Land Acq. & Mgmt.
Committee Meeting
October 19, 2012

PRELIMINARY AGENDA

FLORIDA INLAND NAVIGATION DISTRICT's
Land Acquisition & Management Committee Meeting

Following the Board Meeting, Friday, October 19, 2012

The Riverside Hotel
620 East Las Olas Boulevard,
Ft. Lauderdale, Broward County, Florida.

Committee Members
Chair Spencer Crowley
Commissioners Aaron Bowman, Bruce Barkett, Carl Blow, and Gail Kavanagh

Item 1. **Call to Order.**

Chair Crowley will call the meeting to order.

Item 2. **Roll Call.**

Assistant Executive Director Mark Crosley will call the roll.

Item 3. **Additions or Deletions.**

Any additions or deletions to the meeting agenda will be announced.

RECOMMEND - Approval of a final agenda.

Item 4. **Interlocal Agreement Extension No. 6 with St. Johns County.**

The District entered into an Interlocal Agreement with St. Johns County in 2005 to allow the County to utilize beach quality sand from DMMA SJ-1 to perform dune restoration on County beaches. That agreement was extended 5 times over the years and was modified to allow the County's contractor to perform repair and maintenance work on the DMMA for the District. Extension No. 6 continues this beneficial relationship.

(see back up pages 3 - 5)

RECOMMEND Approval of Interlocal Agreement Extension No. 6 with St. Johns County.

Item 5. **Permitting, Final Engineering Design, and Bid Document Preparation for the Construction of DMMA FL-3, Flagler County.**

Staff requested that the District Engineer provide a scope of services and fee quote for the permitting, final engineering design, and the preparation of bid documents for the construction of DMMA FL-3. This proposal also includes the development of a western soil road for separate Flagler County access through the site to their adjoining properties.

(see back up pages 6 – 20)

RECOMMEND Approval of the scope of services and fee quote on a cost plus basin not to exceed $330,603.34 from Taylor Engineering for the permitting, final engineering design, and the preparation of bid documents for the construction of DMMA FL-3.

Item 6. **Additional Staff Comments and Additional Agenda Items.**

Item 7. **Commissioners Comments.**

Item 8. **Adjournment.**

INTERLOCAL AGREEMENT EXTENSION NUMBER 6

BY AND BETWEEN

ST. JOHNS COUNTY

AND THE

FLORIDA INLAND NAVIGATION DISTRICT

PROJECT # LAN 06-3.263

This EXTENSION AGREEMENT is made and entered into this _____ day of _____, 2012 by and between the Florida Inland Navigation District, an independent special taxing District of the State of Florida (hereinafter the "District"), and St. Johns County, a political subdivision of the State of Florida (hereinafter the "County").

WITNESSETH

WHEREAS, the County and the District previously entered into Interlocal Agreement Number LAN 06-3.263 (hereinafter the "Agreement") to make available dredged material from District's Site SJ-1, ("the Site") for dune restoration on County beaches (hereinafter the "Project") and for work on the Site needed by the District; and

WHEREAS, the County requested an extension of the Term of the Agreement to complete Site restoration activities as well as to remove additional dredged material for the Project and Extension Number 1, 2, 3, 4 and 5 were granted until July 1, 2012; and

WHEREAS, the County has requested a sixth extension of the Term of the Agreement to remove additional dredged material for the Project; and

WHEREAS, the District is willing to grant the requested sixth extension of the Term in the Project because of the benefit to the District and the Atlantic Intracoastal Waterway; and

WHEREAS, should the District desire to have additional site work performed , the County through contracted services will coordinate this effort with their selected contractor to perform this work at District expense.

NOW, THEREFORE, in consideration of the mutual representations, terms and covenants hereafter set forth, the parties agree as follows:

1. The Term of the Agreement is extended to July 1, 2014.
2. The County agrees to coordinate on behalf of FIND for additional site work at District expense.
3. All other provisions and conditions of the Agreement remain in full force and effect, as reflected in the attached original agreement and five previous extension agreements (composite Exhibit "A").

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day, month and year aforesaid.

WITNESSES:

_____

_____

FLORIDA INLAND NAVIGATION DISTRICT

By:_____
Executive Director

DATE: _____

ATTEST:

_____

ST. JOHNS COUNTY

By: _____

Title: _____

DATE: _____

FIND Easement

ICW Right-of-Way
Channel

Dredged Material Management Area
SJ-1

October 9, 2012

David K. Roach
Executive Director
Florida Inland Navigation District (FIND)
1314 Marcinski Road
Jupiter, FL 33477

Re: Scope of Work and Cost Proposal, Permitting and Final Engineering Design for Dredged Material Management Area FL-3, Flagler County, Florida

Dear Mr. Roach,

Per your request, we have prepared the enclosed scope of work (Attachment A) and cost proposal (Attachment B) for the permitting and final engineering design of the FL-3 dredged material management area (DMMA). As detailed in the enclosed documents, our proposed services include field investigations, environmental permitting services, and preliminary design, and final design and bid document development for the FL-3 DMMA facility. Taylor Engineering will perform these services on a cost plus basis, for a total cost not to exceed $330,603.34. This proposed fee includes subconsultant costs as follows:

- AMEC Environment and Infrastructure, Inc. (AMEC) will complete the geotechnical investigation for a fee of $61,765. To select AMEC, we requested qualifications from six qualified professional geotechnical engineering firms. Based on review of five submitted qualification packages, we determined AMEC as the most highly qualified with respect to similar project experience, qualifications of personnel, personnel availability, proximity of assigned personnel to the project location, and ability of firm to provide the required services in-house.

- SEA Diversified, Inc (SDI) will provide site feature survey for a fee of $21,800. SDI serves as the FIND's surveyor for the northern portion of the District.

- Environmental Services, Inc. (ESI) will complete natural resource surveys for a fee of $9,200. We selected ESI based on a history of past successful working relationships on FIND projects. ESI has provided high quality deliverables at competitive rates.

If you have any questions concerning this proposal, please contact Jonathan Armbruster, P.E. or me. We can begin work upon your notice to proceed.

Sincerely,

John Adams, P.E.
Senior Engineer

:fl

Attachments

ATTACHMENT A

PERMITTING AND FINAL ENGINEERING DESIGN FOR
DREDGED MATERIAL MANAGEMENT AREA FL-3
FLAGLER COUNTY, FLORIDA

Selected as the primary site to serve that portion of the Intracoastal Waterway (ICWW) in Flagler County defined as Reach I, the ±107-acre Florida Inland Navigation District (FIND)-owned Dredged Material Management Area (DMMA) FL-3 site has a preliminary design capacity adequate to meet the 50-year storage requirements (including bulking plus overdredging factor of 2.15) for ICWW Reach I (756,630 cubic yards [CY]). Based on previous Taylor Engineering report documents (Management Plan FL-3/MSA 3005A Dredged Material Management Area, 1995), site placement includes a 330-foot (ft) setback from the northern site boundary, a 350-ft setback from the southern boundary, and a variable setback (550-ft to 900-ft) from the western boundary. These setbacks will help ensure continued separation from future development. On the east, where wetlands will preclude future development, the dike plan specifies a setback of 50-ft from the site boundary.

This proposal describes the scope of work associated with developing a permit application, and preparing final engineering design and bid documents for DMMA FL-3. The scope of work pivots on the following assumptions:

1. The pipeline easement routes from the site boundary to the ICWW will not require any geotechnical field investigation activities at this time.
2. Regulatory agencies will not require a permanent effluent pipeline from the site to the discharge point; the scope of work includes no design features within the pipeline easements.
3. The St. Johns Survey boundary and topographic survey (signed and sealed 8/10/1994) of the FL-3 DMMA is adequate for Taylor Engineering to develop the permit application and final design for the facility. If regulatory agencies require an updated survey, Taylor Engineering will provide a separate proposal for additional survey work and efforts associated with migrating design products to the new survey base.
4. Based on review of available sediments samples for Reach I, a test evaluating the settling behavior of fine-grained sediment is unnecessary. Regulatory agencies will not require any sediment sampling or updated grain size or chemical analysis of the Reach I sediments.
5. State and federal regulatory agencies will require a wetlands delineation and community classification of the entire FL-3 site to document existing natural resource conditions. (Note: The 1994 Environmental Site Documentation report (Water & Air Research, Inc. [WAR]) indicates the DMMA footprint will impact an isolated area of "Wet Prairie /Borrow Area." Taylor Engineering's 1995 report does not classify this area as a wetland impacts. However, review of recent aerial photographs suggests a natural expansion of this area. Additionally, regulatory requirements have changed significantly since the report's publishing date. Notably, the FIND has already cleared and grubbed the majority of the site. However, when clearing and grubbing occurred, concerns regarding wetland impacts and mitigation requirements dictated that this area of the site remain undisturbed. Taylor Engineering assumes that regulatory agencies will require mitigation for the "Wet Prairie/Borrow Area." This scope of work includes time to coordinate with agencies regarding the wetland delineation and mitigation planning and costs associated with surveyor identification of the flagged wetland locations.)
6. The site raises no archeological concerns (based on the 1994 review of the Florida Master File indicating no historical or archaeological sites known for this property).
7. There are no known utilities on site.

If any of these assumptions prove incorrect, we reserve the right to modify our scope and cost proposal, if necessary, to ensure we meet the expectations of the FIND. Additionally, this proposal excludes all related permit application fees, bid administration, and construction phase services.

TASK 1 – FIELD INVESTIGATION

1.1 NATURAL RESOURCES SURVEY

State and federal regulatory agency policy requires wetland delineation performed within the past five years. Because the previous environmental surveys occurred in September 1994, we will work with our subconsultant — Environmental Services, Inc. (ESI) — to delineate all on-site wetlands and use the Florida Land Use, Cover and Forms Classification System (FLUCCS) to map natural communities within the project area. This work, performed in accord with the U.S. Army Corps of Engineers (USACE) and the Florida Department of Environmental Protection (FDEP) guidelines, will provide information necessary to characterize existing natural resource conditions and identify any potential impacts requiring mitigation.

Wetlands Delineation

ESI will perform a jurisdictional wetlands delineation of the ±107-acre DMMA portion of FL-3 and the 100-ft wide portion of the pipeline easement out to the saltwater marsh edge. The wetlands delineation methodologies will follow the protocols mandated by the FDEP and USACE. ESI will install sequentially-numbered stakes and/or flags to mark the wetland-upland interface. Succeeding flags/stakes will be clearly visible from the previous flag location and the distance between flags will not exceed 100 feet. ESI will fill out all necessary data sheets as required by the USACE wetlands delineation methodology and regional supplements.

For the remaining portion of the pipeline easement east of the saltwater marsh edge, the subcontractor will use 2011 high resolution aerial photographs provided by Taylor Engineering to delineate the wetland boundaries. ESI will groundtruth the wetland boundaries delineated via aerial interpretation.

ESI will schedule and participate in an on-site meeting with USACE and FDEP staff to verify the jurisdictional wetland boundary. ESI will coordinate this meeting with the Taylor Engineering project manager.

Habitat Characterization and Listed Species Assessment

Using the FLUCCS, ESI will map (via aerial interpretation and groundtruthing) and characterize all natural communities within the FL-3 project area (DMMA site and pipeline easement). Characterizations will include qualitative descriptions of each identified community, lists of dominant vegetation by species, and documentation of observed and likely occurrences of wildlife. ESI will also assess the property for potential use by state- and federally listed species.

Reporting

ESI will develop a report summarizing the results of the natural resources field investigation. The report will include

- detailed descriptions of the methods and results of the field investigation

- qualitative descriptions of natural communities including uplands and wetlands
- FLUCCS map including acreages for each community type
- wetland boundary map (showing line verified by agency staff)
- completed wetland delineation forms
- descriptions of wildlife utilization (both observed and likely occurring)
- an assessment of potential use by threatened and endangered species

The threatened and endangered species assessment will identify the state and federal status of each species discussed. The report will also include the results of the meeting with agency staff to verify the wetland line including any necessary adjustments to the wetland boundary.

1.2 GEOTECHNICAL INVESTIGATION

Based on a request for qualification process, Taylor Engineering, on behalf of the FIND, selected subconsultant AMEC Environmental and Infrastructure (AMEC [Jacksonville office]) to complete a geotechnical investigation and provide key design information for the FL-3 DMMA facility. Activities during this task will begin with a field investigation and sampling to include 40 borings with variable depths between 10 and 80 feet. Work will continue with necessary laboratory and geotechnical engineering analysis. The deliverable for this task will comprise a report to establish geotechnical parameters for the pile foundation conditions (near the overflow weir structure), dike foundation conditions, borrow source soil conditions, settlement countermeasures (if necessary), dike construction qualities (e.g., recommended slopes, compaction criteria, etc.), and design input parameters for seepage and slope stability analyses to guide the containment dike design.

1.3 SITE FEATURE SURVEY

To augment the existing site survey and locate specific site features, Taylor Engineering will subcontract with SEA Diversified, Inc. (SDI), the FIND's surveyor for the northern portion of the District. Survey work will include locating wetland flags (Task 1.1) and core-boring holes within the site boundary (Task 1.2).

SDI will conduct all work to industry standards and under the responsible charge of a Professional Surveyor and Mapper registered in Florida. All work will meet or exceed the Minimal Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 61G17-6, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

TASK 2 – ENVIRONMENTAL PERMITTING

The construction of the FL-3 DMMA will require a permit from the FDEP and the USACE. Task 2 includes preparation and submittal of a Joint Environmental Resource/Dredge and Fill Permit application for the construction of FL-3. It also includes time to respond to requests for additional information (RAI) from the FDEP and the USACE. The permit application will reflect the proposed design detailed in Taylor Engineering's 1995 Management Plan FL-3/MSA 3005A Dredged Material Management Area.

2.1 PRE-APPLICATION MEETINGS

Taylor Engineering will coordinate a joint pre-application meeting with the FDEP and the USACE. During this meetings (potentially located on-site), we will introduce the project to state and federal regulatory agency staff, discuss foreseeable permit application issues, and solicit agency recommendations concerning the content and format of the application materials. We will compile a permit application package based on feedback received during this meeting. Following completion of the pre-application meeting, Taylor Engineering will compile and submit meeting minutes to all attending parties.

2.2 NATURAL RESOURCE IMPACT ANALYSIS AND WETLAND MITIGATION DESIGN

Based on findings of Task 1 and pre-application meeting results, Taylor Engineering will overlay the project footprint to locate and quantify natural resource impacts areas. We will apply the FDEP's Uniform Mitigation Assessment Method (UMAM), and if necessary the Wetland Rapid Assessment Procedure (WRAP), to assess natural resource impacts.

Taylor Engineering will employ the results of the UMAM (and WRAP) to develop an appropriate mitigation plan for unavoidable impacts. We will assess potential on- and off-site mitigation opportunities to identify the most cost effective mitigation solution. On-site opportunities may include wetland creation, wetland enhancement or wetland restoration. If the site provides existing on-site mitigation opportunities and the FIND opts for on-site mitigation, we will develop a conceptual design for on-site mitigation and discuss the acceptability of such design with state and federal regulatory staff. If on-site mitigation proves unfeasible or undesirable, we will evaluate potential off-site mitigation opportunities such as mitigation banks or other wetland creation, enhancement, or restoration projects that could serve as mitigation.

We will structure the final wetlands mitigation design (Task 4.1) as permit requirements dictate. This design will include necessary grading plans, cut and fill calculations, planting plans, and post-construction monitoring plans.

2.3 JOINT ENVIRONMENTAL PERMIT APPLICATION

Based on data (natural resources, geotechnical, and survey) collected in Task 1, the proposed site plan layout, agency comments made during the pre-application meetings, and impact analysis and mitigation design, Taylor Engineering will prepare and submit a Joint Environmental Resource/Dredge and Fill Permit application to the FDEP and the USACE.

We will develop permit-level design drawings to include in the application package (Task 3). In addition to the signed and sealed permit drawings, the application will include narratives describing the (1) overall project and conceptual design, (2) location of on-site sensitive natural habitats, (3) best management practices and impact avoidance/minimization techniques, (4) natural resource impact analysis and mitigation design, and (5) construction methodology and schedule.

The permit application package will specifically address all review criteria outlined in the Draft June 2007 FDEP ERP *Engineering Review Criteria/Information Needs for Dredged Material Management Areas*.

2.4 RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION

Following the submission of the permit application, both the FDEP and the USACE will likely respond with a Request for Additional Information (RAI). RAIs typically comprise a series of questions requiring additional explanation of the proposed project work. Accordingly, our cost estimate includes time (not to exceed a total of 150 man-hours) to respond to RAIs. If the permit application requires additional labor, field investigations, or laboratory tests to respond adequately to agency RAIs, we will submit a new cost proposal commensurate with the level of effort needed to satisfy agency requests. Taylor Engineering will provide all RAI responses to the FIND for review before submitting them to the FDEP and USACE.

2.5 COORDINATION

The single most important activity during the permitting process is the establishment and maintenance of a clear line of communications between the applicant and the participating agencies. To that end, Taylor Engineering will actively coordinate with local, state, and federal agencies staff during the application process. These agencies include, but are not limited to, the FDEP, USACE, U. S. Fish and Wildlife Service, Florida Fish and Wildlife Conservation Commission, and National Marine Fisheries Service. We will maintain consistency between the state and federal permit applications and other environmental documentation, and strive to resolve environmental issues that arise during the review period.

TASK 3 – PRELIMINARY ENGINEERING DESIGN

In conjunction with Tasks 1 and 2, Taylor Engineering will prepare preliminary engineering design documents sufficient for permit review by regulatory agencies. We will review all previously submitted Phase I and Phase II design documents for the FL-3 DMMA facility and update the site plan according to any modification in the site conditions or updated DMMA design policies.

3.1 SITE RECONNAISSANCE VISIT

Taylor Engineering will visit the site at least once to examine the physical characteristics of the site as it relates to the overall design of the project.

3.2 DMMA PRELIMINARY DESIGN

In addition to meeting the FDEP ERP *Engineering Review Criteria* (outlined in Task 3.3), we will design the DMMA site layout, perform associated volume calculations for the overall site plan, and provide a preliminary engineering design for the weir structure.

Site Layout. Based on the updated wetland delineation and geotechnical report, we will develop the project site plan consistent with the site's Phase II preliminary design as well as environmental and buffer requirements. In addition to the central containment basin, the site plan will include access ramp location, ingress/egress points, and access road location. During preliminary design, Taylor Engineering will work to relocate the existing access road to the west to allow for County use.

Volume Calculations. To update the preliminary hand calculations from the Phase II design, we will construct a detailed 3-D terrain model to complete a site design with the goal of obtaining balanced cut and fill earth volumes (to avoid the expense of having an off-site borrow material source).

Weir Design. We will provide a preliminary design analysis of the hydraulic control structures. Design components will include analysis of the hydraulic weir discharge characteristics, the H-pile box weir structures, the HDPE (high-density polyethylene) discharge piping system, and the timber access walkway. The weir structural design will consider geotechnical design parameters, lateral and hydrostatic uplift loads, and lateral earth pressure loads.

3.3 ERP ENGINEERING REVIEW CRITERIA

This sub-task details each of the four elements required as part of the Draft June 2007 FDEP ERP *Engineering Review Criteria/Information Needs for Dredged Material Management Areas* memorandum.

Element 1 – Capacity and Settling Time for Meeting Water Quality Standards at the Discharge. This element requires calculations demonstrating that the DMMA designed settling characteristics (for the Reach I finest sediment fraction) will meet water quality standards. To address this criterion, we will submit calculations and supporting geotechnical data from previously collected sediment samples from ICWW Flagler Reach I.

Element 2 – Dike Stability. This element includes (1) geotechnical site investigation, (2) soil testing, (3) stability/seepage analysis, (4) design safety factor determination, (5) site preparation specification, (6) dike construction material identification, (7) water level control design, (8) seepage control design, (9) minimum freeboard determination, (10) construction methods specifications, and (11) construction quality assurance/quality control. Our scope of services, in combination with the geotechnical site investigation, addresses items 1 – 2; our submittal of standard guide specifications addresses items 5, 6, 10, and 11.

Addressing items 3, 4, 7, 8, and 9 (i.e., stability/seepage analysis, design safety factor determination, water level control design, seepage control design, and minimum freeboard determination) require a more in-depth engineering analysis of the DMMA facility. Taylor Engineering will complete the necessary analysis and prepare a memorandum to detail the stability/seepage analysis, design safety factors, excess capacity requirements, storage capacity, structure height, volume recovery, location and elevation of control structures, and a provision for a hazard classification analysis. Similarly, based on the results of the seepage analysis, we will provide site-specific design details for seepage control (e.g., toe drain) for the FL-3 facility. Lastly, determination of the minimum freeboard will likely require a wind surge and wave run-up analysis to recommend a required freeboard to contain potential wave overtopping.

Element 3 – Stormwater Quality and Prevention of Off-site Flooding. This sub-task involves evaluation of the stormwater quality (in accord with St. John's River Water Management District [SJRWMD] F.A.C. 40C-42.026) and quantity (based on a 25-year, 24-hour rainfall event). Taylor Engineering will design the site drainage and size pipes, culverts, inlets, and ditches as necessary to provide adequate drainage. We will design erosion control measures as necessary to provide protection against erosion from weir discharge and rainfall runoff.

Element 4 – Additional Specific Conditions. Remaining ERP evaluation conditions include submittal of an operation and maintenance plan. This plan — an outline of the site's management activities before, during, and after dredging activities — will assure regulatory agencies of the establishment and maintenance of a vegetative cover, dike safety inspection program, and post-dredging operations.

Under this sub-task, we will update the existing 1995 Management Plan to current operation and maintenance design standards. Specific revisions to the Management Plan will include the following: (1) operational guidelines for the contractor to follow before, during, and immediately after dredging; (2) inspection criteria designed to ensure the stability and safety of the site's containment dikes; and (3) maintenance criteria for the dike's vegetative cover.

3.4 PERMIT DRAWINGS

We will prepare digital permit drawings for the various site elements. If appropriate, the permit set will include photo-based sheets depicting the project areas. We will obtain existing aerial photography for this purpose. These drawings will provide plan, cross section, and detail views of the proposed DMMA and its return water control structure as well as any necessary seepage, drainage, and erosion control features. We will provide signed and sealed permit drawings in appropriate hardcopy format and in digital (AutoCAD and PDF) format.

TASK 4 FINAL DESIGN AND BID DOCUMENTS

4.1 Final Design

Building on the preliminary design efforts and the regulatory permitting process, Taylor Engineering will conduct one additional site reconnaissance visits; complete the final engineering design necessary to construct the DMMA, weir structure and associated deck platform, site access road, stormwater control infrastructure; and calculate final earthwork volumes associated with the overall site plan.

Site Reconnaissance Visit. Taylor Engineering will visit the site at once to visualize and coordinate design aspects with site characteristics during the engineering design process.

DMMA. Taylor Engineering will complete the project site plan consistent with the preliminary design, planning and permit documents, as well as environmental and buffer requirements. In addition to the central containment basin, the site plan will include a final access ramp with ingress/egress points. Based on the slope stability and seepage analyses performed in Task 3.3, we will design and detail the underdrains and collection system (including the perimeter ditch) to collect and route seepage away from the dike. This task also includes an evaluation of the perimeter ditch capacity for mounding of groundwater (and related seepage) that will occur as a result of dredging operations.

Weir Structure and Associated Deck Platform. Taylor Engineering will complete final design hydraulic control structures consisting of box weirs with adjustable timber flashboards to control discharge from the dredged material management area during dredging events. We will design an HDPE pipe collection system to route water collected by the weirs through the dike structure. Taylor

Engineering will design appropriate piles and foundation slab to constrain the weirs against hydrostatic uplift forces during operations. We will design and detail weir box structural members and connections to resist later earth pressure and hydrostatic loads. We will design and detail timber access walkway to allow personnel access to the weir structure from the dike crest.

Site Access Road. Taylor Engineering will provide design for stabilized soil/gravel access road to follow the revised westward alignment developed during preliminary design.

Stormwater Control. Taylor Engineering will develop an Interconnected Pond Routing (ICPR) stormwater model to simulate the 25-year design storm necessary to size pipes, culverts, inlets, and ditches for adequate site drainage. We will design erosion control measures to protect against erosion from weir discharge and rainfall runoff.

Wetland Mitigation Design. If the project environmental permits require on-site mitigation (e.g. wetland creation, restoration, enhancement) to offset unavoidable wetland impacts, Taylor Engineering will develop the final mitigation design and develop details necessary to construct the mitigation area. If the FIND prefers to use a permitted wetlands mitigation bank to offset wetland impacts and the use of these banks is feasible, work and fees associated with this task may be unnecessary.

Volume Computations. Taylor Engineering will construct a three-dimensional digital terrain model to complete a site design with balanced cut and fill earth volumes.

4.2 Bid Documents

We will prepare digital construction drawings for the various site elements. If appropriate, the drawing set will include photo-based sheets depicting the project areas. We will obtain existing aerial photography for this purpose. Construction drawings will provide plan, cross-sectional, and detail views of the proposed dredged material management area and its return water control structure as well as any necessary seepage, drainage, and erosion control features. Taylor Engineering will provide construction drawings in appropriate hard-copy format and in digital (AutoCAD) format, as well as record drawings signed and sealed by a Florida Registered Professional Engineer.

We will update the Division 0 and 1 contract documents (Contract Documents) and prepare Division 2 and higher contract documents (Technical Specifications) for construction of the project. We will follow the Engineer's Joint Contract Documents Committee (EJCDC) and Construction Specification Institute (CSI) standards and guidelines in preparing the specifications.

4.3 Opinion of Probable Cost

We will prepare an opinion of probable cost for constructing the FL-3 DMMA facility.

4.4 Bid Package Preparation

We will prepare a bid schedule with estimated quantities for all bid items. In preparation project bidding and bid administration, Taylor Engineering will develop a digital bid document package including digital

copy of the final drawings and specifications for FIND to advertise the bid and upload onto its FTP site. We will provide FIND with a record set of drawings sealed by a Florida Registered Professional Engineer.

ATTACHMENT B

TAYLOR ENGINEERING, INC.
COST SUMMARY BY TASK
PERMITTING AND FINAL ENGINEERING DESIGN: DMMA FL-3

TASK 1: Field Investigation

Labor	Hours	Cost	Task Totals
Vice President	12.0	2,220.00	
Senior Advisor	6.0	1,062.00	
Director	1.0	154.00	
Senior Professional	36.0	4,644.00	
Staff Professional	19.0	1,634.00	
Senior Technician	26.0	2,340.00	
Administrative	7.0	392.00	
Total Man-Hours	107.0		
Labor Cost			12,446.00
Non-Labor	Units	Cost	
Geotechnical Investigation (AMEC)	1.0	61,765.00	
Wetlands Delineation (ESI)	1.0	9,200.00	
Site Feature Survey (SDI)	1.0	21,800.00	
Mileage (Rountrip)	102.0	45.39	
Meals	1.0	36.00	
Non-Labor Cost		92,846.39	
Fee @ 10.0%		9,284.64	
Total Non-Labor Cost			102,131.03
Total Task 1			114,577.03

ATTACHMENT B

PERMITTING AND FINAL ENGINEERING DESIGN: DMMA FL-3

TASK 2: Environmental Permitting

Labor	Hours	Cost	Task Totals
R. Bruce Taylor, Ph.D.	1.0	306.00	
Vice President	14.0	2,590.00	
Senior Advisor	16.0	2,832.00	
Director	68.0	10,472.00	
Senior Professional	110.0	14,190.00	
Staff Professional	118.0	10,148.00	
Technical Editor	9.0	891.00	
Senior Technician	48.0	4,320.00	
Administrative	12.0	672.00	
Total Man-Hours	396.0		
Labor Cost			46,421.00
Non-Labor	Units	Cost	
Mileage (Rountrip)	102.0	45.90	
Meals	1.0	36.00	
Reproductions and Delivery	1.0	100.00	
Non-Labor Cost		181.90	
Fee @ 10.0%		18.19	
Total Non-Labor Cost			200.09
Total Task 2			46,621.09

ATTACHMENT B

PERMITTING AND FINAL ENGINEERING DESIGN: DMMA FL-3

TASK 3: Preliminary Engineering Design

Labor	Hours	Cost	Task Totals
R. Bruce Taylor, Ph.D.	4.0	1,224.00	
Vice President	30.0	5,550.00	
Senior Advisor	35.0	6,195.00	
Director	22.0	3,388.00	
Senior Professional	220.0	28,380.00	
Project Professional	40.0	4,200.00	
Staff Professional	284.0	24,424.00	
Technical Editor	8.0	792.00	
Senior Technician	160.0	14,400.00	
Administrative	12.0	672.00	
Total Man-Hours	815.0		
Labor Cost			89,225.00
Non-Labor	Units	Cost	
Reproductions and Delivery	1.0	100.00	
Mileage (Rountrip)	102.0	45.90	
Meals	2.0	72.00	
Non-Labor Cost		217.90	
Fee @ 10.0%		21.79	
Total Non-Labor Cost			239.69
Total Task 3			$ 89,464.69

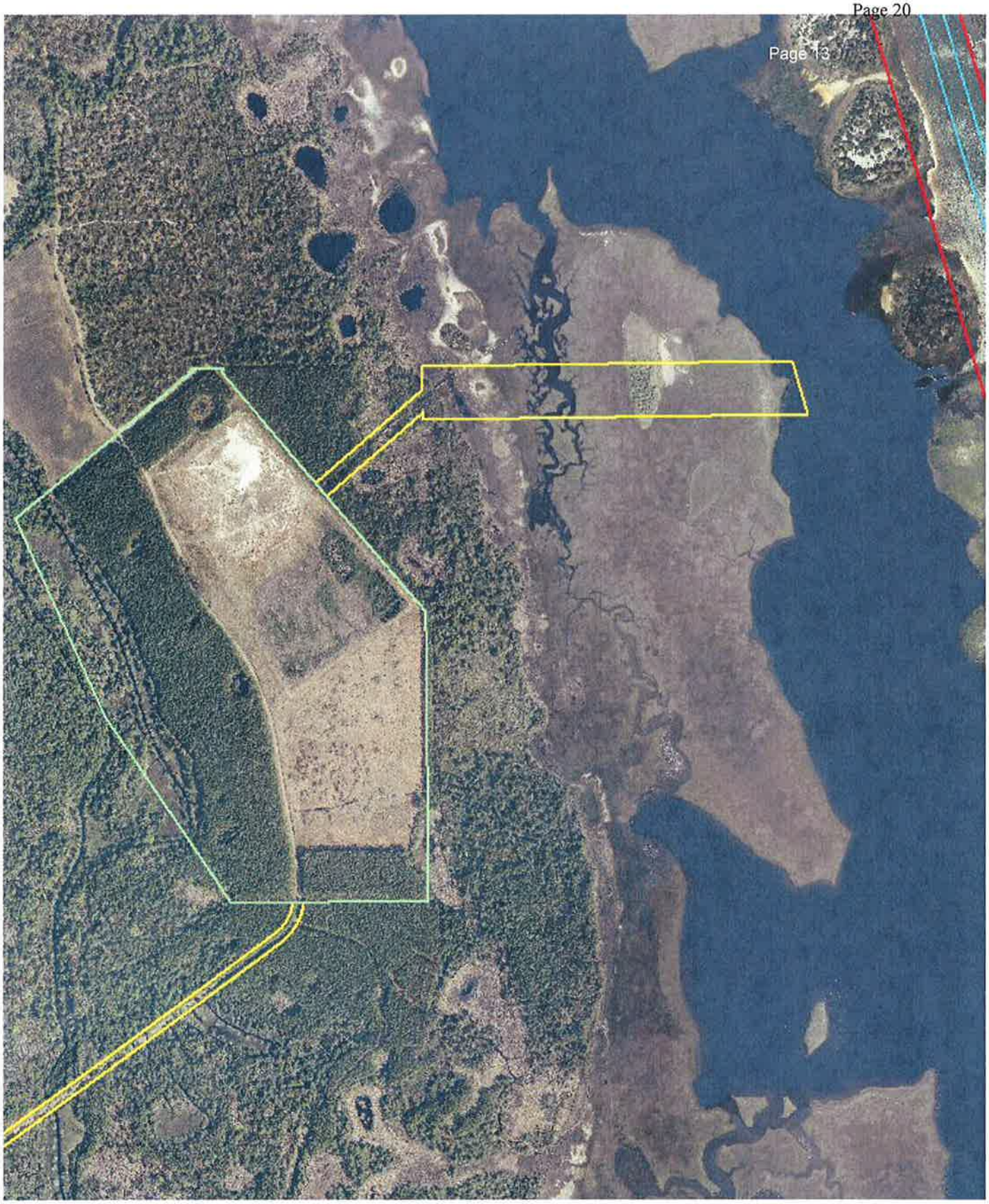
ATTACHMENT B

PERMITTING AND FINAL ENGINEERING DESIGN: DMMA FL-3

TASK 4: Final Design and Bid Documents

Labor	Hours	Cost	Task Totals
R. Bruce Taylor, Ph.D.	2.0	612.00	
Vice President	22.0	4,070.00	
Senior Advisor	15.0	2,655.00	
Director	7.0	1,078.00	
Senior Professional	206.0	26,574.00	
Project Professional	16.0	1,680.00	
Staff Professional	272.0	23,392.00	
Senior Technician	200.0	18,000.00	
Administrative	30.0	1,680.00	
Total Man-Hours	770.0		
Labor Cost			79,741.00
Non-Labor	Units	Cost	
Mileage (Rountrip)	102.0	45.39	
Meals	1.0	36.00	
Reproductions and Delivery	1.0	100.00	
Non-Labor Cost		181.39	
Fee @ 10.0%		18.14	
Total Non-Labor Cost			199.53
Total Task 4			$ 79,940.53

Project Total $ 330,603.34



Channel
ICW Right-of-Way
FIND Owned
FIND Easement

DREDGED MATERIAL MANAGEMENT AREA FL-3