spill response and contingency planning, and coastal mapping studies.

Dr. Sexton has over 30 years of experience in providing geological expertise and vibracore expertise in support of dredging projects throughout the Atlantic and Gulf Coasts. He has overseen vibracore studies for harbor deepening/modification studies in Wilmington, NC, Charleston, SC, Savannah, GA, Jacksonville, FL, Port Canaveral, FL, Port Everglades, FL, and Pensacola, FL. He also has extensive experience in waterway and inlet navigation studies as well as geotechnical studies in support of beach renourishment projects.

Dr. Sexton is also a respected instructor in the field of coastal sedimentology and stratigraphy. He has been involved in research and instruction in marine settings and each year leads several week-long field seminars devoted to modern shorelines and their application to exploration geology in the petroleum geology.

Dr. Sexton will provide project oversight and geological expertise for this Contract.

Education

Ph.D., Sedimentology, University of S. Carolina (1987)
M.S., Coastal Geology, USC (1981)
B.S., Marine Science, USC (1977)

Memberships

American Association of Petroleum Geologists
Society for Sedimentary Geology
National Ground Water Association
American Shore and Beach Preservation Association

Certifications

Licensed Professional Geologist in Florida, #PG2594
Licensed Professional Geologist in S. Carolina, #569
Licensed Professional Geologist in N. Carolina, #678
Certified PADI International Open Water Diver
Licensed Captain - 100 Ton USCG Master, #666914

Tab 5. References

The following pages include reference contact information as well as testimonials, reference forms, and letters of reference attesting to Taylor Engineering's relevant past performance.

Jim Trifilio, Coastal Management Coordinator
(850) 651-7131
jtrifilio@co.okaloosa.fl.us

Okaloosa County Tourist Development Council
15450 Miracle Strip Parkway
Ft. Walton Beach, FL 32548

As Okaloosa County's project manager for Taylor Engineering's continuing services contract, Mr. Trifilio can attest to Taylor Engineering's services on over 25 task orders, including numerous inlet management initiatives (dredge permitting, monitoring, and Norriego Point stabilization), and associated projects such as beach restoration and borrow area dredging in the vicinity of the East Pass ebb shoal.

Richard Bouchard, Senior Coastal Program Manager
(772) 462-1710
bouchardr@stlucieco.org

Public Works Department
St. Lucie County
3150 Will Fee Road
Fort Pierce, FL 34982

As St. Lucie County's project manager for Taylor Engineering's continuing services contract, Mr. Bouchard can attest to Taylor Engineering's services. Since 1996, Taylor Engineering has assisted St. Lucie County with its coastal erosion problems along a 2.3-mile stretch of Fort Pierce Beach. Initial tasks assessed the local coastal processes and environmental concerns, applied numerical models to characterize the effect of the Fort Pierce Inlet deep water federal navigation project on the beach; revised the inlet sediment budget; achieved local, state, and federal governmental consensus on responsibilities and funding; defined the offshore sand source in the Atlantic Ocean; secured perpetual public-use easements; and established beach fill templates to minimize hardbottom and other environmental impacts.

Jerry Dixon, Chairman
(904) 824-0113
Jerry.Dixon@staugustineport.com

St. Augustine Port, Waterway, and Beach District
P.O. Box 4512
St. Augustine, FL 32085

In 1991, the St. Augustine Port, Waterway, and Beach District selected Taylor Engineering to serve as its engineer. Projects have ranged from establishment of designated anchorages, design and permitting of a dinghy dock, repair of damaged lens prisms for the historic St. Augustine Lighthouse, a hydrographic survey of Salt Run, a District Master Plan and new channel design and feasibility study.

Joe Nolin, Manager
(386) 248-8072
jnolin@co.volusia.fl.us

Ponce de Leon Inlet and Port District
515 South Atlantic Avenue
Daytona Beach, FL 32118

As Volusia County's project manager for Taylor Engineering's continuing services contract, Mr. Nolin can attest to Taylor Engineering's services over the past 22 years. Taylor Engineering has provided Volusia County with a wide variety of coastal engineering services focusing on the management of the Ponce de Leon Inlet and Volusia County's beaches to the south.

Mike Grella, Executive Director
(561) 746-2223
mgrella@jupiterinletdistrict.org

Jupiter Inlet District
400 N. Delaware Boulevard
Jupiter, FL 33458

Since 2002, Taylor Engineering has provided the Jupiter Inlet District with engineering design, permitting and bidding assistance, and construction-phase services for the Jupiter Inlet sand trap maintenance dredging and beach nourishment.

Mark Crosley, Executive Director
(561) 627-3386
mcrosley@aicw.org

Florida Inland Navigation District
1314 Marcinski Road
Jupiter, FL 33477

As the executive director of the Florida Inland Navigation District (FIND), Mr. Crosley can attest to Taylor Engineering's breadth and depth of services on a continuing services contract maintained since 1986. Supporting the District's effort to prepare and implement long-term dredged material management plans for 502 miles of federal navigation channels, Taylor Engineering has provided feasibility analyses, site design, dredging design, local, state, and federal environmental permitting; wetland delineation, mitigation planning, and monitoring; natural resource mapping and monitoring; Phase 1 and Phase 2 environmental site assessments; and construction administration services.

ATTACHMENT "B"
Project Specific Reference Form

Company under Review: Taylor Engineering, Inc.

RFQ Number & Title: 17-051
Professional Marine and Engineering Consulting Services Related to Artificial Reef Projects

Reference: Okaloosa County
(Name of Company giving Reference)

Name/Title: Jim Trifilio
(Name and Title of person giving Reference)

Telephone: 850-609-5382

Project: Artificial Reef Design, Permitting, and Program Assistance
(Project for which references are being provided)

Fax:

Team Members for this project: Michael Trudnak, P.E., Clifford Truitt, P.E., D.CE, D.Eng, David Stites, Ph.D., Christopher Ellis, Steven Schropp, Ph.D., Matthew Trammell, P.E., Duncan Greer, P.E., Yehya Siddiqui, E.I.

Firm's submitting proposals are responsible for providing completed Project Specific Reference forms with their proposal. Failure to provide the completed Reference Forms will result in proposal being deemed non-responsive. References must be for projects that are listed under Tab's # 4 & 6 of this Request for Qualifications. Minimum of three (3) references must be provided for specific/similar projects.

1. Describe the scope of work of the contract awarded by your company/agency to this contractor.

Taylor Engineering has provided many different services for the County. The most recent artificial reef project was a complicated multi-facted project that involved Eglin AFB. Not only were the expected issues dealt with admirably by Taylor Engineering but they also had to deal with Department of Defense security issues involving access to the AFB to collect reef material . The entire project went like clockwork and we deployed approximately 2,000 tons of re purposed concrete material. https://www.youtube.com/watch?v=BSAoAxds5g0

No.	Questions	Rating	Comments
2.	Rate the level of commitment of the firm to your project. Did they devote the time and management staff necessary for successful and timely work?	5	This was a very complicated project that involved multiple partners including Eglin AFB. Taylor Engineering performed their work flawlessly on time and on budget. They went well beyond what their contract required of them without additional cost. We are currently in Phase II of this "Concrete to Reefs" project with Eglin AFB with Taylor providing all required services. Couldn't be happier with their work. Taylor provided all aspects of this project including permitting, design and construction management.
3.	Rate the quality of customer service and the competence and accessibility of the personnel.	5	I can't count the number of times I have asked Taylor staff to participate in important meetings or calls without giving them reasonable notice. They have never failed to participate as the County needed them. In my 30+ years of experience in the field, I have never worked with more competent individuals.
4.	Rate the firm's interactive capability with your staff.	5	Taylor Engineering is effectively an extension of County staff. In truth I have a closer working relationship with Taylor staff than I do with County staff. They are top notch.
5.	Rate the firm's success at minimizing and controlling potential mistakes. Were there bid addendums, contract change orders, etc	5	Rarely have there been bid addendums or change orders and those that did occur where due to unforeseen events such as bad weather conditions etc.
6.	Rate the overall quality of the work.	5	Taylor Engineering's quality of work is irreproachable. They have worked for Okaloosa County for over 15 years and have never failed to provide a top notch product.
7.	Rate the comfort and confidence you had in the firm.	5	I am never concerned that something will "fall through the cracks" when Taylor Engineering is working on a project. I can focus on other aspects of my work knowing that Taylor will make sure we have a successful project.
8.	If you have a similar contract to undertake in the future, would the firm be considered? Yes x No	5	Without question.

Rating: 1=Poor 2=Fair 3=Average 4=Good 5=Excellent

PERFORMANCE SURVEY QUESTIONNAIRE

Proposer Information		Client/Reference Information
From: Jim Marino		To: Richard Bouchard, P.E.
Company: Taylor Engineering, Inc.		Company: St. Lucie County
Phone: 904-731-7040		Phone: 772-462-1710
Email: jmarino@taylorengineering.com		Email: bouchardr@stlucieco.org

Performance Survey of (project name): St. Lucie County Coastal Engineering Services	
Cost of Services: Over $6 million to date	Date Completed: Ongoing

Client:

Rate each of the criteria on a scale of 1 to 10, with 1 representing that you were very unsatisfied (and would never hire the company again) and 10 representing that you were very satisfied (and would hire the company again). Please rate each of the criteria to the best of your knowledge. If you do not have sufficient knowledge of past performance in a particular area, leave it blank. Once completed, return survey to the Proposer.

Criteria	Unit	Score
1. Ability to manage cost	(1 – 10)	10
2. Ability to maintain project schedule (complete/on-time/early)	(1 – 10)	9
3. Quality of workmanship	(1 – 10)	10
4. Professionalism and ability to manage	(1 – 10)	9
5. Close out process	(1 – 10)	9
6. Ability to communicate with all staff	(1 – 10)	9
7. Ability to resolve issues promptly	(1 – 10)	10
8. Ability to follow protocol	(1 – 10)	10
9. Ability to maintain proper documentation	(1 – 10)	10
10. Ability to offer solid recommendations	(1 – 10)	10
11. Had proper resources and personnel by which to get the project done	(1 – 10)	10
12. Overall client satisfaction and comfort level in hiring	(1 – 10)	10

Richard Bouchard
Printed Name of Reference

Richard Bouchard
Signature of Reference

MICHAEL J. GRELLA
Executive Director
mgrella@jupiterinletdistrict.org

MICHELLE A. WALLACE
Administrative Assistant
mwallace@jupiterinletdistrict.org

October 31, 2016

Re: Taylor Engineering Recommendation

To Whom It May Concern:

The Jupiter Inlet District (JID) is an independent special taxing district responsible for the maintenance and preservation of the Jupiter Inlet and Loxahatchee River in northern Palm Beach County. Taylor Engineering, Inc. (Taylor) has served as JID's District Engineer since 2002. On a consistent basis, I have found Taylor's work to be both practical and technically sound. As such, they are a trusted partner in the management and operation of the District.

Examples of projects Taylor has performed for JID include permitting, design, bidding, and construction administration in support of annual dredging of the Jupiter Inlet sand trap, maintenance dredging of navigation channels in the Loxahatchee River Central Embayment, and dredging fine muck sediments from Jones and Sims Creek. Taylor also helps maintain JID's 10-acre dredged material management area.

As District Engineer, they have successfully tackled several challenging environmental permitting projects on JID's behalf. Taylor staff perform annual seagrass surveys to satisfy various permit monitoring requirements and comprehensive natural resource surveys in support of permitting efforts for new projects.

Taylor has also successfully addressed several unique, one-off type projects including: reconstruction of the Jupiter Inlet jetty armor stone, a vessel traffic study to determine boating demand through the Florida East Coast Loxahatchee River railroad bridge, breakwater design to protect an eroding mangrove island, and restoration of flow through an oxbow within the Wild and Scenic portion of the Loxahatchee River.

Based on their performance over the last decade and a half, I feel confident in recommending Taylor Engineering.

Sincerely,

Michael Grella, AICP, CDM
Executive Director, Jupiter Inlet District

FLORIDA INLAND NAVIGATION DISTRICT

October 26, 2016

Re: Letter of Reference for Taylor Engineering

To Whom It May Concern:

Please accept this letter of reference for Taylor Engineering.

Taylor Engineering has served as the Florida Inland Navigation District (District) engineering consultant since 1986. In this capacity, Taylor Engineering has provided a wide range of services related to maintenance dredging of the Intracoastal and Okeechobee Waterways. These services include preparation of dredged material management plans; design of dredged material management facilities; construction observation; sediment quality assessments; environmental characterization of dredging and dredged material management areas; coordination with the U.S. Army Corps of Engineers, the Florida Department of Environmental Protection, and other federal, state, and municipal agencies; as well as many other dredging and navigation related tasks.

I have had the pleasure of working with Taylor Engineering since my employment with the District in 1999, and I am familiar with the quality and level of service, advice and professionalism they have provided to our organization since 1986. Taylor Engineering's staff has consistently exhibited extensive knowledge of dredging and the engineering and environmental issues that affect these types of projects. Their technical expertise and excellent professional relationships with various regulatory and commenting agencies have greatly facilitated implementation of the District's dredged material management plan. During this time, Taylor Engineering has produced high quality engineering and environmental products and consistently performed all assigned tasks in a timely and professional manner. In addition, Taylor Engineering has proven to be financially responsible and competitive when negotiating cost proposals.

In conclusion, Taylor Engineering has provided the District with high-quality waterway engineering services that have assisted or organization in meeting our project responsibilities, and I would highly recommend this firm. Please feel free to contact me should you need any further information in this matter.

Sincerely,

Mark Crosley
Executive Director

ADMINISTRATIVE OFFICE ON THE INTRACOASTAL WATERWAY IN PALM BEACH COUNTY
1314 MARCINSKI ROAD, JUPITER, FLORIDA 33477-9427 TELEPHONE 561-627-3386 FAX No 561-624-6480
www.aicw.org

ATTACHMENT "B"

Project Specific Reference Form

Company under Review: Taylor Engineering, Inc.

RFQ Number & Title: RFQ No. 17-011 Professional Engineering Services Fisherman's Wharf Bulkhead Rehabilitation - Design Port of Fort Pierce

Reference: Florida Inland Navigation District (FIND)
(Name of Company giving Reference)

Name/Title: Mark Crosley, Executive Director
(Name and Title of person giving Reference)

Telephone: (561) 627-3386

Project: FIND St. Lucie County Reach 1 Deepening
(Project for which references are being provided)

Fax: Email: mcrosley@aicw.org

Team Members for this project: Jonathan Armbruster, Lori Brownell, Bill Aley, Christopher Ellis, Jerry Scarborough, David Stites, Steve Schropp

Firm's submitting proposals are responsible for providing completed Project Specific Reference forms with their proposal. Failure to provide the completed Reference Forms will result in proposal being deemed non-responsive. References must be for projects that are listed under Tab's # 4 & 6 of this Request for Qualifications. Minimum of three (3) references must be provided for specific/similar projects.

1. Describe the scope of work of the contract awarded by your company/agency to this contractor.
Dredging and dredged material management engineering design and permitting for maintenance dredging a stretch of intracoastal waterway (ICWW) both north and south of the Fort Pierce Harbor.

No.	Questions	Rating	Comments
2.	Rate the level of commitment of the firm to your project. Did they devote the time and management staff necessary for successful and timely work?	5	TAYLOR ENGINEERING HAS CONSISTENTLY DISPLAYED THE UTMOST PROFESSIONALISM AND COMMITMENT TO OUR AGENCY AND THE PROJECT
3.	Rate the quality of customer service and the competence and accessibility of the personnel.	5	FULLY COMPETENT & THOROUGH FIRM
4.	Rate the firm's interactive capability with your staff.	5	VERY AVAILABLE & EXCELLENT COMMUNICATION
5.	Rate the firm's success at minimizing and controlling potential mistakes. Were there bid addendums, contract change orders, etc	4	ORIGINAL BID WAS NOT SUCCESSFUL PROJECT HAS BEEN QUICKLY REFORMULATED FOR REBID.
6.	Rate the overall quality of the work.	5	EXCELLENT
7.	Rate the comfort and confidence you had in the firm.	5	FULL CONFIDENCE
8.	If you have a similar contract to undertake in the future, would the firm be considered? Yes ✓ No ____	5	YES, NO HESITATION

Rating: ***1=Poor*** ***2=Fair*** ***3=Average*** ***4=Good*** ***5=Excellent***

Tab 6. Licenses and Forms

This section is organized as follows:

- Professional Licenses
- Insurance Certificates
- Respondents Acknowledgement
- Drug-Free Workplace Certification Form
- Conflict of Interest Form
- Federal E-Verify Form
- Cone of Silence Clause Form
- Indemnification and Hold Harmless Form
- Company Data Form
- Addendum Acknowledgement
- Certification Regarding Lobbying
- Governmental Debarment & Suspension
- Recycled Content Form
- Exhibit "B" General Grant Funding Conditions
- Exhibit "C" Standard Additional Clauses

State of Florida

Board of Professional Engineers

Attests that

Taylor Engineering, Inc.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is authorized under the provisions of Section 471.023, Florida Statutes, to offer engineering services to the public through a Professional Engineer, duly licensed under Chapter 471, Florida Statutes.

Expiration: 2/28/2019
Audit No: 228201900546 R

CA Lic. No:
4815

State of Florida

Board of Professional Engineers

Attests that

Matthew A. Trammell , P.E.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201925778 R

P.E. Lic. No:
69244

State of Florida

Board of Professional Engineers

Attests that

James Nicholas Marino , P.E.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201904668 R

P.E. Lic. No:
37666

State of Florida

Board of Professional Engineers

Attests that

Clifford Lee Truitt , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201907428 R

P.E. Lic. No:
21194

State of Florida

Board of Professional Engineers

Attests that

Christopher J. Bender , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201925171 R

P.E. Lic. No:
64736

State of Florida

Board of Professional Engineers

Attests that

Lori Sue Brownell , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201900625 R

P.E. Lic. No:
60025

State of Florida

Board of Professional Engineers

Attests that

Kenneth Robert Craig II, P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019 **P.E. Lic. No:** 52605

Audit No: 228201913802 R

Licensee Details

Licensee Information	
Name:	**GREER, DUNCAN (Primary Name)**
Main Address:	**1102 E. NURSERY RD. SANTA ROSA BEACH Florida 32459**
County:	**WALTON**
License Mailing:	
LicenseLocation:	

License Information	
License Type:	**Professional Engineer**
Rank:	**Prof Engineer**
License Number:	**83306**
Status:	**Current,Active**
Licensure Date:	**06/28/2017**
Expires:	**02/28/2019**

Special Qualifications	Qualification Effective
Civil	**12/14/2016**

State of Florida

Board of Professional Engineers

Attests that

Michael Bautista Kabiling , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201902748 R

P.E. Lic. No:
69054

State of Florida

Board of Professional Engineers

Attests that

Keith A. Knight , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201905223 R

P.E. Lic. No:
58084

State of Florida

Board of Professional Engineers

Attests that

William Miller Jr., P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201912074 R

P.E. Lic. No:
69813

State of Florida

Board of Professional Engineers

Attests that

Jerry Wayne Scarborough , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201900422 R

P.E. Lic. No:
43408

State of Florida

Board of Professional Engineers

Attests that

Michael Edward Trudnak , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201929410 R

P.E. Lic. No:
58200

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): [illegible]

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Marsh [illegible] a division of Marsh USA Inc. PO Box [illegible] [illegible]	PHONE (A/C, No, Ext): [illegible]	FAX (A/C, No): [illegible]
	E-MAIL ADDRESS: [illegible]	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : [illegible]	[illegible]
INSURED	INSURER B : [illegible]	[illegible]
Taylor Engineering Inc. P.O. Box [illegible] Jacksonville, FL [illegible]	INSURER C : [illegible]	[illegible]
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY			[illegible]	[illegible]	[illegible]	EACH OCCURRENCE	$1,[illegible]
	X COMMERCIAL GENERAL LIABILITY			[illegible]			DAMAGE TO RENTED PREMISES (Ea occurrence)	$1,[illegible]
	CLAIMS-MADE X OCCUR						MED EXP (Any one person)	$1[illegible]
							PERSONAL & ADV INJURY	$1,[illegible]
							GENERAL AGGREGATE	$[illegible]
	GEN'L AGGREGATE LIMIT APPLIES PER						PRODUCTS - COMP/OP AGG	$[illegible]
	POLICY X PROJECT LOC							$
[illegible]	AUTOMOBILE LIABILITY			[illegible]	[illegible]	[illegible]	COMBINED SINGLE LIMIT (Ea accident)	$1,[illegible]
	X ANY AUTO						BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS / NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
A	X UMBRELLA LIAB X OCCUR			[illegible]	[illegible]	[illegible]	EACH OCCURRENCE	$4,[illegible]
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$4,[illegible]
	DED X RETENTION $ [illegible]							$
[illegible]	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		[illegible]	[illegible]	[illegible]	X WC STATUTORY LIMITS / OTHER	
							E.L. EACH ACCIDENT	$1,[illegible]
							E.L. DISEASE - EA EMPLOYEE	$1,[illegible]
							E.L. DISEASE - POLICY LIMIT	$1,[illegible]

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER	CANCELLATION
FOR PROPOSAL PURPOSE	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE [signature]

ACORD 25 (2010/05)

Client#: 1051175 TAYLOENG2

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 5/19/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
USI Insurance Services, LLC 1715 N. Westshore Blvd. Suite 700 Tampa, FL 33607	PHONE (A/C, No, Ext): 813 321-7500	FAX (A/C, No):
	E-MAIL ADDRESS:	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : XL Specialty Insurance Company	37885
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Taylor Engineering, Inc
10151 Deerwood Park Blvd
Bldg 300, Suite 300
Jacksonville, FL 32256

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	CLAIMS-MADE OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$
	OTHER							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS / NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N / A	N/A					E.L. EACH ACCIDENT	$
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	Professional Liability			DPR9805824	06/01/2017	06/01/2018	$2,000,000 per claim $2,000,000 annl aggr.	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Professional Liability coverage is written on a claims-made basis.

CERTIFICATE HOLDER

FOR PROPOSAL PURPOSES

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/09/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh Sponsored Programs a division of Marsh USA Inc. PO Box 14404 Des Moines IA 50306	CONTACT NAME: PHONE (A/C, No, Ext): 800-338-1391 FAX (A/C, No): 888-621-3173 E-MAIL ADDRESS: acecclientrequest@marsh.com
	INSURER(S) AFFORDING COVERAGE — NAIC #
	INSURER A: Hartford Accident & Indemnity Co — 22357
INSURED Taylor Engineering Inc. P.O. Box 550510 Jacksonville, FL 32255-0510	INSURER B: Hartford Fire Insurance Company — 19682
	INSURER C: Hartford Underwriters Insurance Co — 30104
	INSURER D:
	INSURER E:
	INSURER F:

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY	Y		84SBWNA6176	11/01/2017	11/01/2018	EACH OCCURRENCE	$1,000,000
	X COMMERCIAL GENERAL LIABILITY			Prof. Liab Excl			DAMAGE TO RENTED PREMISES (Ea occurrence)	$1,000,000
	CLAIMS-MADE X OCCUR						MED EXP (Any one person)	$10,000
							PERSONAL & ADV INJURY	$1,000,000
							GENERAL AGGREGATE	$2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	$2,000,000
	POLICY X PRO-JECT LOC							$
C	AUTOMOBILE LIABILITY	Y		84UEGLP0627	11/01/2017	11/01/2018	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS / NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
A	X UMBRELLA LIAB X OCCUR	Y		84SBWNA6176	11/01/2017	11/01/2018	EACH OCCURRENCE	$4,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$4,000,000
	DED X RETENTION $ 10,000							$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N		Y	84WBGBN0954	11/01/2017	11/01/2018	X WC STATU-TORY LIMITS OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N/A (Mandatory in NH)						E.L. EACH ACCIDENT	$1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$1,000,000
							E.L. DISEASE - POLICY LIMIT	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

RE: Coastal & Environmental Engineering Services - Okaloosa County, FL is included as additional insured for above coverages except WC AS REQUIRED BY WRITTEN CONTRACT. Waiver of Subrogation is included in favor of additional insureds as respects the WC.

CERTIFICATE HOLDER

Okaloosa County Purchasing Dept.

602-C North Pearl Street
Crestview, FL 32536

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Brenda Trust

Client#: 1051175 TAYLOENG2

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 7/17/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
USI Insurance Services, LLC 1715 N. Westshore Blvd. Suite 700 Tampa, FL 33607 813 321-7500	PHONE (A/C, No, Ext): 813 321-7500	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : XL Specialty Insurance Company	37885
INSURED Taylor Engineering, Inc 10151 Deerwood Park Blvd Bldg 300, Suite 300 Jacksonville, FL 32256	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						☐ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ N/A						E.L. EACH ACCIDENT	$
	(Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$
A	Professional Liability			DPR9926239	06/01/2018	06/01/2019	$2,000,000 per Claim $2,000,000 Annl Aggr.	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Coastal & Environmental engineering Services.

Professional Liability coverage is written on a claims-made basis.

CERTIFICATE HOLDER

Okaloosa County Purchasing Department
602-C North Pearl Street
Crestview, FL 32536

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE