

**Board of
Commissioners Meeting
February 14, 2014**

PRELIMINARY AGENDA

FLORIDA INLAND NAVIGATION DISTRICT Board of Commissioners Meeting

9:00 a.m., Friday, February 14, 2014

**Hilton Garden Inn at PGA Village
8540 Commerce Centre Drive
Port St. Lucie, St. Lucie County, FL 34986**

Item 1. Call to Order.

Chair Kavanagh will call the meeting to order.

Item 2. Pledge of Allegiance.

Chair Kavanagh will lead the Pledge of Allegiance to the United States of America.

Item 3. Roll Call.

Secretary Cuozzo will call the roll.

Item 4. Consent Agenda.

The consent agenda items are presented for approval. Commissioners may remove any items from this agenda that they have questions on or would like the Committee to discuss in depth. Any items removed would then be included in the regular agenda in an order assigned by the Chair.

(Consent agenda follows colored page)

RECOMMEND: Approval of the Consent Agenda.

- A) City of Satellite Beach Small-Scale Spoil Island Restoration and Enhancement Program Project, Brevard County.
 - B) Keep Nassau Beautiful Waterway Cleanup Program Funding Request, Nassau County.
 - C) St. Johns River Waterway Cleanup Program Funding Request, Volusia County.
 - D) Marine Industries Association of South Florida's (MIASF) Waterway Cleanup Program Funding Request, Broward County.
-

Item 5. Additions or Deletions.

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

RECOMMEND: Approval of a final agenda.

Item 6. Public Comments.

The public is invited to provide comments on issues that are NOT on today's agenda. All comments regarding a specific agenda item will be considered following Board discussion of that agenda item. *Please note: Individuals who have comments concerning a specific agenda item should make an effort to fill out a speaker card or communicate with staff prior to that agenda item.*

Item 7. Board Meeting Minutes.

The minutes of the following meetings are presented for approval.

- ♦ January 18, 2014 – Finance & Budget Comm. Mtg. (Please see back up pages 8 - 10).
- ♦ January 18, 2014 – Board Meeting (Please see back up pages 11 - 34).

RECOMMEND: Approval of the minutes as presented.

Item 8. Comments from the U.S. Army Corps of Engineers.

U.S. Army Corps of Engineers (USACE) Intracoastal Waterway Project Manager, Ms. Shelly Trulock is scheduled to present an update on projects and activities.

(Please see back up pages 35 - 38)

Item 9. Staff Report on St. Lucie County Area Projects.

Staff will present a report on the District's St. Lucie County area projects.

(Please see back up pages 39 - 51)

Item 10. Presentation and Discussion on Indian River Lagoon Muck Removal Dredging.

Dr. John Trefry is scheduled to provide a presentation to the Board regarding Muck Removal Dredging in the Indian River Lagoon (IRL). Dr. Trefry is a Florida Institute of Technology Professor of Marine and Environmental Systems who is noted for his work and expertise in IRL sediments. Dr. Trefry recently addressed the Florida State Senate Committee on Environmental Preservation and Conservation with a presentation on "Sediment Accumulation and Removal in the Indian River Lagoon".

In addition, staff has provided a 3-year "Muck Dredging Priorities" summary developed by our engineers as a projected plan for muck removal should the District obtain up to \$20M in State funding each year for this effort.

(Please see back up pages 52 - 56)

Item 11. **Scope of Work and Cost Proposal for Permitting and Final Design of Dredge Material Management Area (DMMA) BV-4B, Brevard County.**

The recent discussions and probable state funding support for muck removal in the Indian River Lagoon (IRL) have elicited review and recommendations from staff and Taylor Engineering in support of this effort. To this effect, DMMA BV-4B has demonstrated the greatest navigation dredging need (approximately 420,000 cy³) within the IRL area, and would have the secondary benefit of muck removal and water quality improvements for this region. Staff has requested a scope of services and cost proposal from Taylor Engineering to complete permitting and final design of this site. The costs reflect necessary additional geotechnical work and permitting efforts (including wetlands) that are not always associated with all DMMA site construction. The proposal is a not to exceed proposal.

(Please see back up pages 57 - 83)

RECOMMEND: Approval of a scope of services and cost proposal in the amount of \$604,346.58 from Taylor Engineering for the permitting and final design of DMMA BV-4B, Brevard County.

Item 12. **Scope of Services and Cost Proposal for Permitting & Engineering of St. Lucie Dredging Reach 1, St. Lucie County.**

Dredging Reach 1 in St. Lucie County is becoming problematic to navigation interests. There are confirmed hard shoals in the Intracoastal Waterway (IWW) both north and south of the entrance to Fort Pierce Inlet and other intermittent shallow areas within this reach. The shoal material needs to be quantified and qualified to determine its proper disposal. Beach quality material could be placed on the neighboring beaches, while non-beach compatible material would be placed in Dredge Material Management Area (DMMA) SL-2 that has been previously constructed. In addition, there are resources and logistical concerns associated with dredging this reach that will require additional evaluation. Staff has requested a scope of services and cost proposal from Taylor Engineering to complete preliminary permitting and design of this project. The costs reflect the required additional geotechnical work and environmental surveys. The proposal is a not to exceed proposal.

(Please see back up pages 84 - 101)

RECOMMEND: Approval of a scope of services and cost proposal in the amount of \$249,410.00 from Taylor Engineering for the permitting and engineering of St. Lucie Dredging Reach 1, St. Lucie County.

Item 13. **Scope of Services and Cost Proposal for Post-Construction Monitoring Services for Dredge Material Management Area (DMMA) NA-1, Nassau County.**

The successful construction of DMMA NA-1 was recently completed. The unique characteristics of this site (compressible clay) required additional dike embankment monitoring equipment to be installed in order to monitor settlement and consolidation of the underlying dike material. The site consolidation must be achieved prior to the utilization of the site for dredge material dewatering. In addition, a monitoring well will be established and monitored as part of the original permit conditions. Staff has requested a scope of services and cost proposal from Taylor Engineering for post-construction monitoring services for this project. The proposal includes the fees associated with expertise needed for additional geotechnical monitoring. The proposal is a not to exceed proposal.

(Please see back up pages 102 - 116)

RECOMMEND: Approval of a scope of services and cost proposal in the amount of \$70,809.45 from Taylor Engineering for post-construction monitoring services for DMMA NA-1, Nassau County.

Item 14. **Scope of Work and Cost Proposal for Construction Administration Services for Dredge Material Management Area (DMMA) FL-3 Construction, Flagler County.**

Engineering and permitting of DMMA FL-3 is complete and the District has received the permits to construct our permanent, Long-Range Dredge Material Management Area. Staff has requested a scope of work and cost proposal from Taylor Engineering for construction administration services for this project. The proposed costs reflect additional geotechnical work necessary to successfully construct this facility. The construction and administration of this project has been previously budgeted. The proposal is a not to exceed proposal.

(Please see back up pages 117 - 132)

RECOMMEND: Approval of a scope of work and cost proposal in the amount of \$389,880.25 from Taylor Engineering for construction administration services for DMMA FL-3, Flagler County.

Item 15. **Scope of Services and Cost Proposal for MSA-726 Clearing & Grubbing Design and Bidding Assistance Services, Broward County.**

The District's Long-Range Dredge Material Management Area MSA-726 located in Pompano Beach near the Hillsboro Inlet will be required for the forthcoming Broward Reach 1 dredging project. Most of the site is currently overgrown with exotic vegetation and a portion of the site is currently in use by the City of Pompano Beach (and Lighthouse Point) as a recreational community park. In order to prepare this site for the dredging event, it must be cleared. Since the site is surrounded by medium-density residential homes, staff is of the opinion that we will need to establish a significant vegetation buffer on this site prior to site utilization.

We have held a preliminary meeting with local officials who are receptive to this concept. The landscape buffer will require a more intensive coordinated effort with the community, including several public meetings. Staff has requested a cost estimate and fee quote from Taylor Engineering, who will utilize the services of a local landscaping firm to assist with the landscape buffer design. The proposal is a not to exceed proposal.

(Please see back up pages 133 - 149)

RECOMMEND: Approval of a scope of services and cost proposal in the amount of \$50,675.82 from Taylor Engineering for MSA-726 Clearing & Grubbing Design and Bidding Assistance Services, Broward County.

Item 16. **Site Mowing Project Bids, Brevard County Dredge Material Management Areas (DMMA) BV-2C, BV-4B, BV-NASA, BV-11, BV-R, BV-40, and BV-52.**

Staff has requested bids from qualified applicants for the quarterly mowing of seven DMMA's (BV-2C, BV-4B, BV-NASA, BV-11, BV-R, BV-40, and BV-52) in Brevard County. These sites are currently cleared and maintained (or constructed) and the existing mowing contracts have expired. The low bidder has worked on other District sites and is qualified to perform the project. The contract will continue for a three-year period.

(Please see back up pages 150 - 173)

RECOMMEND Approval of the low qualified bid from Santa Cruz Construction, Inc. in the amount of \$14,877.00 per event for the three year, quarterly mowing of seven DMMA's in Brevard County. Total contract price is \$178,524.00.

Item 17. **Lease of Dredge Material Management Area (DMMA) LT-4A.**

Following the purchase of DMMA LT-4A in 2009, the District previously entered into a 2-year lease agreement with the existing tenant, Sugar Cane Services, Inc. to continue farming sugar cane on the property. That original lease agreement has expired and the tenant has expressed the desire to continue farming this property. The lessee has paid all back taxes and the required lease fee of \$144.00/acre (for a total of \$5,335.00/year). The District has no immediate plans to develop this property and the lease extension is recommended for a one year extension.

(Please see back up pages 174 – 186)

RECOMMEND Approval of a one- year lease agreement extension with Sugar Cane Services, Inc for the temporary use of DMMA LT-4A, Palm Beach County.

Item 18. **Temporary Partial Assignment of Easement for Beach Restoration in the Vicinity of Ocean Trail Condominiums, Palm Beach County.**

The District's Long-Range Dredge Material Management Area (DMMA) PB-JB is the area identified for the maintenance dredging of the Intracoastal Waterway (IWW) in the vicinity of Jupiter Inlet. This beach area consist of both public and private ownership. In order to facilitate beach renourishment in this area, Palm Beach County (PBC) has obtained 10 year easements from the private property interests within the project template. The District has previously executed agreements with PBC to place sand from the Jupiter IWW maintenance dredging project in the area of the County's easements. The original 10 year agreement in front of the Ocean Trail Condominiums has expired and this item, if approved, will renew the easement for an additional 10 years. Both the County and the adjacent property owners are highly supportive of this effort.

(Please see back up pages 187 - 192)

RECOMMENDED Approval of a Temporary Partial Assignment of Easement from Palm Beach County for the Beneficial Use of Dredge Material (Beach Restoration) at Ocean Trail Condominium, Palm Beach County.

Item 19. **Finance and Budget Committee Report.**

The District's Finance and Budget Committee met prior to the Board meeting and will provide their recommendations concerning items on their agenda.

(Please see Finance and Budget Committee Agenda Package)

RECOMMEND: Approval of the recommendations of the District's Finance and Budget Committee.

Item 20. Legislative Committee Report.

The District's Legislative Committee met prior to the Board meeting and will provide their recommendations concerning items on their agenda.

(Please see Legislative Committee Agenda Package)

RECOMMEND: Approval of the recommendations of the District's Legislative Committee Committee.

Item 21. Additional Staff Comments and Additional Agenda Items.

Item 22. Additional Commissioners Comments.

Item 23. Adjournment.

If a person decides to appeal any decision made by the board, agency, or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

**MINUTES OF THE
FLORIDA INLAND NAVIGATION DISTRICT**

Finance and Budget Committee Meeting

8:30 a.m., Saturday, January 18, 2014

Hilton St. Augustine Historic Bayfront Hotel

32 Avenida Menendez

St. Augustine, St. Johns County, Florida 32084-3644

ITEM 1. Call to Order.

Committee Chair Blow called the meeting to order at 8:32 a.m.

ITEM 2. Roll Call.

Assistant Executive Director Janet Zimmerman called the roll and Chair Blow, Commissioner Bowman, Commissioner McCabe, and Commissioner Sansom were present. Ms. Zimmerman stated that a quorum was present. Commissioner Chappell arrived to the meeting at 8:33 a.m.

ITEM 3. Additions or Deletions.

Chair Blow asked if there were any additions or deletions to the meeting agenda.

Mr. Crosley stated that there are no additions or deletions to the agenda.

ITEM 4. Public Comments.

Chair Blow asked if there were any public comments on issues that are not on today's agenda. There were none.

ITEM 5. Financial Statements for November of 2013.

Mr. Crosley presented the District's financial statements for November of 2013 and noted that the First Atlantic Bank CD is currently receiving 0.36% interest and that

CD will be rolled over with a new competitive interest rate. He stated that most of the money in the Suntrust saving account will be transferred to a bank that can provide a competitive interest rate.

Mr. Crosley stated that the latest report from the SBA shows that the District has an unrealized gain of \$13,984.96 and noted that the funds continue to be frozen. He asked if there were any questions.

Chair Blow questioned the property taxes that the District paid on property leased to Kennedy Farms. Mr. Crosley stated that Mr. Kennedy did not re-file his exemption form and the District was taxed on the property Mr. Kennedy leases from the District. He noted that Kennedy Farms has reimbursed the District for these payments.

Commissioner Sansom made a motion to approve a recommendation to the full Board of the financial statements for November of 2013. The motion was seconded by Vice-Chair Chappell. Chair Blow asked for any additional discussion. Hearing none, a vote was taken and the motion passed.

ITEM 6. November 2013 Expenditure and Project Status Reports.

Mr. Crosley presented the Expenditure and Project Status Reports for November 2013 and he referred to the IWW Ponce Inlet vicinity project. He noted that next month staff will be presenting a project Budget Amendment that will include the carry forward balance for this account.

Commissioner Sansom suggested eliminating the Amount Under/Over column from the report.

Chair Blow asked for questions. There were none.

ITEM 7. Delegation of Authority Report.

Mr. Crosley presented the Executive Director's Delegation of Authority actions and stated that three actions were taken from December 3, 2013 through January 6, 2014 and are presented for Committee review. He asked for any questions. There were none.

ITEM 8. Additional Agenda Items or Staff Comments.

Chair Blow asked if there were any additional agenda items or staff comments. There were none.

ITEM 9. Additional Commissioners Comments.

Chair Blow asked if there were any additional Commissioner comments. There were none.

ITEM 10. Adjournment.

Chair Blow stated that hearing no further business the meeting was adjourned at 8:45 a.m.

**MINUTES OF THE
FLORIDA INLAND NAVIGATION DISTRICT**

Board of Commissioners Meeting

9:00 a.m., Saturday, January 18, 2014

Hilton St. Augustine Historic Bayfront Hotel

32 Avenida Menendez

St. Augustine, St. Johns County, Florida 32084-3644

ITEM 1. Call to Order.

Chair Kavanagh called the meeting to order at 9:02 a.m.

ITEM 2. Pledge of Allegiance.

Treasurer Blow led the pledge of allegiance to the flag of the United States of America.

ITEM 3. Roll Call.

Secretary Cuzzo called the roll and Chair Kavanagh, Vice-Chair Chappell, Treasurer Blow, Commissioners Bowman, Crowley, Isiminger, McCabe, Netts, Sansom, and Williams were present. Secretary Cuzzo stated that a quorum was present.

ITEM 4. Additions or Deletions.

Chair Kavanagh asked if there were any additions or deletions to the meeting agenda.

Mr. Crosley stated that he would like to add to the agenda: Item 17A, Taylor Engineering Hourly Rate Adjustment.

Mr. Crosley passed out additional information including, a letter from St. Johns County, for Agenda Item 9; and a summary of additional bid information for Items 8, 13, and 14.

Treasurer Blow made a motion to approve the final agenda as amended. The motion was seconded by Commissioner Bowman. Chair Kavanagh asked for discussion. Hearing none, a vote was taken and the motion passed.

ITEM 5. Public Comments.

Chair Kavanagh asked if there were any public comments on issues that are not on today's agenda. There were none.

ITEM 6. Board Meeting Minutes.

Chair Kavanagh asked if there were any comments or questions regarding the Board Meeting Minutes. There were none.

Treasurer Blow made a motion to approve the minutes as presented. The motion was seconded by Commissioner McCabe. Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed.

ITEM 7. Staff Report on St. Johns County Area Projects.

Mr. Crosley stated that Phase I of the Dredged Material Management Plan (DMMP) for the Intracoastal Waterway (IWW) in St. Johns County was completed in 1989. He stated that Phase II of the DMMP was completed in 1992 and all major land acquisition was completed in 1995.

Mr. Crosley stated that Maintenance Dredging in Reach V in the vicinity of the Matanzas Inlet is 67% of the county's dredging volume, occurs approximately every 2.7 years, and this reach is the highest shoaling reach of the entire waterway.

Mr. Crosley stated that to date, two of the four upland Dredged Material Management Areas (DMMA) in the county have been fully constructed. He stated that the other two sites have had Phase I development completed. He stated that the District has one beach disposal area SJ-MB, located south of Matanzas Inlet.

Mr. Crosley stated that material was removed by St. Johns County from DMMA SJ-1 in 2011 to repair the sand dunes at Summerhaven Beach. He stated that at that time, the District removed material that had been blown out of the site by Tropical Storm Fay.

Mr. Crosley stated that the county has requested to utilize DMMA SJ-20A for a dredging project associated with the nearby Treasure Beach community. He stated that the county is requesting to use the DMMA and we will discuss that under Item 9.

Mr. Crosley stated that in 2011, Dredging Reach V near Matanzas Inlet was maintenance dredged with approximately 180,000 cubic yards of material, placed on the southern portion of Summerhaven Beach. He stated that plans & specifications for dredging this reach will again be pursued in 2014. He stated that Dredging Reach III in the vicinity of St. Augustine Inlet was dredged in 2011, with the material being placed on the beach at Anastasia State Park.

Mr. Crosley stated that the dredging of the northern portion of Reach I, Palm Valley, was completed in early 2010, with 232,000 cubic yards of material being placed in DMMA DU-9. He stated that this project completed the maintenance of the 15 miles of channel in the Palm Valley Cut.

Mr. Crosley stated that the St. Johns County Waterways Economic Study was completed in 2005 and it found that there were 155 waterway-related businesses in the

county employing 2,157 people, with salaries of \$73 million, a direct economic output of \$139 million and a total economic impact of \$213 million.

Mr. Crosley stated that since 1986, the District has provided \$5 million in Waterways Assistance Program funding to 54 projects in the county having a total constructed value of \$16.9 million. He noted that one of those projects was the installation of a breakwater to the north of the City Marina, where the District's Community Outreach Event took place, and that allowed the marina to become more user friendly. He asked for questions.

Treasurer Blow noted that the material the District placed on the beach at Summerhaven several years ago has washed away. He stated that the people working to restore the Summerhaven River continue to work on obtaining their permits.

Dr. Taylor stated that the Summerhaven area is a chronic high erosion area and that results in breeches to the barrier every few years.

Commissioner Netts asked what is the trigger or criteria to initiate dredging at the Matanzas area. Dr. Taylor stated that area has an authorized 12-foot channel depth, and less than eight-feet would be relevant to initiating a project.

Mr. Crosley stated that the District will start the Matanzas IWW Project Plans and Specifications in late 2014 and he noted that it takes approximately six-months to obtain the permits, which are good for ten years.

Commissioner Netts asked how often the Corps completes a condition survey. Mr. Crosley stated that two months ago the Board approved performing a new Centerline Survey which will provide the District with additional information. He noted that we should have those results in six to eight weeks.

Commissioner Sansom asked about installing a sand trap in that area. Dr. Taylor stated that Taylor Engineering performed detailed bathymetric modeling of the Matanzas area and determined that a sand trap would capture some of the material, but there would be no significant benefit in reducing the overall shoaling rate. Mr. Crosley noted that it was determined that the installation of a sand trap would not prove to be economically feasible because it would not decrease the area's dredging requirements.

ITEM 8. Purchase of Freshwater Wetland Mitigation Credits in Regional Watershed Mitigation Basin #6, St. Johns and Duval Counties (DMMA SJ-14).

Mr. Crosley stated that the District must remediate the impacts for the material release which occurred at Dredge Material Management Area (DMMA) SJ-14 in 2006, and FIND will need to purchase approximately 9.3 Uniform Mitigation Assessment Methodology (UMAM) freshwater wetland mitigation credits. He stated that these credits must be purchased from Regional Watershed Mitigation Basin #6 in order to qualify for the Florida Department of Environmental Protection's (FDEP) settlement order. He stated that in addition, the bid package was structured to allow the possible purchase of up to five additional credits to be utilized as a potential option for the District's long-term monitoring of the required on-site wetland restoration area.

Mr. Crosley stated that staff has requested bids for this item and received three bids, with the apparent qualified low bidder from St. Marks Pond Mitigation Bank, LLC at \$90,000.00 per mitigation credit. He stated that staff bid the project per-credit so we could potentially negotiate the revised mitigation credit requirement with FDEP.

Mr. Crosley stated that because wetland mitigation draws a limited response field, he would like the Board to approve this item based on the bidder list in the event there is

a problem with the low bidder. This would allow staff to move on to the next low bidder and not re-advertise this project.

Mr. Crosley introduced Mr. Bill Schrader of St. Marks Pond Mitigation Bank, LLC and stated that Mr. Schrader is available to answer any commissioner questions.

Vice-Chair Chappell asked for a summary regarding the monetary value required by the FDEP as a fine, the mitigation plan re-planting requirement, and the UMAM Credit requirement. Mr. Crosley stated that with the purchase of the UMAM Credits, everything except the re-planting of the impacted area will be addressed. He stated that we are waiting for the soil salt content to decrease before planting. He stated that staff and Taylor Engineering will be meeting with FDEP on site twice, once at the end of January and once the beginning of February 2014. He stated that staff would like to get the UMAM credits taken care of and then discuss the wetland re-planting project with the FDEP.

Commissioner Isiminger asked if the FDEP has approved the mitigation credits from St. Marks Pond Mitigation Pond Bank, LLC. Mr. Crosley answered yes, verbally and by e-mail. He stated that he does not anticipate any problems with St. Marks Pond Mitigation Bank, LLC.

Mr. Schrader stated that the St. Marks Pond Mitigation Bank is an 800-acre site located inside Mitigation Basin #6 that has been permitted and scored. He stated that the site is comprised of various mitigation credits defined across the 800-acre site. He noted that FDEP cannot reject this mitigation bank. He stated that mitigation banks are the preferred solution for this type of problem. He stated that this is the second time that he has worked with the District and sold mitigation credits to FIND. He stated that he will

work with FIND on this and help in any way he can, including meeting with the FDEP if necessary.

Treasurer Blow stated that he believes in mitigation banks and the concept of mitigation banks, but he did not like the idea of a government agency purchasing mitigation credits for an accident that was not the District's fault. He stated that he felt that perhaps there could be another option for the District to perform mitigation, such as performing a project that would benefit the public in St. Johns County. He stated that after meeting with the FDEP, he now agrees that the best option is to purchase mitigation credits for this impact.

Chair Kavanagh asked if there were any Public Comments on this Item. There were none.

Commissioner Crowley made a motion to approve the bid list for the purchase of up to 14 UMAM freshwater wetland credits in Regional Watershed Mitigation Basin #6 for remediation of SJ-14 impacts. The motion was seconded by Commissioner Sansom. Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed. Commissioner Netts voted against the motion.

ITEM 9. Scope of Work and Cost Proposal for Permitting and Final Design of Dredge Material Management Area (DMMA) SJ-20A, St. Johns County.

Mr. Crosley stated that in October of 2013, staff met with St. Johns County to discuss the potential temporary use of DMMA SJ-20A by the County for the neighboring Treasure Beach dredging project. He stated that through those negotiations, staff requested Taylor Engineering conduct a preliminary site evaluation. The final recommendations by Taylor Engineering included the construction of a permanent

facility prior to any site use, with additional groundwater and geotechnical investigations necessary due to the site's location approximately 1.4 miles from the Intracoastal Waterway.

Mr. Crosley stated that staff feels that it would not be in the District's best interest to allow the temporary use of this site, and that the District should stick with our long-range Dredged Material Management Plan and proceed with construction of this site. He noted that the District's engineers are in concurrence with this plan, and the District has already completed some preliminary investigations on this site.

Treasurer Blow stated that St. Johns County has requested temporary use of the District SJ-20A site for the dredging of their Treasure Beach Canal project. He stated that the dredging has been scheduled and would have been completed by hydraulic dredge that would pump the material to the District's site. He noted that this project would be strictly for temporary use. He noted that the contractor is on a tight schedule. He stated that staff and the District engineer have reviewed this request and have determined that if the site is to be used, the permanent site should be constructed first. He stated that the scheduling does not work well for St. Johns County because they need to get started on their project. He stated that the county would like the District to formally deny their use of this site, which would allow them to use their alternate site, a public boat ramp adjacent to Treasure Beach.

Commissioner Netts stated that because the District has had problems with material releases from our constructed sites, he questioned the safety of using an unconstructed site and how the material would be contained to the site. He stated that he feels the use of an unconstructed site would pose a tremendous risk to the environment

and the District. Mr. Crosley stated that is staff's concern also. He noted that the county said that they were going to install two cells, one for the material and one for dewatering. He stated that staff had Taylor Engineering review the site and they determined that the District is the land owner and would be responsible for any issues, especially issues associated with hydraulic dredging. He stated that the District has a good relationship with the county, but the District should not allow our unconstructed sites for temporary use in general and especially with a hydraulic dredging project.

Treasurer Blow stated that the District has a great relationship with St. Johns County and they have stated that they would take responsibility for any problems with this project. He noted that the District is preparing to spend \$1 million for a spill during a dredging project that was not our fault, but noted as the land owner, the District is being held responsible.

Mr. Crosley stated that the District has developed a 50-year Long Range Dredged Material Management Plan and these sites were purchased for that use. He stated that additionally, he is concerned with groundwater contamination. He noted that if something were to go wrong with the temporary use dredging project, the public reception would not be positive.

Commissioner Sansom stated that he does not feel that any site should be used before it is constructed.

Commissioner Netts stated that because St. Johns County considered constructing temporary cells, there is a cost involved for this temporary use. He questioned if they would want to partner with the District in constructing this site, with an agreement for use of this site for their future dredging projects.

Treasurer Blow stated that the county implemented a special assessment to the residents of Treasure Beach and the county must move forward with this dredging project at this time.

Ms. Zimmerman read a letter from St. Johns County, signed by Michael B. Rubin, Director for St. Johns County Construction Services Department to the Board. (The letter will be attached to the District's Minutes.)

Ms. Phyllis Thorpe, Construction Services Supervisor for St. Johns County, stated that she wanted to make sure that the letter from the county was read at the meeting. She stated that she would like to thank the District for consideration of this request and all the time and concern that has gone into St. Johns County's request to use District Site DMMA SJ-20A. She stated that the county has given the District reasonable assuredness that the county would sign a hold-harmless agreement along with a temporary lease to use this site. She stated that the county is requesting a simple yes or no vote from the Board to approve or deny St. Johns County's request to use DMMA SJ-20A.

Chair Kavanagh asked if there were any other guests that had any questions or wanted to address the Board. There were none.

Commissioner Netts made a motion of a simple "no" for temporary use of DMMA SJ-20A from St. Johns County. The motion was seconded by Secretary Cuzzo. Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed.

Commissioner Sansom made a motion to approve a scope of services and cost proposal in the amount of \$500,594.98 from Taylor Engineering for the permitting and

final design of DMMA SJ-20A, St. Johns County. The motion was seconded by Commissioner McCabe. Chair Kavanagh asked for discussion.

Treasurer Blow referred to DMMA SJ-20A and noted that the site is adjacent to a residential neighborhood, school, golf course, and a large tract of land belonging to the St. Johns River Water Management District (SJRWMD). He noted that saltwater intrusion is already a problem in this area. He stated that if the District decides to construct this site, the District should evaluate the need for more land in this area and pursue that from the SJRWMD first.

Dr. Taylor noted that the land owned by the SJRWMD is under conservation easement.

Mr. Crosley noted that the District has built the sites in the areas of the waterway that have a need for frequent waterway maintenance. He stated that now we are focusing on sites that are in areas of the waterway not requiring as frequent maintenance. He noted that right now, the District's pressing need is to build the sites for the Okeechobee Waterway maintenance.

Mr. Crosley stated that he presented DMMA SJ-20A for construction because the local community has requested the use of this site. He stated that some of these sites present saltwater intrusion problems. He stated that the way the District proposes to handle this problem is to install monitoring wells and take groundwater samples to determine intrusion levels. He stated that if the site shows saltwater intrusion potential, FIND may need to install a liner at the site. He stated that construction of this site will provide beneficial information when we move forward with construction of other similar sites.

Dr. Taylor stated that DMMA SJ-20A is one of the District's primary permanent DMMA facilities. He stated that construction of this site will be a large job and he noted that the construction cost is expected to increase. He stated that DMMA SJ-20A has a current site capacity of only 55,000 cubic yards of material and that estimate was made from the District's 1980 DMMA Plan based on the information available at that time. He stated that since that time Taylor Engineering has obtained additional information and the latest survey revealed approximately 100,000 cubic yards of material in Reach IV, which is the dredging area served by this site. He stated that this site will be developed in phases, starting with site data, groundwater modeling, and the evaluation of different alternatives. He stated that if this site requires lining, the cost could be an additional \$1.5 million or more. He stated that the engineers are working to identify a less expensive alternative. He stated that the proposal will include an evaluation of an increase in the site's capacity, reduction in the buffer width, and an increase in containment dike height. It will take approximately one year to complete. He noted that this proposal is a not to exceed proposal.

Vice-Chair Chappell asked if this site has wetlands. Dr. Taylor stated that there are wetlands in the buffer area and that the facility will not impact the wetlands. Vice-Chair Chappell asked if from a permitting standpoint, will there be any environmental impact problems. Dr. Taylor answered no. Vice-Chair Chappell requested that future work proposals estimate the RAI's and that the figures should match the timeline schedule.

Treasurer Blow stated that he was surprised to find that there is saltwater intrusion in the groundwater in this area, but noted that the county has placed most of the residents in this area on city water and sewer. He stated that this should be documented.

Commissioner Williams suggested meeting with the public regarding this project. Secretary Cuzzo stated that he does not have an objection to holding a public meeting, but recommended that we should not do so before all the facts are in place. Dr. Taylor stated that construction of this site will be reviewed by the State of Florida during the permitting process and that will determine how the District will proceed forward.

Commissioner Crowley noted that this site is also adjacent to a hydro aluminum plant, which is next to the school.

Treasurer Blow asked if the District could exchange this site for an area of the SJRMWD site closer to the IWW. Dr. Taylor answered that it has been a long time since he has reviewed this site, but when the site was purchased, he remembers that there were not a lot of other options and that was many years ago.

Commissioner Isiminger stated that in the past, the Board has approved work orders for projects and he questioned the "not to exceed" proposal. Dr. Taylor noted that work orders sometimes involve permitted projects or projects with delays. Mr. Adams stated that this proposal has been reviewed item by item to determine how best to accomplish the work.

Commissioner Bowman noted that this reach of the waterway was dredged to a 12-foot channel depth in 1952. He asked if we have a projected dredging date that we will need the use of this site. Mr. Crosley stated that currently, there are pockets that

require dredging and the Survey 2013 may reveal updated shoaling information and the District should anticipate dredging upon completion of this site.

Commissioner Bowman asked if once a site is constructed, does it degrade over time. Dr. Taylor stated that staff does inspect the site on a regular basis, but overall, we do not have problems with a site once it is constructed. Mr. Crosley stated that the District has made some design changes to these sites to reduce maintenance costs.

Dr. Taylor stated that Taylor Engineering, Inc. would never recommend moving forward with construction of a site that would prove to be un-useful. He stated if there are any kinds of issues, he will let this Board know about it, openly, candidly and honestly.

Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed. Commissioner Williams voted against the motion.

ITEM 10. Dredge Material Management Area (DMMA) DU-8 Engineering Design for an Underground Pipeline Sleeve in the Pipeline Easement.

Mr. Crosley stated that since its original purchase in 1988, the area surrounding permanent DMMA Site DU-8 in Duval County has experienced rapid development. Condominiums have been constructed along the District's pipeline easement at this site. He noted that during a dredging event in 2006, a pipeline ruptured and affected the adjacent condominiums. He stated that as a result, subsequent pipeline access to this site has required a pipeline sleeve or pipeline burial to avoid a similar occurrence. He stated that during the recent use of the site, staff received several complaints and concerns from property owners and the property manager during the pipeline staging and burial. He noted that staff has a great relationship with the adjacent homeowners and condominium management and he would like to maintain that relationship.

Mr. Crosley stated that staff requested that our engineering firm investigate the possibility of a permanent pipeline sleeve at this location. He stated that the positive result of this initial investigation has lead to the request for a final design. He stated that the plan is to reduce construction costs and disruption by installing this pipeline sleeve when the current on-site contractor removes the temporary buried dredge pipeline. He asked for questions.

Commissioner Bowman asked for a rough estimate of other pipeline sleeve installations. Mr. Crosley stated that the pipeline sleeve installed at DMMA SJ-14 cost approximately \$100,000.00, but it was more extensive.

Treasurer Blow noted that there is no mention of meeting with the Homeowners Association regarding this installation. Mr. Adams stated that he has no problem meeting with the Homeowners Association.

Commissioner Sansom made a motion to approve a scope of services and cost proposal in the amount of \$42,441.08 from Taylor Engineering for the final design of an underground pipeline sleeve at DMMA DU-8, Duval County. The motion was seconded by Treasurer Blow. Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed.

ITEM 11. Site Mowing Project Bids, Flagler (FL-3, FL-8, FL-12) and Volusia (V-22 and V-29) Counties Dredge Material Management Area (DMMA).

Mr. Crosley stated that staff has requested bids from qualified applicants for the quarterly mowing of three DMMA's FL-3, FL-8, and FL-12 in Flagler County and two DMMA's V-22 and V-29 in Volusia County. He stated that these sites are currently cleared and maintained, or constructed, and the existing mowing contracts have expired.

He stated that the project was bid and three bids were received. He stated that the low bidder is a new contractor for FIND with comparable experience and solid references. He stated that staff recommends the lower bidder and they appear qualified to perform the project. He stated that the contract will continue for a three-year period with a total net cost of approximately \$137,004.00 for four mowing events per site over three years.

Vice-Chair Chappell made a motion to approve the low qualified bid from Ashlie Environmental in the amount of \$11,417.00 per event for quarterly mowing of five DMMA's in Flagler & Volusia Counties. The motion was seconded by Commissioner Netts. Chair Kavanagh asked for discussion.

Commissioner Sansom suggested that we investigate alternative methods to maintain District sites.

Secretary Blow noted that this type of mowing is specialized with a mechanical arm that should only be operated by experienced staff.

Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed.

ITEM 12. Volusia County Monitoring Well Sampling, Dredge Material Management Areas (DMMA) V-22, V-26 and V-29.

Mr. Crosley stated that staff has requested bids from qualified applicants for the quarterly sampling and analysis of well data of three DMMA's V-22, V-26 and V-29 in Volusia County. He stated that these sites currently have monitoring wells installed and the existing sampling contracts have expired. The project was bid and five bids were received. He stated that the District has successfully worked with the apparent low-bid contractor, Bonn Environmental Services & Technologies, Inc., in the past and they

appear qualified to perform the project. He stated that the contract will continue for a three-year period for a total contract amount of \$21,300.00.

Vice-Chair Chappell made a motion to approve the low qualified bid from Bonn Environmental for a three-year quarterly sampling of 17 monitoring wells for three DMMA's V-22, V-26 & V-29 in Volusia County. The motion was seconded by Treasurer Blow. Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed.

Commissioner Williams suggested that the District provide this information to local government or the water management district to show that we are doing this type of monitoring.

ITEM 13. Brevard County Monitoring Well Sampling, Dredge Material Management Areas (DMMA) BV-2C, BV-4B, BV-11 and BV-52.

Mr. Crosley stated that staff has requested bids from qualified applicants for the quarterly sampling and analysis of monitoring wells on four DMMA's, BV-2C, BV-4B, BV-11 and BV-52 in Brevard County. He stated that these sites currently have monitoring wells installed and the existing sampling contracts have expired. The project was bid and six bids were received. He stated that the District has successfully worked with the apparent low-bid contractor, Bonn Environmental Services & Technologies, Inc., in the past and they appear qualified to perform the project. He stated that the contract will continue for a three-year period for a total contract amount of \$33,000.00.

Secretary Cuzzo commented on the large difference in some of these bids. Mr. Crosley noted that some of these firms use engineers and those bids are more costly. He stated that Bonn Environmental has done this work for the District for many years.

Secretary Cuzzo made a motion to approve the low qualified bid from Bonn Environmental for a three-year quarterly sampling of 27 monitoring wells for three DMMA's BV-2C, BV-4B, BV-11, and BV-52 in Brevard County. The motion was seconded by Treasurer Blow. Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed.

ITEM 14. Palm Beach County Monitoring Well Sampling, Dredge Material Management Areas (DMMA) MSA-617C, MSA-640 and MSA-641.

Mr. Crosley stated that staff has requested bids from qualified applicants for the quarterly sampling and analysis of monitoring wells on three DMMA's, MSA-617C, MSA-640 and MSA-641 in Palm Beach County. He stated that these sites currently have monitoring wells installed and the existing sampling contracts have expired. The project was bid and 11 bids were received. He stated that the District has successfully worked with the apparent low-bid contractor, Bonn Environmental Services & Technologies, Inc., in the past and they appear qualified to perform the project. He stated that the contract will continue for a three-year period for a total contract amount of \$15,600.00.

Commissioner Netts made a motion to approve the low qualified bid from Bonn Environmental for a three-year quarterly sampling of 13 monitoring wells for three DMMA's MSA-617C, MSA-640, and MSA-641 in Palm Beach County. The motion was seconded by Secretary Cuzzo. Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed.

ITEM 15. Finance and Budget Committee Report.

Treasurer Blow stated that the Finance and Budget Committee met earlier today and the committee reviewed and recommends approval of the November 2013 financial statements, the delegation of authority, and the expenditure and project status report.

Treasurer Blow stated that the State Board of Administration Fund "B" is showing an unrealized gain, and he noted that those funds are still frozen.

Treasurer Blow made a motion to approve the recommendations of the District's Finance and Budget Committee of the November 2013 financial statements. The motion was seconded by Commissioner Netts. Chair Kavanagh asked for discussion. Hearing none, a vote was taken and the motion passed.

ITEM 16. Washington Report.

Mr. Crosley stated that the House and Senate conferees for the Water Resources Development Act (WRDA) are continuing negotiations to work out the differences between the House and Senate versions. He stated that FY 2014 navigation project appropriations will be provided to the U.S. Army Corps of Engineers (USACE) to prioritize.

Mr. Crosley stated that the Washington D. C. trip is scheduled for February 23 through February 27, 2014. He stated that during that visit, the District will request funding for Dredging Reach I in Broward County and building Dredged Material Management Sites in Okeechobee and Brevard County.

Mr. Crosley stated that the Magnuson Stevens Act is up for reauthorization and this bill would be an appropriate vehicle to address the "essential fish habitat" definition which has led to the required mitigation of Johnson's Seagrass for maintenance dredging activities in the Intracoastal Waterway (IWW). He stated that currently there are important Committee meetings taking place regarding this issue. He noted that he has offered to fly to Washington to speak with those representatives, if necessary. He asked for questions.

Commissioner Isiminger noted that he spoke with Colonel Dodd last evening and he mentioned that the Water Resources Development Act (WRDA) Bill may include language that would allow the Corps to move forward on projects and not wait on agency comments. He requested that staff ask Mr. Davenport investigate the issue.

Commissioner Isiminger stated that additionally, the Johnson's Seagrass issue is regional and he noted that there should be other states affected by this language and perhaps Mr. Davenport could discuss this issue with them.

Commissioner Sansom noted that the focus in the Magnuson Stevens Act this year is to add flexibility to the rule and that he feels that the mitigation for dredging regarding Johnson's Seagrass impacts should be brought to the representative's attention.

Vice-Chair Chappell asked if staff has given Mr. Davenport examples of dredging impacts to Johnson's Seagrass. Mr. Crosley noted that the Parker Bridge dredging project was conducted with a general permit that required a project area buffer 100-foot away from Johnson's Seagrass. He stated that he will work with Taylor Engineering to develop a list.

Vice-Chair Chappell noted that during the deepening of the man-made Dania-Cut-Off Canal dredging project, the National Marine Fisheries required Johnson's Seagrass mitigation by requiring the removal of Brazilian Peppers.

Treasurer Blow stated that it is good use of staff time and resources to work to try to fix some of the problems with the Magnuson Stevens Act. He stated that the process is broken when a National Marine Fisheries employee can hold up a maintenance dredging project forever, and cost local governments a tremendous amount of money with no additional benefit to the environment.

ITEM 17A. Taylor Engineering Hourly Rate Adjustment.

Dr. Taylor stated that the District's agreement with Taylor Engineering allows the rates for services to be adjusted annually by mutual agreement. He noted that Taylor Engineering did not request a rate increase last year.

Dr. Taylor stated that for 2014 he is proposing an average 1.8% increase for all staff and a 3.7% adjustment for technical and professional staff. He stated that the District's Senior Advisor is Mr. John Adams who works only with FIND and he noted that Mr. Adams has done a great job. He stated that this request is in line with industry standards and that he feels that the proposed increase is reasonable given that Taylor Engineering did not request an increase in 2013. He stated that he respectfully asks that the Board consider this request. He asked for questions.

Commissioner Isiminger stated that he is new to this Board but knows about Taylor Engineering through the industry and that they have earned their good reputation. He stated that he respects Dr. Taylor and Taylor Engineering. He stated that he has reviewed this request and finds the costs reasonable. He noted that lower rates do not always mean cheaper costs and he noted that when someone gets the work done correctly the first time, that is the higher value firm.

Vice-Chair Chappell asked if the invoices reflect the staff member name or classification that performed each task. Dr. Taylor stated that information is in their system and they can document that.

Treasurer Blow stated that the invoice should not show the staff member name, but just the title, such as Staff Professional.

Treasurer Blow stated that he is totally comfortable with Taylor Engineering, Inc. He stated that you are hiring the people within the firm and Dr. Taylor and his staff are the best.

Commissioner Crowley made a motion to approve the rate adjustments requested by Taylor Engineering for 2014. The motion was seconded by Commissioner Netts. Chair Kavanagh asked for discussion.

Commissioner Sansom noted that Taylor Engineering provided a very quick response to the District's request regarding the Florida Legislature's inquiry about muck removal. He stated that they provided a 36-month spending plan if the District were to receive \$20 million a year for muck removal, which included site construction, removal, and processing of the material. He noted that the information has been received by the Florida House, Senate and Governor's office.

Chair Kavanagh asked if there was any further discussion. Hearing none, a vote was taken and the motion passed.

Mr. Crosley stated that Dr. Trefry will address the Board at the District's February 14, 2014 meeting regarding the muck issue.

Mr. Crosley stated that Taylor Engineering, Inc. has been the District's firm for many years and he wanted to thank Dr. Taylor, John Adams, Lori Brownell, John Armbruster, and Jim Marino and the rest of the staff for going above and beyond during the Executive Director transition. He stated that it seems smooth on the outside but they have worked very hard during this transition to keep things running smooth from the inside.

Dr. Taylor thanked the Board for their kind comments and he recognized and thanked his staff for their hard work.

ITEM 17. Additional Staff Comments and Additional Agenda Items.

Chair Kavanagh asked if there were any additional staff comments or agenda items.

Mr. Crosley stated that the Washington D. C. trip is scheduled for February 23 through February 27, 2014. He stated that staff has made hotel arrangements, but commissioners interested in going should make their own travel arrangements. He asked that commissioners interested in going to Washington D. C. contact him.

Mr. Crosley stated that the Intracoastal Waterway (IWW) tour is scheduled for April and will start in Miami and head north along the IWW. He stated that commissioners attending the full tour or any part of the tour should contact him.

Mr. Crosley noted that he spoke with Colonel Dodd at last evening's Community Outreach Event and the Colonel is looking forward to the IWW Waterway Tour.

ITEM 18. Additional Commissioners Comments.

Chair Kavanagh asked if there were any additional Commissioner comments.

Vice-Chair Chappell stated that the Broward County deepening project is very important to the county. He stated that Taylor Engineering has put together a White Paper regarding the project that will be distributed by the Marine Industries and the District to the County Commissioners and local government. He stated that Congresswoman Frankel is coming into town this week to discuss this project and help get the project back on track with Broward County Parks and Environmental

Departments. He stated that additionally, next week, he, Mr. Crosley, and Mr. Adams will be meeting with Port Everglades to secure the DMMA site.

Mr. Crosley stated that he met with Congresswoman Frankel and he provided her with a Palm Beach County Deepening project summary paper. He noted that the north boundary of her District starts at FIND's Palm Beach County Deepening project and the south boundary including FIND's Broward County Deepening project. He stated that she supports these projects.

Treasurer Blow thanked everyone for attending last evening's Community Outreach Event. He noted that without the IWW maintenance we would not have ships like the El Galeòn on our waterways.

ITEM 19. Adjournment.

Chair Kavanagh stated that hearing no further business the meeting was adjourned at 11:19 a.m.



**US Army Corps
of Engineers ®**
Jacksonville District

**IWW STATUS UPDATE
FIND Board of Commissioners Meeting
February 14, 2013**



WORK ACTIVITIES IN FY 14:

1. IWW: Sawpit (Nassau County)
2. IWW: Indian River Reach 1 (Indian River County)
3. IWW: Bakers Haulover / Jupiter (O&M Supplemental project)



**US Army Corps
of Engineers ®**
Jacksonville District

IWW STATUS UPDATE FIND Board of Commissioners Meeting February 14, 2013



AIWW = Atlantic Intracoastal Waterway Norfolk to St. Johns

IWW = Intracoastal Waterway Jacksonville to Miami (12' and 10' projects)

DMMA = Dredge Material Management Area

1. WORK ACTIVITY: AIWW Sawpit Reach 3(Nassau County)

CONTRACT AMOUNT: \$4,288,670.00

DESCRIPTION OF WORK: The AIWW Sawpit Reach 3 project consists of maintenance dredging of approximately 591,000 cubic yards (cy) of material from the AIWW channel and settling basins in Cuts 24-26A, 27, 27A, 27C; and adjoining advance maintenance areas in the waters of Sawpit Creek, the Amelia River, and Nassau Sound. The majority of the excavated material, 578,000 cy, will be placed in the Amelia Island State Park beach disposal site. The pumping distance between dredging areas and beach placement ranges from 4.0 miles to 1.5 miles. The material from Cut-27, totaling 13,000 cy is not beach compatible and will be placed upland in DMMA DU-2. DMMA DU-2 lies adjacent to Cut-26A and Cut-27.

SCHEDULE:

Submit WQC permit application to DEP:	29 June 2011A
Pre Application Meeting	2 Aug 2011A
Date we expect DEP permit:	20 July 2012A
Contract Advertisement Initiated:	8 March 2013A
Bid Opening:	8 April 2013A
Contract Award:	10 May 2013A
NTP Issued:	7 June 2013A
Preconstruction Conference:	19 June 2013A
Mobilization Complete:	14 July 2013A
Begin Dredging:	15 July 2013A
Dredging Complete:	22 Nov 2013A

FIND WORK ORDER: Work order for dredging of AIWW Sawpit Reach 3 was approved by the FIND Board in December 2012.

NAME OF CONTRACTOR: Contract was awarded to Cottrell Contracting Corporation on 10 May 2013 in the amount of \$4,288,670.00.

STATUS: Dredging and tilling has been completed and contract closeout is underway. This will be the last report on the AIWW Sawpit project.





**US Army Corps
of Engineers ®**
Jacksonville District

**IWW STATUS UPDATE
FIND Board of Commissioners Meeting
February 14, 2013**



2. WORK ACTIVITY: IWW Indian River Reach 1 (Indian River County)

CONTRACT AMOUNT: TBD

DESCRIPTION OF WORK: Development of plans and specifications for the IWW Indian River Reach 1. Material from this reach is non beach quality and will be placed upland in the newly constructed DMMA IR-2. Preliminary estimates for shoaling quantities include 100,000 cy of material within Reach 1.

SCHEDULE (Tentative):

Submit Exemption Letters to FDEP:	26 Nov 2013A
Complete Plans & Specification (including all reviews and certifications):	28 April 2014
Contract Advertisement Initiated:	6 May 2014
Bid Opening:	4 June 2014
Contract Award:	2 July 2014
NTP Issued:	31 July 2014
Mobilization Complete:	28 Aug 2014
Begin Dredging:	29 Aug 2014
Dredging Complete:	25 Nov 2014

FIND WORK ORDER: Work order for developing plans and specifications for Indian River Reach 1 was approved at the May 2013 FIND Board Meeting. Wire transfer of funds was completed 25 June 2013. A separate work order will be developed and presented to the FIND Board prior to initiating dredging.

NAME OF CONTRACTOR: TBD

STATUS: Jacksonville received concurrence from FDEP that both the dredging and pipeline corridor were exempt actions. This is a huge step forward for the team! The current schedule shows dredging starting in August 2014 within Indian River Reach 1.



**US Army Corps
of Engineers ®**
Jacksonville District

IWW STATUS UPDATE FIND Board of Commissioners Meeting February 14, 2013



3. WORK ACTIVITY: IWW Bakers Haulover / Jupiter – O&M Supplemental Project

DESCRIPTION OF WORK: Based on shoaling incurred within these two reaches with the passage of Hurricane Sandy in the Fall of 2012, Emergency Supplemental funding was received by the Corps to proceed with O&M dredging for these two reaches. Approximately 50,000 cy of material will be removed from within the Bakers Haulover reach of the IWW and 125,000 cy of material will be removed from within the Jupiter reach of the IWW. All material is beach quality. There is approximately 3,000 cy of material that is advanced maintenance within cut 4.

SCHEDULE:

Contract Advertisement Initiated:	15 Aug 2013A
Bid Opening:	5 Sept 2013A
Contract Award:	19 Sept 2013A
NTP Issued:	7 Dec 2013A
Mobilization Complete:	27 Jan 2014A
Begin Dredging:	2 Feb 2014A
Dredging Complete:	17 Apr 2014

FIND WORK ORDER: N/A: 100% of the plans and specifications and dredging contract is being funded with Hurricane Sandy Supplemental funding.

NAME OF CONTRACTOR: Contract was awarded to Southwind Construction Corporation on 19 Sept 2013 in the amount of \$2,601,206.58.

STATUS: Contract was awarded on 19 Sept 2013. As of Sunday 2 Feb 2014, dredging began at midnight in Cut P4 of the Jupiter Reach. Although somewhat behind schedule, there are no indications that the contract will extend past the established completion date of 17 April 2014. Intense discussions have occurred with the contractor regarding the presence of seagrasses within cuts P1 and P2 in the Jupiter reach. Per the FDEP permit, we are allowed to have impacts to resources WITHIN the federal channel. The federal channel as defined includes the area that makes up the 3-1 side slope, therefore, an additional 36' on each side of the 125' cut. The Corps has directed the contractor to proceed into cuts P1 and P2 after finishing the advanced maintenance area/cut P4. The contractor's operations may slow down due to the way he'll have to maneuver the dredge up the channel. However, Corps staff feels that the contractor will be able to remove and clear most of the federal channel. It should be noted that impacts are NOT allowed to resources outside of the federal channel. This limits the contractor to anchoring within the 125' plus 36' on each side. After finishing the Jupiter reach the contractor will proceed south to the Bakers Haulover reach.



ST. LUCIE COUNTY PROJECT STATUS UPDATE

February 2014

Dredged Material Management Plan

Phase I of the Dredged Material Management Plan for the Intracoastal Waterway in St. Lucie County was completed in 1997. Phase II of the DMMP was completed in 2001 and all major land acquisition was completed in 1999. (Please see the attached maps).

The 50-year dredging projection for this county is 29,201 cyd³ and the storage projection is 62,782 cyd³, the second lowest of the District's 12 counties. Limited dredging within Reach I will be conducted in 2014.

DMMA SL-2, which will serve Dredging Reach I, has been constructed and DMMA M-8 has been fenced.

Waterway Dredging

Limited dredging of Dredging Reach I is scheduled for 2014. A couple of shoals in the Intracoastal Waterway (ICW) north and south of the Fort Pierce Inlet in Reach I have been identified as navigation problems and are expected to be corrected with this dredging effort.

Waterways Economic Study

The St. Lucie County Waterways Economic Study was completed in 2001 and updated in 2011. The studies found that there were 125 waterway related businesses in the county employing 1,184 people, with salaries of \$45 million and a total economic impact of \$186 million. Approximately \$8.3 million in tax revenue was generated by waterway activities. Property values were determined to be increased by \$155 to \$188 million by the presence of the ICW channel. There are 13,100 registered vessels in the county.

Waterways Assistance Program

Since 1986, the District has provided \$5.7 million in Waterways Assistance Program funding to 55 projects in the county having a total constructed value of \$20.8 million. The County, the City of Ft. Pierce, Port St. Lucie, the Ft. Pierce Utilities Authority and the St. Lucie County Port and Airport Authority have participated in the program. See attached listing.

Notable projects funded include: the Ft. Pierce Municipal Marina; public boat ramps at St. Lucie Inlet State Park, South and North Causeways, Ft. Pierce Marina, and Jaycee Park, and; shoreline stabilization in downtown, the north and south causeways, and River Park Marina.

FIND



ST. LUCIE COUNTY PROJECT STATUS UPDATE

February 2014

Cooperative Assistance Program

The District's Cooperative Assistance Program has provided funding assistance for the following projects with elements in St. Lucie County: Taylor Creek Dredging and Restoration; Florida Clean Marina Program; Florida Clean Vessel Act Program; Florida Marine Patrol Officer Funding; the Indian River Lagoon Boaters Guide; and the Indian River Lagoon Spoil Island Management Plan. The District's funding assistance for the St. Lucie County portion of these projects was approximately \$613,000.00.

Interlocal Agreements

Through Interlocal Agreements the District has provided funding assistance in the amount of \$667,000.00 for the following projects or project with elements in St. Lucie County: Taylor Creek Dredging and restoration; Florida Clean Marina Program; Florida Clean Vessel Act Program, and the M-8 Shoreline Stabilization Project.

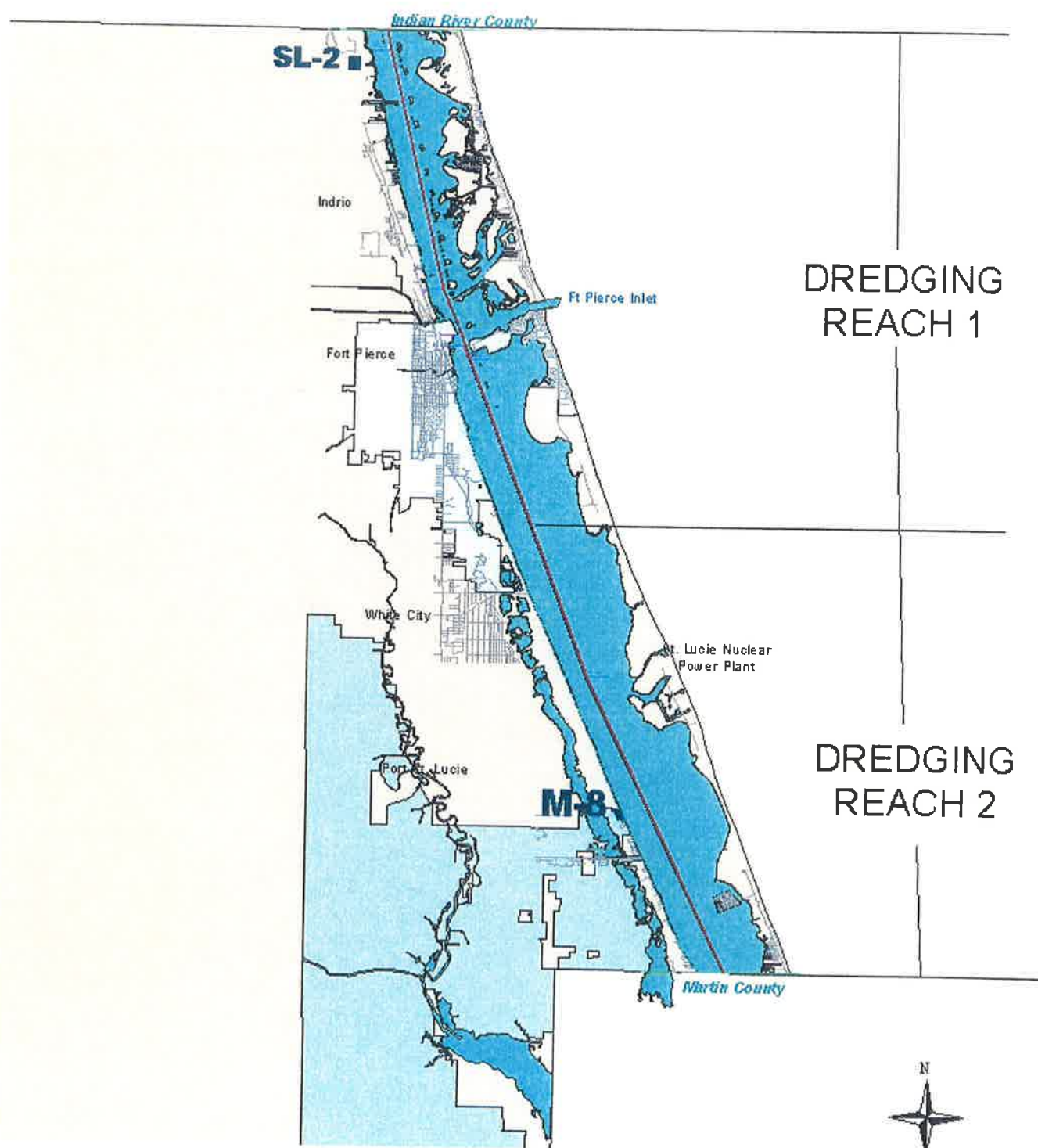
In addition, in 2013 the District provided approximately 119,000 cyd³ of sand for the construction of the Ft. Pierce Waterfront Protection Project. The material originated from our DMMA M-5 site in Martin County. This project will protect the downtown waterfront and allow the rebuilding of a majority of the Ft. Pierce Municipal Marina, a WAP assistance project that was destroyed by the hurricanes of 2004.

Public Information Program

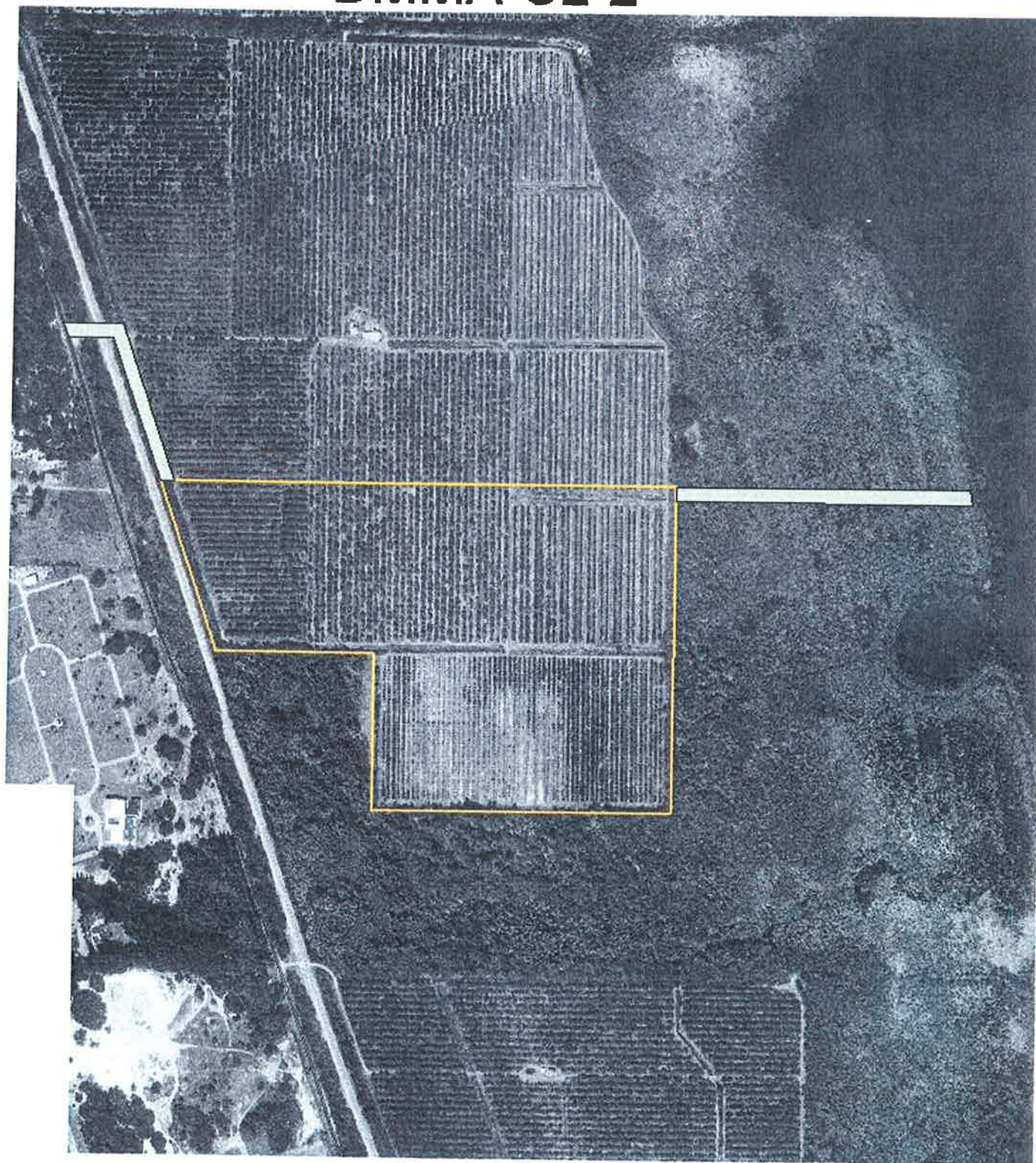
The District currently prints and distributes the following brochures with specific information about St. Lucie County Waterways: the Economic Impact of St. Lucie County Waterways; St. Lucie County Spoil Islands; St. Lucie County Manatee and Boating Safety Zones; ICW Channel Conditions; and the ICW Moveable Bridge Guide.





FIND

LONG RANGE DREDGED MATERIAL
MANAGEMENT PLAN
FOR THE INTRACOASTAL WATERWAY
IN ST. LUCIE COUNTY



DMMA SL-2



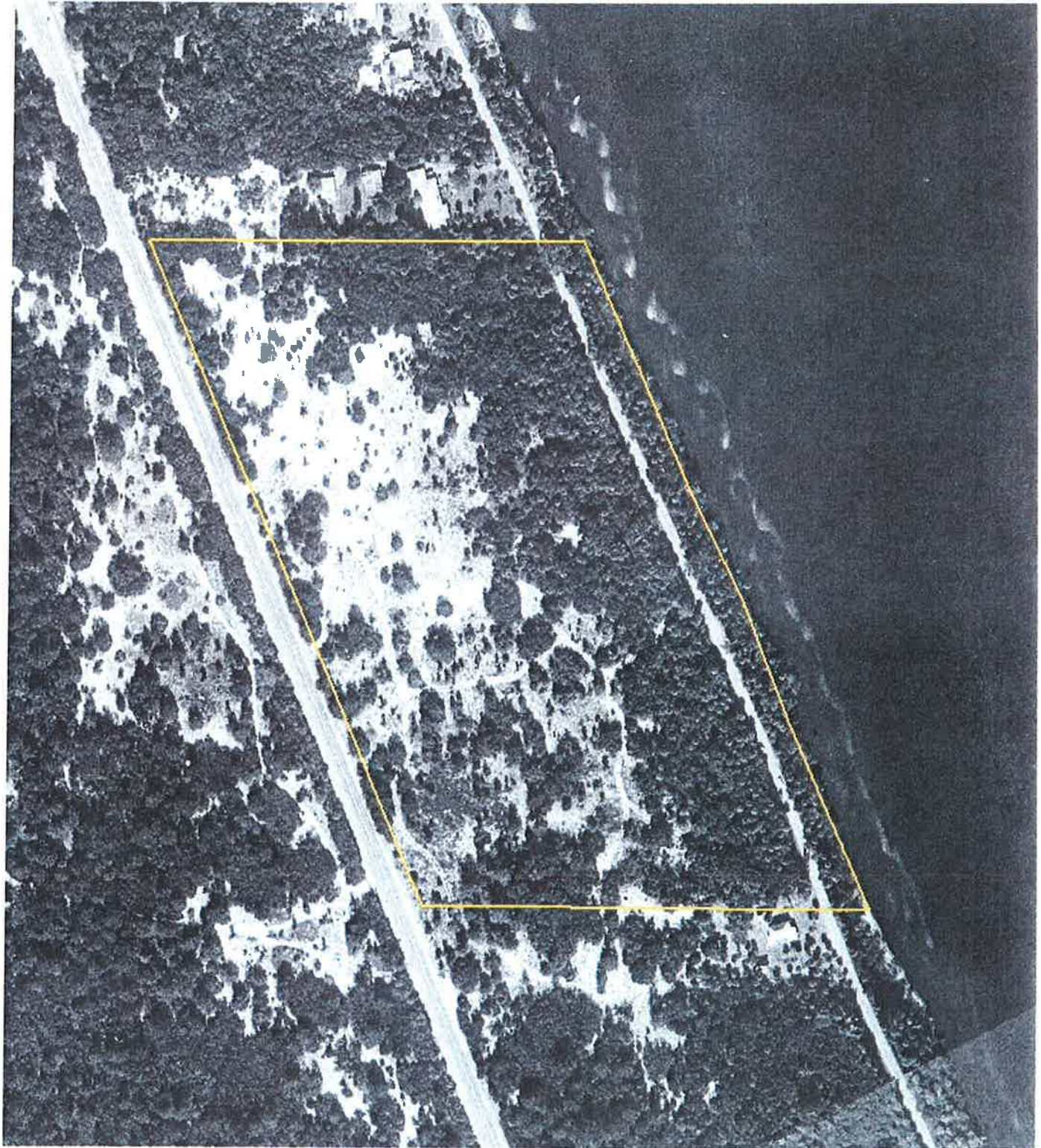
-  FIND Easement
-  FIND Owned
-  Channel
-  ICW Right-of-Way









Imagery Date: 4/23/2012 27°32'50.30" N 80°21'37.39" W elev 4 ft eye alt 3788 ft

DMMA M-8



-  FIND Easement
-  FIND Owned
-  Channel
-  ICW Right-of-Way





Google earth

© 2013 Google

Imagery Date: 4/23/2012 27°18'44.17" N 80°15'43.12" W elev 27 ft eye alt 2272 ft

526 ft

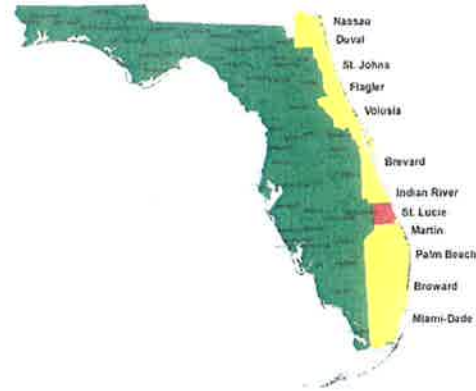
1994

ECONOMIC BENEFITS OF THE DISTRICT'S WATERWAYS



Purpose

To update economic benefits in St. Lucie County of marine-related activities on the District Waterways, as previously estimated in *An Economic Analysis of the District's Waterways in St. Lucie County*, June 2001, and to provide the general public and Federal, State, and local officials with a clear understanding of the importance of maintaining the waterways.



Scenarios Evaluated

1. Current Existing Conditions
2. Cessation of Waterways Maintenance
3. Increase in Waterways Maintenance
4. Estimated impact of the 2007-2009 U.S. economic recession

ECONOMIC IMPACTS

Current Existing Impacts

- \$186.0 million in business volume
- \$45.0 million in personal income
- 1,184 jobs
- \$8.3 million in tax revenue

Impacts of Cessation of Waterways Maintenance

- Decrease of \$90.3 million in business volume
- Decrease of \$23.7 million in personal income
- Decrease of 69 jobs
- Decrease of \$3.8 million in tax revenue

Impacts of an Increase in Waterways Maintenance

- Increase of \$19.55 million in business volume
- Increase of \$4.77 million in personal income
- Increase of 133 jobs
- Increase of \$0.9 million in tax revenue

Impact of the 2007-2009 U.S. Economic Recession

- Decrease of \$284.4 million in business volume
- Decrease of \$69.8 million in personal income
- Decrease of 1,815 jobs
- Decrease of \$10.9 million in tax revenue

Economic Benefits as of April 2011

ST. LUCIE COUNTY



ECONOMIC BENEFITS OF THE DISTRICT'S WATERWAYS

ST. LUCIE COUNTY

The Intracoastal Waterway

The Atlantic Intracoastal Waterway (AICW) is a 1,391-mile channel between Trenton, New Jersey, and Miami, Florida. The Waterway along Florida's eastern seaboard is 406 miles long and follows coastal rivers and lagoons past numerous tourism-oriented communities. The channel is authorized to a depth of 12 feet from Nassau County to Fort Pierce, and a 10 foot depth south through Miami-Dade County. Boating activities on the waterways contribute to the existence of numerous marine-related businesses such as marinas and boatyards and have stimulated development of residential properties on the Waterways.

The Navigation District

The Florida Inland Navigation District, created in 1927, is the local sponsor for the AICW in Florida. In cooperation with the Jacksonville District of the U.S. Army Corps of Engineers, the Navigation District is responsible for maintenance of the AICW in Florida. To maintain navigation, the waterways need to be periodically dredged due to shoaling from currents, upland soil erosion, and the movement of offshore sands through the ocean inlets. Maintenance dredging is projected to cost approximately \$12 to \$16 million annually during the next 50 years, of which 50 percent of the costs are expected to be borne by property owners within the Navigation District's jurisdiction.

The Navigation District also partners with other governments to provide waterway access and improvement facilities for our mutual constituents. These projects include public boat ramps, marinas, side channels, parks, fishing piers, boardwalks, navigation aids, derelict vessel removal, shoreline stabilization, and waterway cleanups.

Source of Data Used in This Analysis

The economic benefits of the Waterways were estimated in June 2001 in *An Economic Analysis of the District's Waterways in St. Lucie County*.

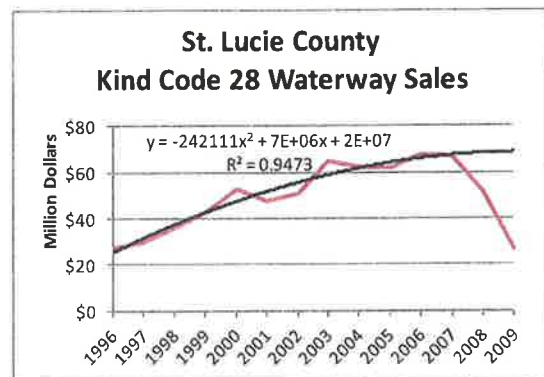
Updating of Previously Estimated Benefits

The benefits presented in this analysis were estimated by updating the direct marine-business

impacts in the original analysis to current values using the change in gross sales reported by boat dealers to the Florida Department of Revenue (FDOR). The updated direct impacts were used in conjunction with an IMPLAN input/output model to estimate total economic benefits.

Estimating the Impact of the Recession

The impact of the recession was estimated by determining the trend in gross sales of boat dealers over the 20-year period prior to the onset of the recession. This trend was used to estimate the theoretical gross sales if sales had continued to increase at the rates previously experienced. The red line in the figure below illustrates reported actual gross sales of boat dealers and the black line illustrates the trend of those sales. From 2007 to 2009 gross boat dealer sales in St. Lucie County decreased by 60 percent; if the recession had not occurred, it is estimated that gross sales from 2007 to 2009 would have increased by six percent.



Annual Boater Spending on Gas, Food, and Drinks at Non-Marine-Related Establishments

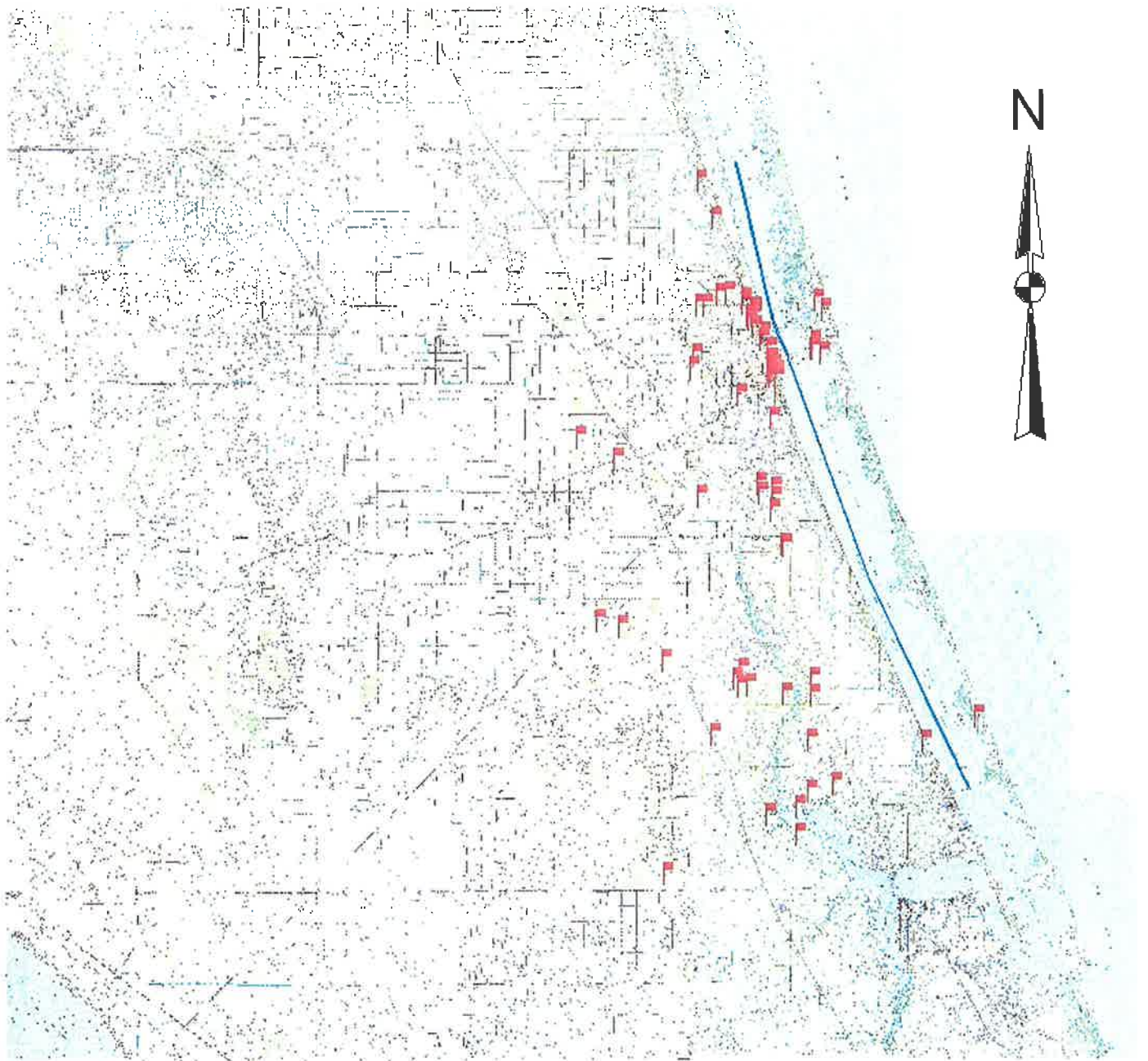
- Current existing conditions: \$12.8 million
- Cessation of maintenance: \$10.7 million
- Increased maintenance: \$12.8 million
- Assuming no recession: \$18.2 million

Vessel Draft Restrictions Assumed for Each Scenario

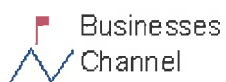
- Current existing conditions: 6.5 feet MLW
- Cessation of maintenance: 3 feet MLW
- Increased maintenance: 10 feet MLW
- Assuming no recession: 6.5 feet MLW

LOCATION MAP

WATERWAY RELATED BUSINESSES IN ST. LUCIE COUNTY



Map Legend



FLORIDA INLAND NAVIGATION DISTRICT - WATERWAYS ASSISTANCE PROGRAM PROJECTS IN ST. LUCIE COUNTY 1986-2012

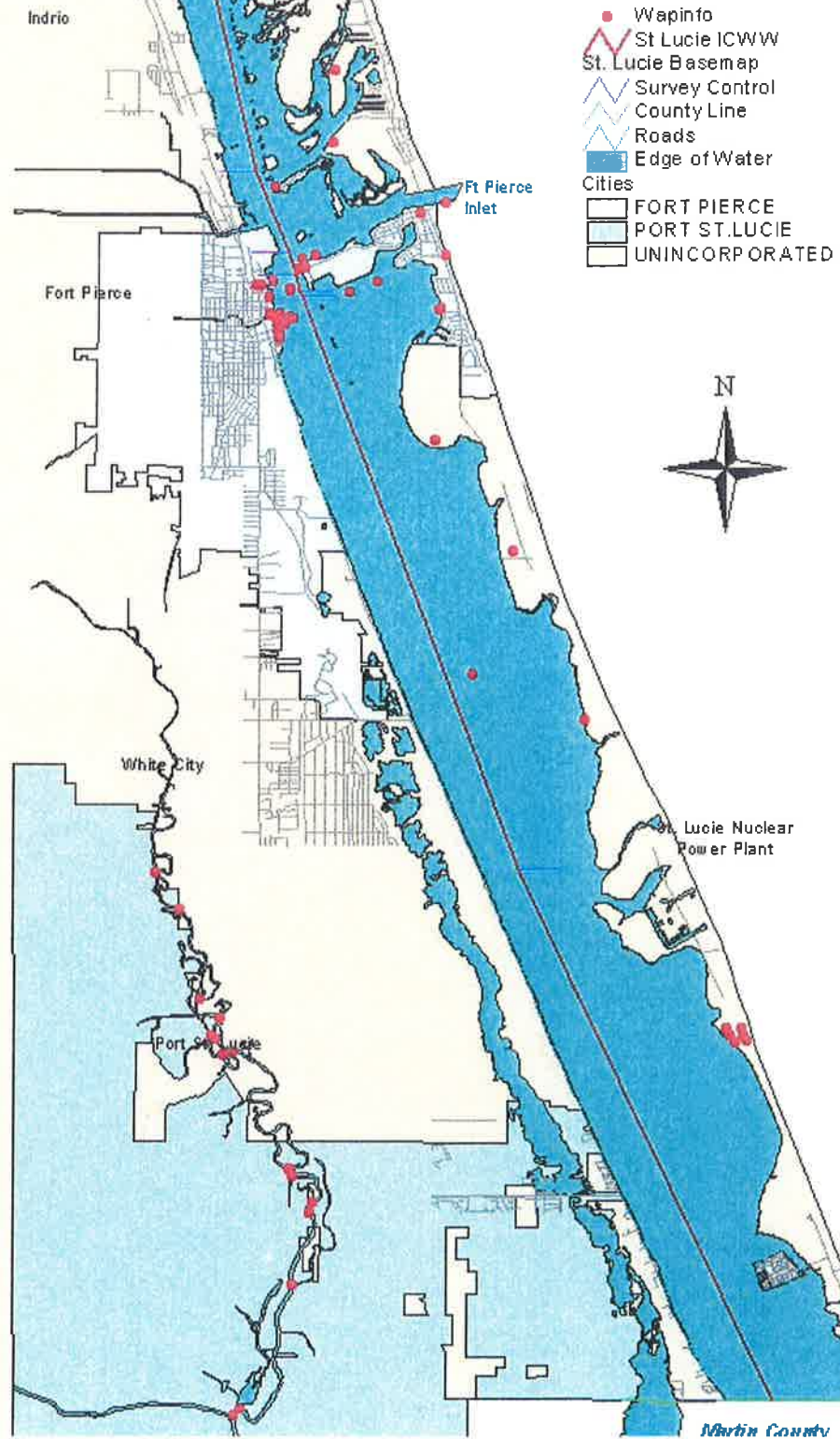
ProjectName	ProjectNumber	ProjectSponser	GrantAmount	TotalCost
Ft. Pierce Inlet Boat Launch	SL-00-29	St. Lucie County	\$251,986.00	\$875,900.00
Shoreline Stabilization At South Causeway Island	SL-01-30	St. Lucie County	\$224,668.00	\$500,000.00
Law Enforcement Patrol & Rescue Vessel	SL-01-31	St. Lucie County	\$29,335.00	\$77,088.00
Vitolo Park/ Middle Cove - Public/ A.D.A. Access	SL-02-32	St. Lucie County	\$50,000.00	\$108,716.00
Blind Creek Public Access Improvements	SL-03-34	St. Lucie County	\$50,000.00	\$107,150.00
Shoreline Stabilization Project - North Causeway Island	SL-03-35	St. Lucie County	\$100,000.00	\$200,000.00
Wildcat Cove Preserve/ Observation Pier	SL-04-36	St. Lucie County	\$22,500.00	\$45,000.00
Indrio Blueway Preserve	SL-05-38	St. Lucie County	\$20,000.00	\$40,000.00
Ocean Bay Preserve Improvements	SL-05-39	St. Lucie County	\$25,000.00	\$50,000.00
Queens Island Preserve	SL-05-40	St. Lucie County	\$35,000.00	\$70,000.00
River Park Marina	SL-05-41	St. Lucie County	\$32,500.00	\$65,000.00
River Park Marina	SL-06-44	St. Lucie County	\$122,000.00	\$244,000.00
South Causeway Park Shoreline Restoration	SL-06-45	St. Lucie County	\$258,300.00	\$516,600.00
Stan Blum Boat Ramp Restrooms - Phase I	SL-08-48	St. Lucie County	\$18,000.00	\$36,000.00
Little Mud Creek Boat Ramp & Kayak Launch	SL-09-49	St. Lucie County	\$40,000.00	\$113,800.00
Stan Blum Boat Ramp Restrooms - Phase I I	SL-09-50	St. Lucie County	\$99,113.00	\$198,226.00
South Causeway Island Boat Docks	SL-87-2	St. Lucie County	\$105,000.00	\$210,000.00
4-H Sea Grant Environmental Education	SL-91-7	St. Lucie County	\$14,000.00	\$14,000.00
South Beach Causeway Boat Ramp Maintenance Project	SL-92-8	St. Lucie County	\$65,975.00	\$99,875.00
Boat Ramp Parking Improvement	SL-94-13	St. Lucie County	\$145,000.00	\$375,000.00
Fort Pierce Harbor Mitigation	SL-94-14	SLC Port & Airport Auth.	\$170,000.00	\$1,262,100.00
Fort Pierce Harbor Navigation Improvements	SL-95-15	SLC Port & Airport Auth.	\$168,079.00	\$1,262,100.00
South Causeway Island Improvement - Phase I I	SL-95-18	St. Lucie County	\$16,000.00	\$32,000.00
Inlet Spur Jetty	SL-97-22	St. Lucie County	\$220,000.00	\$782,000.00
Fort Pierce Shore Protection Project	SL-97-23	St. Lucie County	\$36,245.00	\$2,950,000.00
Law Enforcement Patrol & Rescue Vessel	SL-98-26	St. Lucie County	\$32,063.00	\$70,248.00
Fort Pierce City Marina North Channel	SL-FP-03-33	City Of Fort Pierce	\$94,481.00	\$206,445.00
Fort Pierce City Marina - North Access Channel Dredging	SL-FP-05-37ER	City Of Fort Pierce	\$318,000.00	\$991,437.16
City Of Marina Dredging Of Internal Basin	SL-FP-06-42	City Of Fort Pierce	\$18,000.00	\$36,000.00
City Marina Fuel Tank Replacement	SL-FP-06-43	City Of Fort Pierce	\$205,000.00	\$517,000.00
Veteran's Memorial Park (Withdrawn)	SL-FP-07-46	City Of Fort Pierce	\$285,000.00	\$570,000.00
Repair and Expansion of City Marina	SL-FP-1	City of Fort Pierce	\$100,000.00	\$2,023,660.00
Marine Law Enforcement & Boating Safety Program	SL-FP-10-51	Fort Pierce Police Dept.	\$30,000.00	\$70,085.00

FLORIDA INLAND NAVIGATION DISTRICT - WATERWAYS ASSISTANCE PROGRAM PROJECTS IN ST. LUCIE COUNTY 1986-2012

Public Fishing Pier Cleaning Station @ City Marina	SL-FP-11-53	City Of Fort Pierce	\$16,420.00	\$32,840.00
Dredge Mouth Of Moores Creek	SL-FP-12-54	City Of Fort Pierce	\$47,726.00	\$102,060.00
Repair And Expansion Of City Marina - Phase I I	SL-FP-87-3	City of Fort Pierce	\$93,000.00	\$186,000.00
Melody Lane Seawall/Public Recreation Area	SL-FP-88-4	City of Fort Pierce	\$125,000.00	\$410,000.00
Melody Lane Seawall Restoration	SL-FP-89-5	City of Fort Pierce	\$130,000.00	\$325,000.00
Melody Lane Public Recreation Area	SL-FP-90-6	City of Fort Pierce	\$55,000.00	\$110,000.00
Manatee Observation & Education Center - Phase I	SL-FP-93-10	City Of Fort Pierce	\$199,150.00	\$256,900.00
Dredging Of Entrance Channel To Marina/ Boat Launches	SL-FP-93-9	City Of Fort Pierce	\$70,000.00	\$72,800.00
Jaycee Park Boat Ramps Reconstruction - Phase I	SL-FP-94-12	City Of Fort Pierce	\$7,500.00	\$15,000.00
Jaycee Park Boat Ramps Reconstruction	SL-FP-95-16	City Of Fort Pierce	\$50,000.00	\$100,000.00
Design Of Lagoon Life - A Touch Screen Kiosk Exhibit	SL-FP-95-17	Ft. Pierce Utilities Authority	\$33,291.00	\$41,891.00
Manatee Observation & Education Center	SL-FP-96-19	City Of Fort Pierce	\$153,453.00	\$153,453.00
City Marina Entrance Channel Dredging	SL-FP-96-20	City Of Fort Pierce	\$70,000.00	\$70,500.00
City Marina Access Channel Dredging	SL-FP-97-21	City Of Fort Pierce	\$84,926.25	\$94,362.50
Indian River Memorial Park Riverwalk	SL-FP-98-24	City Of Fort Pierce	\$204,505.00	\$409,010.00
Fisherman's Wharf Fishing & Viewing Piers	SL-FP-98-25	City Of Fort Pierce	\$54,448.00	\$231,520.00
Library Square Park	SL-FP-99-27	City Of Fort Pierce	\$122,486.00	\$245,814.00
Riverwalk Boardwalk Reconstruction	SL-PSL-07-47	City Of Port St. Lucie	\$396,125.00	\$856,000.00
North Fork St. Lucie River Channel Marker Replacement	SL-PSL-10-52	City Of Port St. Lucie	\$7,500.00	\$15,000.00
Waterway Improvement Project	SL-PSL-93-11	City Of Port St. Lucie	\$8,250.00	\$11,000.00
Fishing Pier & Fish Cleaning Station on Melody Lane	SL-FP-13-55	City of Fort Pierce	\$100,000	\$517,880
C-24 Canal Park Boat Ramp	SL-PSL-13-56	City of Port St. Lucie	\$302,426	\$2,005,805
Project Totals			\$5,732,451.25	\$20,982,265.66

Indian River County

LOCATION MAP Florida Inland Navigation District Waterway Assistance Program Projects in St. Lucie County



TREFRY, John H



Contact Information

Professor

Marine and Environmental Systems

424LNK, 118

Phone: 7305

Email: jtrefry@fit.edu

Research & Project Interests

Research activities focus on the concentrations and cycling of trace metals in the oceans, estuaries and rivers. These studies are carried out in a wide variety of geographical settings including the Pacific and Atlantic Oceans, the Gulf of Mexico, the Alaskan Arctic, the Mississippi River and Indian River Lagoon, Florida.

Trace metals are studied at Florida Tech for their natural economic value in marine deposits and for their potential as pollutants.

Keywords

Marine Geochemistry

Trace Metals

Deep-Sea Hydrothermal Vents

Marine Pollution

Arctic Geochemistry

Professor

Marine and Environmental Systems

Personal Overview

- Associate Editor of the Elsevier journal Marine Chemistry (2004-).
- Member of U.S. Department of Interior Outer Continental Shelf Scientific Committee (2003-).
- President of the Florida Academy of Sciences (2005-2007).

Educational Background

Ph.D. Texas A&M University

A.B. Syracuse University

Professional Experience

Member of the first scientific team to photograph and sample active hydrothermal vents on the Mid-Atlantic Ridge in 1985. Research has identified the importance of high-temperature venting (200-350 degrees C) on the cycling of trace metals through the oceans and in creating metal-rich deposits on the seafloor.

Involved in various national and international panel and workshop activities in areas such as the development of U.S. Marine pollution programs and offshore oil activities from U.S. to Sakhalin Island, Russia.

Participated in >40 Oceanographic cruises including trips aboard R/Vs OCEANOGRAPHER, DISCOVERER, GYRE, KNORR, RESEARCHER, ATLANTIS (and AII)/ALVIN, SURVEYOR with more that 600 days at sea. Chief Scientist on 12 occasions.

Teaches courses in marine and environmental chemistry, geochemistry and instrumental analysis.

Current Research

Current research projects include:

- ANIMIDA III Program: Study of potential impacts of offshore oil operations in the Alaskan Arctic (2013-2016). Research includes detailed study trace metals in bottom sediments and inputs of suspended sediment and trace metals from arctic rivers to the Beaufort Sea and their transport and fate in the marine environment. (U.S. Department of the Interior, Bureau of Ocean Energy Management)
- Chukchi Sea Offshore Monitoring in the Drilling Area (COMIDA), U.S. Department of Interior, Bureau of Ocean Energy Management, Regulation and Enforcement, 2009-2012. Chukchi Sea Offshore Monitoring in the Drilling Area (COMIDA), U.S. Department of Interior, Bureau of Ocean Energy Management, Regulation and Enforcement, 2009-2016. Study of trace metals, including arsenic, lead and mercury, in water, biota and sediments from the Chukchi Sea with recent emphasis on Hanna Shoal. Study is designed to identify sensitive areas for possible future oil exploration and to track impacts of global climate change in the sensitive arctic environment.

Selected Publications

Trefry, J.H., Trocine, R.P., Cooper, L.W., Dunton, K.H. (2013) Trace metals and organic carbon in sediments of the northeastern Chukchi Sea. *Deep-Sea Research II*, doi: 10.1016/j.dsr2.2013.07.018.

Trefry, J.H., Dunton, K.H., Trocine, R.P., Schonberg, S.V., McTigue, N.D., Hersh, E.S., McDonald, T.J. (2013) Chemical and biological assessment of two offshore drilling sites in the Alaskan Arctic. *Marine Environmental Research* 86:35-45.

Fox, A.L., Hughes, E.A., Trocine, R.P., Trefry, J.H., Schonberg, S.V., McTigue, N.D., Lasorsa, B.K., Cooper, L.W. (2013) Mercury in the northeastern Chukchi Sea: Distribution patterns in seawater and sediments and biomagnification in the benthic food web. *Deep-Sea Research II*, doi:10.1016/j.dsr2.2013.07.012.

- Kang, W.-J. and Trefry, J.H. (2013) Identifying increased inputs of terrestrial phosphorus to sediments of the southwestern Everglades and Florida Bay. *Estuarine, Coastal and Shelf Science* 129:28-36.
- Naidu, A.S., Blanchard, A.L., Misra, D., Trefry, J.H., Dasher, D.H., Kelley, J.J., Venkatesan, M.I. (2012) Historical changes in trace metals and hydrocarbons in nearshore sediments, Alaskan Beaufort Sea, prior and subsequent to petroleum-related industrial development: Part I. Trace metals. *Marine Pollution Bulletin* 64:2177-2189.
- Trefry, J.H. and Trocine, R.P. (2011) Metals in sediments and clams from the Indian River Lagoon, Florida: 2006-7 versus 1992. *Florida Scientist* 74:43-62.
- Trefry, J.H. and Trocine, R.P. (2011) Chemical forms and reactions of barium in mixtures of produced water with seawater. In: Lee K, Neff J (eds) *Produced water: environmental risks and advances in mitigation technologies*, Ed. by Lee, K and Neff, J. Springer, New York, pp. 127-146.
-
- Rember, R.D. and Trefry, J.H. (2004) Increased concentrations of dissolved trace metals and organic carbon during snowmelt in rivers of the Alaskan Arctic. *Geochimica et Cosmochimica Acta* 68:477-489.
- Kang, W.-J., Trefry, J.H., Nelsen, T.A. and Wanless, H.R. (2000) Direct Atmospheric Inputs versus Runoff Fluxes of Mercury to the Lower Everglades and Florida Bay. *Environmental Science and Technology* 34: 4058-4063.
- Metz, S. and Trefry, J.H. (2000) Chemical and mineralogical influences on concentrations of trace metals in hydrothermal fluids. *Geochimica et Cosmochimica Acta*, 64(13): 2267-2279.
- Feely, R.A., Trefry, J.H., Lebon, G.T. and German, C.R. (1998) The relationship between P/Fe and V/Fe ratios in hydrothermal precipitates and dissolved phosphate in seawater. *Geophysical Research Letters*, 25(13): 2253-2256.
- Trefry, J.H. and Metz, S. (1989) Role of Hydrothermal Precipitates in the Geochemical Cycling of Vanadium. *Nature* 342: 531-533.
- Trefry, J.H., Metz, S., Trocine, R.P. and Nelsen, T.A. (1985) A Decline in Lead Transport by the Mississippi River. *Science* 230: 439-441.



FY 15: July 14 – June 15

Task	Dates	Cost (in thousands)
1. Define Muck Areas	July 2014 – December 2014	\$500
2. Reach V Channel & Muck Dredging; BV-52; Design, Permitting, Dredging (175,000 cy3)	July 2014 – August 2015	\$3,125
3. Reach I & II Channel & Muck Dredging; BV-2C; Design, Permitting, and Dredging (414,000 cy3)	July 2014 – December 2015	\$9,658
4. Reach V BV-40; Design & Permitting	July 2014 –June 2015	\$400
5. Reach III BV-11, Design & Permitting	July 2014 –June 2015	\$500
6. Reach IV BV-R; Design & Permitting	July 2014 –June 2015	\$400
7. Reach II Muck Dredging, Material to BV-4B; Design & Permitting	Feb 2015 – October 2015	\$300
8. Reach I BV-4B Construction	February 15 – October 15	\$5,400
Estimated dredged quantities = 589,000 cy3	Total Cost:	\$20,283

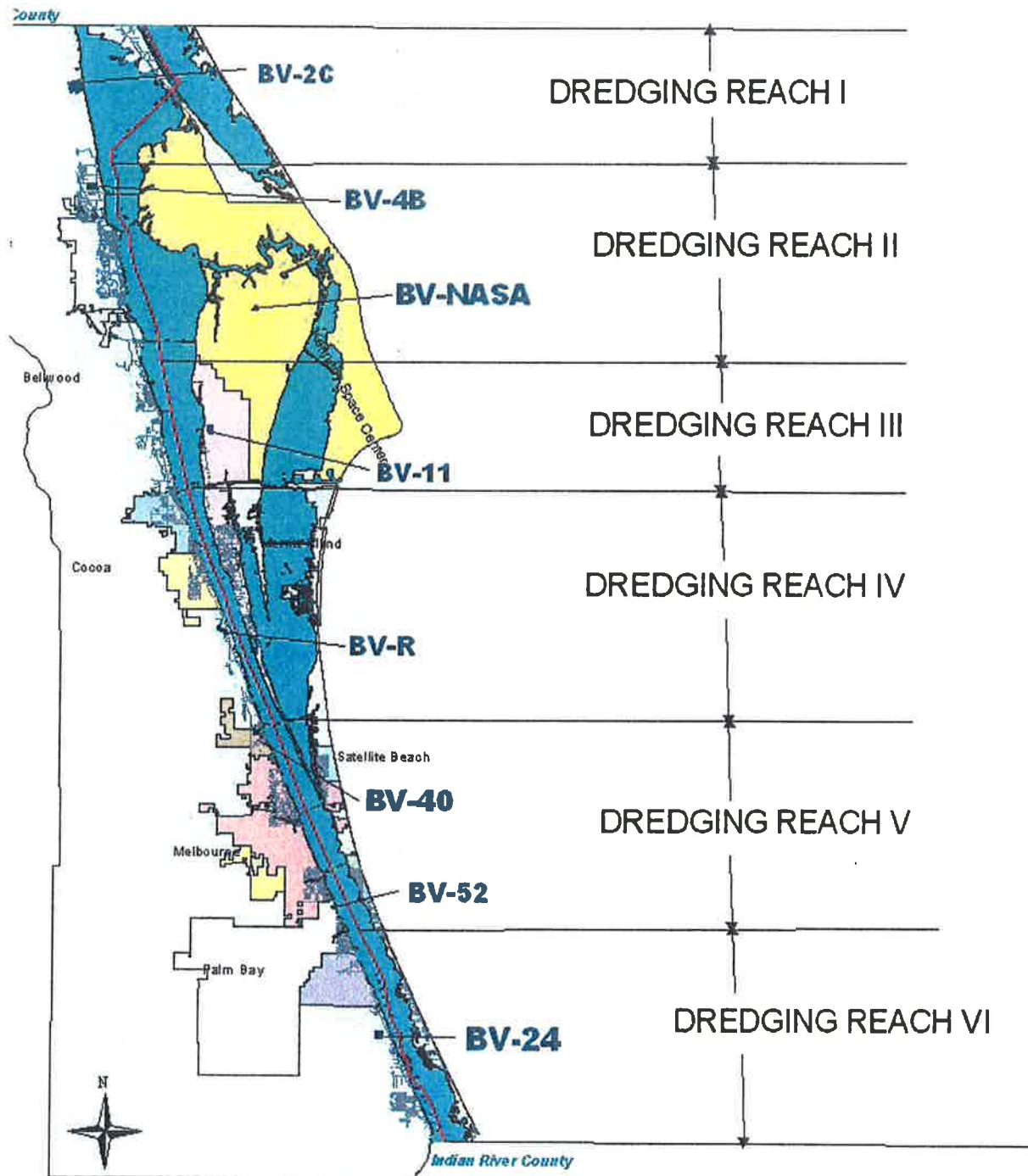
FY 16: July 15 – June 16

Task	Dates	Cost (in thousands)
1. Reach V BV-40 Construction	July 2015 – December 2015	\$3,800
2. Reach V Muck Dredging; Material to BV-40; Design & Permitting Dredging (150,000 cy3)	July 2015 – May2016 April 2016 – August 2016	\$300 \$4,700
3. Reach V BV-52; Drying & Offloading; Muck Dredging Design and Permitting	September2015 – April 2016 October 2015 – April 2016	\$1,950 \$300
4. Reach III BV-11 Construction Muck Dredging Design & Permitting	July 2015 – December 2015 July 2015 – March 2016	\$4,900 \$300
5. Reach II Muck Dredging, Material to BV-4B (300,000 cy3)	November 2015 –July 2016	\$7,750
Estimated dredged quantities = 450,000 cy3	Total Cost:	\$24,000

FY 17: July 16 – June 17

Task	Dates	Cost (in thousands)
1. Reach III Muck Dredging, Material to BV-11 (150,000 cy3)	July 2016 – November 2016	\$4,700
2. Reach V Muck Dredging, Material to BV-52 (175,000 cy3)	July 2016 – November 2016	\$5,750
3. Reach IV BV-R Construction	July 2016 – December 2016	\$3,800
4. Reach IV Muck Dredging; Design Permitting Muck Dredging to BV-R (150,000 cy3)	July 2016 - March 2017 April 2017 – August 2017	\$300 \$5,000
Estimated dredged quantities = 475,000 cy3	Total Cost:	\$19,250

Attachment 1
INTRACOASTAL WATERWAY
DREDGING REACHES AND
DREDGED MATERIAL MANAGEMENT AREAS
IN BREVARD COUNTY





January 31, 2014

Mark Crosley
Executive Director
Florida Inland Navigation District
1314 Marcinski Road
Jupiter, FL 33477

Re: Scope of Work and Cost Proposal
Permitting and Final Engineering Design for Dredged Material Management Area BV-4B
Brevard County, Florida

Dear Mr. Crosley:

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 BV-4B dredged material management area (DMMA). A 2002 report by Taylor Engineering, *Groundwater Assessment, Model Development, and Preliminary Evaluation of Potential Engineering Controls at Dredged Material Management Area BV-4B, Brevard County, Florida* (Attachment C, Executive Summary), evaluated the potential of dredging operations having an adverse impact (in terms of saline water infiltration) to the underlying aquifer. Due to previous modeling results, site location, and vicinity of over 100 homes that rely on relatively shallow wells for potable and irrigation water use, report recommendations concluded that the BV-4B DMMA requires installation of a system (e.g., liner) to prevent off-site saline contamination.

As detailed in the enclosed documents, our proposed services include field investigations, environmental permitting, preliminary and final design (inclusive of design for saline controls, if necessary), and bid document development for the BV-4B DMMA facility. Taylor Engineering will perform these services on a cost plus basis, for a total cost not to exceed \$604,346.58. This proposed fee includes subconsultant costs as follows:

- Dunkelberger Engineering & Testing, Inc. (DET), a Terracon company, will complete the geotechnical investigation and provide geotechnical design support for a fee of \$279,420.00. To select DET, we requested qualifications from five qualified professional geotechnical engineering firms. Based on review of four submitted qualification packages, we determined DET 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. Attachment D provides their scope of services in its entirety.
- SEA Diversified, Inc. (SDI) will provide site feature survey for a fee of \$49,185.00. SDI serves as the FIND's surveyor for the northern portion of the District. Attachment E provides their scope of services in its entirety.

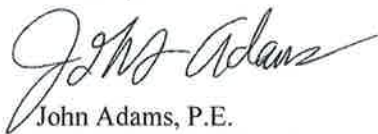
Mr. Mark Crosley
January 31, 2014
Page 2 of 2

Finally, due to the unknown final design features of the BV-4B DMMA facility and associated fees for this scope of work, we propose to perform the enclosed services in the following four phases.

PHASE	ACTIVITY DESCRIPTION	COST
I	Natural Resources Survey (Task 1.1)	\$199,853.27
	Geotechnical Investigation (Task 1.2)	
	Review of Existing Data (Geotechnical, Hydrological, Hydrogeological)	
	Compilation of Nearby Wells, Septic Tanks, Ponds, etc.	
	Sampling and Lab Testing of ICWW Sediments to be Dredged	
	Geotechnical Field Work and Testing for Groundwater Model & DMMA Design	
	Conceptual Groundwater Model – identification/selection of alternates for detailed analysis	
	Environmental Permitting (Task 2.1)	
	Pre-Application Meeting	
	INTERMEDIATE RESULTS PRESENTED TO FIND STAFF	
II	Geotechnical Investigation (Task 1.2)	\$86,866.50
	Detailed Groundwater Numerical Model	
	Saltwater Intrusion Alternatives Analysis	
	Topographic and Site Feature Survey (Task 1.3)	
INTERMEDIATE RESULTS PRESENTED TO FIND STAFF		
III	Environmental Permitting (Tasks 2.2 – 2.5)	\$216,261.27
	Joint Environmental Permit Application	
	Natural Resources Impact Analysis and Mitigation Planning	
	Responses to Requests for Additional Information	
	Coordination	
	Preliminary Engineering Design (Task 3) and Final Geotechnical Analysis (Task 1.2)	
	Site Layout	
	Dike Stability and Seepage Analyses	
IV	Weir Foundation	\$101,365.54
	Stormwater Quality	
	Site Saline Controls, as applicable	
	Wetland Mitigation, as applicable	
	Final Design and Bid Documents (Task 4)	
	Preparation of Plans and Specifications	
	Bid Administration (Task 5)	
TOTAL COST NOT TO EXCEED		\$604,346.58

After the completion of Phase I and II, Taylor Engineering and DET will provide the intermediate results to FIND staff and obtain direction and feedback, based on a foundation of field- and engineering-specific data to the BV-4B site, before moving into the next phase of work. If you have any questions concerning this proposal, please contact Lori Brownell, P.E. or me. We can begin work upon your notice to proceed.

Sincerely,



John Adams, P.E.

Senior Advisor, Waterfront Engineering

Attachments (5)

TAYLOR ENGINEERING, INC.

**SCOPE OF WORK AND COST PROPOSAL
PERMITTING AND FINAL ENGINEERING DESIGN FOR
DREDGED MATERIAL MANAGEMENT AREA BV-4B
BREVARD COUNTY, FLORIDA**

The Florida Inland Navigation District (FIND) has designated BV-4B, a ± 101 -acre abandoned citrus grove in Brevard County, Florida for development as a permanent dredged material management area (DMMA) to serve adjacent segments of the Intracoastal Waterway. BV-4B, one of eight DMMA facilities in Brevard County, will receive material removed from the north portion of Reach II of the ICWW during channel maintenance operations. Reach II extends from Mims (ICWW mile 134.07) south to NASA Parkway (ICWW mile 146.01). The ± 101 -acre site lies approximately one-half mile east of Mims, 1,600 ft west of the Indian River and is bounded on the north by Cuyler Street and on the east by Hammock Road. Local area development includes an RV Resort to the west, sparse residential development to the north and south, and a mixture of citrus groves and fallow croplands to the south and west.

A series of previous Taylor Engineering investigations and subsequent reports will provide the foundation for the DMMA design. The 1992 *Management Plan* indicates that the ± 48 -acre DMMA includes a 300-ft setback from the property boundary and a dike crest elevation of approximately 15 ft above the existing mean site grade of +10.5 ft NGVD. The preliminary design capacity will meet approximately one-half of the 50-year storage requirement — including the bulking plus over-dredging factor of 2.15 — of 1,415,219 cubic yards (CY) (per the 2002 Management Plan) or 1,744,984 CY (per the 2004 survey). A 2002 report by Taylor Engineering, *Groundwater Assessment, Model Development, and Preliminary Evaluation of Potential Engineering Controls at Dredged Material Management Area BV-4B, Brevard County, Florida*, evaluated the potential of dredging operations having an adverse impact (in terms of saline water infiltration) to the underlying aquifer. Due to modeling results, site location, and vicinity of over 100 homes that rely on relatively shallow wells for potable and irrigation water use, report recommendations concluded that the BV-4B DMMA requires installation of a system (e.g., liner) to prevent off-site saline contamination.

This proposal describes the scope of work associated with developing a permit application and preparing final engineering design and bid documents for DMMA BV-4B. We have based our proposed scope of services on the following assumptions:

1. Regulatory agencies will not require the mitigation of temporary wetland impacts, if any, associated with the placement of the ingress/egress pipeline for dredging operations.
2. The pipeline right-of-way, routing approximately 1,635 ft east from the site boundary to the ICWW, will not require any geotechnical field investigation activities at this time.
3. Regulatory agencies will not require any sediment sampling or updated grain size or chemical analysis of the Reach II sediments.
4. State and federal regulatory agencies will require a wetlands delineation and community classification of the entire BV-4B site to document existing natural resource conditions. These agencies will require compensatory mitigation for unavoidable, permanent impacts.
5. The site raises no archeological concerns (based on the 1991 review of the Florida Master File indicating no historical or archaeological sites known for this property).
6. No known utilities exist 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 FIND. Additionally, this proposal excludes all related permit application fees 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 1991, we will delineate 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 will provide information necessary to characterize natural resources and identify potential impacts requiring mitigation (if any).

Wetlands Delineation. Taylor Engineering will perform a jurisdictional wetlands delineation of the ±101-acre DMMA portion of BV-4B and the 60-ft wide portion of the pipeline right-of-way out to the edge of the ICWW. The wetlands delineation methodologies will follow the protocols mandated by the Florida Department of Environmental Protection (FDEP) and USACE. Taylor Engineering 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. Taylor Engineering will fill out all necessary data sheets as required by the USACE wetlands delineation methodology and regional supplements.

Taylor Engineering will schedule and participate in an on-site meeting with USACE and FDEP staff to verify the jurisdictional wetland boundary and, if necessary, adjust the boundary based on agency staff field observations and comments.

Habitat Characterization and Listed Species Assessment. Taylor Engineering will use the FLUCCS to map (via aerial interpretation and groundtruthing) and characterize all natural communities within the BV-4B project area (DMMA site and pipeline right-of-way). Characterizations will include qualitative descriptions of each identified community, lists of dominant vegetation by species, and documentation of observed and likely occurrences of wildlife. Taylor Engineering will also assess the property for potential use by state- and federally listed species.

Reporting. Taylor Engineering will develop a report summarizing the results of the natural resources field investigation. The report will include

- 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 and make any agency-requested adjustments.

1.2 Geotechnical Investigation

Based on a request for qualification process, Taylor Engineering, on behalf of the FIND, selected subconsultant Dunkelberger Engineering & Testing, Inc. (DET), a Terracon Company, to complete a geotechnical investigation and provide key design information for the BV-4B DMMA facility. Activities

ATTACHMENT A

during this task will begin with a field investigation to include 24 Standard Penetration Test (SPT) and 13 Cone Penetration Test (CPT) borings with variable depths between 15 and 100 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/slope stability analysis, and saline control measures to guide the containment dike design.

As part of this sub-task, DET will also evaluate the potential area of influence of saltwater migration resulting from multiple uses of the DMMA. DET, through comprehensive groundwater flow and transport modeling, will evaluate the need for an engineered controlled solution (e.g., liner) to minimize and/or prevent off-site saline contamination. Attachment D provides DET's scope of services in its entirety.

1.3 Topographic and Site Feature Survey

Based on review of both Taylor Engineering and FIND's historical files, we were able to locate a 1991 St. Johns Survey Company Boundary and Right-of-Way survey for the site; however, previously collected topographic survey information was not identified. To perform the preliminary and final design, Taylor Engineering will subcontract with SEA Diversified, Inc. (SDI), the FIND's surveyor for the northern portion of the District, to collect topographic survey information. The topographic survey fieldwork will consist of obtaining ground elevations on a 50-ft x 50-ft grid for the area designated for DMMA development and on a 100-ft x 100-ft grid for the buffer and pipeline right-of-way. In addition to grid topography, the survey will include ground elevations at all material changes in elevation greater than 6 inches (in.) and identification of material changes in land coverage such as tree lines, dense vegetation, roadways, fencing, trails, levees, marsh, agricultural ditches, and edge of water. Rather than locate individual trees, the survey map will provide the limits or edges of dense tree clusters. Mapping will also include locating wetland flags (Task 1.1) and core-boring holes within the site boundary (Task 1.2). Additionally, the survey will document any visual evidence of surface utilities. This scope of services (Attachment E) excludes mapping the location of underground utilities.

While completing field work, and based on the 1991 boundary survey, SDI will verify that the property corner markers remain in place. SDI will replace lost or destroyed corners; SDI will not perform a full boundary survey. 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 BV-4B DMMA will require a permit from the FDEP and the USACE. Task 2 includes preparation and submittal of a Joint Environmental Resource Permit (ERP) application for the construction of BV-4B. It also includes time to respond to requests for additional information (RAI) from the FDEP and the USACE.

2.1 Pre-Application Meetings

Taylor Engineering will coordinate and attend pre-application meetings (one per agency) with the FDEP and the USACE. During these 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. Following

ATTACHMENT A

completion of the pre-application meetings, Taylor Engineering will compile and submit meeting minutes to all attending parties.

2.2 Joint Environmental Permit Application

Based on data (natural resources, geotechnical, and survey) collected in Task 1, the proposed site plan layout, and agency comments made during the pre-application meetings, Taylor Engineering will prepare and submit a Joint ERP application to the FDEP and the USACE.

The application will include signed and sealed permit-level design drawings (Task 3.4) and 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 (if necessary), and (5) construction methodology and schedule.

2.3 Natural Resource Impact Analysis and Mitigation Planning

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) to assess natural resource impacts and mitigation requirements.

Taylor Engineering will employ the results of the UMAM to develop a 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, enhancement or restoration. Off-site mitigation may include options such as purchasing credits from a mitigation bank or off-site creation, enhancement, restoration. If the FIND opts for on- or off-site wetland creation, enhancement, or restoration as mitigation, we will develop a conceptual mitigation design and discuss the acceptability of such design with state and federal regulatory staff. We will structure the final wetlands mitigation design (Task 4.1) as permit requirements dictate.

2.4 Responses to Requests for Additional Information

Following submission of the permit application, both the FDEP and the USACE will likely respond with an 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 or \$16,564.00) to respond to two 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 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 BV-4B 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

Taylor Engineering 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, environmental and buffer requirements, and any design updates necessary to accommodate modification in the site conditions or updated DMMA design policies. In addition to the central containment basin, the site plan will include access ramp location, ingress/egress points, and access road location.

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) while providing sufficient dredged material storage volume.

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.

Site Saline Controls. Taylor Engineering will work with the geotechnical subconsultant, DET, to evaluate the need for and develop and design (if necessary) a site saline control system (e.g., liner), that (1) is compatible with typical DMMA designs; (2) will help to reduce and potentially eliminate off-site saline water impacts; and (3) enable the site to be eventually offloaded (when site capacity is reached) without damage (to the extent practicable) to the saline control system. This task also includes the submittal of an intermediate report providing a summary of the alternatives analyzed, associated cost, and subsequent recommendations.

3.3 ERP Engineering Review Criteria

This sub-task details the each of the four primary engineering criteria required for design.

Criteria No. 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 II 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 Brevard Reach II.

ATTACHMENT A

Criteria No. 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, in coordination with DET (see Task 1.2) 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) integrated with site saline controls (if necessary) for the BV-4B facility.

Criteria No. 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, retention structure) and quantity (based on a 3-year, 1-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 protect against erosion from weir discharge and rainfall runoff.

Criteria No. 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 1992 Management Plan to current operation and maintenance design standards. Specific revisions to the Management Plan will include (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. The updated Management Plan document will also include a discussion of necessary maintenance activities associated with the site saline control (e.g., liner) system.

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, saline control, 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 visit; complete the final engineering design necessary to construct the DMMA, weir structure and associated deck platform, site access road, and stormwater and saline control infrastructure; and calculate final earthwork volumes associated with the overall site plan.

Site Reconnaissance Visit. Taylor Engineering will visit the site once to visualize and coordinate design aspects with site characteristics during the final 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 (as appropriate), selected saline-control system (e.g., liner), 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 control and treatment of stormwater runoff.

Weir Structure and Associated Deck Platform. Taylor Engineering will complete final design of hydraulic control structures consisting of box weirs with adjustable timber flashboards to control discharge from the DMMA during dredging events. We will design an HDPE pipe collection system to route water collected by the weirs through the dike structure (and the selected site saline control system). Taylor Engineering will design appropriate piles and foundation slab to constrain the weirs against hydrostatic uplift forces during operations. We will design and detail box weir structural members and connections to resist later earth pressure and hydrostatic loads. We will design and detail a 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 allow for site ingress/egress and transport around the site perimeter.

Stormwater Control. Taylor Engineering will prepare stormwater calculations 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 wetland mitigation area design. If the FIND prefers to use a permitted wetlands mitigation bank to offset wetland impacts and the use of these banks is feasible, wetland mitigation design and associated fees may be unnecessary.

Volume Computations. Taylor Engineering will construct a final 3-D 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

ATTACHMENT A

photography for this purpose. Construction drawings will provide plan, cross-sectional, and detail views of the proposed DMMA and its return water control structure as well as any necessary seepage, drainage, saline, 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 BV-4B DMMA facility.

4.4 Bid Package Preparation

We will prepare a bid schedule with estimated quantities for all bid items. In preparation for 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.

TASK 5 BID ADMINISTRATION

Taylor Engineering will help FIND administer the bidding process and assist in selecting the contractor. We will remain available at our Jacksonville offices to clarify and interpret project documents and prepare addenda, if required. Our project engineer will attend the pre-bid meeting to answer questions concerning elements of the project for which Taylor Engineering is responsible. We will assist with reviewing the bids received and provide FIND with our recommendations for contractor selection. This work includes reviewing the submitted bid documents, checking references of the responsive bidders, and preparing and transmitting a written recommendation for contractor selection. Taylor Engineering will limit its review and recommendations to engineering and technical issues. FIND will take responsibility for legal review and evaluation of contractors' financial condition, business licenses or authorizations, bonding, contractual requirements, and any other non-engineering or non-technical information.

ESTIMATED SCHEDULE

No.	Task	Months from Notice to Proceed														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Field Investigation															
2	Environmental Permitting															
3	Preliminary Engineering Design															
4	Final Design and Bid Documents															
5	Bid Administration															

ATTACHMENT B

TAYLOR ENGINEERING, INC.
COST SUMMARY BY TASK
P2013-191: PERMITTING AND FINAL ENGINEERING DESIGN FOR DMMA BV-4B

TASK 1: FIELD INVESTIGATION

<i>Labor</i>	<i>Hours</i>	<i>Cost</i>	<i>Task Totals</i>
Vice President	9.0	1,665.00	
Senior Advisor	4.0	740.00	
Director	2.0	310.00	
Senior Professional	56.0	7,560.00	
Staff Professional	59.0	5,074.00	
Technical Editor	1.0	99.00	
Senior Technician	28.0	2,884.00	
Administrative	10.0	520.00	
Total Man-Hours	169.0		
Labor Cost			18,852.00
<i>Non-Labor</i>	<i>Units</i>	<i>Cost</i>	
Mileage (RT)	260.0	115.70	
Per Diem	2.0	30.00	
DET Geotechnical Investigation	1.0	279,420.00	
SDI Topographic Survey	1.0	49,185.00	
Non-Labor Cost		328,750.70	
Fee @ 10.0%		32,875.07	
Total Non-Labor Cost			361,625.77
Total Task 1			380,477.77

TASK 2: ENVIRONMENTAL PERMITTING

<i>Labor</i>	<i>Hours</i>	<i>Cost</i>	<i>Task Totals</i>
R. Bruce Taylor, Ph.D.	1.0	306.00	
Vice President	14.0	2,590.00	
Senior Advisor	16.0	2,960.00	
Director	68.0	10,540.00	
Senior Professional	122.0	16,470.00	
Staff Professional	102.0	8,772.00	
Technical Editor	8.0	792.00	
Senior Technician	56.0	5,768.00	
Administrative	14.0	728.00	
Total Man-Hours	401.0		
Labor Cost			48,926.00

ATTACHMENT B

P2013-191: PERMITTING AND FINAL ENGINEERING DESIGN FOR DMMA BV-4B

<i>Non-Labor</i>	<i>Units</i>	<i>Cost</i>
Mileage (RT)	260.0	115.70
Per Diem	2.0	30.00
Reproductions and Delivery	1.0	100.00
Non-Labor Cost		245.70
Fee @ 10.0%		24.57
Total Non-Labor Cost		270.27
<i>Total Task 2</i>		49,196.27

TASK 3: PRELIMINARY ENGINEERING DESIGN

<i>Labor</i>	<i>Hours</i>	<i>Cost</i>	<i>Task Totals</i>
R. Bruce Taylor, Ph.D.	4.0	1,224.00	
Vice President	38.0	7,030.00	
Senior Advisor	43.0	7,955.00	
Director	38.0	5,890.00	
Senior Professional	166.0	22,410.00	
Project Professional	40.0	4,200.00	
Staff Professional	244.0	20,984.00	
Technical Editor	8.0	792.00	
Senior Technician	166.0	17,098.00	
Administrative	14.0	728.00	
Total Man-Hours	761.0		
Labor Cost			88,311.00
<i>Total Task 3</i>			\$ 88,311.00

TASK 4: FINAL DESIGN AND BID DOCUMENTS

<i>Labor</i>	<i>Hours</i>	<i>Cost</i>	<i>Task Totals</i>
R. Bruce Taylor, Ph.D.	2.0	612.00	
Vice President	20.0	3,700.00	
Senior Advisor	15.0	2,775.00	
Director	3.0	465.00	
Senior Professional	214.0	28,890.00	
Project Professional	16.0	1,680.00	
Staff Professional	272.0	23,392.00	
Senior Technician	180.0	18,540.00	
Administrative	27.0	1,404.00	
Total Man-Hours	749.0		
Labor Cost			81,458.00

ATTACHMENT B

P2013-191: PERMITTING AND FINAL ENGINEERING DESIGN FOR DMMA BV-4B

<i>Non-Labor</i>	Units	Cost	
Reproductions and Delivery	1.0	100.00	
Mileage (RT)	260.0	115.70	
Per Diem	2.0	30.00	
Non-Labor Cost		245.70	
Fee @ 10.0%		24.57	
Total Non-Labor Cost			270.27
<i>Total Task 4</i>			\$ 81,728.27

TASK 5: BID ADMINISTRATION

<i>Labor</i>	Hours	Cost	Task Totals
Senior Advisor	5.0	925.00	
Senior Professional	12.0	1,620.00	
Staff Professional	20.0	1,720.00	
Administrative	4.0	208.00	
Total Man-Hours	41.0		
Labor Cost			4,473.00
<i>Non-Labor</i>	Units	Cost	
Mileage (RT)	260.0	115.70	
Per Diem	2.0	30.00	
Non-Labor Cost		145.70	
Fee @ 10.0%		14.57	
Total Non-Labor Cost			160.27
<i>Total Task 5</i>			\$ 4,633.27

Project Total \$ 604,346.58

**Groundwater Assessment, Model Development,
and Preliminary Evaluation of Potential Engineering Controls
at Dredged Material Management Area BV-4B, Brevard County, Florida**

Prepared for

Florida Inland Navigation District
1314 Marcinski Road
Jupiter, Florida 33477-9498

by

Darrell M. Setser, P.E.
Lori S. Brownell, E.I.
Matthew P. Fischer, E.I.
R. Bruce Taylor, Ph.D., P.E.

Taylor Engineering, Inc.
9000 Cypress Green Drive, Suite 200
Jacksonville, Florida 32256
(904) 731-7040

March 2002
C2000-055

EXECUTIVE SUMMARY

Dredged material management area BV-4B, a 101-acre abandoned citrus grove located southeast of Mims, Brevard County, Florida, is one of eight dredged material sites selected to provide long-term containment capacity for the Intracoastal Waterway in Brevard County. Based on historical channel maintenance and present shoaling patterns, dredging within this reach is projected to occur once every 10 years. Each dredging operation should discharge a slurry (20% solids and 80% liquid average composition) into the BV-4B containment basin. Poned saline water from each planned dredging operation will likely remain for four weeks, during which time the containment basin will retain an average of 4 ft of ponded water. Thus, the basin may impound water up to four consecutive weeks during each maintenance operation every 10 years (up to the basin's 50-year site design capacity).

Saline water migration into the surficial aquifer is of particular concern at BV-4B due to the site's close proximity to citrus groves and over 100 homes to the north and south. These homes rely on relatively shallow wells for potable and irrigation water use. In a previous evaluation of the baseline groundwater conditions on site, Foster Wheeler Environmental Corp., on behalf of the U.S. Army Corps of Engineers, noted that several of the privately owned wells already exhibited concentrations of chlorides and total dissolved solids exceeding state drinking water standards of 250 mg/L and 500 mg/L. The possibility that operation of BV-4B could introduce additional saline water into the surficial aquifer is therefore a concern.

In response to this concern, Taylor Engineering, Inc., under contract to the Florida Inland Navigation District, performed the following tasks to evaluate potential saline water migration from dredged material management area BV-4B:

- 1) Characterized BV-4B baseline groundwater and hydrologic site specific conditions;
- 2) Developed a BV-4B site specific three-dimensional groundwater flow and transport model;
- 3) Evaluated, by model simulations, potential saline water migration from the introduction of dredged slurry at the BV-4B containment basin into the local surficial aquifer over its 50-year service life; and
- 4) Evaluated, by model simulations, the potential effectiveness of selected engineering controls (perimeter ditching, vertical extraction wells, under drains, low permeability liner) at BV-4B to minimize or prevent saline water migration.

Field investigations, conducted in association with Law Engineering and Environmental Services, Inc., included installation of permanent monitoring wells, aquifer performance tests, and collection of samples for the determination of soil density, specific gravity, and porosity. Taylor Engineering staff collected two of the four quarterly groundwater samples to evaluate the site-specific hydraulic gradient and seasonal groundwater elevation changes and to obtain background chloride and total dissolved solids concentrations within the local surficial aquifer at site BV-4B. The field results, combined with published regional site-characteristic data and the Foster Wheeler report, formed the basis for the development of a site-specific three-dimensional flow and transport groundwater model.

The United States Geological Survey MODFLOW (v1996) code with the Groundwater Modeling System interface was used for the simulations summarized in this report. MODFLOW is a three-dimensional, cell-centered, finite difference code for modeling groundwater flow. MT3DMS, a modular three-dimensional transport code, was used in conjunction with MODFLOW to predict the resulting saline groundwater plume in terms of its chloride content.

The median background chloride concentrations of the surficial aquifer at BV-4B range from 31.95 mg/L (March 2001) to 41.65 mg/L (March 2000). Model results suggest planned dredged material management operations at BV-4B will probably increase surficial groundwater chloride concentrations in excess of the state groundwater criteria of 250 mg/L on and off site.

The model results further demonstrate that a synthetic liner or other low hydraulically conductive material beneath the containment basin will prevent saline contamination of the surficial aquifer. Other modeled control alternatives (extraction wells, under drains, perimeter ditch) do not eliminate the introduction of saline water into the surficial groundwater. Model results demonstrate, however, that appropriately placed vertical extraction wells can prevent the off-site migration of saline water. Model results also demonstrate under drains are more effective than a perimeter ditch at reducing the amount of saline water entering the surficial aquifer.

DUNKELBERGER
 engineering & testing, inc.
 A Terracon COMPANY

January 3, 2014
 (revised January 29, 2014)

Taylor Engineering, Inc.
 10151 Deerwood Park Boulevard
 Building 300, Suite 300
 Jacksonville, Florida 32256

Attention: Ms. Lori S. Brownell, P.E...via email (lbrownell@taylorengeering.com)
 Director, Waterfront Engineering

Subject: **Geotechnical Services Proposal**
BV-4B Dredged Material Management Area (DMMA)
Brevard County, Florida
Proposal No. PHB130090

Dear Ms. Brownell:

INTRODUCTION

Dunkelberger Engineering & Testing, Inc., A Terracon Company (Dunkelberger/Terracon) is pleased to submit this proposal for geotechnical consulting services at the proposed BV-4B facility in Brevard County, Florida. The proposal has been revised in consideration of the recently provided existing monitoring well/water quality information, and the proposed project phasing as we discussed. Our work is to be carried out in Phases as outlined below.

PHASE	ACTIVITY DESCRIPTION
I	<i>Review of Existing Data (Geotechnical, Hydrological, Hydrogeological) Compilation of Nearby Wells, Septic Tanks, and Ponds Sampling and Lab Testing of ICWW Sediments to be Dredged Geotechnical Field Work and Testing for Groundwater Model & DMMA Design Conceptual Groundwater Model – identification/selection of alternates for detailed analyses</i>
II	<i>Detailed Groundwater Numerical Model Saltwater Intrusion Alternatives Analysis</i>
III	<i>Final Geotechnical Analysis – Dike Stability and Seepage Analyses Weir Foundation Site Saline Controls Design, as applicable</i>
IV	<i>Final Plan and Specification Preparation for Saline Control Features</i>

Dunkelberger Engineering & Testing, Inc., A Terracon Company 607 NW Commodity Cove, Port St. Lucie, Florida
 P 772.343.9787 F 772.343.9404 <http://www.dunkelberger-engineering.com/>

Geotechnical



Environmental



Construction Materials



Facilities

Geotechnical Services Proposal
 BV-4B DMMA in Brevard County, Florida
 January 29, 2014 in Proposal No. PHB130090

DUNKELBERGER
 engineering & testing, inc.
 A Terracon COMPANY

PROJECT INFORMATION

The subject BV-4B site is approximately 101 acres in area and is located just southeast of Mims in northern Brevard County. The site is located just to the east of an area of residential development and, from its midpoint, is about ½ mile west of the IWW. With the exception of a narrow band of north-south aligned vegetation and a narrow ditch feature, the Google Earth 2013 aerial map shows the site as cleared, level ground, presumably with a planted grass covering. We attempted a site reconnaissance on Friday, December 20, 2013; however, we were unable to gain access to the site as it is fenced and the two access gates were locked. From the perimeter, the site conditions appeared to be consistent with those shown on the 2013 Google Earth map.

The site is expected to comprise a ±48-acre DMMA with a design capacity of approximately 771,031 cubic yards. This is based on a dike crest elevation of approximately 15 feet above the existing mean site grade of +10.5 feet NGVD with the final deposition layer 4 feet below the dike crest. Preliminary design of the dike was based on 3:1 (horizontal:vertical) side slopes with a crest width of 12 feet. Other details regarding the site development are discussed in previously prepared reports and design documents, which have been provided to us. These documents, listed on the next page, provide the foundation for the final DMMA design and permitting.

- **BV-4B Management Plan** — a summary of the preliminary design, site preparation, and site management features as originally documented in 1992.
- **BV-4B Engineering Narrative** — an abbreviated summary of the site's key proposed engineering parameters
- **BV-4B Groundwater Assessment Report** — a document which describes groundwater assessment, model development, and preliminary evaluation of potential engineering controls which may be necessary to limit the potential of off-site saline contamination.

A key design consideration for the BV-4B is saltwater intrusion of the shallow freshwater aquifer during and post-dredging events. Preliminary modeling by Taylor Engineering, Inc. (Taylor) indicates that the planned dredged material management operations at the BV-4B will likely increase surficial groundwater chloride concentrations in excess of the state groundwater criteria of 250 mg/L on and off site. The modeling also showed that the use of a synthetic liner or other low permeability material beneath the containment basin would help to prevent saline contamination of the surficial aquifer.

SCOPE OF SERVICES

Pursuant to Taylor's Request for Proposal and our recent discussions, our scope of services is as follows:

I. GEOTECHNICAL FIELD INVESTIGATION AND LABORATORY ANALYSIS

Geotechnical field investigation and laboratory analysis are required to provide an overall subsurface characterization that will accomplish the following tasks:

Geotechnical Services Proposal
 BV-4B DMMA ■ Brevard County, Florida
 January 29, 2014 ■ Proposal No. PHB130090

DUNKELBERGER
 engineering & testing, inc.
 A Terracon COMPANY

1. Identify soil stratum available and suitable for dike construction borrow material within the interior dike footprint.
2. Identify soil stratum likely unsuitable for dike construction borrow material (silt, clay, and organic) located within the expected excavation zone.
3. Determine expected groundwater elevations during construction and recommend whether dewatering, mixing, or compaction of excavated material will be required for placement and construction of the dike.
4. Determine soil properties for dike stability and seepage analyses.
5. If the investigation identifies compressible soils, determine dike consolidation settlement and length of time for settlement to occur.
6. Collect field and laboratory data necessary to support groundwater modeling to evaluate the need for site saline controls.
7. Develop seepage or groundwater models to consider alternative saline controls and design and specify a saline control system (if necessary).
8. Provide soil properties for analysis of shallow or deep (pile) foundations at weir location (expected pile depth no greater than 80 feet below existing grade).
9. Provide laboratory compaction tests (Modified Proctor) and bearing tests (LBR) of in situ material for dike and access road construction.
10. Provide general recommendations for earthwork and pile construction methods.

Our work will include the conduct of laboratory classification and index property tests on soil samples obtained during field data collection. The testing will be performed on representative disturbed and undisturbed samples. All field borings will be logged and classified in accordance with the Unified Soil Classification System (USCS) with location and depths, referenced to depth below ground surface and elevation, of all samples recorded on the log.

Laboratory tests will include consolidation (if clays and/or silts are encountered), shear-strength, laboratory compaction, Limerock Bearing Ratio (LBR), and hydraulic conductivity of the foundation and embankment soils. Index property tests will include moisture content, sieve analysis, organic content, and Atterberg limits. Tests will be conducted in accordance with ASTM or other accepted standards.

Toward this end, we are proposing the use of a combination of Standard Penetration Test (SPT) and Cone Penetrometer Test (CPT) soundings as a cost-effective means to accomplish Taylor's field investigation requirements. The attached Sheet 1 provides a layout of the proposed SPT borings and CPT soundings along with the proposed depths.

Groundwater data (depths/elevations) will be gathered using the existing on-site wells. Baseline/background water quality data (i.e., chloride concentrations) will be taken from the provided Bonn Environmental Services Technologies, Inc. report (dated August 16, 2013) and any subsequent quarterly monitoring data.

Each test location will be field staked and numbered for subsequent XYZ survey by a registered land surveyor.

Geotechnical Services Proposal
 BV-4B DMMA ■ Brevard County, Florida
 January 29, 2014 ■ Proposal No. PHB130090

DUNKELBERGER
 engineering & testing, inc.
 A Terracon COMPANY

In addition to the on-site exploratory work, we have included a provision for vibracore sampling from the subject IWW reach to collect samples for laboratory testing. Specifically, we will be working to develop laboratory methods to quantify the concentration of chlorides that may leach from the impounded samples as the result of rainfall infiltration (i.e., long-term chloride leaching potential of dredged material). Samples from the vibracores will be classified in accordance with the Unified Soil Classification System (ASTM D 2487), and representative samples will be tested for grain size distribution (ASTM D 422).

A detailed breakdown of our proposed field investigation and laboratory analysis work is provided on attached Sheet 2 of this proposal.

II. ENGINEERING ANALYSES, RECOMMENDATIONS, AND DESIGN

Dunkelberger/Terracon will provide the following engineering analyses and recommendations:

1. If the field investigation identifies compressible soils, estimates of dike settlement at appropriate locations along the dike will be furnished, including estimated time required for consolidation settlement to occur.
 - a. Determine whether dike settlement or differential settlement is excessive for the type and height of earthen dike.
 - b. If dike settlement or differential settlement is excessive, recommend ways to reduce or design for the expected settlement.
 - c. Recommend methods to decrease the consolidation period (e.g. wick drains, surcharge, etc.) and methods to monitor consolidation settlement.
2. Provide recommended foundation type to support weir (shallow foundation vs. deep foundation). If a shallow foundation appears feasible, provide allowable bearing capacity and anticipated settlement. For deep foundation, provide soil properties for analysis of pile foundation. Based on the data provided, Taylor will complete the design for the weir foundation.
 - a. Provide measured and estimated soil properties for dike stability and seepage analysis including:
 - b. Shear strength for undrained and drained conditions
 - c. Hydraulic conductivity of in-situ soils in the horizontal and vertical directions
 - d. Hydraulic conductivity of mixed and compacted soils for dike construction in the horizontal and vertical directions.
3. Complete seepage and slope stability analysis to include design safety factor determination for conditions including:
 - a. End of Construction
 - b. Steady-State Seepage
 - c. Rapid Drawdown
4. Based on seepage analysis and in conjunction with Taylor, provide recommendations for maximum interior and exterior dike slopes, stability berms, seepage control features, construction specifications, and other design features necessary to maintain minimum standard safety factors.
5. Develop groundwater and/or seepage models to evaluate the need for site saline controls, and then if necessary, determine the regulatory and practical design criteria, consider and evaluate alternative solutions, select the preferred cost-

Geotechnical Services Proposal
 BV-4B DMMA ■ Brevard County, Florida
 January 29, 2014 ■ Proposal No. PHB130090

DUNKELBERGER
 engineering & testing, inc.
 A Terracon COMPANY

effective solution (collaborative effort with Taylor), and develop the necessary design details. This task also includes the submittal of an intermediate report providing a summary of the alternatives analyzed, and subsequent recommendations.

- a. The final saline controls design must (i) be compatible with typical DMMA design and operations; (ii) help to reduce and potentially eliminate off-site saline water impacts; and (iii) enable the site to be eventually offloaded (when site capacity is reached) without damage (to the extent practicable) to the saline control system. This task will also include locating and describing (e.g., depth, purpose, etc.) local area surficial (potable, irrigation) wells.
 - b. If the analysis recommends installation of saline control features, its design must be integrated into the seepage and slope stability analysis and coordinated with any seepage control features.
6. If necessary, work collaboratively with Taylor to prepare construction drawings and specifications to be integrated within the overall construction document package to fully detail the requirements for required saline control features.

Regarding the saltwater intrusion work, we have teamed with Mr. Nicolas Andreyev, P.E. of Andreyev Engineering, Inc. for conduct of the groundwater modeling. Based on our preliminary conversations with you and Mr. Andreyev, we expect this effort to include the following:

- i. Collect available data for the project area, including previous studies, geotechnical investigations, water quality data, rainfall, runoff, source water quality and other data that may be available and useful for this analysis and modeling.
- ii. Identify needed additional data, collect the necessary data and conduct laboratory testing as necessary. This will include collecting dredge material samples at the source (budgeted for approximately 10 samples), collect soil samples above the water table and below the water table at the location of the DMMA, set up and conduct 10 to 20 leachability tests in the laboratory (Dunkelberger/Terracon laboratory and Palm Beach Environmental Laboratories) to estimate the leaching parameters for the saline water transport model calibration, conduct water quality tests on leachate from the laboratory tests (analytical laboratory), and reduce all field and laboratory data as needed for model import.
- iii. Obtain the existing preliminary groundwater flow and contaminant transport models from Taylor, import the models, review and revise the models as necessary for final model set up. Set up the final models to cover the effective area around the DMMA and calibrate the models to existing flow and saline water parameters. This task will require utilization of previously collected data and the newly generated leachability parameters to create a model that reasonably represent existing conditions. The MODFLOW and MT3DMS model will be used for this analysis and design.
- iv. Once the model is calibrated, the proposed dredging and settling of the dredge materials will be incorporated into the model and the effect of saline water infiltration and movement will be simulated by the flow and contaminant transport models. Several alternatives will be modeled to allow selection of the most effective and least costly option to contain the saline water and minimize contamination of the shallow aquifer system. This task may include meeting with the project team to present initial results and then finalize modeling once the preferred alternative was selected.

Geotechnical Services Proposal

BV-4B DMMA • Brevard County, Florida

January 29, 2014 • Proposal No. PHB130090

DUNKELBERGER

engineering & testing, inc.

A Terracon COMPANY

- v. Prepare a detailed report summarizing the field work, data collection, laboratory testing, data reduction, description of the model set up and calibration, selection of DMMA management alternatives, modeling the various alternative of saline water retention and control and presenting the results of the final modeling with recommendations for the construction and management of the DMMA.
- vi. Participate in various meetings, conferences, correspondence, presentations, site visits and other related services as needed.

A resume for Mr. Andreyev has been furnished separately.

Man-hour estimates for these tasks are presented on the attached Sheet 3. The tasks, along with their associated costs, are broken out by Phase.

III. SUMMARY REPORT AND RECOMMENDATIONS

The following information, as a minimum, will be furnished in a final, detailed geotechnical report. We have made allowance for preparation and presentation of interim Phase reports.

1. Summary of project considerations including review of surface features and site conditions that could affect foundation construction and site preparation.
2. A general evaluation of the site considering the proposed project and estimated subsurface conditions.
3. Logs of all SPT borings and CPT soundings along with a field exploration plan illustrating the location and reference number of each test location. For each test location, the following will be provided.
 - a. Actual GPS coordinates of each test location.
 - b. Grain-size distribution from sieve analyses, presented both graphically and by summary statistics.
 - c. Existing and estimated seasonal high groundwater depths, referenced to depth below ground surface and elevation, at each test location.
4. A geotechnical engineering evaluation of the subsurface conditions with respect to the planned construction (i.e., settlement evaluation of the planned dike).
5. Recommended shear strength, unit weight, and hydraulic conductivity parameters for dike stability and seepage analyses.
6. A summary of seepage and slope stability analysis.
7. A summary of seepage or groundwater modeling relative site saline controls. The summary will include an evaluation of the need (or lack thereof) for such control, alternative control measures considered including the estimated construction costs (to be done collaboratively with Taylor) and technical risks and benefits associated

Geotechnical Services Proposal
 BV-4B DMMA ■ Brevard County, Florida
 January 29, 2014 ■ Proposal No. PHB130090

DUNKELBERGER
 engineering & testing, inc.
 A Terracon Company

with each alternative, and a summary of the recommended saline control design (if any).

8. Specific recommendations for construction if dike settlement or differential settlement is deemed excessive.
9. General recommendations for earthwork and weir foundation construction methods.

IV. CONSTRUCTION DRAWINGS AND SPECIFICATIONS

Develop construction drawings and specifications to describe and detail the construction requirements for any recommended saline control features. Dunkelberger/Terracon will coordinate with Taylor to integrate saline control construction drawings and specifications into the project's overall construction documents.

V. PROJECT DELIVERABLES

Six hard copies and one digital copy of the final report providing the test results and recommendations signed and sealed by a licensed Florida Professional Engineer.

Six hard copies and one digital copy of construction drawings and technical specifications for any recommended saline control features signed and sealed by licensed Florida Professional Engineer.

Digital point file containing the horizontal coordinates of each boring location.

SCHEDULE

We are prepared to begin providing the required services as soon as needed. We estimate that our schedule for the geotechnical work will be as follows:

- Phase I:
 - Field Work – 6 weeks
 - Laboratory Testing – 6 weeks
 - Engineering Analysis & Reporting – 4 weeks
 - Total: About 16 weeks
- Phase II:
 - Engineering Analysis & Reporting – 4 weeks
- Phases III and IV:
 - Engineering & Final Report, Plans and Specifications – 12 weeks

SCHEDULE TOTAL: About 32 weeks

During the course of the project, we will provide written progress reports on a monthly basis, or as requested.

Responsive ■ Resourceful ■ Reliable

Geotechnical Services Proposal

BV-4B DMMA Brevard County, Florida

January 29, 2014 Proposal No. PHB130090

DUNKELBERGER

engineering & testing, inc.

A Terracon COMPANY

COST

Our work will be performed on a unit rate basis in accordance with the fees shown on Sheets 2 and 3 of this proposal. Based on our understanding of the project and our scope of work as described herein, we have developed an estimated total project cost of **\$279,420** for performance of the geotechnical services. We understand that our work will be executed under a subcontract agreement prepared by Taylor Engineering, Inc.

SAFETY – IIF

At Dunkelberger/Terracon, we all have a personal and uncompromising commitment to everyone going home safely each and every day. Incident and Injury-Free (IIF) is about care and concern for people. It is our personal and organizational commitment at all levels of the company. Working safely is an inseparable part of working correctly, just as much as other operational priorities, in particular quality, profitability and schedule. Incident and Injury-Free is our commitment to our people and others, who we value for who they are and what they do. IIF is not just something we do; it's in everything we do.

As part of our IIF process, we will prepare a "Pre-Task Plan" for this project where we will identify the potential site safety and job hazards associated with your site. Our Pre-Task Plan will identify and prepare our personnel to be able to handle conditions such as but not limited to traffic control, environmental contamination, site access issues, overhead and underground utilities, adverse weather conditions, and personal protection equipment and will continually be reviewed and reevaluated throughout the field work activities. We understand that each site is unique and may contain different safety conditions and as a company to protect our personnel as well as others, we look at each site individually to identify the potential concerns.

_____oOo_____

We appreciate the opportunity to submit this proposal for your consideration and look forward to further discussions with you and other members of the project team.

Sincerely,

**DUNKELBERGER ENGINEERING & TESTING, INC.,
A TERRACON COMPANY**



Craig E. Dunkelberger, P.E.
Senior Associate

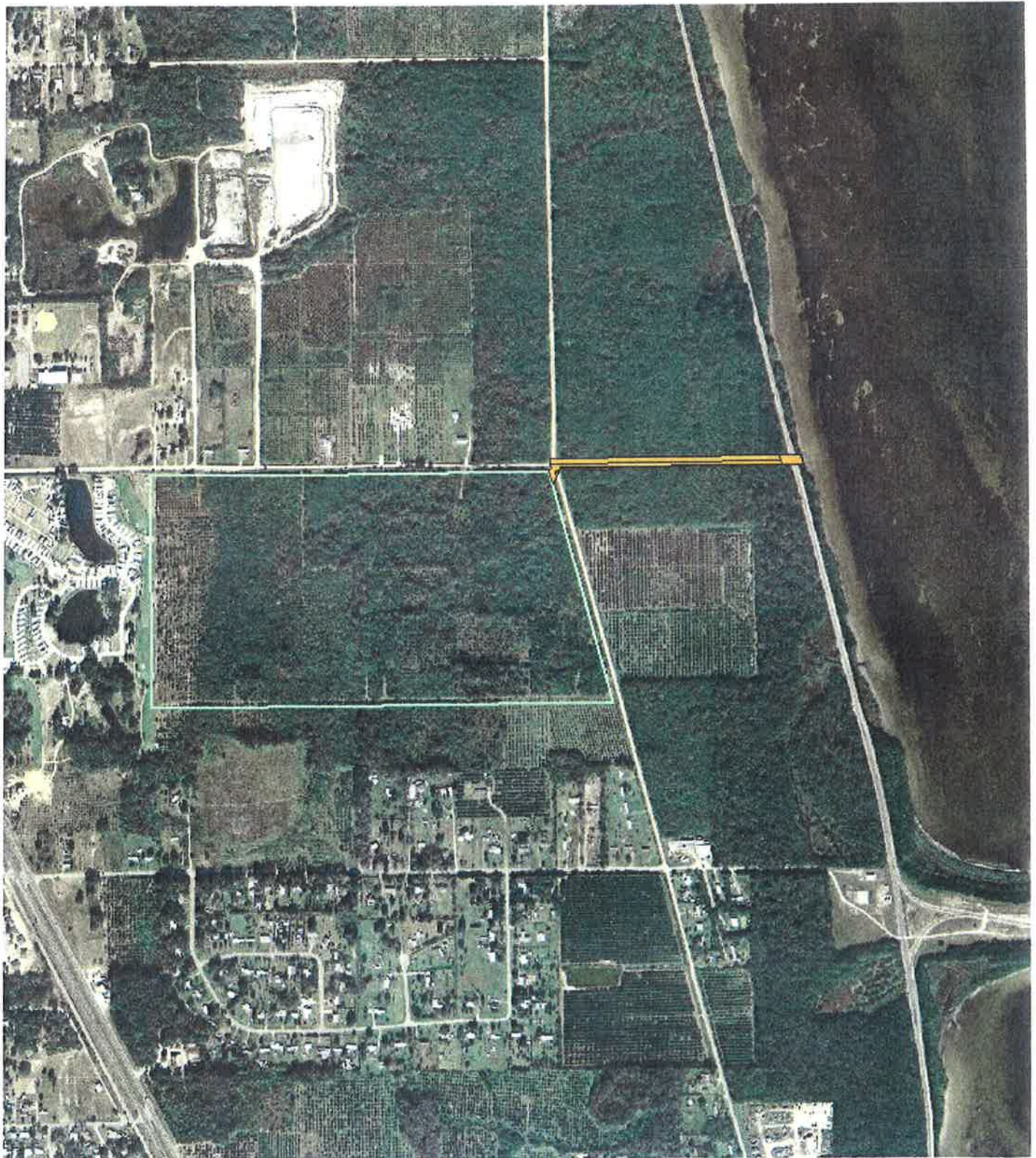


Kevin E. Aubry, P.E.
Senior Associate

Attachments: Sheet 1 – Proposed SPT and CPT Location Plan
Sheet 2 – Detailed Field and Laboratory Scope and Fee Breakdown
Sheet 3 – Man-hour and Overall Cost Breakdown

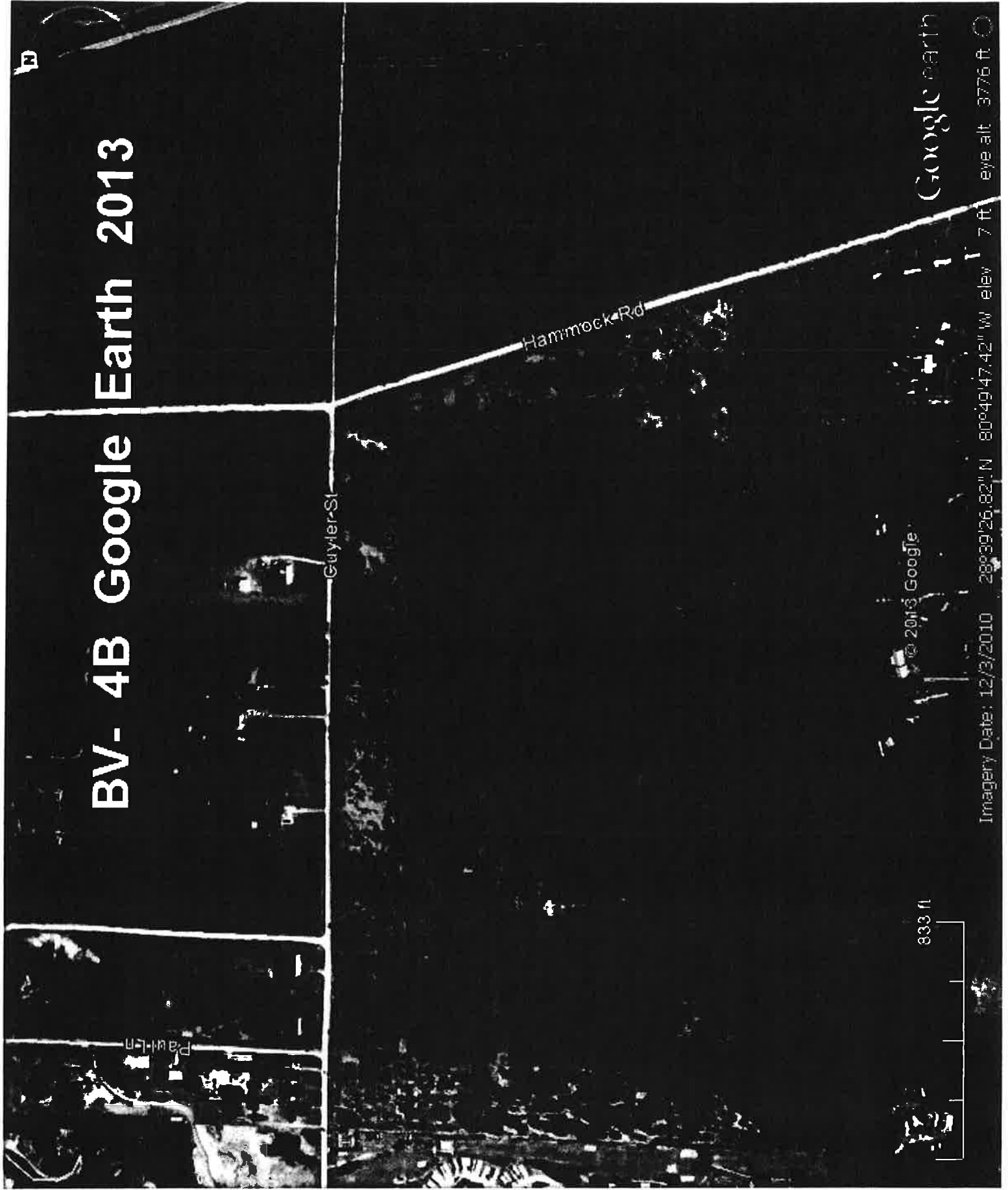
Responsive B Resourceful B Reliable

DMMA BV-4B



 FIND Easement
 FIND Owned





BV- 4B Google Earth 2013

Guyler St

Hammock Rd

833 ft

© 2013 Google

Imagery Date: 12/3/2010

28°39'26.82"N

80°49'47.42"W

elev

7 ft

eye alt

3776 ft

Google Earth



January 31, 2014

Mr. Mark Crosley
Executive Director
Florida Inland Navigation District (FIND)
1314 Marcinski Road
Jupiter, FL 33477

RE: Scope of Professional Engineering Services
St. Lucie County Reach I Permitting and Dredging Engineering, St. Lucie County, Florida

Mr. Crosley:

Per your request, Taylor Engineering has prepared the attached Scope of Services (Attachment A) and Cost Proposal (Attachment B) for the following services related to the St. Lucie County Reach I dredging project.

- Task 1. Preliminary Design
- Task 2. Submerged Aquatic Vegetation Survey
- Task 3. Environmental Permitting
- Task 4. Final Design and Bid Documents
- Task 5. Bid Administration Assistance

Taylor Engineering will complete the work described herein for a cost-plus-maximum fee of \$249,410 (Attachment B). Of this total, a cost ranging between \$59,100 and \$92,000 represents American Vibracore Services, Inc.'s (AVS) cost-plus-maximum fee to collect and analyze between 16 and 30 vibracore borings (Attachment C). The total number of vibracore borings and the resulting fee will depend on the specifics of the dredging project as developed based on pending field data collection and preliminary design activities. To select AVS, we requested qualifications from six professional firms. Based on review of four submitted qualification packages, we determined AVS 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.

Taylor Engineering appreciates this opportunity to serve FIND. Please contact me if you have questions or comments.

Sincerely,

John Adams, P.E.

Senior Advisor, Waterfront Engineering

Attachments (3)

ATTACHMENT A

**FLORIDA INLAND NAVIGATION DISTRICT
ST. LUCIE COUNTY REACH I PERMITTING AND DREDGING ENGINEERING
ST. LUCIE COUNTY, FLORIDA**

**ATTACHMENT A
SCOPE OF WORK**

**FLORIDA INLAND NAVIGATION DISTRICT
ST. LUCIE COUNTY REACH I PERMITTING AND DREDGING ENGINEERING
ST. LUCIE COUNTY, FLORIDA**

INTRODUCTION

This scope of professional engineering services describes Taylor Engineering's effort to support a proposed Florida Inland Navigation District (FIND) project that would restore St. Lucie County Reach I of the Intracoastal Waterway (ICWW) to its authorized depth and deposit dredged material within the constructed SL-2 dredged material management area (DMMA) facility. Restoration of the Reach I project area — extending from the Indian River \ St. Lucie County line southward approximately 12 miles to Middle Cove — will include excavation of the ICWW channel to target elevations of -12 ft mean lower low water (MLLW) north of the Fort Pierce Harbor Project and -10 ft MLLW south of the Fort Pierce Harbor Project. The proposed dredging template design will include an additional maximum 2 ft of allowable overdepth dredging and side slopes of one vertical to three horizontal (1V:3H).

The bathymetric survey *Intracoastal Waterway Jacksonville to Miami, Florida, St. Lucie County Project Condition Survey, 12- Foot Project* (U.S. Army Corps of Engineers, May 2008) indicates that the dredging volume required to restore St. Lucie County Reach I to its authorized depth exceeds the total storage capacity (approximately 85,000 cy) of FIND SL-2 DMMA. Therefore, the final dredging distance, depths, and resulting quantity of dredged material FIND will remove will depend on the results of an ongoing bathymetric surveying effort, dredged sediment characteristics, capacity restrictions, and the ability to offload (e.g., beach placement, local area construction projects, etc.) dredged material from the FIND SL-2 DMMA during construction. The dredged sediment characteristics, determined during the preliminary design phase via collection and analysis of vibrocore data, will largely govern alternatives available for consideration.

As discussed in the *Long-Range Dredged Material Management Plan for the Intracoastal Waterway in St. Lucie County, Florida* (Taylor et al. November 1997), previous geotechnical samples suggest that at least some of the sediments within the ICWW channel may potentially be suitable for beach placement. Should the proposed geotechnical analysis identify ICWW shoal material suitable for beach placement, FIND could choose to cooperate with local interests in placing that material on the beach and thus reduce the amount of material placed in FIND SL-2 DMMA. Alternatively, FIND can work with the selected construction contractor to find viable alternatives for offloading and/or stockpiling extra material at the FIND SL-2 DMMA.

The FIND requested Taylor Engineering provide construction drawings and specifications, and bid services for this project. In response, Taylor Engineering has developed this scope of services based on the following assumptions:

- Use of the FIND SL-2 DMMA during project construction (dredging and offloading) will require that FIND reestablish an access road agreement through the Coconut Cove property between the Siemens Group and FIND similar to the agreement established for the original construction of FIND SL-2 DMMA.

ATTACHMENT A

- The FIND, through its designated surveyor, Morgan & Eklund, Inc. (M&E), will provide an updated bathymetric survey of the project area.
- The provided bathymetric survey and collected geotechnical data (vibracore borings and testing) will form the basis of the final design dredging template and construction drawings for the project, including the possible exclusion of portions of the channel from the proposed dredging project due to storage capacity restrictions and/or the presence of a significant quantity of sediments compatible with beach placement.
- Permitting and engineering for any possible future beach placement project will occur under a separate scope of services with FIND.
- The FIND, through its designated environmental specialist subcontractor, will provide a pre-dredge submerged aquatic vegetation (SAV), natural hardbottom, or other protected aquatic resources survey between June 1 and September 30 following Johnson's seagrass protocols, under a separate scope of services with FIND.
- Project construction (dredging) may result in currently indeterminate amount of SAV impacts, thus requiring establishment of a correspondingly complex mitigation plan. If required, mitigation plan development would occur under a separate scope of services with FIND.

If any of these assumptions prove incorrect, Taylor Engineering will work with the FIND to develop an appropriate additional scope of services and cost. Finally, this proposal excludes permit fees, contract administration, and construction observation services.

TASK 1 PRELIMINARY DESIGN

Task 1.1 Dredging Template Design and Dredge Quantities

FIND's surveyor — M&E — should provide bathymetric survey of St. Lucie County Reach I of ICWW by the beginning of March 2014. After reviewing the survey, Taylor Engineering will develop a three-dimensional AutoCAD-based digital terrain model of the project area. Taylor Engineering will apply side slopes of one vertical to three horizontal (1V:3H) for the preliminary dredging template. Taylor Engineering may update this side-slope assumption as geotechnical data from the dredging area becomes available. Taylor Engineering will develop for FIND review a dredge template that will include plan area, cross sections, and total required dredging volume by individual channel cut.

Task 1.2 Geotechnical Data Collection

American Vibracore Services, Inc. (AVS), as a subcontractor to Taylor Engineering, will collect at least 16 and at most 30 vibracore borings. Taylor Engineering and AVS will agree in advance on the location (coordinates) of each boring based on review of the pending M&E bathymetric and sub-bottom survey data and the result of the preliminary dredge template development completed in Task 1.1. AVS will perform laboratory classification and index property tests as necessary on selected soil samples obtained from the exploration. AVS will perform grain size analyses for each soil stratum encountered at the boring locations. To inform potential offloading strategies, AVS will conduct laboratory analysis of vibracores to determine the suitability of the dredged material for beneficial use as construction material

ATTACHMENT A

for offsite projects. AVS will document the results of the exploration in a report. Attachment C provides a copy of the AVS scope of services in its entirety.

As noted above, Taylor Engineering will apply side slopes of 1V:3H for the preliminary dredging template. Based on the results of the geotechnical data collection Taylor Engineering may update this side-slope assumption as geotechnical data from the dredging area becomes available. If Taylor Engineering updates the side-slope assumptions, we will update the AutoCAD-based digital terrain model to develop a new dredge template (plan area, cross sections, and total required dredging volume by individual channel cut).

Task 1.3 DMMA Reconnaissance

Taylor Engineering staff will investigate the FIND SL-2 DMMA to document and evaluate existing site conditions. Staff will document any visibly apparent geotechnical issues (e.g., erosion, settling, cracking) of the DMMA and weir, and evaluate any potential on-site environmental issues (within the DMMA, pipeline corridor, borrow area, and within the contractor's likely staging area). In a letter report to the FIND, Taylor Engineering will summarize site conditions and note potential site encumbrances. The report will include photographs, an aerial map detailing any geotechnical and environmental site features and, if necessary, any restorative DMMA features required for the project.

Task 1.4 Permit-Level Drawings

Taylor Engineering 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 maintenance dredging project and associated upland DMMA site and, if necessary, 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 hard-copy format and in digital (AutoCAD and PDF) format.

TASK 2 SUBMERGED AQUATIC VEGETATION SURVEY

Taylor Engineering will coordinate with FIND's designated environmental specialist subcontractor, as necessary, during the natural resources surveying process. Taylor Engineering will provide FIND's subcontractor with an AutoCAD-based digital terrain model of the dredge template (plan area, cross sections, and total required dredging volume by individual channel cut) for the subcontractor's Uniform Mitigation Assessment Method (UMAM) and seagrass impact calculations, if necessary.

TASK 3 ENVIRONMENTAL PERMITTING

Task 3.1 Pre-Application Meetings

Taylor Engineering will coordinate and attend pre-application meetings (one per agency) with the Florida Department of Environmental Protection (FDEP) and the U.S. Army Corps of Engineers

ATTACHMENT A

(USACE). During these meetings (potentially located on-site), Taylor Engineering 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. Following completion of the pre-application meetings, Taylor Engineering will compile and submit meeting minutes to all attending parties.

During the meeting, as one alternative to deal with excess dredged material storage needs, Taylor Engineering will present and discuss the potential use of the on-site borrow area as storage for dewatered dredged material removed from the DMMA. We assume that this strategy would not require formal regulatory approval. If pre-application meetings suggest that this approach would require a modification to the existing SL-2 DMMA site permit, and assuming that FIND wishes to pursue this strategy, we will propose to pursue a site permit modification under a separate scope of services.

Task 3.2 Permit Application

Task 3.2.1 FDEP Maintenance Dredging Exemption

Taylor Engineering will prepare and submit to the FDEP a request for maintenance dredging exemption under Florida Statute 403.813(2)(f). The exemption request will include a description of the waterway's design, construction, and maintenance history; drawings showing the maintenance dredging locations and templates, and final dredged material storage areas; and description of the dredging and material handling methods.

Task 3.2.2 USACE Permit

If the pre-dredge submerged aquatic vegetation (SAV), natural hardbottom, or other protected aquatic resources survey indicates no impacts, Taylor Engineering will prepare and submit to the USACE Jacksonville District a request for verification of the maintenance dredging authorization under Department of the Army Regional General Permit SAJ-93. The verification request will include drawings showing the maintenance dredging locations and templates and final dredged material storage areas, and description of the dredging and material handling methods.

If the pre-dredge SAV, natural hardbottom, or other protected aquatic resources survey indicates impacts, Taylor Engineering will prepare and submit to the USACE Jacksonville District a Joint ERP application for the dredging of St. Lucie County Reach I of ICWW. The USACE Joint ERP application will include signed and sealed permit-level design drawings (Task 1.4) and 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 (if necessary), and (5) construction methodology and schedule.

Task 3.3 Responses to Requests for Additional Information

This task includes time to respond to requests for additional information (RAI) from the FDEP and the USACE, if necessary. After initial review of the maintenance exemption and general permit

ATTACHMENT A

verification requests, the FDEP and USACE will likely respond with one or more RAIs. An RAI typically comprises a series of questions that require additional clarification or other information regarding the proposed work. Accordingly, we have budgeted a maximum \$24,932 (approximately 200 person-hours) to respond to up to two RAIs each from the FDEP and USACE. Should the RAI responses require more than this budgeted labor (or should the agencies deny the maintenance exemption or verification request and require new state or federal permits), we will evaluate the response requirements and prepare and submit to FIND a scope of work and cost proposal to respond to the agency requirements. Taylor Engineering will provide all RAI responses to FIND for review before submittal to the FDEP and USACE.

Task 3.4 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 agency 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. Taylor Engineering 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 4 FINAL DESIGN AND BID DOCUMENTS

Task 4.1 Final Design

Task 4.1.1 Final Design and Construction Drawings

Taylor Engineering will prepare final design documents and digital construction drawings for the various site elements. Construction drawings will provide plan, cross-sectional, and detail views of the ICWW dredging area and pertinent details (i.e., pipeline corridor, contractor staging area, weir location, discharge area, etc.) of the SL-2 DMMA. Taylor Engineering will provide construction drawings in appropriate hardcopy format and in digital (AutoCAD) format, as well as record drawings signed and sealed by a Florida Registered Professional Engineer.

Task 4.1.2 Contract Documents and Technical Specifications

Taylor Engineering will update the Division 00 and 01 Contract Documents and prepare Division 02 Technical Specifications to construct the project. Taylor Engineering will follow the Engineers Joint Contract Documents Committee (EJCDC) and Construction Specification Institute (CSI) standards and guidelines to prepare the specifications.

ATTACHMENT A

Task 4.2 Bid Documents*Task 4.2.1 Bid Package Submittal*

Taylor Engineering will prepare a bid package (including contract documents, technical specifications, and bid schedule) with estimated quantities for all bid items. To give interested bidders immediate access to the bid package, Taylor Engineering will provide an electronic copy of the final drawings and specifications for FIND to upload onto its FTP site. Taylor Engineering will provide FIND with a record set of drawings signed and sealed by a Florida Registered Professional Engineer.

Task 4.2.2 Opinion of Probable Cost

Taylor Engineering will prepare an opinion of probable cost for the project.

TASK 5 BID ADMINISTRATION ASSISTANCE

Taylor Engineering will help FIND administer the bidding process and help select the contractor. Taylor Engineering will remain available at its Jacksonville offices to clarify and interpret project documents and prepare addenda, if required. Taylor Engineering will coordinate and attend the pre-bid meeting to answer questions concerning project elements for which Taylor Engineering is responsible.

Taylor Engineering will help review the bids received and provide FIND with recommendations for contractor selection. This work includes reviewing the submitted bid documents, checking references of the responsive bidders, and preparing and transmitting a written recommendation for contractor selection. Taylor Engineering will limit its review and recommendations to engineering and technical issues. The FIND will take responsibility for legal review and evaluation of contractors' financial condition, business licenses or authorizations, bonding, contractual requirements, and any other non-engineering or non-technical information.

ATTACHMENT A

SCHEDULE

Taylor Engineering's work on this project will begin immediately on receipt of the FIND's Notice to Proceed (NTP). Assuming Taylor Engineering receives an updated bathymetric survey soon after the NTP, Taylor Engineering expects to complete the initial design phase of the project (Task 1) within three months of the NTP.

Taylor Engineering will begin Task 2 upon receipt of FIND's designated environmental specialist subcontractor survey and should complete the task within one month. Task 3 could take between 4 and 12 months depending on the presence of natural resources. Following the satisfactory completion of Task 3, Taylor Engineering should complete the project schedule for Tasks 4 and 5 within three months.

No.	Task	Months from Notice to Proceed																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Preliminary Design																	
2.	SAV Survey																	
3.	Environmental Permitting																	
4.	Final Design and Bid Documents																	
5.	Bid Admin Assistance																	

**FLORIDA INLAND NAVIGATION DISTRICT
ST. LUCIE COUNTY REACH I PERMITTING AND DREDGING ENGINEERING
ST. LUCIE COUNTY, FLORIDA**

**ATTACHMENT B
COST PROPOSAL**

ATTACHMENT B

TAYLOR ENGINEERING, INC.
COST SUMMARY BY TASK
P2014-009: FIND : ST. LUCIE COUNTY REACH I DREDGING

TASK 1: PRELIMINARY DESIGN

<i>Labor</i>	<i>Hours</i>	<i>Cost (\$)</i>	<i>Task Totals</i>
Vice President	1.0	185.00	
Senior Advisor	11.0	2,035.00	
Director	6.0	930.00	
Senior Professional	100.0	13,500.00	
Editor	2.0	198.00	
Senior Technical Support	100.0	10,300.00	
Administrative	14.0	728.00	
Total Man-Hours	234.0		
Labor Cost			\$ 27,876.00
<i>Non-Labor</i>	<i>Units</i>	<i>Cost (\$)</i>	
DMMA Reconnaissance (Site Visit)	--	--	
Mileage (RT)	425.0	189.13	
Per Diem for 2 people	2.0	72.00	
Hotel for 2 people	2.0	200.00	
Reproductions and Delivery	1.0	50.00	
AVS Vibracores	1.0	92,000.00	
Non-Labor Cost		92,511.13	
Fee @ 10.0%		9,251.11	
Total Non-Labor Cost			\$ 101,762.24
Total Task 1			\$ 129,638.24

TASK 2: SUBMERGED AQUATIC VEGETATION SURVEY

<i>Labor</i>	<i>Hours</i>	<i>Cost (\$)</i>	<i>Task Totals</i>
Senior Advisor	1.0	185.00	
Senior Professional	7.0	945.00	
Senior Technical Support	1.0	103.00	
Administrative	2.0	104.00	
Total Man-Hours	11.0		
Labor Cost			\$ 1,337.00
<i>Non-Labor</i>	<i>Units</i>	<i>Cost (\$)</i>	
Reproductions and Delivery	1.0	50.00	
Fee @ 10.0%		5.00	
Total Non-Labor Cost			\$ 55.00
Total Task 2			\$ 1,392.00

ATTACHMENT B

P2014-009: FIND : ST. LUCIE COUNTY REACH I DREDGING

TASK 3: ENVIRONMENTAL PERMITTING

<i>Labor</i>	Hours	Cost (\$)	Task Totals
Vice President	12.0	2,220.00	
Senior Advisor	18.0	3,330.00	
Director	6.0	930.00	
Senior Professional	290.0	39,150.00	
Editor	14.0	1,386.00	
Senior Technical Support	52.0	5,356.00	
Administrative	15.0	780.00	
Total Man-Hours	407.0		
Labor Cost			\$ 53,152.00
<i>Non-Labor</i>	Units	Cost (\$)	
Pre-Application Meetings (USACE)	--	--	
Mileage (RT)	535.0	238.08	
Per Diem for 2 people	2.0	72.00	
Pre-Application Meetings (FDEP)	--	--	
Mileage (RT)	550.0	244.75	
Per Diem for 2 people	2.0	72.00	
Reproductions and Delivery	1.0	50.00	
Non-Labor Cost		676.83	
Fee @ 10.0%		67.68	
Total Non-Labor Cost			\$ 744.51
Total Task 3			\$ 53,896.51

TASK 4: FINAL DESIGN AND BID DOCUMENTS

<i>Labor</i>	Hours	Cost (\$)	Task Totals
Vice President	14.0	2,590.00	
Senior Advisor	26.0	4,810.00	
Director	4.0	620.00	
Senior Professional	266.0	35,910.00	
Editor	1.0	99.00	
Senior Technical Support	130.0	13,390.00	
Administrative	15.0	780.00	
Total Man-Hours	456.0		
Labor Cost			\$ 58,199.00
<i>Non-Labor</i>	Units	Cost (\$)	
Reproductions and Delivery	1.0	100.00	
Fee @ 10.0%		10.00	
Total Non-Labor Cost			\$ 110.00
Total Task 4			\$ 58,309.00

ATTACHMENT B

P2014-009: FIND : ST. LUCIE COUNTY REACH I DREDGING**TASK 5: BID ADMINISTRATION ASSISTANCE**

<i>Labor</i>	Hours	Cost (\$)	Task Totals
Senior Advisor	7.0	1,295.00	
Senior Professional	32.0	4,320.00	
Editor	2.0	198.00	
Administrative	2.0	104.00	
Total Man-Hours	43.0		
Labor Cost			\$ 5,917.00
<i>Non-Labor</i>	Units	Cost (\$)	
Pre-Bid Meeting Attendance	--	--	
Mileage (RT)	425.0	189.13	
Per Diem for 2 people	2.0	20.00	
Reproductions and Delivery	1.0	25.00	
Non-Labor Cost		234.13	
Fee @ 10.0%		23.41	
Total Non-Labor Cost			\$ 257.54
Total Task 5			\$ 6,174.54
Project Total			\$ 249,410.28

**FLORIDA INLAND NAVIGATION DISTRICT
ST. LUCIE COUNTY REACH I PERMITTING AND DREDGING ENGINEERING
ST. LUCIE COUNTY, FLORIDA**

**ATTACHMENT C
AMERICAN VIBRACORE SERVICES
SCOPE OF WORK AND COST PROPOSAL**



January 29, 2014

AVS Proposal # 140127

Joe Wagner, P.E.
Taylor Engineering, Inc.
10151 Deerwood Park Blvd
Bldg 300, Suite 300
Jacksonville, Florida 32256

Re: Vibracore Sampling, Analysis and Reporting Plan
St. Lucie County - ICW Dredging Reach I

American Vibracore Services, Inc. is pleased to submit this proposal to provide professional geotechnical services for the above mentioned project.

We understand that the project objectives are to establish the geotechnical characteristics of channel bottom sediments within Dredging Reach I of the Intracoastal Waterway in St. Lucie County, Florida. We further understand that the potential project area extends from the Indian River / St. Lucie line southward approximately 12 miles to Middle Cove. For the purposes of this proposal we have assumed that the Florida Inland Navigation District will authorize two vibracores per channel mile with the option of conducting supplemental cores up to a total of 30 cores.

All vibracores will be performed to a depth of approximately -16 ft MLW or refusal. We understand that the vibracore locations will be in approximately 9 – 13 feet of water. It is our understanding that the exact locations will be determined by Taylor Engineering after the performance of a bathymetric survey.

Our scope of work will be the following:

1. Mobilize vibracore vessel to the project area.
2. Mobilize vibracore equipment and crew to the project area. All cores will be extracted using a new polycarbonate core liner.
3. Extract the determined number of vibracores from locations within the Intracoastal Waterway as determined by the client.
4. Coring will be to a depth of approximately -16 ft MLW or refusal, in approximately 9-13 feet of water. A coring vessel equipped with an A-frame, winch and DGPS will be used as a coring platform. An AVS vibracore unit will be used to extract all cores. Coordinates and water depths will all be recorded.

5. Cores will be split on site as needed to optimize supplemental core locations.
6. Demobilize vessel and equipment.
7. Laboratory analysis will include the following:
 - Core logging by a Florida Licensed Professional Geologist
 - Photo-documentation of cores
 - Gradation Analysis (approx. 4 samples per core)
 - Calcium Carbonate Analysis (approx. 2 samples per core)
 - Post Carbonate Content Gradation Analysis (approx. 1 sample per core)
 - Visual Shell Content (approx. 4 samples per core)
 - Munsell Color Designation (approx. 4 samples per core)
8. A report will be prepared of the sampling event and laboratory analyses. All laboratory data will be reported in the gINT format. The report will provide field logs, penetrometer reports, generalized subsurface profiles, core logs, particle size distribution reports, and a summary of the laboratory test results of the physical parameters, all to current FDEP standards. A Florida Registered Professional Geologist will direct all final deliverables, including electronic logs and reports.
9. The deliverables will include: (a) a presentation of the field and laboratory test procedures used and the data obtained, (b) logs presenting the subsurface conditions encountered at the boring locations referenced to mean lower low water (MLLW) elevation, (c) log photo documentation, (d) results of the grain size analysis including grain size curves and soil classifications in accordance with the Unified Soil Classification System (USCS) and (e) results of the suitability evaluations for beach placement and construction material.

Based on the scope of work, a breakdown of fees as follows:

Mobilization	\$18,900.00
Vibracoring @ \$1,100.00/core x 16 cores	\$17,600.00
Core Logging /Photo-documentation @ \$600.00/core x 16 cores	\$9,600.00
Lab Testing @ \$650.00/core @ x 16 cores	\$10,400.00
Final Report	\$2,600.00
	Total 59,100.00

Additional Cores:

Inclusive of vibracoring, logging, photo-documentation, lab testing, and beach compatibility analysis:

\$2,350.00/core

Page 3 of 3

American Vibracore Services - proposal # 140127 - St Lucy County Dredging ICW Reach I

We estimate that mobilization will take place approximately within 10 days of authorization depending on vessel availability and weather conditions.

The preceding costs represent our best estimate for the tasks as we understand them.

We appreciate the opportunity to be of service to you and if you have any questions or comments, please don't hesitate to call our office.

Pricing on this proposal is good for 90 days.

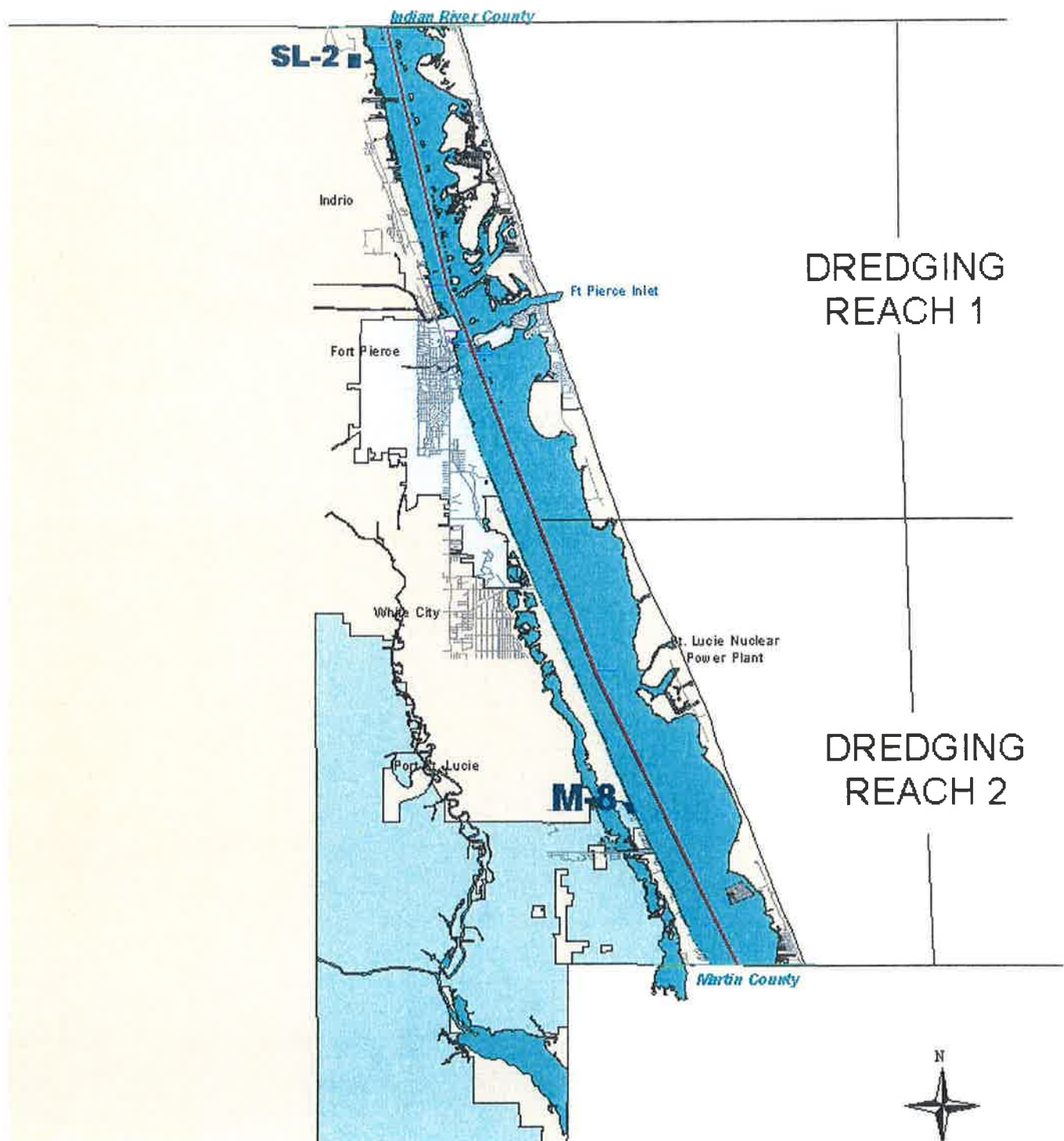
Sincerely,

A handwritten signature in blue ink, appearing to read 'F. Kaub', is written over the word 'Sincerely,'.

Frederick Kaub, P.G.
Professional Geologist #1344
State of Florida

1215 Wallace Drive, Delray Beach, Florida 33444 Ph. 561-372-0500 www.americanvibracore.com

LONG RANGE DREDGED MATERIAL
MANAGEMENT PLAN
FOR THE INTRACOASTAL WATERWAY
IN ST. LUCIE COUNTY





January 29, 2014

Mr. Mark Crosley
Executive Director
Florida Inland Navigation District
1314 Marcinski Road
Jupiter, FL 33477

RE: Dredged Material Management Area NA-1; Nassau County, Florida
Post-Construction Monitoring Services

Mr. Crosley:

Taylor Engineering is pleased to submit the enclosed scope of work for post-construction monitoring services (Attachment A) and fee proposal (Attachment B) for the NA-1 Dredged Material Management Area. Primary tasks include installation of a groundwater monitoring well, collection of groundwater samples for environmental analyses, continued data collection and analysis of settlement instrumentation underneath the dike embankment, and final determination of site readiness for use.

Specific condition 13 of the Florida Department of Environmental Protection (FDEP) permit (permit no. 45-291060-002-EI) requires the Florida Inland Navigation District (FIND) to install a groundwater monitoring well before dredging occurs. Sample collection and subsequent laboratory testing of the groundwater will determine the pre-dredging chloride content and sodium adsorption rate (SAR) of the groundwater.

A portion of the NA-1 DMMA dike embankment lies above soft compressible clay material. In the pre-construction geotechnical engineering report (dated March, 2010), Dunkelberger Engineering & Testing, Inc. (a Terracon company) recommended that the compressible clay reach at least 80% of the estimated total consolidation settlement before the site is safe for its intended use as a dredged material management area. Using the NA-1 DMMA to receive dredged material before the clay reaches the recommended degree of consolidation settlement could lead to undesired slope stability problems. Dunkelberger will use the settlement instrumentation installed during construction to collect and analyze data. Taylor Engineering selected Dunkelberger for this effort given the firm's experience as geotechnical experts for this project throughout design and construction.

Taylor Engineering will perform these services on a cost plus basis, for a total cost not to exceed \$ 70,809.45 (Attachment B). Of this total, \$46,900.00 represents Dunkelberger's fees.

Please contact me at 904-731-7040 ext. 288 or jadams@taylorengeering.com with any questions.

Sincerely,

John Adams, P.E.
Senior Advisor

Attachments (3)

**DREDGED MATERIAL MANAGEMENT AREA NA-1
NASSAU COUNTY, FLORIDA
SCOPE OF POST-CONSTRUCTION MONITORING SERVICES**

**ATTACHMENT A
SCOPE OF WORK**

ATTACHMENT A

**DREDGED MATERIAL MANAGEMENT AREA NA-1
POST-CONSTRUCTION MONITORING SERVICES**

The Florida Inland Navigation District (FIND) dredged material management area (DMMA) NA-1, located in Nassau County, Florida, lies east of the Atlantic Intracoastal Waterway and north of the Fernandina Beach Airport on Crane Island. Construction of the NA-1 DMMA occurred between January and December, 2013.

Specific condition 13 of the Florida Department of Environmental Protection (FDEP) permit (permit no. 45-291060-002-EI) requires the Florida Inland Navigation District (FIND) to install a groundwater monitoring well before dredging occurs. Sample collection and subsequent laboratory testing of the groundwater will determine the pre-dredging chloride content and sodium adsorption rate (SAR) of the groundwater.

A portion of the NA-1 DMMA dike embankment lies above soft compressible clay material. In the pre-construction geotechnical engineering report (dated March, 2010), Dunkelberger Engineering & Testing, Inc. (a Terracon company) recommended that the compressible clay reaches at least 80% of the estimated total consolidation settlement before the site is safe for its intended use as a dredged material management area. Upon initial loading from the dike embankment, the clay has low shear strength; however, as the clay undergoes consolidation settlement it gains the necessary shear strength to safely support the overlying dike embankment. Using the NA-1 DMMA to receive dredged material before the clay reaches the recommended degree of consolidation settlement could lead to undesired slope stability problems. During the NA-1 DMMA construction project, the Contractor installed settlement instrumentation and monitored consolidation settlement throughout construction. Review of the data collected during construction indicates that the dike embankment has settled approximately 50% (nine inches) of the anticipated total consolidation settlement (18 inches). Therefore, the site requires further settlement instrumentation data collection analysis. Dunkelberger will use the previously installed settlement instrumentation to collect and analyze data.

Taylor Engineering has developed its scope of work based on the following assumptions:

1. Groundwater monitoring and testing will consist of one sample collection effort to satisfy the FDEP permit condition.
2. Consolidation settlement will reach 80% within two years, and settlement data collection and analysis will cease when Dunkelberger declares the site safe for its intended use.
3. Differential settlement of the dike embankment will not cause soil cracks or other severe embankment problems needing repair or remediation.
4. Settlement data collection and analysis will require up to three site visits to visually inspect the dike embankment for any developing cracks or other visual signs of instability.
5. Settlement instrumentation installed during construction remains in working and useable order.

If any of these assumptions prove incorrect, Taylor Engineering will work with the FIND to develop an appropriate additional scope of work and cost.

ATTACHMENT A

**TASK 1 GROUNDWATER MONITORING WELL INSTALLATION AND
GROUNDWATER AND SOIL SAMPLE COLLECTION AND ANALYSIS**

Taylor Engineering will coordinate with Dunkelberger to install a shallow groundwater monitoring well on the south side of the NA-1 DMMA property to a depth of approximately 10 feet. This groundwater monitoring well will contain slotted screens to allow the surrounding groundwater to penetrate into the well for sample collection.

Taylor Engineering will allow the well to charge with groundwater, will collect samples at a depth of 5 feet below the ground surface, and will deliver the samples for laboratory analysis of chloride concentration and SAR. Upon receipt of the groundwater chloride and SAR test results, Taylor Engineering will summarize and maintain the laboratory data in accordance with FDEP Specific Condition 13 of the permit. We have budgeted for two site visits under this task.

**TASK 2 DIKE EMBANKMENT SETTLEMENT INSTRUMENTATION DATA
COLLECTION AND ANALYSIS**

Taylor Engineering will provide Dunkelberger with the full settlement instrumentation data set and earthwork construction testing data from the NA-1 DMMA construction project. Upon receipt of this data, Dunkelberger will determine whether the data warrants any changes to the initial design assumptions regarding consolidation and slope stability.

Taylor Engineering and Dunkelberger will visit the site to establish post-construction baseline readings and survey monument locations for the settlement instrumentation. During this site visit, we will take photographs and prepare written notes of our visual observations regarding dike stability. Dunkelberger will provide a written report documenting the baseline readings. The settlement instrumentation data will consist of the following.

- Groundwater pore pressure readings from the 6 vibrating wire piezometers
- Soil settlement readings from the 6 Sondex casings
- Soil settlement readings from the 10 settlement plates

Dunkelberger will visit the site once every three months from its Jacksonville office to collect settlement data and will prepare a written report for each site visit. The written reports will briefly describe the site visit and will contain graphical and tabular data describing the settlement data. The reports will estimate the degree of consolidation settlement to date and describe any observable trends in the data. This scope of work provides Dunkelberger for up to eight regularly scheduled site visits and up to two extra site visits for unusual or erratic data. Each site visit and data collection event will require a written report by Dunkelberger. In addition to the initial site visit, Taylor Engineering will make up to two subsequent site visits to visually observe the dike embankment.

Dunkelberger will recommend to Taylor Engineering when the data and the site observations indicate that the site is safe for its intended use as a dredged material management area. Upon reaching this conclusion, settlement data collection will cease.

Differential settlement of the dike embankment could cause soil cracking or other problems that might require repair of the dike before use. Any repair would likely incorporate soil grouting. This scope of work does not include any design work for repair of the dike embankment because it will not likely experience any problems during the settlement process. This scope of work does include visual

ATTACHMENT A

observation and data monitoring in an attempt to identify any unforeseen problems and advise the FIND if additional repair or stabilization is warranted before use of the site.

ESTIMATED SCHEDULE

N o .	Task	Months from Notice to Proceed																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	GROUNDWATER MONITORING WELL INSTALLATION AND GROUNDWATER SAMPLE COLLECTION AND ANALYSIS																								
2	DIKE EMBANKMENT SETTLEMENT INSTRUMENTATION DATA COLLECTION AND ANALYSIS																								

**DREDGED MATERIAL MANAGEMENT AREA NA-1
NASSAU COUNTY, FLORIDA
SCOPE OF POST-CONSTRUCTION MONITORING SERVICES**

**ATTACHMENT B
TAYLOR ENGINEERING
COST PROPOSAL**

TAYLOR ENGINEERING, INC.
COST SUMMARY BY TASK
P2013-204: NA-1 DMMA Post-Construction Monitoring

TASK 1: Groundwater Monitoring Well Installation, and Groundwater and Soil Sample Collection and Analysis

<i>Labor</i>	<i>Hours</i>	<i>Cost</i>	<i>Task Totals</i>
Vice President	3	555	
Senior Advisor	1	185	
Senior Professional	11	1,485.00	
Project Professional	11	1,155.00	
Technical Editor	1	99	
Administrative	1	52	
Total Man-Hours	28		
Labor Cost			3,531.00
<i>Non-Labor</i>	<i>Units</i>	<i>Cost</i>	
Mileage for two site visits @ 100 miles per trip	200	111	
Laboratory Analysis Budget	1	300	
Non-Labor Cost		411	
Fee @ 10%		41.1	
Total Task 1			3,983.10

TASK 2: Dike Embankment Settlement Instrumentation Data Collection and Analysis

<i>Labor</i>	<i>Hours</i>	<i>Cost</i>	<i>Task Totals</i>
R. Bruce Taylor, Ph.D.	1	306	
Vice President	8	1,480.00	
Senior Advisor	4	740	
Senior Professional	44	5,940.00	
Project Professional	60	6,300.00	
Administrative	4	208	
Total Man-Hours	121		
Labor Cost			14,974.00
<i>Non-Labor</i>	<i>Units</i>	<i>Cost</i>	
Mileage for three site visits for two people @ 100 miles per trip	300	166.5	
Per Diem (meals for two people for 3 visits each)	6	72	
Terracon/Dunkelberger Subcontract	1	46,900.00	
Non-Labor Cost		47,138.50	
Fee @ 10%		4713.85	
Total Task 2			66,826.35

Project Total

\$70,809.45

**DREDGED MATERIAL MANAGEMENT AREA NA-1
NASSAU COUNTY, FLORIDA
SCOPE OF POST-CONSTRUCTION MONITORING SERVICES**

ATTACHMENT C
DUNKELBERGER ENGINEERING & TESTING, INC.
SCOPE OF WORK AND COST PROPOSAL

DUNKELBERGER
engineering & testing, inc.

A Terracon COMPANY

January 20, 2014

Taylor Engineering, Inc.
10151 Deerwood Park Boulevard
Building 300, Suite 300
Jacksonville, Florida 32256

Attention: Mr. Robert DiRienzo, E.I....via email (rdirienzo@taylorengeering.com)
Staff Engineer

Subject: **Geotechnical Engineering Services Proposal**
NA-1 Post-Construction Settlement Monitoring
Nassau County, Florida
Proposal No. PHB140010

Dear Mr. DiRienzo:

INTRODUCTION

Dunkelberger Engineering & Testing, Inc., A Terracon Company (Dunkelberger) is pleased to submit this proposal to provide geotechnical consulting services for the post-construction settlement monitoring of the recently constructed Dredged Material Management Area (DMMA) NA-1. Dunkelberger performed the geotechnical design for the facility in 2010 and served as a geotechnical consultant during the project's construction.

As requested, this proposal is being provided to assist Taylor with post-settlement monitoring of the NA-1 DMMA to determine when the facility can be used.

PROJECT INFORMATION

The NA-1 site has unique and challenging subsoil conditions with the approximate eastern one-half of the dike being underlain at shallow depth by highly compressible and very weak clays that were presumably deposited during dredging events circa 1943 to 1960. The western portion of the site is underlain by native (natural) soils that are much less compressible and notably stronger than those within the eastern area.

The soil conditions required special consideration (i.e., phased/staged construction tied to specialized settlement monitoring/measurement) during the construction to ensure the clays had gained sufficient strength to provide an adequate factor of safety at end-of-construction (EOC). Post-construction, the clays are expected to continue to settle (consolidate) and again need to gain sufficient strength during this process prior to filling (use) of the DMMA. To achieve the required EOC factor of safety, the clays needed to undergo about 30% of the predicted consolidation. Another approximately 50% (or total of 80%) of the total estimated consolidation settlement needs to occur post-construction prior to filling of the DMMA.

Dunkelberger Engineering & Testing, Inc., A Terracon Company 607 NW Commodity Cove, Port St. Lucie, Florida
P 772.343.9787 F 772.343.9404 <http://www.dunkelberger-engineering.com/>

Geotechnical



Environmental



Construction Materials



Facilities

Geotechnical Services Proposal
 NA-1 DMMA ■ Nassau County, Florida
 January 20, 2014 ■ Proposal No. PHB140010

DUNKELBERGER
 engineering & testing, inc.
 A Terracon COMPANY

The NA-1 dike construction took place between about February and October of 2013. In accordance with the project specifications, the Contractor installed and monitored 10 settlement plates, six Sondex casing settlement devices, and six pore water pressure piezometers. Dunkelberger reviewed the data, along with Taylor, during the construction and provided recommendations with respect to the specified construction phasing.

Review of the last settlement monitoring data provided to us by Taylor shows that the dike (eastern section of concern) settled on average about 9 inches, or about 50% as compared to our predicted average total settlement of about 18 inches for the area.

The pore pressure piezometer in the area with the greatest settlement had a pore pressure reading of about 8.4 psi (November 9, 2013 measurement) which is about 5.5 psi above the initial (start of construction) measurement. This additional 5.5 psi pore water pressure is equal to about one-half of the imposed dike fill load of 11.7 psi. In other words, assuming that the initial pore water pressure increase was roughly equal to the imposed dike load, about 50% of the pore pressure has dissipated consistent with the 50% average total settlement to date.

Our design analyses showed that 80% consolidation needed to occur prior to filling (usage) of the DMMA. It was estimated that this condition would occur within about 8 months from the end of construction. The time for the full primary consolidation of the clays to occur was predicted to be on the order of 2½ to 7 years from start of construction.

SCOPE OF SERVICES

Pursuant to your request, our scope of services is to provide settlement monitoring up to the 80% consolidation stage as follows:

- Taylor to provide Dunkelberger with construction testing records and construction phase instrumentation readings (provided in January 9, 2014 email).
- Dunkelberger to review and update their consolidation/shear strength model and assumptions based on field data if necessary
- Taylor and Dunkelberger to visit the site to establish baseline readings and survey monument locations
- Dunkelberger to collect settlement data for the 6 Sondex casings, 6 pore pressure piezometers, and 10 settlement plates every three months and provide Taylor with instrumentation data with a brief written report of the data and opinion as to degree of consolidation.
 - Elevation shots on settlement plates and Sondex casings will be made by Lee Surveying and Mapping Co., a Florida registered land surveyor based in Nassau County.
 - Ellis and Associates has agreed to allow us to use their Sondex sounding measurement and pore pressure reading equipment to maintain continuity.
- Since time to reach 80% consolidation is an unknown, the proposal is based on up to two years of monitoring.
- Dunkelberger to make recommendation that the site is ready for use from a stability standpoint. Recommendation based on both instrumentation readings and on-site observations.

Geotechnical Services Proposal

NA-1 DMMA ■ Nassau County, Florida

January 20, 2014 ■ Proposal No. PHB140010

DUNKELBERGER

engineering & testing, inc.

A Terracon COMPANY

- Field visits by Dunkelberger (estimate 2/year) to make visual observations of dike condition.
- Install one shallow groundwater monitoring well within the southwest area of the site, just outside of the southwest gate in an area that is readily accessible to a small, tracked drill rig (mini-rig). The well will be set to a depth of about -6 feet (NAVD-88), or about 10½ feet below the existing ground level. A 1 or 2-inch diameter well will be installed. An above ground riser and pad will be constructed for protection.
- Contingency to install a new pore pressure piezometer in the vicinity of Station 18+75. While the current data appears to be in line with the dike performance, the readings from this device have been and remain outliers with respect to the other five pore pressure piezometers.

SCHEDULE

We are prepared to begin providing the required services immediately upon your notice to proceed. We estimate that our schedule for the geotechnical work will be as follows:

- Well installation
 - Utility notification and permitting – 2 weeks
 - Installation – 1 day
 - Summary report describing work within about 2 weeks after field work
- Engineering monitoring (assume once every 3 months)
 - Field work – 1 day per event
 - Report provided within about 2 weeks after field work

FEE and TERMS

Our work will be performed on a unit rate basis in accordance with the fees shown on the Attachment to this proposal. Based on our understanding of the project and our scope of work as described herein, we have developed a not-to-exceed cost of **\$46,900** for performance of the outlined services.

We understand that our work will be executed under a subcontract agreement prepared by Taylor Engineering, Inc.

SAFETY – IIF

At Dunkelberger, we all have a personal and uncompromising commitment to everyone going home safely each and every day. Incident and Injury-Free (*IIF*) is about care and concern for people. It is our personal and organizational commitment at all levels of the company. Working safely is an inseparable part of working correctly, just as much as other operational priorities, in particular quality, profitability and schedule. Incident and Injury-Free is our commitment to our people and others, who we value for who they are and what they do. *IIF* is not just something we do; it's in everything we do.

Geotechnical Services Proposal

NA-1 DMMA • Nassau County, Florida

January 20, 2014 • Proposal No. PHB140010

DUNKELBERGER

engineering & testing, inc.

A Terracon COMPANY

As part of our IIF process, we will prepare a "Pre-Task Plan" for this project where we will identify the potential site safety and job hazards associated with your site. Our Pre-Task Plan will identify and prepare our personnel to be able to handle conditions such as but not limited to traffic control, environmental contamination, site access issues, overhead and underground utilities, adverse weather conditions, and personal protection equipment and will continually be reviewed and reevaluated throughout the field work activities. We understand that each site is unique and may contain different safety conditions and as a company to protect our personnel as well as others, we look at each site individually to identify the potential concerns.

_____oOo_____

We appreciate the opportunity to submit this proposal for your consideration and look forward to further discussions with you and other members of the project team.

Sincerely,

**DUNKELBERGER ENGINEERING & TESTING, INC.,
A TERRACON COMPANY**



Craig E. Dunkelberger, P.E.
Senior Associate



Kevin E. Aubry, P.E.
Senior Associate

Attachment: Scope and Fee Breakdown

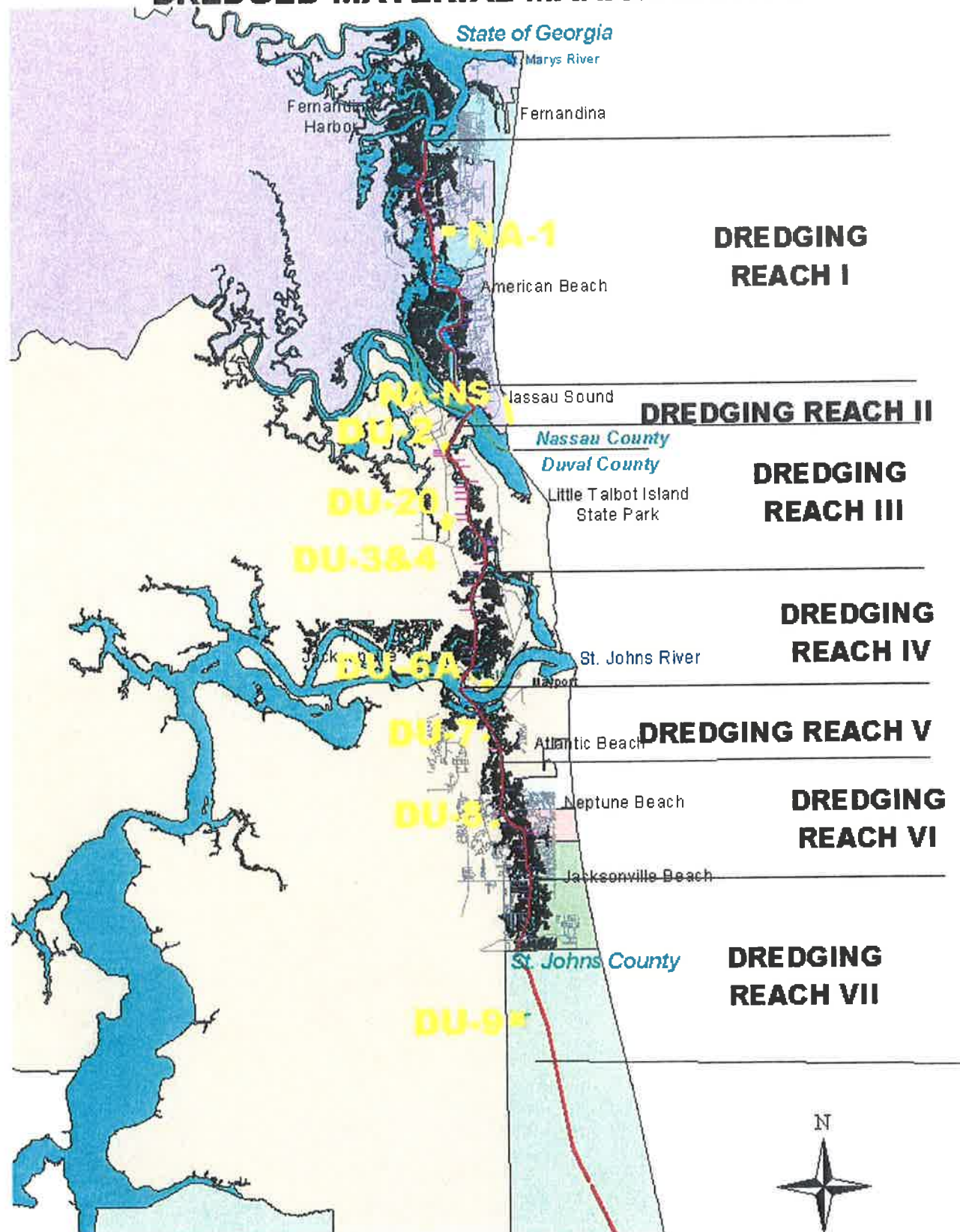
Responsive • Resourceful • Reliable

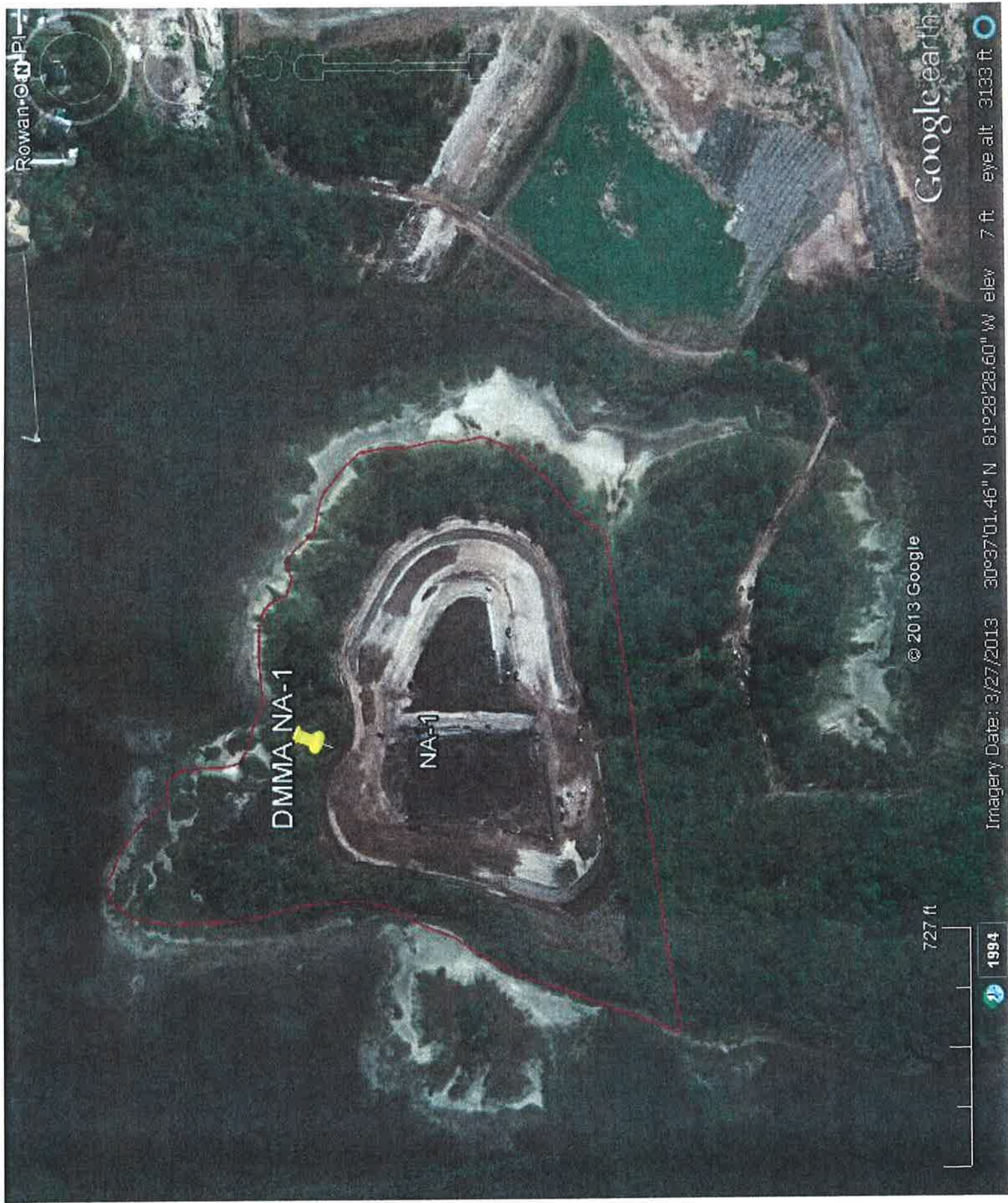
NA-1 DREDGED MATERIAL MANAGEMENT AREA
POST-CONSTRUCTION MONITORING SCOPE and COST BREAKDOWN
DUNKELBERGER ENGINEERING & TESTING, INC., A TERRACON COMPANY (DUNKELBERGER)

ITEM DESCRIPTION	UNITS	AMOUNT	UNIT RATE	FEE
I. WELL INSTALLATION				
Utility Notification and Permitting				
Sr. Engineering Technician	hours	4	\$ 75.00	\$ 300.00
Permit (allowance)	each	1	\$ 100.00	\$ 100.00
Well Installation (1 or 2 inch dia with well head protection)				
Drilling	each	1	\$ 1,380.00	\$ 1,380.00
Sr. Engineering Technician	each	6	\$ 75.00	\$ 450.00
Summary Report	each	1	\$ 350.00	\$ 350.00
SUBTOTAL- MONITORING WELL INSTALLATION				\$ 2,580.00
II. FIELD INSTRUMENTATION MONITORING				
Elevation Shots on Settlement Plates and Sondex Casing (subcontracted to Lee Surveying & Mapping)				
Note: Lee provided field survey to Privett during construction				
Assume 4 trips (events) per year, plus 2 contingency	event	10.00	\$ 600.00	\$ 6,000.00
(10 elevations/shots plus report per event)				
Sr. Engineering Technician to take Sondex and Pore Pressure Piezometer Readings				
assume 4 trips/year with 2 contingency	trip	10.00	\$ 600.00	\$ 6,000.00
Field visits by Engineers (Aubry and Dunkelberger, 5 trips (initial plus 2/year) at 16 hrs each/trip)				
	hours	80.00	\$ 160.00	\$ 12,800.00
	trip	5.00	\$ 250.00	\$ 1,250.00
Contingency to install new Pore Pressure Piezometer (PPP)				
Drill rig mob/demob and one day to install PPP	day	1	\$ 1,500.00	\$ 1,500.00
All required equipment (4500 DP, cable and incidentals)	each	1	\$ 1,150.00	\$ 1,150.00
[billed at cost plus 15%]				
Project Scientist (calibrate and oversee installation)	hours	12	\$ 85.00	\$ 1,020.00
SUBTOTAL- FIELD INSTRUMENTATION MONITORING (W/O CONTINGENCY)				\$ 26,050.00
SUBTOTAL- FIELD INSTRUMENTATION MONITORING (W/ CONTINGENCY)				\$ 29,720.00
III. GEOTECHNICAL ENGINEERING and REPORTING				
Senior Geotechnical Engineer	hours	60	\$ 160.00	\$ 9,600.00
assume 6 hours/field trip				
Project Geotechnical Engineer	hours	20	\$ 120.00	\$ 2,400.00
assume 2 hours/field trip				
CADD Drafting	hours	20	\$ 70.00	\$ 1,400.00
assume 2 hours/field trip				
Clerical Assistant	hours	24	\$ 50.00	\$ 1,200.00
SUBTOTAL-GEOTECHNICAL ENGINEERING				\$ 14,600.00
SAY, NOT-TO-EXCEED FEE OF (INCLUDING CONTINGENCY):				\$ 46,900.00

Dunkelberger

NASSAU/DUVAL COUNTIES DREDGED MATERIAL MANAGEMENT PLAN







January 29, 2014

Mr. Mark Crosley
Executive Director
Florida Inland Navigation District
1314 Marcinski Road
Jupiter, FL 33477

RE: Dredged Material Management Area FL-3 Construction; Flagler County, Florida
Professional Construction Administration Services

Mr. Crosley:

Taylor Engineering is pleased to submit the enclosed scope of work for professional construction administration services (Attachment A) and fee proposal (Attachment B) for the FL-3 Dredged Material Management Area. Primary tasks include bidding and preconstruction coordination, construction administration, and project closeout over the expected 450-day (15 months) construction period.

Project continuity influenced our decision to secure AMEC Environmental and Infrastructure, Inc. (AMEC) — the previous subconsultant for the site's geotechnical investigation — to serve as a subconsultant and provide verification testing and limited construction-phase engineering services. AMEC's services will include field observation of pile driving and limited independent verification of the contractor's earthwork and concrete-related construction tests. Attachment C provides the original proposal from AMEC.

Taylor Engineering will perform these services on a cost plus basis, for a total cost not to exceed \$389,880.25 (Attachment B). Of this total, \$29,156.00 represents AMEC's fees.

Please contact me at 904-731-7040 ext. 288 or jadams@taylorengeering.com with any questions.

Sincerely,

John Adams, P.E.
Senior Advisor

Attachments (3)

**DREDGED MATERIAL MANAGEMENT AREA FL-3 CONSTRUCTION
FLAGLER COUNTY, FLORIDA
PROFESSIONAL CONSTRUCTION ADMINISTRATION SERVICES**

**ATTACHMENT A
SCOPE OF WORK**

ATTACHMENT A

**FL-3 DREDGED MATERIAL MANAGEMENT AREA
PROFESSIONAL CONSTRUCTION ADMINISTRATION SERVICES**

The Florida Inland Navigation District (FIND) requested Taylor Engineering, Inc. to provide construction administration and certification services for construction of the FL-3 dredged material management area (DMMA). Located in Flagler County, Florida (Township 10S; Section 18; Range 31E and Township 10S; Section 13, 23, 24, & 40, Range 30E), the FL-3 DMMA lies east of North Old Kings Highway and is accessible by Old Kings Road. The completed project, resulting in an approximate 756,000-cubic-yard dredged material storage capacity within a 42.2-acre earthen containment basin, requires completion of the following project tasks:

1. Clearing and grubbing the site, access areas, and bypass road corridor
2. Constructing permanent bypass road and perimeter road adjacent to dike
3. Constructing the dike and associated underdrain system
4. Constructing perimeter ditches and associated stormwater overflow weir
5. Fabricating and installing a system of three steel box weirs and mass concrete foundation pad for dredged effluent discharge and control
6. Installing 30-inch and 42-inch HDPE weir pipe for dredged effluent discharge and control
7. Driving piles and installing access walkway for the box weir system
8. Installing security fencing and gate
9. Establishing grass

Taylor Engineering has developed its scope of work based on the following assumptions:

1. Project bidding will occur in March 2013 and extend over a 45-day period.
2. The project construction phase will extend from approximately May 2014 through July 2015
 - a. The total contract time (including mobilization/demobilization) will approach approximately 450 calendar days, (15 months).
 - b. During the major earthwork, undrain installation, and weir and walkway construction, Taylor Engineering will perform field observations five days a week with an observer located on site approximately four to six hours each observation day. Observation hours will occur throughout the week, and may include weekend days as necessary. We anticipate that these activities will require 10 months (300 days) to complete and have budgeted accordingly.
 - c. Outside of the major construction items described above, Taylor Engineering will perform field observations on average one to two days per week with an observer located on site approximately two to four hours each observation day. Observation hours will occur throughout the work week. We anticipate that these activities will require 5 months (150 days) to complete and have budgeted accordingly.
3. We will sub-contract AMEC Environmental and Infrastructure, Inc. (AMEC) to perform limited construction engineering and verification testing services during construction.
4. Project construction will neither result in any substantial deviations from the project drawings and specifications nor violate permit conditions.

If any of these assumptions prove incorrect, Taylor Engineering will work with FIND to develop appropriate modifications to this scope of work and cost.

TASK 1 BIDDING AND PRE-CONSTRUCTION COORDINATION

This task includes the following sub-tasks:

ATTACHMENT A

- Provide bid administration
- Prepare for and conduct a preconstruction meeting
- Review and approve contractor preconstruction submittals
- Make recommendations to FIND for issuance of a Notice to Proceed
- Prepare for and conduct an on-site coordination meeting

Taylor Engineering will help FIND administer the bidding process and assist in selecting the contractor. We will remain available at our Jacksonville offices to clarify and interpret project documents and prepare addenda, if required. Our project engineer will attend the pre-bid meeting to answer questions concerning project elements for which Taylor Engineering is responsible. We will assist with reviewing the bids received and provide FIND with our recommendations for contractor selection. This work includes reviewing the submitted bid documents, checking references of the responsive bidders, and preparing and transmitting a written recommendation for contractor selection. Taylor Engineering will limit its review and recommendations to engineering and technical issues. FIND will take responsibility for legal review and evaluation of contractors' financial condition, business licenses or authorizations, bonding, contractual requirements, and any other non-engineering or non-technical information. When FIND makes the decision to award the contract, Taylor Engineering will issue the notice of award and begin coordinating with the successful bidder.

Taylor Engineering representatives will conduct a preconstruction meeting with the contractor. The preconstruction meeting will serve to describe the project and answer contractor's questions concerning any technical aspects of the work. In addition, Taylor Engineering will discuss the ground rules and other issues including lines of engineer and contractor authority, general and specific contract conditions, contract administration, progress payment, correspondence procedures, project schedule, submittal register, and labor requirements. We will take minutes of the preconstruction meeting discussions and distribute them to FIND and the contractor. We assume the preconstruction meeting will occur at Taylor Engineering's Jacksonville office. This meeting will occur after the Notice to Award and shortly before or immediately after the Notice to Proceed.

Taylor Engineering will issue the Notice to Proceed to the contractor. We will also conduct a coordination meeting after the preconstruction meeting and before the start of on-site construction. We will review contractor preconstruction submittals to prepare a coordination meeting agenda. The submittal review may include schedule of values, list of subcontractors, signature authority, construction schedule, submittal register, environmental protection plan, and quality control plan. This meeting's purpose is to achieve a mutual understanding with the contractor of required quality control; to review submitted draft plans and resolve issues of concern; to discuss project drawings and specifications, schedule, and documentation; and to establish a good working relationship between the contractor's quality control staff and our quality assurance representatives.

TASK 2 CONSTRUCTION ADMINISTRATION

This task includes the following sub-tasks:

- Review up to 80 shop drawings and submittals
- Observe construction activities
- Prepare general site visit report following each site visit
- Conduct verification testing
- Schedule and prepare for 30 on-site progress meetings occurring every two weeks
- Schedule and prepare for up to four additional coordination meetings
- Prepare up to two work change directives

ATTACHMENT A

- Prepare up to six change order directives
- Review and approve up to 15 monthly pay applications

We will help FIND administer the construction contract from our office in Jacksonville and from the project site. In-office duties will include reviewing the contractor's shop drawings and submittals, reviewing progress pay applications, providing oversight of the work progress, and assisting with the preparation of change orders, if required. We will remain available through construction to provide advice and consultation to FIND through site visits and teleconference. In that role we will address questions pertaining to engineering, design, permitting issues, and any proposed changes to project design.

During the major earthwork, underdrain installation, and weir and walkway construction, we will provide on-site observation services five days a week with an experienced observer on site between four and six hours each observation day. We anticipate that these activities will occur during the middle months of the construction project and extend approximately 10 months (300 days) in total. Outside of the major construction activities described above, Taylor Engineering will perform field observations on average one to two days per week with an observer on site approximately two to four hours each observation day. We anticipate this reduced observation schedule will occur at the beginning and end of the construction project and extend a total of 5 months (150 days).

Our visits will include observation of the work and monitoring of the contractor's means, methods, and sequence. We will observe the contractor's activities to evaluate whether they are within general conformance with the project contract, drawings, specifications, and environmental permits. As part of the observation process, we will complete a daily construction report, which will become part of the project record. The report will include the name of the observer, weather conditions, date, personnel/visitors on site, the contractor's personnel and equipment, summary of events, and the contractor's representative and observer's signature. These reports will constitute a daily log of construction progress.

Construction observation will evaluate the contractor's work to

- Prepare the dike foundation in accordance with the drawings and specifications
- Maintain dike material quality and compaction requirements
- Construct the dike drains in accordance with the drawings and specifications
- Construct weir and walkway structures in accordance with the drawings and specifications. Assuming that the steel fabrication shop lies within three hours drive from the project site, this task also includes observation of the steel box weir at the shop (prior to delivery to the site).
- Construct the dike and associated earthwork features (roads, ramps, ditches, and stormwater features) in accordance with the drawings and specifications
- Maintain a current construction schedule
- Provide submittals on time and in proper format
- Protect environmental resources
- Follow quality control procedures to produce an end product that meets contract requirements
- Remove waste and debris from the project site
- Establish grassing in the work areas

In addition to ongoing observations, Taylor Engineering's senior engineers (the Engineer of Record or project manager) will also make a minimum of 30 visits (over the 15-month contract length) to the project site to attend the bi-weekly progress meeting and ascertain whether work is progressing in general conformance with permit conditions, drawings, and specifications.

ATTACHMENT A

We will attend on-site project meetings once every two weeks to discuss project progress and address questions pertaining to engineering, design, permitting issues, proposed changes to the project design, and any conflicts. Attendees will include representatives from the construction contractor and its subconsultants, and Taylor Engineering. The progress meeting agenda will generally include review of minutes of previous meetings, work progress since the previous meeting, current definable features of work (i.e., construction schedule, submittal register, reviewing testing, changes to construction schedule, contract quality for materials and workmanship, pending modifications, changes and substitutions), and other business, as appropriate. Additionally, if unexpected problems arise outside of these meetings, we will attend a maximum of up to two problem resolution meetings on site and up to two meetings via teleconference.

For quality control and at Taylor Engineering's direction, our local geotechnical construction testing services subconsultant, AMEC, will collect and provide verification testing of earthwork (modified proctor, in-place density, grain-size, organic material) and concrete (slump, temperature, air entrainment, compressive strength) samples.

Throughout the observation process, we will notify FIND of any permit violations, work stoppages, or conflicts, and recommend to FIND ways to resolve these issues. However, we will not direct the contractor's means and methods of construction. Taylor Engineering is not responsible for jobsite safety. Taylor Engineer's Senior Advisor will provide senior management review and quality control/quality assurance oversight.

TASK 3 PROJECT CLOSE-OUT AND CERTIFICATION

This task includes the following sub-tasks:

- Develop preliminary and final punch lists
- Certify substantial completion of the project
- Review final pay application
- Review contractor release of lien
- Attend pre-final and final observation meetings
- Conduct final review/acceptance of field data
- Certify final completion of the project to appropriate regulatory agencies

Once FIND receives from the contractor a request to certify the project substantially complete, Taylor Engineering will visit the project site to determine the degree of completion. If we cannot certify substantial completion, we will develop preliminary and final punch lists of items for the contractor to complete or correct. With concurrence from FIND, we will transmit this list to the contractor. Upon completion of outlined items, we will certify the project substantially complete. We have budgeted for two on-site meetings during this stage of the project.

We will collect and review the following information from the contractor before project closeout.

- Final waiver and release of lien from contractor (does not include subcontractors, material suppliers, or equipment vendors, etc.)
- Final pay application
- Post-construction record drawings
- Post-construction/as-built survey

ATTACHMENT A

We will help FIND coordinate permit-related submittals. Following completion of the project, we will prepare and submit to the FDEP a statement of completion and a certification in accordance with the FDEP permit requirements.

As part of the 180-day grassing establishment period, Taylor Engineering will conduct a preliminary, up to three interim, and final evaluations (up to five total site visits) to determine the overall success of the grass.

Taylor Engineering will prepare a DVD (or a set of DVDs, if necessary) of the construction project records for submittal to FIND at project completion.

ESTIMATED SCHEDULE

No.	Task	Months from Notice to Proceed																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Bidding and Pre-Construction Coordination																			
2	Construction Administration																			
3	*Project Close-out and Certification																			

* Project Close-out and Certification extends to include observations during 180-day grassing establishment period. The graphic schedule above does not show this activity.

**DREDGED MATERIAL MANAGEMENT AREA FL-3 CONSTRUCTION
FLAGLER COUNTY, FLORIDA
PROFESSIONAL CONSTRUCTION ADMINISTRATION SERVICES**

**ATTACHMENT B
COST PROPOSAL**

TAYLOR ENGINEERING, INC.
COST SUMMARY BY TASK
P2013-203: Dredged Material Management Area FL-3 Construction

TASK 1: Pre-Construction and Coordination Meetings

<i>Labor</i>	<i>Hours</i>	<i>Cost</i>	<i>Task Totals</i>
R. Bruce Taylor, Ph.D.	1	306	
Vice President	17	3,145.00	
Senior Advisor	13	2,405.00	
Senior Professional	54	7,290.00	
Staff Professional	54	4,644.00	
Administrative	10	520	
Total Man-Hours	149		
Labor Cost			18,310.00
<i>Non-Labor</i>	<i>Units</i>	<i>Cost</i>	
Mileage	115	63.82	
Per Diem (Food for two people)	2	24	
Mileage	115	63.82	
Per Diem (Food for two people)	2	24	
Non-Labor Cost		175.6	
Fee @ 10%		17.57	
Total Task 1			18,503.22

ATTACHMENT B

TASK 2: Construction Administration (for 450-day Contract)

<i>Labor</i>	Hours	Cost	Task Totals
R. Bruce Taylor, Ph.D.	4	1,224.00	
Vice President	40	7,400.00	
Senior Advisor	113	20,905.00	
Senior Professional	1,047.00	141,345.00	
Staff Professional	1,242.00	106,812.00	
Senior Technical Support	60	6,180.00	
Administrative	102	5,304.00	
Total Man-Hours	2,608.00		
Labor Cost			289,170.00
<i>Non-Labor</i>	Units	Cost	
Mileage (43 wk x 5 days = 215 trips @ 115 miles per trip)	24,725.00	13,722.38	
Per Diem (Food for one person for 107 days)	107	1,284.00	
Per Diem (Food for one person for 22 site visits)	22	264	
Mileage (22 wks x 2 days = 44 trips @ 115 miles per trip)	5,060.00	2,808.30	
AMEC Subcontract	1	29,156.00	
Per Diem (food for 1 person for 30 meetings)	30	360	
Mileage (30 trips @ 115 miles per trip)	3,450.00	1,914.75	
Non-Labor Cost		49,509.40	
Fee @ 10%		4,950.94	
Total Task 2			343,630.37

ATTACHMENT B

TASK 3: Project Closeout and Certification

<i>Labor</i>	Hours	Cost	Task Totals
Vice President	19	3,515.00	
Senior Advisor	11	2,035.00	
Senior Professional	82	11,070.00	
Staff Professional	102	8,772.00	
Senior Technical Support	8	824	
Administrative	15	780	
Total Man-Hours	237		
Labor Cost			26,996.00
<i>Non-Labor</i>	Units	Cost	
Mileage (2 trips for 2 people @ 115 miles per trip)	460	255.3	
Per Diem (Food for two people for 2 site visits)	4	48	
Mileage (5 trips @ 115 miles per trip)	575	319.12	
Per Diem (Food for 1 person for 5 trips)	5	60	
Non-Labor Cost		682.4	
Fee @ 10%		68.24	
Total Task 3			27,746.67

Project Total \$389,880.25

**DREDGED MATERIAL MANAGEMENT AREA FL-3 CONSTRUCTION
FLAGLER COUNTY, FLORIDA
PROFESSIONAL CONSTRUCTION ADMINISTRATION SERVICES**

ATTACHMENT C
AMEC ENVIRONMENTAL AND INFRASTRUCTURE, INC.
SCOPE OF WORK AND COST PROPOSAL

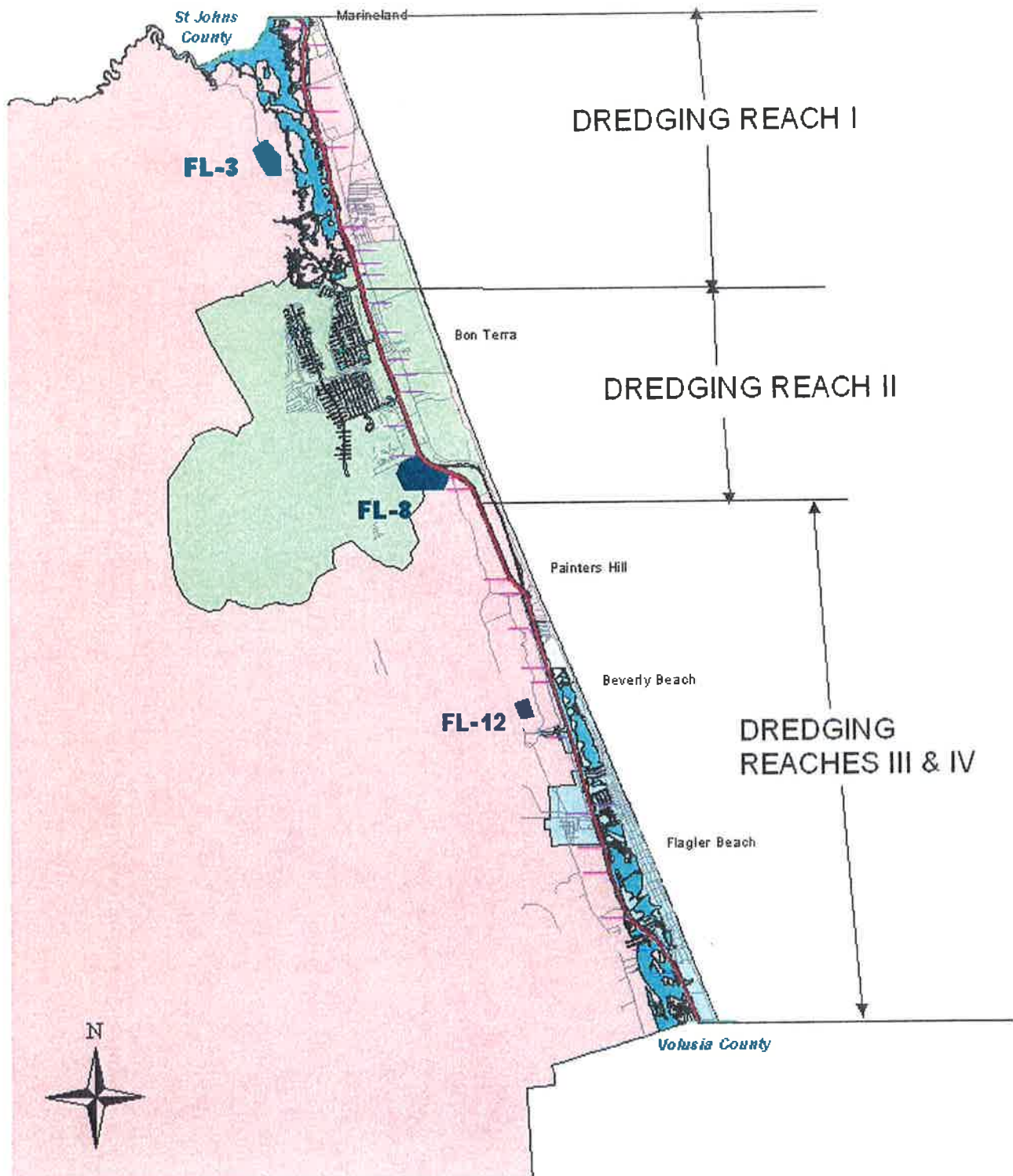


Construction Materials Testing Rate Sheet

Date:		1/22/2014			
Job Name:		FL-3 Dredged Material Management Area		PROPOSAL #:	PROP14JAXV, Task 0013
Client Name:		Taylor Engineering, Inc		PROJECT #:	
Per Hour :		<input type="checkbox"/>	Per Test:		<input type="checkbox"/>
Unit Code	Expenses / Test		Standard Rate	Qty	Override Rate
Total					
Travel Per Mile					
	Mileage (Round Trip Miles)		\$0.65		
Trip Charge					
UAT30	Trip Charge		\$45.00	71	\$3,195.00
Technician-Field Testing Per Hour					
UICG5H	Engineering Technician for Concrete and Density Testing		\$48.00	322	\$15,456.00
	CMT Supervisor for on site Meetings		\$75.00	35	\$2,625.00
	Staff Engineer		\$80.00	15	\$1,200.00
	Administrative Assistant		\$45.00	31	\$1,395.00
UISQ8H	Standby-Time, per hour		\$48.00		
Soils - Field Testing - Each					
UIDG9E	Density Test - Sand Cone (Min 3)		\$25.00		
UIDG8E	Density Test - Nuclear/Shelby Tube (Min 3 per trip)		\$20.00		\$0.00
UINK4E	Nuclear Gauge Asphalt Density Testing (Min 3 per trip)		\$20.00		\$0.00
Soils - Drilling per feet					
UIAD6F	Auger Borings, per LF		\$8.00		
Pile Installation					
	Engineering Technician for Pile Installation Monitoring, Estimate 1 Days		\$65.00	22	\$1,430.00
Soils - Lab Test - Each					
UQLL4E	Limerock Bearing Ratio (LBR), Each		\$245.00		
UQCA5E	Standard Proctor		\$100.00	0	\$0.00
UQCA1E	Modified Proctor		\$100.00	10	\$1,000.00
UQPO9E	Soil Sieve Analysis, Wash # 200		\$45.00	40	\$1,800.00
UQCX2E	Organic Content		\$35.00	15	\$525.00
	Bulk Density of Fine or Coarse Aggregate		\$55.00	0	\$0.00
UM010	Sieve Analysis Coarse Aggregate		\$45.00	10	\$450.00
Soils - Lab Test Per Hour					
UIEH4H	Proctor Sample Pick-up, per hour		\$45.00		\$0.00
Concrete / Asphalt - Lab Test Each					
UQCC7E	Concrete Sampling - Cylinders, Cubes, Prisms (temp, slump, mold, 4 cylinders)		\$55.00		
UQCC5E	Additional Concrete Cylinders		\$5.00		
	Cylinder Pick-up		\$45.00		
UQCB7E	Compressive Strength of Motar or Grout Cubes		\$10.00		
UQCB7E	Compressive Strength of GroutPrisms		\$10.00		
UQCB1E	Compressive Strength Test - Cylinders, Cubes, Prisms		\$10.00	8	\$80.00
UQCC4E	Concrete Sampling - Cylinders, Cubes, Prisms (temp, slump, mold, 4 cylinders, pick-up & test)		\$175.00		
	Additional Concrete Slump Test		\$5.00		
	Concrete Unit Weight Test		\$5.00		
	Concrete Air Content Test (Volumetric / Pressure)		\$5.00		
	Concrete Beams (temp, slump, air, mold, 2 / 4 beams)		\$75.00		
	Flexural Strength of Concrete Beams		\$33.00		
UQCB3E	Compressive Strength Concrete Cores		\$25.00		
	Bulk Specific Gravity / Density of Asphalt Core		\$25.00		

\$29,156.00

INTRACOASTAL WATERWAY
DREDGING REACHED AND
DREDGED MATERIAL MANAGEMENT AREAS
IN FLAGLER COUNTY



Page 13



Channel
ICW Right-of-Way
FIND Owned
FIND Easement

DREDGED MATERIAL
MANAGEMENT AREA
FL-3







TAYLOR ENGINEERING, INC.

Delivering Leading-Edge Solutions

January 31, 2014

Mr. Mark Crosley
Executive Director
Florida Inland Navigation District
1314 Marcinski Road
Jupiter, FL 33477

RE: MSA-726 Clearing & Grubbing Design and Bidding Assistance Services
Broward County, Florida

Dear Mr. Crosley:

Taylor Engineering is pleased to submit the enclosed scope of work (Attachment A) and fee proposal (Attachment B) for design and bidding assistance services for the MSA-726 clearing and grubbing project. The Florida Inland Navigation District (FIND) material storage area (MSA) MSA-726, located in Broward County, Florida, lies immediately west of the Atlantic Intracoastal Waterway in the City of Pompano Beach. Located north of NE 23rd Place and south of NE 24th Street, the site currently serves as a multi-use park facility called Exchange Club Park. The cities of Pompano Beach and Lighthouse Point operate Exchange Club Park.

This scope of services generally includes attendance at up to three public meetings, design and construction document preparation to describe site clearing and grubbing and further development of the passive park, and bidding assistance. Clearing and grubbing will occur west of the fenced shoreline area of the site and within upland areas only. The existing restroom and parking facilities will remain in place and unmodified; all other current amenities may or may not incorporate into the final landscaping plan. The existing chain link fence will likely require removal and possible replacement. We will determine the extent of the perimeter fence as well as the desired new park facilities through the public meeting process and through future discussions with FIND.

Taylor Engineering will perform these services on a cost plus basis, for a total cost not to exceed \$50,675.82 (Attachment B). Of this total, \$26,500.00 represents IBI Group (Florida), Inc. fees (Attachment C) to assist with landscape architecture and park planning activities.

Please contact me at 904-731-7040 ext. 288 or jadams@taylorengeering.com with any questions.

Sincerely,

John Adams, P.E.
Senior Advisor

Attachments (3)

10151 DEERWOOD PARK BLVD BLDG 300 STE 300 JACKSONVILLE FL 32256 TEL 904.731.7040
WWW.TAYLORENGINEERING.COM

**MSA-726
CLEARING & GRUBBING
DESIGN AND BIDDING ASSISTANCE SERVICES
BROWARD COUNTY, FLORIDA**

**ATTACHMENT A
SCOPE OF WORK**

ATTACHMENT A

**MSA-726
CLEARING & GRUBBING
DESIGN AND BIDDING ASSISTANCE SERVICES
BROWARD COUNTY, FLORIDA**

The Florida Inland Navigation District (FIND) material storage area (MSA) MSA-726, located in Broward County, Florida, lies immediately west of the Atlantic Intracoastal Waterway in the City of Pompano Beach. Located north of NE 23rd Place and south of NE 24th Street, the site currently serves as a multi-use park facility called Exchange Club Park. The cities of Pompano Beach and Lighthouse Point operate Exchange Club Park.

As noted in our December 19, 2013 site visit with FIND personnel, the park contains a permanent restroom facility, volleyball court, two playground areas, pull-up bars, a fitness area, and numerous picnic table areas with concrete pads. Taylor Engineering and FIND staff also noted an unidentified utility box located in the northwest corner of the park site.

A trail system leads through the park interior, and an approximately 15-foot high mound of dredged material lies near the center of the project site. Much of the on-site vegetation consists of exotic species (mainly Australian Pine). A perimeter fence runs along the property boundary; the condition of the fence appears poor.

This scope of work generally includes attendance at up to three public meetings, design and construction document preparation for site clearing and grubbing and further development of the passive park, and bidding assistance. Clearing and grubbing will occur west of the fenced shoreline area of the site and within upland areas only. The existing restroom and parking facilities will remain in place while all other current amenities may or may not incorporate into the final landscaping plan. The existing chain link fence will likely require removal and possible replacement. Taylor Engineering will determine the extent of the perimeter fence as well as the desired new park facilities through the public meeting process and through future discussions with FIND.

Taylor Engineering has developed its scope of work based on the following assumptions:

1. FIND staff will establish wetland boundary line based on a site visit with FDEP.
2. Clearing and grubbing will avoid wetland impacts and will not require any Federal or State environmental permits.
3. Clearing and grubbing and the proposed buffer landscape installation is associated with a federal dredging project and therefore will not require any local permits or approvals.
4. Outside of attending the public meetings included in this scope of work, FIND will coordinate with the local municipalities and the public regarding the clearing and grubbing and future park use.
5. Taylor Engineering will apply the July 2003 boundary, topographic, and site features survey by Mastteller, Moler, & Reed, Inc. as the basis for the design and construction drawings.
6. Park development will include only passive features, and these features will not require geotechnical investigation or engineering to develop the design.

ATTACHMENT A

If any of these assumptions prove incorrect, Taylor Engineering will work with the FIND to develop an appropriate additional scope of work and cost.

TASK 1 PUBLIC MEETING ATTENDANCE

Taylor Engineering will contract with IBI Group (Florida), Inc. (IBI) to provide landscape design and park facilities planning for the cleared site. This scope of work includes attendance at up to three public meetings to discuss the desired improvements and to coordinate during design development for the clearing and grubbing project. Taylor Engineering staff and a landscape architect from IBI will attend each meeting.

TASK 2 DEVELOPMENT OF DESIGN AND CONSTRUCTION DOCUMENTS FOR CLEARING AND GRUBBING, AND LANDSCAPE/PARK DEVELOPMENT

Taylor Engineering will develop construction documents for the site clearing and grubbing and landscape/passive park development project. Construction documents will include signed and sealed construction drawings and contract documents/technical specifications. This scope of work includes one site visit to develop the design. To reduce travel costs, we intend to schedule this site visit in coordination with one of the public meetings noted above.

To support the clearing and grubbing project, FIND will coordinate with FDEP to identify and map wetland locations. Planned clearing and grubbing activities will remain a minimum of 25 feet from any on-site wetlands to avoid impact. Because this project will avoid wetlands, we do not expect the need to secure permits for these activities.

As previously stated, planned clearing and grubbing activities will occur west of the fenced shoreline area. Because much of the on-site vegetation consists of exotic species, we anticipate that most, if not all, of the area west of this fenced shoreline would require clearing and grubbing followed by re-vegetation. Taylor Engineering will contract with IBI to design and prepare a landscape plan for inclusion within the construction drawings. We will review the MSA-726 management plan to remain consistent with the planned site vegetative buffers and expected future uses.

This task includes design development of passive park features for inclusion within the construction drawings. IBI will develop this information mainly based on input received from FIND and at the public meetings.

Taylor Engineering, with assistance from IBI, will prepare an opinion of probable construction cost for this project under this task.

TASK 3 BIDDING ASSISTANCE

Taylor Engineering will prepare a bid schedule with estimated quantities for all bid items. In preparation for 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 attend a pre-bid meeting (assumed to occur at the project site) and provide written responses for up to one bid addendum.

ATTACHMENT A

DELIVERABLES**TASK 2**

- One digital (PDF) copy of 90% construction drawings and contract documents/technical specifications
- Three hard copies and a digital (PDF) copy of 100% signed and sealed construction drawings, contract documents/technical specifications, and opinion of probable construction cost

TASK 3

- One digital (PDF) bid document package including digital copy of the final drawings and specifications for FIND to advertise the bid
- One digital (PDF) copy of one addendum response

ESTIMATED SCHEDULE

No.	Task	Months from Notice to Proceed				
		1	2	3	4	5
1	PUBLIC MEETING ATTENDANCE	■				
2	DEVELOPMENT OF DESIGN AND CONSTRUCTION DOCUMENTS FOR CLEARING AND GRUBBING, AND LANDSCAPE/PARK DEVELOPMENT		■	■	■	
3	BIDDING ASSISTANCE				■	■

**MSA-726
CLEARING & GRUBBING
DESIGN AND BIDDING ASSISTANCE SERVICES
BROWARD COUNTY, FLORIDA**

**ATTACHMENT B
COST PROPOSAL**

TAYLOR ENGINEERING, INC.
COST SUMMARY BY TASK
P2014-014: FIND: MSA 726 Clearing & Grubbing

TASK 1: PUBLIC MEETING ATTENDANCE

<i>Labor</i>	Hours	Cost	Task Totals
Vice President	8	1,480.00	
Senior Advisor	8	1,416.00	
Staff Professional	20	1,720.00	
Total Man-Hours	36		
Labor Cost			4,616.00
<i>Non-Labor</i>	Units	Cost	
Meeting 1 - Mileage (1 Roundtrip = 72 miles)	72	39.96	
IBI Meeting Attendance	1	3,500.00	
Meeting 2 - Mileage (1 Roundtrip = 72 miles)	72	39.96	
Meeting 2 - Per Diem (Lodging and Meals, 1 Person)	1	190	
Meeting 3 - Mileage (Roundtrip = 72 miles)	72	39.96	
Meeting 3 - Per Diem (Lodging and Meals, 1 Person)	1	190	
Non-Labor Cost		3,999.90	
Fee @ 10%		399.99	
Total Task 1			9,015.87

TASK 2: DEVELOPMENT OF DESIGN AND CONSTRUCTION DOCUMENTS FOR CLEARING AND GRUBBING, AND LANDSCAPE/PARK DEVELOPMENT

<i>Labor</i>	Hours	Cost	Task Totals
Vice President	7	1,295.00	
Senior Advisor	5	885	
Senior Professional	22	2,838.00	
Staff Professional	40	3,440.00	
Senior Technical Support	40	3,600.00	
Total Man-Hours	114		
Labor Cost			12,058.00
<i>Non-Labor</i>	Units	Cost	
IBI Landscape Design and Park Planning	1	20,000.00	
Non-Labor Cost		20,000.00	
Fee @ 10%		2000	
Total Task 2			34,058.00

ATTACHMENT B

TASK 3: BIDDING ASSISTANCE

<i>Labor</i>	Hours	Cost	Task Totals
Vice President	1	185	
Senior Advisor	2	354	
Senior Professional	12	1,548.00	
Staff Professional	22	1,892.00	
Senior Technical Support	2	180	
Technical Editor	1	99	
Total Man-Hours	40		
Labor Cost			4,258.00
<i>Non-Labor</i>	Units	Cost	
IBI Bidding Assistance	1	3,000.00	
Pre-Bid Meeting - Mileage (1 Roundtrip = 72 miles)	72	39.96	
Non-Labor Cost		3,040.00	
Fee @ 10%		304	
<i>Total Task 3</i>			7,601.96
Project Total			\$50,675.82

**MSA-726
CLEARING & GRUBBING
DESIGN AND BIDDING ASSISTANCE SERVICES
BROWARD COUNTY, FLORIDA**

**ATTACHMENT C
IBI GROUP (FLORIDA) INC.
SCOPE OF WORK AND COST PROPOSAL**

**PROPOSAL FOR
PROFESSIONAL CONSULTING SERVICES
FOR
TAYLOR ENGINEERING, INC.
PROJECT: EXCHANGE CLUB PARK, POMPANO
BEACH, FLORIDA**





IBI Group (Florida) Inc.
 2200 Park Central Blvd., North, Suite 100
 Pompano Beach, FL 33064 USA
 tel 954 974 2200
 fax 954 973 2686

January 27, 2014

Mr. Robert DiRienzo
 Taylor Engineering, Inc.
 10151 Deerwood Park Blvd
 Bldg. 300
 Jacksonville, FL 32256

Dear Mr. DiRienzo;

Per your request, IBI Group (Florida) Inc. is pleased to submit this proposal to provide professional consulting services for the subject project. This proposal is for Master Planning and Construction Documents for the landscape and park facilities. As the project is being development, please note that IBI is a local Pompano Beach firm, and we would be pleased to provide additional services such as survey, additional public presentations, coordination for community outreach, construction administration, etc. These services can be provided upon your request with fees based on our Schedule of Hourly Rates and Other Charges, attached as Appendix E.

The following is a description of the Consultant, the Client and the Project.

Consultant: IBI Group (Florida) Inc.
Consultant Contact: Patrea St. John, RLA, LEED®AP, AICP
Client: Taylor Engineering, Inc.
Client Contact: Robert DiRienzo
Project Name & Location: Exchange Club Park
 Pompano Beach, Florida
 5389BD
Proposal Includes: Master Plan, Construction Documents

IBI Group (Florida) Inc. proposes to render Professional Master Planning and Landscape Architectural Services to CLIENT in connection with the above referenced PROJECT for the values depicted in Appendix A — Scope of Services. Additional provisions of this proposal include; Appendix E — Schedule of Hourly Rates and Other Charges for work not enumerated in the Scope of Services.

Reimbursable Expenses: Reimbursable expenses such as blueprinting, copying, same-day and overnight courier services, long distance phone charges, and travel expenses including airfare, accommodations and sustenance to be invoiced in accordance with Appendix E.

Project Start and Completion Date: Based upon our present schedule, we can begin your project within three (3) working days after we receive authorization to proceed. We anticipate that Phase I and II will run concurrently and estimate an approximate time frame of 2 - 3 months, notwithstanding difficulty in scheduling the public meetings.

ATTACHMENT C

Unless earlier withdrawn, this proposal will remain valid for a period of thirty (30) days from the date of our submittal.

Yours truly,

IBI Group (Florida) Inc.

Patrea St. John, RLA, LEED®AP, AICP
Vice President/Landscape Architecture

PSJ:kk

J:\9999\BD\2014\5389-BD\PTP - psi to Taylor Engineering - Exchange Club Park Pompano - 2014-01-27.docx

Attachments:

Appendix A — Scope of Services

Appendix E — Schedule of Hourly Rates and Other Charges

Appendix A — Scope of Services

**Professional Planning and Landscape Architectural Services Estimate for
Exchange Club Park, Pompano Beach, Florida**

	Description		Total
IBI - I	Phase I – Public Meeting Attendance	\$ 3,500	
	Attendance and participation of up to three (3) public meetings to assist with obtaining the community input that will guide the final plan		
IBI - II	Phase II - Development of Design and Construction Documents for Landscape and Park Amenities	\$19, 500	
II - A	<ul style="list-style-type: none"> Develop Park Master Plan that will define the conceptual site plan Includes passive park facilities such as <ul style="list-style-type: none"> Open play fields Trails Picnic area to augment existing restroom and park facilities Existing vegetation will be removed by others and replaced with a visual landscape buffer around the perimeter of the site 		
II - B	Develop a Preliminary Cost Estimate based on Master Plan for review by Client prior to developing Construction Documents		
II - C	Preparation of Landscape Plans, Irrigation Plans, Construction Details and Specifications as defined by the approved Master Plan (above)		
II - D	Develop a detailed Cost Estimate based on the Construction Documents		
IBI - III	Phase III – Bidding Support	\$3,000	
	Attendance at 1 pre-bid meeting and assistance with bid package preparation and pre -bid addendum.		
IBI	TOTAL		\$26,000.00
	Estimated Reimbursable Expenses	\$500	
NOTES	<ul style="list-style-type: none"> Does not include submittal for permits or review by local rm. Any Submittal and review fees are the responsibility of the Client. Additional services such as survey, additional public presentation, coordination for community outreach, construction administration, etc. Can be provided upon request on an hourly rate basis in accordance with Appendix E – attached. 		

ATTACHMENT C

Appendix E -- Schedule of Hourly Rates and Other Charges

(Rates effective for services performed between November 1, 2012 through February 28, 2014)

HOURLY RATES-PERSONNEL & EQUIPMENT**PRINCIPAL**

Associate Director/Director	= \$300.00/hour
Principal (Registered) Architect, Engineer, Transportation Engineer, Landscape Architect	= \$225.00/hour
Principal Prof. Land Surveyor	= \$185.00/hour
Principal Planner	= \$175.00/hour
Principal/Senior Project Manager	= \$150.00/hour

PROFESSIONALS/TECHNICIANS

Traffic Engineering Manager	= \$200.00/hour
Senior Project Manager	= \$175.00/hour
Traffic Engineering Specialist	= \$150.00/hour
Project Manager	= \$115.00/hour
Assistant Project Manager	= \$100.00/hour
Engineering Intern	= \$ 95.00/hour
Senior Transportation Technician	= \$135.00/hour
Senior CADD Technician	= \$105.00/hour
CADD Technician	= \$ 75.00/hour

LANDSCAPE ARCHITECT/PLANNER

Registered Landscape Architect	= \$115.00/hour
Landscape Architect	= \$110.00/hour
Senior Landscape Designer	= \$ 85.00/hour
Landscape Designer	= \$ 75.00/hour
Senior Planner	= \$125.00/hour
Planner	= \$ 85.00/hour

RESIDENT PROJECT REPRESENTATIVE

Construction Observer	= \$ 75.00/hour
-----------------------	-----------------

SURVEYOR/SURVEY CREW

Registered PSM/ Project Manager	= \$130.00/hour
3-Man Survey Crew	= \$175.00/hour
2-Man Survey Crew	= \$125.00/hour
Land Surveyor	= \$110.00/hour

Other services upon request.

SYSTEMS / SOFTWARE

Chief Architect / Engineer	= \$250.00/hour
Senior Architect / Engineer	= \$175.00/hour
Architect / Engineer	= \$125.00/hour
Senior Developer	= \$175.00/hour
Developer	= \$125.00/hour

CLERICAL

Administrative Assistant	= \$65.00/hour
--------------------------	----------------

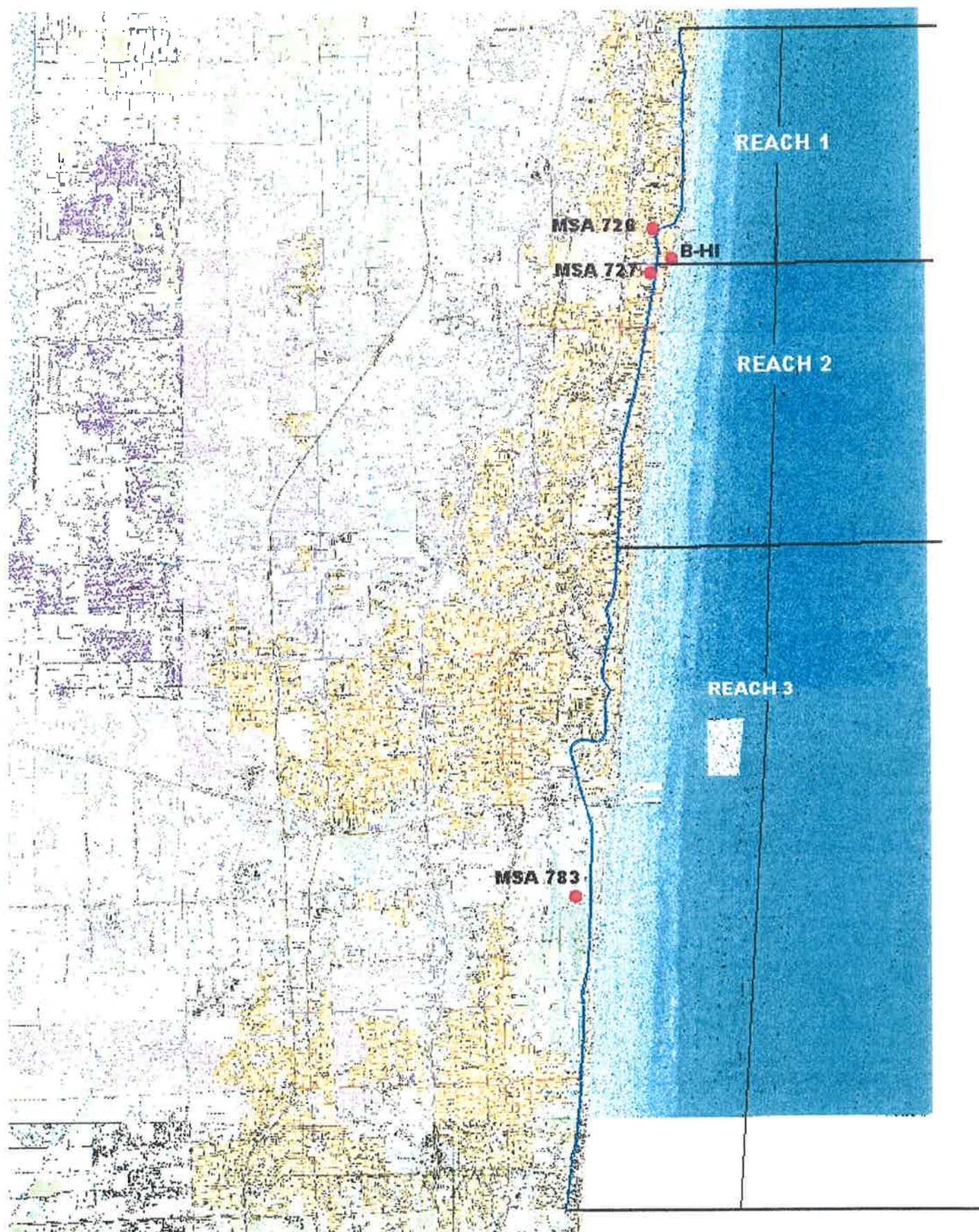
MISCELLANEOUS

Professional Representation	= \$275.00/hour
Preparation for and Courtroom Appearance, Depositions and Testimony	

B. REIMBURSABLE EXPENSES**Reproductions**

Xerographic Prints (in house)	= \$ 1.75/each
Standard Size Color Plots (24" x 36")	= \$65.00/each
Large Color Plots	= \$75.00/each
Photostats, Mylar-Reproducibles	= at cost plus 15%
Xerox Copies	= \$.15/sheet
Color Xerox Copies	
8 1/2 x 11	= \$ 2.00/each
8 1/2 x 14	= \$ 2.50/each
11 x 17	= \$ 3.00/each
Fax Transmittals	= \$ 1.00/sheet

Outside Consultants Services At Cost plus 15%**Equipment** At Cost plus 15%**Federal Express and
Immediate Courier Service** At Cost plus 15%**Commercial Air Travel** At Cost plus 15%**Long Distance Phone** At Cost plus 15%**Mileage Expenses** = \$.55/mile**Toll Expenses** At Cost



INTRACOASTAL WATERWAY
DREDGED MATERIAL MANAGEMENT PLAN
IN BROWARD COUNTY

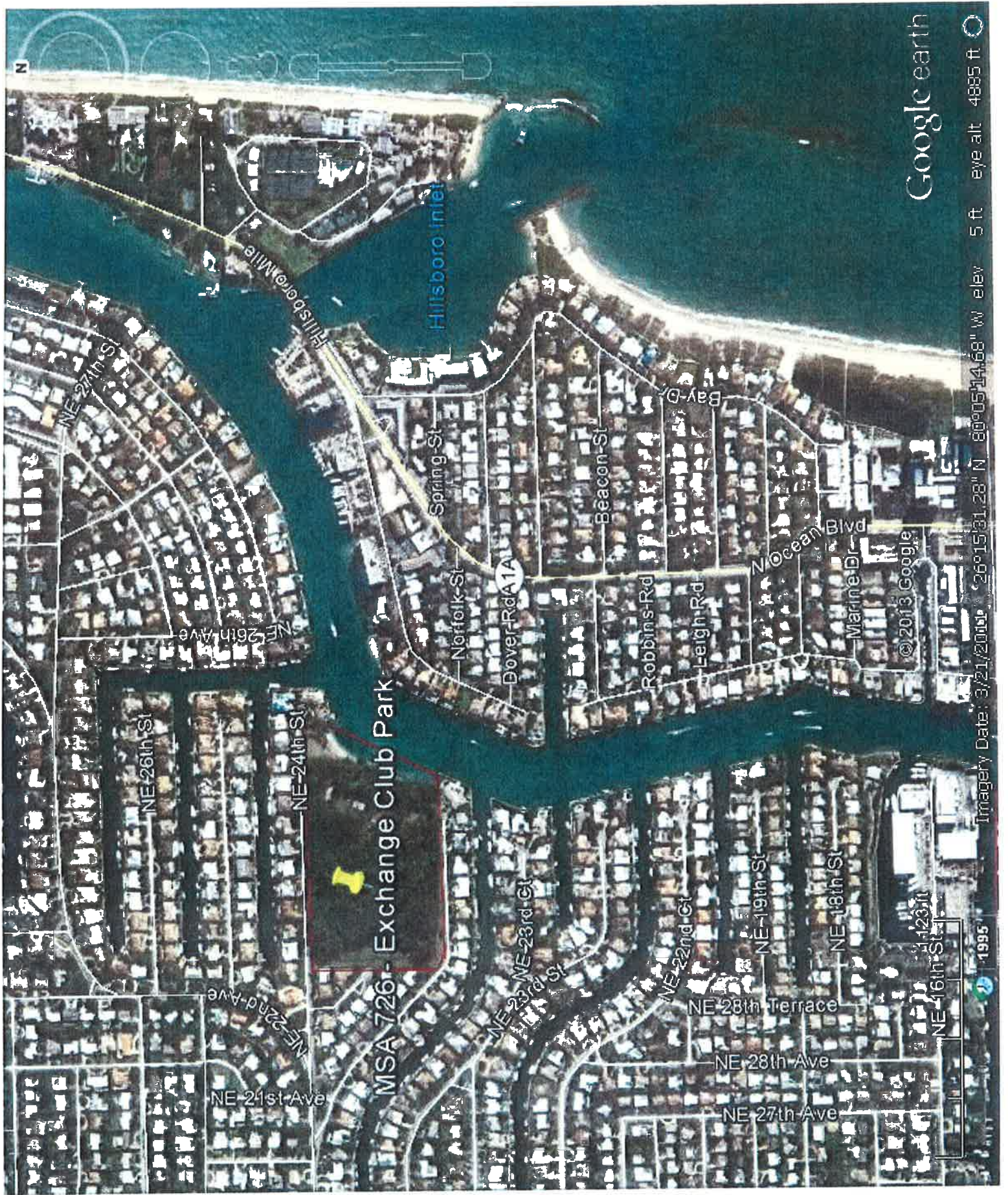




MSA 726

FIND Owned
Channel
ICW Right-of-Way







FLORIDA INLAND NAVIGATION DISTRICT

COMMISSIONERS

GAIL KAVANAGH
CHAIR
ST. LUCIE COUNTY

E. TYLER CHAPPELL
VICE-CHAIR
BROWARD COUNTY

J. CARL BLOW
TREASURER
ST. JOHNS COUNTY

DONALD J. CUOZZO
SECRETARY
MARTIN COUNTY

AARON L. BOWMAN
DUVAL COUNTY

T. SPENCER CROWLEY, III
MIAMI-DADE COUNTY

PAUL U. DRITENBAS
INDIAN RIVER COUNTY

CHARLES C. ISIMINGER
PALM BEACH COUNTY

SUSANNE McCABE
VOLUSIA COUNTY

JONATHAN S. NETTS
FLAGLER COUNTY

JERRY H. SANSOM
BREVARD COUNTY

LYNN A. WILLIAMS
NASSAU COUNTY

MARK T. CROSLEY
EXECUTIVE DIRECTOR

JANET ZIMMERMAN
ASSISTANT EXECUTIVE
DIRECTOR

January 09, 2014

MEMO

To: Mark Crosley, Executive Director

From: Mark Tamblyn, Field Projects Coordinator *MT*

Attached are the bid results for the Brevard County Mowing Project.

The bid submitted by Santa Cruz Construction, Inc. is the lowest bid for the Brevard County Mowing Project.

Santa Cruz Construction, Inc. is qualified for the following several reasons:

- 1) Submitted the lowest Bid of \$14, 877.00.
- 2) Their references were favorable and cooperative, and the jobs represented the same types, as this District project.
- 3) The equipment list was complete and represented the types of machinery for the District's specific mowing needs.
- 4) The bid submittal was received prior to the closing.

I recommend that the contract be awarded to the low bidder Santa Cruz Construction, Inc. The bid results have been emailed or faxed to all the bidders for their review.



FLORIDA INLAND NAVIGATION DISTRICT
Brevard County Mowing Bid Results

Santa Cruz Construction, Inc.
4205 N. Courtenay Parkway
Merritt Island, FL 32953

\$14,877.00 / \$178,524.00

Lincoln House LLC
13223 53 rd Court N
West Palm Beach, FL 33411

\$15,570.00 / \$186,840.00

Ashlie Environmental
1842 S. Seagrave St..
S. Daytona, FL 32119

\$21,253.00 / \$255,036.00

ATTACHMENT D

FLORIDA INLAND NAVIGATION DISTRICT

BREVARD COUNTY SITE MOWING PROJECT

Bid Submittal Form

Bids are to be made on a total cost basis and shall include all costs necessary to complete one mowing event of the SEVEN (7) sites in the specification. Bids shall not be qualified, incomplete or include extra costs to be determined later or on a unit basis. One award will be made to the low qualified bidder.

NAME OF FIRM: Santa Cruz Construction, Inc.

ADDRESS: 4205 N. Courtenay Parkway
Merritt Island, FL 32953

TELEPHONE: (321) 452-3190

REFERENCES: (Name, Address, Phone, Contact Person)

1. City of Palm Bay

5240 Babcock Street, Suite 310, Palm Bay, FL 32905

(321) 952-3430 / William Martinez - Code Enforcement Officer

2. Florida Department of Environmental Protection

1800 Wekiva Circle, Apopka, FL 32712

(407) 884-2000 / Jason DePue - Biologist

TOTAL PROJECT BID COST \$ 14,877⁰⁰ / 178,524⁰⁰

Signature

Title

ATTACHMENT C
FLORIDA INLAND NAVIGATION DISTRICT
BREVARD COUNTY SITE
MOWING PROJECT
EQUIPMENT LIST FORM

NAME OF FIRM: Santa Cruz Construction, Inc.

ADDRESS: 4205 N. Courtenay Parkway

Merritt Island, FL 32953

TELEPHONE AND FAX: _____

LISTING OF EQUIPMENT TO BE USED ON THIS DISTRICT PROJECT:

1. _____

SEE ATTACHED EQUIPMENT LIST

2. _____

3. _____

4. _____


Signature

President
Title



4205 N. Courtenay Parkway
Merritt Island, FL 32953
(321) 452-3190
FAX (321) 459-3358
scci@santacruzconstruction.com

SCCI - EQUIPMENT LIST

Kershaw Klearway 800 w/ FAE Grinding Head

TV 140 Tractor w/ 15' Batwing Mower

Gehl 6640 Skid Steer w/FAE Grinding Head

AGRO Tractor w/8" Alamo Brush Cutter (2 each)

AGRO Tractor w/ Sidewinder Mower

Mack Tractor w/ Lowboy Trailer

ESTABLISHED 1975
State Certified and Bond General Contractor
State License Number CGC0004606

ATTACHMENT D
FLORIDA INLAND NAVIGATION DISTRICT
BREVARD COUNTY SITE
MOWING PROJECT

Bid Submittal Form

Bids are to be made on a total cost basis and shall include all costs necessary to complete one mowing event of the SEVEN (7) sites in the specification. Bids shall not be qualified, incomplete or include extra costs to be determined later or on a unit basis. One award will be made to the low qualified bidder.

NAME OF FIRM: Lincoln House LLC

ADDRESS: 713 E Lincoln Ave
Melbourne, FL, 32901

TELEPHONE: 321-426-5749

REFERENCES: (Name, Address, Phone, Contact Person)

1. Young's Communications Co. Inc
424 West Drive, Melbourne, FL 32904
321-723-6025 (Steve Young) President

2. _____

TOTAL PROJECT BID COST \$ 15,570 / 186,840.00

Bret Johnson
Signature

CEO
Title

ATTACHMENT C
FLORIDA INLAND NAVIGATION DISTRICT
BREVARD COUNTY SITE
MOWING PROJECT
EQUIPMENT LIST FORM

NAME OF FIRM: Lincoln House LLC

ADDRESS: 713 E Lincoln Ave, Melbourne
FL, 32901

TELEPHONE AND FAX: 321-426-5749

LISTING OF EQUIPMENT TO BE USED ON THIS DISTRICT PROJECT:

1. Massey Ferguson 5460 (105hp)

2. Massey Ferguson 4610 (100hp)

3. Bush Hog RMB 1660 (16.5ft boom mower)
Bush Hog 3815 (15ft bent wing)
Bush Hog 3008 (8ft Deck mower)

4. _____

Bret Johnson
Signature

CEO
Title

ATTACHMENT D

FLORIDA INLAND NAVIGATION DISTRICT

BREVARD COUNTY SITE

MOWING PROJECT

Bid Submittal Form

Bids are to be made on a total cost basis and shall include all costs necessary to complete one mowing event of the SEVEN (7) sites in the specification. Bids shall not be qualified, incomplete or include extra costs to be determined later or on a unit basis. One award will be made to the low qualified bidder.

NAME OF FIRM: ASHLEIGH ENVIRONMENTAL

ADDRESS: 1842 G. S. SECOR ST
S. DAYTONA FL 32119

TELEPHONE: 386-523-6890

REFERENCES: (Name, Address, Phone, Contact Person)

1. FWC MICHAEL WALKER
100 8TH AV SE 727-896-8626
ST PETERS BURL FL 33761

2. CITY OF DAYTONA BEACH TIM FRANKLIN
301 S RIDGEWOOD AV 386-671-8675
DAYTONA BEACH FL 32114

TOTAL PROJECT BID COST \$ 21,253 / \$ 255,036.00

[Signature]
 Signature

PRESIDENT
 Title

ATTACHMENT C
FLORIDA INLAND NAVIGATION DISTRICT
BREVARD COUNTY SITE
MOWING PROJECT
EQUIPMENT LIST FORM

NAME OF FIRM: ASHLEY ENVIRONMENTAL

ADDRESS: 1842 G S. SEGRAVE ST

S. DAYTONA FL 32119

TELEPHONE AND FAX: 386-523-6890

LISTING OF EQUIPMENT TO BE USED ON THIS DISTRICT PROJECT:

1. MASSEY FERGUSON 5460

CAB TRACTOR 4x4

2. BAT LING

JOHN DEERE LX 15

3. BOOM MOWER

TIGER 60

4. ZTR MOWERS

JOHN DEERE Z797, Z717, Z910A, Z757


Signature

President
Title



FLORIDA INLAND NAVIGATION DISTRICT

COMMISSIONERS

December 09, 2013

GAIL KAVANAGH
CHAIR

ST. LUCIE COUNTY

E. TYLER CHAPPELL
VICE-CHAIR

BROWARD COUNTY

J. CARL BLOW
TREASURER

ST. JOHNS COUNTY

DONALD J. CUOZZO
SECRETARY

MARTIN COUNTY

AARON L. BOWMAN
DUVAL COUNTY

T. SPENCER CROWLEY, III
MIAMI-DADE COUNTY

PAUL U. DRITENBAS
INDIAN RIVER COUNTY

CHARLES C. ISIMINGER
PALM BEACH COUNTY

SUSANNE McCABE
VOLUSIA COUNTY

JONATHAN S. NETTS
FLAGLER COUNTY

JERRY H. SANSOM
BREVARD COUNTY

LYNN A. WILLIAMS
NASSAU COUNTY

MARK T. CROSLEY
EXECUTIVE DIRECTOR

JANET ZIMMERMAN
ASSISTANT EXECUTIVE
DIRECTOR

To: Potential Bidders

From: Mark M. Tamblyn, Field Projects Coordinator

Subject: Brevard County Site Mowing Project.

Enclosed are the bid documents and scope of work for the referenced project. **Bids are due in the District office no later than 2:00 PM on January 9, 2014.** A bid will consist of the completed bid submittal forms. Sealed bids are required in accordance with Section 5.0 of the Project Specification and shall be mailed or hand delivered.

There will be one award of this contract to the lowest qualified bidder, however, the District reserves the right to not award a contract based on its discretion. The District also reserves the right to expand or reduce the scope of work of this contract upon negotiation with contractor.

Please contact me should you have any questions concerning this matter.



FLORIDA INLAND NAVIGATION DISTRICT

Brevard County
Site Mowing Project
Bid Package
December 09, 2013



**SCOPE OF WORK
BREVARD COUNTY SITE MOWING PROJECT**

DECEMBER 09, 2013

Dredge Material Management Areas (DMMA's) BV-2, BV-4, BV-11, BV-40, BV-52, BV-R & BV-NASA are located in Brevard County Florida. The Florida Inland Navigation District manages dredged materials from the Atlantic Intracoastal Waterway on these sites. The specific locations of the seven (7) sites are referenced in Attachments A.

The contractor will mow the designated grassed areas within the selected seven (7) District sites up to four (4) times a year for a period of three (3) years as directed by the District. The contractor will use flat bed mowers for the level planes, boom mowers for the earthen berms, elevated slopes, perimeter ditches, and other mowable areas on these District sites. Attachments B, Fig. 1-7 show the site locations with the boundaries of the areas to be mowed. Along with the dimensions of the site an estimated area of mowing is depicted in Attachments B, figures 1-7. The contractor will also mow along fence perimeters as well as the access to and around District monitoring wells on the sites.

ATTACHMENT A

BREVARD COUNTY SITE MOWING PROJECT

PROJECT SPECIFICATIONS

SECTION 1.0 GENERAL

The Florida Inland Navigation District, hereinafter referred to as the "District", desires to enter into an agreement with a qualified and insured mowing contractor, hereinafter referred to as the "Contractor", to mow SEVEN (7) District properties known as BV-2 (SCOTTSMORE), BV-4 (MIMS), BV-11 (MERRITT ISLAND), BV-40 (WICKHAM ROAD), BV-52 (PALM BAY), BV-R (ROCKLEDGE) BV-NASA (KENNEDY SPACE CENTER) in Brevard County.

SECTION 2.0 PROPERTY DESCRIPTION BV-2

The location, boundaries and monitoring wells of Site BV-2 are shown in Attachments B, FIG. 1. The Site is 311 acres. The area to be mowed is approximately 187 acres. This site consists of a very large berm area, a landscaped area, and it has monitoring wells throughout the site. The inner basin area shall be mowed to maintain uniform ground cover. This site has been recently cleared of exotic vegetation and many new open space areas have been opened up, these new areas will be mowed.

SECTION 2.1 PROPERTY DESCRIPTION BV-4

The location, boundaries and monitoring wells of Site BV-4 are shown in Attachments B, FIG. 2. The Site is 101 acres. The area to be mowed is approximately 77 acres. This site has been recently cleared of exotic vegetation and many new open space areas have been created, these new areas will be maintained by mowing them. This site has monitoring wells throughout the site.

SECTION 2.2 PROPERTY DESCRIPTION BV-11

The location, boundaries and monitoring wells of Site BV-11 are shown in Attachments B, FIG. 3. The Site is 95 acres. The area to be mowed is approximately 60 acres. This site consists of a very large open area, it has a large wetland on it, and it has monitoring wells throughout the site.

SECTION 2.3 PROPERTY DESCRIPTION BV-40

The location and boundaries of the Site BV-40 are shown in Attachments B, FIG. 4. The Site is 42 acres. The area to be mowed is approximately 25 acres. This site consists of a very large open space, a cypress island within the open space. This site has regulated access due to the school adjacent to it.

SECTION 2.4 PROPERTY DESCRIPTION BV-52

The location, boundaries and monitoring wells of Site BV-52 are shown in Attachments B, FIG. 5. The Site is 25 acres. The area to be mowed is approximately 12 acres. This site consists of a very large berm area, a landscaped area, it has flat mowing, mowing inside the basin shall be completed as well in areas that are not underwater. This site also has monitoring wells throughout the site.

SECTION 2.5 PROPERTY DESCRIPTION BV-R

The location and boundaries of the Site BV-R are shown in Attachments B, FIG. 6. The Site is 79 acres. The area to be mowed is approximately 26 acres. This site consists of a one very large open space area, and one large lake, both of these parcel are fenced and they are straddled by an FPL easement.

SECTION 2.6 PROPERTY DESCRIPTION BV-NASA

The location and boundaries of the Site BV-NASA are shown in Attachments B, FIG. 7. The Site is 32 acres. The area to be mowed is approximately 14 acres. This site consists of a one medium large open space area, berm road perimeter ditch and basin area. This parcel is fenced and access can only be gained by having a security gate pass for the KSC. The gate pass will be issued by Kennedy Space Center.

SECTION 3.0 PROJECT DESCRIPTION

Project work will consist of the routine mowing of level grassed areas with conventional high production style mowing equipment and the mowing of sloped areas that will require the use of specialized equipment. Hand labor and small machine mowers may be required to perform the specified work in certain areas or during certain times of the year.

Vegetation to be mowed will consist of all grasses, part grass and part weed growth, or all weed growth within the areas to be mowed. The sloped areas to be mowed consist of a dike, which includes the top, back and front slopes. The dike ramps, the grassed areas around the dike and the perimeter ditching. If the interior of the dike is ponded it will not require mowing.

The dike slopes will be mowed with equipment that will not damage the dike or the grasses. These areas will normally require specially designed mowing equipment. The Ditch area will be mowed at minimum once (1) per year, preferably during the winter or dry season. Ditch areas that are saturated with water or too wet for standard mowing equipment will be required to be mowed by hand or mowed with specialized mowing equipment. No rutting or damage to the ditches or the dike will be allowed. Damage of this nature will be the contractor's responsibility to repair at no cost to the District. All grasses and vegetation will be cut to a height of six inches maximum.

The sites will be mowed up to four (4) times annually on an as needed basis. The District will determine the mowing schedule. The District reserves the right to expand this contract as additional properties are developed or extend the contract for subsequent years with the Board of Commissioner approval, and a executed project agreement amendment.

SECTION 3.1 MOWING THE ACCESS & AROUND MONITORING WELLS

Vegetation will be mowed along access to the monitoring wells and around the physical wells during every mowing event. Access to these areas is critical and it shall be maintained to allow easy access to and from well locations on all site where wells are present.

SECTION 4.0 EQUIPMENT

The Contractor will be required to use the minimum of one (1) flat bed mower or bat wing mower for the level surfaces, and one (1) slope or boom mower to mow the surfaces which are on contoured slopes, or mowing of perimeter ditches. The equipment used by the contractor must be in good repair and shall be maintained as to produce a clean, sharp cut and uniform distribution of the cuttings at all times. The Contractor will provide a complete list of the equipment, which will be utilized on these District sites. This list shall accompany the bid form upon submittal.

SECTION 4.1 FUELING

Fueling on site will be conducted with authorized and approved fueling containers and or equipment to avoid spillage. The fueling activities shall be conducted on level ground and on the most appropriate a hard, road base surface on site. All spills shall be immediately reported to the District. The spill shall be immediately contained, and the impacted soil shall be excavated and placed into an impervious container to be removed from the District property by the Contractor.

SECTION 5.0 BIDS

Bids shall be submitted on Attachment D the Bid Submittal Form. The total bid amount shall include all costs to perform one (1) mowing event of all sites. Qualified bids or bids with exceptions will not be accepted. A qualified bid will also include a completed Equipment List Form which is Attachment C. Bids will be made by sealed bid only. The sealed bid shall be marked clearly on its outside "Sealed Bid Brevard -Indian River Mowing Project" and shall be submitted inside another envelope. Bids can be mailed or hand delivered. All bids are due by 2:00 pm January 9, 2014.

SECTION 6.0 PROJECT MANAGER

The District's project manager for this agreement will be Mark M. Tamblyn. He can be contacted at the District office 1314 Marcinski Road, Jupiter, Florida 33477 Telephone (561) 627-3386, Fax (561) 624-6480 email .

SECTION 7.0 PROJECT SUPERVISION

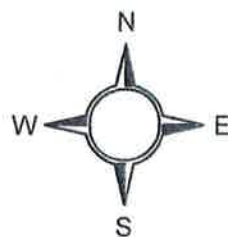
The District's Project Manager shall give notice regarding the approximate date and time of the initial mowing and completion of the mowing. The project manager will make available personnel to assist in the resolution of any questions or problems that may arise. The District sites are locked and secured, and will remain this way prior to mowing and upon completions of mowing activities. The contractor will maintain security of gates and notify the District of damage or vandalism to them at the time of mowing events.

SECTION 8.0 INSURANCE REQUIREMENTS

The contractor will be required to provide a minimum of \$ 500,000.00 insurance policy covering general liability and workman's compensation coverage with the District as an insured party.

SECTION 9.0 PAYMENT

The contractor will submit to the District an invoice at the completion of a mowing event. Upon District inspection and approval the District will release payment to the contractor.



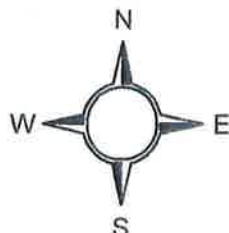
LEGEND



MOWING AREA



MONITORING WELLS



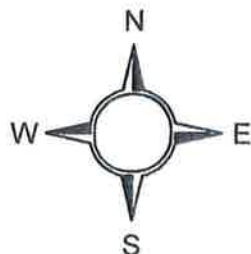
LEGEND

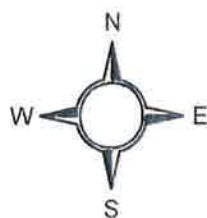
—	MOWING AREA
⊕	MONITORING WELLS
—	WET PRAIRIE



LEGEND

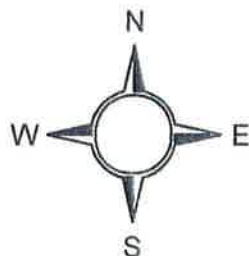
	MOWING AREA
	MONITORING WELLS
	WETLAND AREA





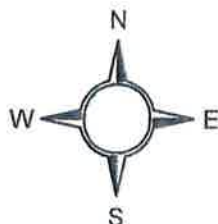
LEGEND

— MOWING AREA



LEGEND

	MOWING AREA
	MONITORING WELLS



LEGEND



MOWING AREA



FORESTED AREA



LEGEND



MOWING AREA

ATTACHMENT C
FLORIDA INLAND NAVIGATION DISTRICT
BREVARD COUNTY SITE
MOWING PROJECT
EQUIPMENT LIST FORM

NAME OF FIRM: _____

ADDRESS: _____

TELEPHONE AND FAX: _____

LISTING OF EQUIPMENT TO BE USED ON THIS DISTRICT PROJECT:

1. _____

2. _____

3. _____

4. _____

Signature

Title

ATTACHMENT D

FLORIDA INLAND NAVIGATION DISTRICT

BREVARD COUNTY SITE

MOWING PROJECT

Bid Submittal Form

Bids are to be made on a total cost basis and shall include all costs necessary to complete one mowing event of the SEVEN (7) sites in the specification. Bids shall not be qualified, incomplete or include extra costs to be determined later or on a unit basis. One award will be made to the low qualified bidder.

NAME OF FIRM: _____

ADDRESS: _____

TELEPHONE: _____

REFERENCES: (Name, Address, Phone, Contact Person)

1. _____

2. _____

TOTAL PROJECT BID COST \$ _____

Signature

Title

TEMPORARY LEASE AGREEMENT

This TEMPORARY LEASE AGREEMENT ("LEASE") is made and entered into this ____ day of _____, 2014, between "the Parties, the Florida Inland Navigation District, an independent special district existing under the laws of the State of Florida (the "DISTRICT"), and Sugar Cane Services, Inc., ("LESSEE").

WITNESSETH:

WHEREAS, DISTRICT is the owner in fee simple of a parcel of land in Palm Beach County, Florida, designated as Dredged Material Management Area LT-4A (less Tract H, Lot 27) which will be used by DISTRICT and the United States for the improvement and maintenance of the Okeechobee Waterway in Martin and Palm Beach Counties, Florida and holds title for such use; and

WHEREAS, LESSEE desires to lease from DISTRICT Dredged Material Management Area LT-4A, a description of which is attached hereto as Exhibit A and made a part hereof excepting Tract H Lot 27, for the purpose of growing and harvesting sugar cane as described in Exhibit B subject to said rights of DISTRICT and to the terms and conditions of this LEASE, and

WHEREAS, DISTRICT is of the opinion that such use by the LESSEE pursuant to the provisions of this agreement is in the public interest, and

WHEREAS, DISTRICT is agreeable that this LEASE should be executed for a limited term at a rental rate subject to the terms and conditions stated herein.

NOW THEREFORE, in consideration of the promises and mutual covenants and agreements contained herein, the receipt and sufficiency of which is hereby acknowledged, it is agreed by the parties hereto:

1. RECITALS: The recitals contained herein above are true and correct and incorporated herein by reference.
2. LEASE: DISTRICT hereby leases to LESSEE the property hereinafter known as the "Leased Premises" as described in paragraph 4 below, subject to the terms and conditions set forth herein.

3. PROJECT MANAGEMENT: The Project Manager for the DISTRICT is its Executive Director and all correspondence and communications from the LESSEE shall be directed to him/her. The Project Manager shall be responsible for overall coordination and oversight related to the performance of this lease.

4. DESCRIPTION OF THE LEASED PREMISES: The Leased Premises which is subject to this LEASE, is situated in Palm Beach County, State of Florida, as described in Exhibit A and consisting of 46.8 acres, attached hereto and made a part of this agreement. Tract H Lot 27 is not part of this LEASE or the Leased Premises.

5. EXISTING CONDITIONS: LESSEE agrees to accept the Leased Premises in as is condition subject to existing easements.

6. TERM: The term of this LEASE shall be for a one (1) year period and may be extended by a written extension agreement. Rent shall be one hundred and fourteen (\$114.00) dollars per acre per year (a total of \$5,335.00 per year) and shall be paid in advance for the year. Prepayment of the rent shall not affect in any way the DISTRICT's rights under paragraph 24 below. The lease period shall commence on the date of execution. Expiration or termination of this LEASE shall not entitle the LESSEE to any payment from the DISTRICT for the value of any unharvested crops, except and unless the lease is wrongfully terminated by the DISTRICT.

7. PURPOSE: LESSEE shall manage the Leased Premises for sugar cane cultivation and harvesting as described in Exhibit B and for no other purpose without DISTRICT's written consent.

8. QUIET ENJOYMENT AND RIGHT OF USE: LESSEE shall have the right of ingress and egress to, from, and upon the Leased Premises for all purposes that do not conflict with the DISTRICT's Dredge Material Management Program, however, use of the property is restricted to day light hours for the quiet enjoyment of the neighboring property owners.

9. UNAUTHORIZED USE: LESSEE shall, through its agents and employees, prevent the unauthorized use of the Leased Premises or any use thereof not in conformance with this LEASE.

10. ASSIGNMENT: This LEASE shall not be assigned in whole or in part without the prior written consent of DISTRICT. Any assignment made either in whole or in part without the prior written consent of DISTRICT shall be void and without legal effect; provided, however, the District acknowledges and agrees that LESSEE may utilize the services of third parties in the performance of work on the Leased Premises, and any such third party contracts for such purpose shall require the LESSEE's to abide by the terms and conditions of this LEASE.

11. EASEMENTS: All easements to be granted by LESSEE including, but not limited to, utility easements are expressly prohibited without the prior written approval of DISTRICT. Any easement not approved in writing by DISTRICT shall be void and without legal effect.

12. SUBLEASES: This LEASE is for the purposes specified herein, and subleases of any nature are prohibited without the prior written approval of DISTRICT. Any sublease not approved in writing by DISTRICT shall be void and without legal effect.

13. RIGHT OF INSPECTION: DISTRICT or its duly authorized agents, representatives or employees shall have the right at any and all times to inspect the Leased Premises and the works and operations of LESSEE in any matter pertaining to this LEASE.

14. PLACEMENT AND REMOVAL OF IMPROVEMENTS: Any equipment, supplies, or improvements constructed or placed on the property by LESSEE in accordance with a plan approved by the DISTRICT shall be removed by LESSEE at the termination of this LEASE. No trees, other than non-native species, shall be removed or major land alterations done without the prior written approval of DISTRICT. Removable equipment and removable improvements placed on the Leased Premises by LESSEE which do not become a permanent part of the Leased Premises will remain the

property of LESSEE and may be removed by LESSEE upon termination of this LEASE, pursuant to Paragraph 26 below.

15. INSURANCE BY LESSEE: In consideration for the privilege herein granted, LESSEE shall not claim any damages from the DISTRICT in connection with or on account of, and as between the parties shall be solely responsible for, any injuries or damages arising in or on the Leased Premises while being used by LESSEE and its agents, representatives, and employees. The DISTRICT does not warrant or represent that the Lease Premises are safe or suitable for the purpose for which LESSEE is permitted to use it, and LESSEE assumes all risks in its use. LESSEE, and any contractors and sub-contractors utilized by LESSEE pursuant to this LEASE, shall have public liability and workmen's compensation insurance in the amount of not less than one million dollars (\$1,000,000.00) and shall name DISTRICT as an additional insured on such policy or policies. LESSEE shall also provide for not less than thirty (30) days' prior written notice to DISTRICT in the event of cancellation thereof. LESSEE, prior to entering upon the subject Premises, shall provide to DISTRICT copies of said insurance policies or certificates of insurance showing conformity with this provision. LESSEE shall provide and keep in force such other insurance and in such amount as may from time to time be required by DISTRICT against such other insurable hazards as at the time are commonly insured against in the case of other premises similarly situated or similarly utilized.

It is specifically understood and agreed that in no event shall DISTRICT or any interest of DISTRICT in the Leased Premises or any portion thereof be liable for or subject to any construction lien or liens for improvements or work made by or for LESSEE; and this Agreement specifically prohibits the subjecting of DISTRICT's interest in the Leased Premises or any portion to any construction lien or liens for improvements made by LESSEE which LESSEE is responsible for payment under the terms of this Agreement. All persons dealing with LESSEE are hereby placed upon notice of this provision. All memoranda and short forms of this agreement which shall be recorded among any public records shall contain the provisions set forth above in this

paragraph; provided, however, nothing contained in this sentence shall permit or authorize the recording of and memorandum or short form of this Agreement other than by DISTRICT.

16. ADDITIONAL INSURANCE: LESSEE shall require any third party contractors to maintain insurance in the amounts and types indicated above and shall furnish the DISTRICT copies of the Certificates of Insurance.

17. PAYMENT OF TAXES AND ASSESSMENTS: LESSEE shall assume full responsibility for and shall pay when due all liabilities that accrue to the Leased Premises and/or to the improvements thereon, including any and all ad-valorem taxes and drainage and special assessments or taxes of every kind and all construction liens which may be hereafter lawfully assessed and levied against the Leased Premises, resulting from LESSEE use of the Lease Premises for the purposes provided for herein.

18. NO WAIVER OF BREACH: The failure of DISTRICT to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this LEASE shall not be construed as a waiver of such covenants, terms or conditions, but the same shall continue in full force and effect, and no waiver of DISTRICT of any of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing and signed by DISTRICT.

19. NON-DISCRIMINATION: LESSEE shall assure and certify that it will comply with Title IV of the Civil Rights ACT of 1964 (PL 88-352) as amended and, in accordance with that Act, shall not discriminate against any individual's race, color, creed, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the Leased Premises or upon lands adjacent to and used as an adjunct of the Leased Premises.

20. UTILITY FEES: LESSEE shall be responsible for payment of all charges for the furnishing of gas, electricity, water and other public utilities to the Leased Premises, if needed by LESSEE, and for having the utilities turned off when the Leased Premises are surrendered.

21. COMPLIANCE WITH LAWS: LESSEE agrees that this LEASE is contingent upon and subject to LESSEE obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules and laws of the State of Florida or the United States or of any political subdivision or agency of either.

22. NOTICE: All notices given under this LEASE shall be in writing and shall be served by certified mail to the last address of the party to whom notice is to be given, as designated by such party in writing. DISTRICT and LESSEE hereby designate their address as follows:

TO DISTRICT: Florida Inland Navigation District
1314 Marcinski Road
Jupiter, Florida 33477
Attn: Executive Director

TO LESSEE: Sugar Cane Services, Inc.
1797 Bacom Pt. Rd.
Pahokee, Fl. 33476

Copies of all Notices shall also be delivered to the DISTRICT'S Project Manager.

23. BREACH OF COVENANTS, TERMS OR CONDITIONS: Should LESSEE breach any of the covenants, terms, or conditions of this LEASE, DISTRICT shall give written notice to LESSEE to immediately remedy such breach. In the event LESSEE fails to immediately remedy the breach to the satisfaction of DISTRICT upon receipt of written notice, or longer period if it is not capable of being immediately cured but LESSEE has commenced the cure, DISTRICT may either terminate this LEASE and recover from LESSEE all damages DISTRICT may incur by reason of the breach including, but not limited to, the cost of recovering the Leased Premises and attorney's fees; or maintain this LEASE in full force and effect and exercise all rights and remedies herein conferred upon DISTRICT.

24. **DAMAGE TO THE PREMISES:** LESSEE agrees that it will not do, or cause to be done, in, on, or upon the Leased Premises or as affecting said Leased Premises, any act which may result in damage or depreciation of value to the Leased Premises, or any part thereof. Any alterations to the property caused by the LESSEE shall be restored to their original conditions. DISTRICT SPECIFICALLY ADVISES LESSEE THAT A PORTION OF THE LEASED PREMISES ARE SUBJECT TO EASEMENTS FOR ELECTRICAL TRANSMISSION LINES AND UNDERGROUND GAS TRANSMISSION LINES. LESS EE SHALL NOT OCCUPY OR USE SAID EASEMENT AREAS IN VIOLATION OF THE TERMS OF SAID EASEMENT OR IN ANY MANNER WHICH COULD DAMAGE THE UTILITY EQUIPMENT OR OTHERWISE CAUSE A DANGEROUS CONDITION. Copies of the easements are available upon request.

25. **HAZARDOUS MATERIALS:** LESSEE agrees that, during the term of this lease, it:

A. Shall keep or cause the Leased Premises to be kept free of hazardous wastes or substances. Specifically, the LESSEE shall not fuel any equipment, store fuel, store pesticides or other chemicals, or mix or transfer pesticides or chemicals on the Leased Premises.

B. Shall not cause or permit, as a result of any intentional or unintentional act or omission on the part of LESSEE or any assignees, a release of hazardous wastes or substances onto the Leased Premises.

C. Shall comply with and ensure compliance by its employees and all others under its direction with all applicable federal, state, and local laws, ordinances, rules, and regulations.

D. The terms "hazardous waste", "hazardous substance", "disposal", "release", and "threatened release", if used in this lease, shall have the same meaning as set forth in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. Section 9601, et seq. (CERCLA), the Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499 ("SARA"), the Hazardous

Materials Transportation Act, 49 U.S.C. Section 1801, et seq., the Resource Conservation and recovery Act, 49 U.S.C. Section 6901 et seq., the Florida Resource and Management Act, Chapter 403, Florida Statutes, the Pollution, Spill, Prevention, and Control Act, Chapter 376, Florida Statutes, or any other applicable state or federal laws, rules, or regulations adopted pursuant to any of the foregoing.

E. Shall immediately provide DISTRICT with notice of any release or threatened release of hazardous waste within the Leased Premises, and shall immediately provide DISTRICT with notice of any injury or action taken by any local, state, or federal governmental body with respect to hazardous waste within the Leased Premises.

F. Shall remove any hazardous waste or hazardous substances which exceed allowable levels in the ground or the groundwater within the Leased Premises, arising from LESSEE's use of the Leased Premises.

26. SURRENDER OF PREMISES: Upon termination or expiration of this LEASE, LESSEE, shall surrender the Leased Premises to DISTRICT. Upon termination or expiration of this LEASE, all structures permanently affixed to the land and all improvements made will become the property of the DISTRICT, provided, however, that if any structures are such, in the DISTRICT'S determination, that they can be moved without harm to the area where situated then the LESSEE may, within ten (10) days following termination of the LEASE, remove the same. Upon final termination, the property must be left in essentially the same condition as when it was first leased to the LESSEE, save for ordinary wear and tear, unless otherwise approved in writing by the DISTRICT.

27. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES:

Fee title to the Leased Premises is held by DISTRICT. LESSEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the Leased Premises including, but not limited to, mortgages or construction liens against the Leased Premises or against any interest of DISTRICT therein.

28. **PARTIAL INVALIDITY:** If any term, covenant, condition or provision of this LEASE shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

29. **DUPLICATE ORIGINALS:** This LEASE is executed in duplicate originals, each of which shall be considered an original for all purposes.

30. **ENTIRE UNDERSTANDING:** This LEASE sets forth the entire understanding between the Parties and shall only be amended with the prior written approval of the Parties.

31. **MAINTENANCE OF IMPROVEMENTS:** LESSEE shall maintain the real property contained within the Leased Premises and the improvements located thereon in a state of good condition, working order and repair including, but not limited to, keeping the Leased Premises free of trash or litter, meeting all building and safety codes in the location situated.

32. **GOVERNING LAW:** This LEASE shall be governed by and interpreted according to the laws of the State of Florida.

33. **SECTION CAPTIONS:** Articles, subsection and other captioned contained in this LEASE are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope or extent of intent of this LEASE or any provisions thereof.

34. **INDEMNIFICATION:** LESSEE shall indemnify, defend and hold harmless DISTRICT , its Board of Commissioners, officers and employees from and against any loss, damage, suit, action, liability, cost, expense or judgment arising out of or due to LESSEE's use or occupancy of the Leased Premises .

35. **ATTORNEY'S FEES:** In the event of any litigation arising out of or resulting from this LEASE, the venue of such litigation shall be had only in the state courts in Palm Beach County, Florida. The prevailing party in such litigation shall be entitled to its costs and reasonable attorney's fees (at trial, appellate, and post-judgment proceeding levels).

IN WITNESS WHEREOF, the parties have caused this LEASE to be executed on the day and year first written above.

Signed, sealed and delivered
in the presence of:

DISTRICT:

FLORIDA INLAND NAVIGATION DISTRICT

(1) _____

(Typed or Printed Name)

By: _____
Mark Crosley, Executive Director

(2) _____

(Typed or Printed Name)

Signed, sealed and delivered
in the presence of:

LESSEE:

SUGAR CANE SERVICES, INC.

(1) _____

(Typed or Printed Name)

By: _____

Name: _____

(2) _____

(Typed or Printed Name)

Title: _____

Exhibit A

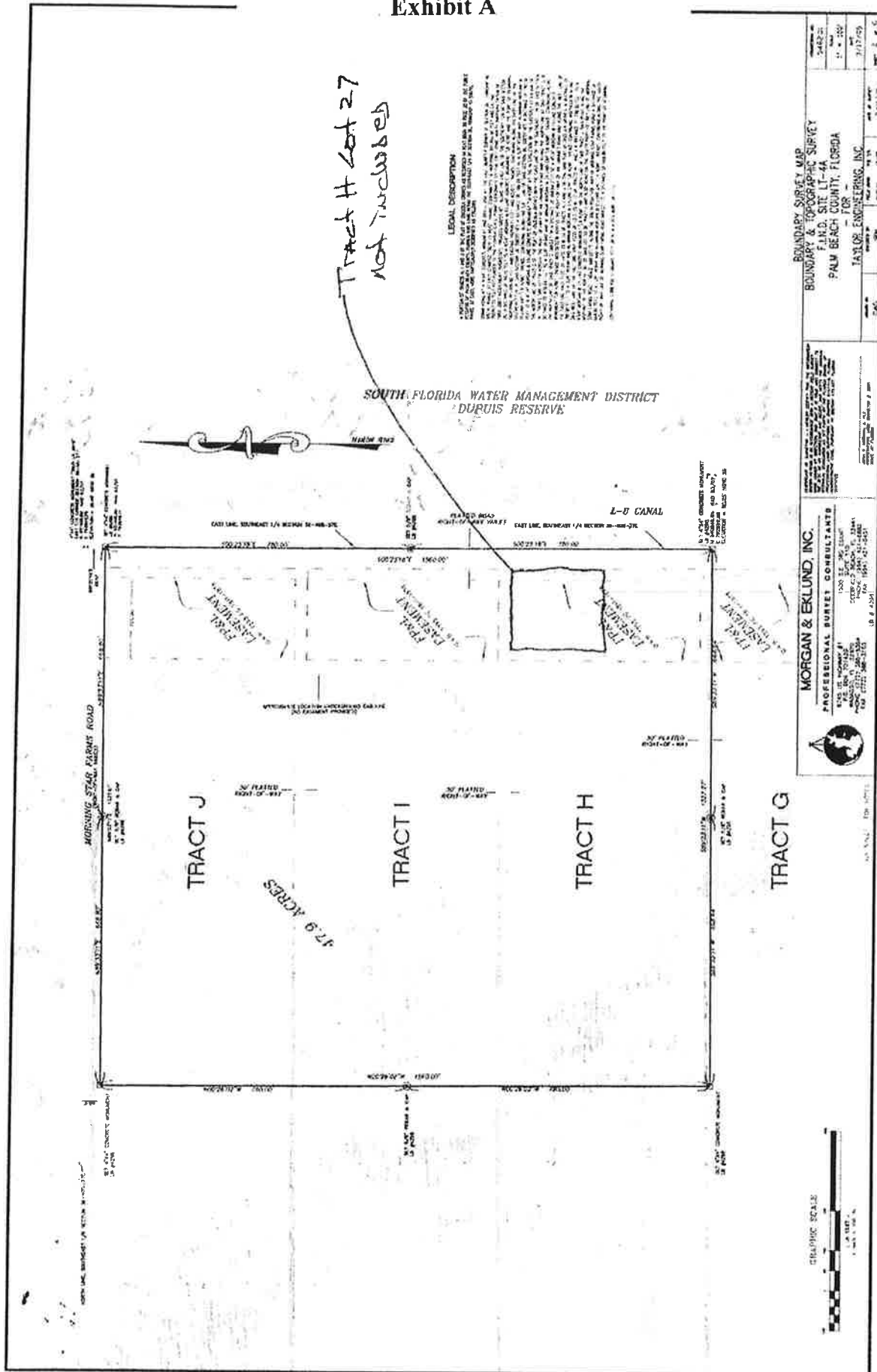


Exhibit B

***Sugar Cane Services, Inc.
1797 Bacom Pt. Rd.
Pahokee, FL 33476
561-924-7946 office or 561-924-3338 fax***

November 29, 2010

Mr. David Roach
1514 Marcinski
Jupiter, FL 33477

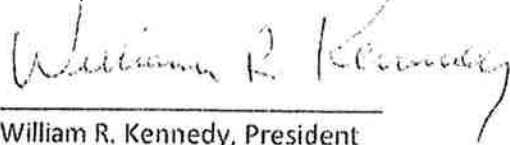
Mr. Roach,

As agreed in our telephone conversation on November 24, 2010, please accept this proposal for the rental of 50 acres of land located in the northwest section of Palm Beach County.

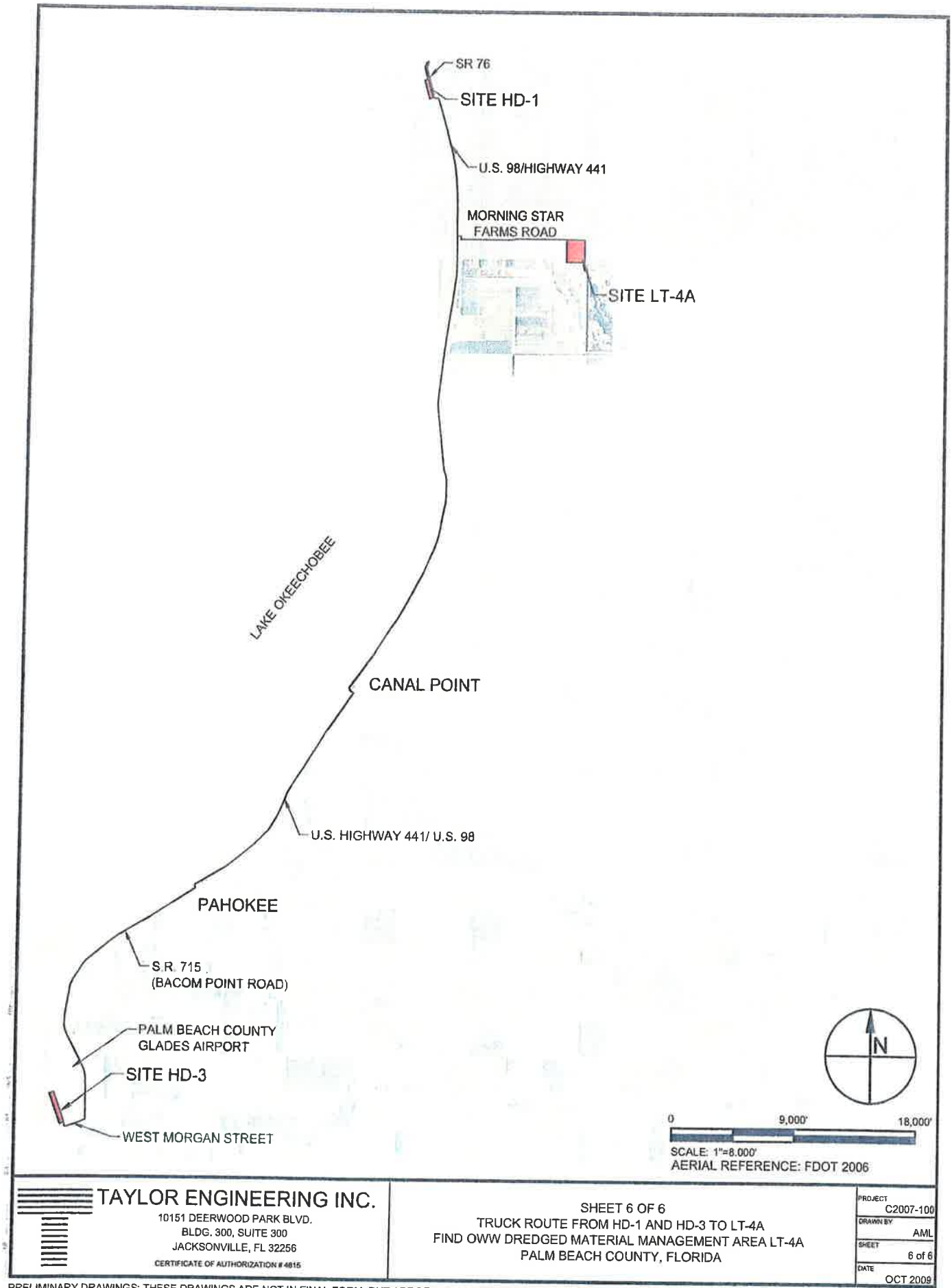
I am a sugar cane farmer and have been growing cane on this land for the past seven years. I am definitely interested in leasing your parcel for the same terms I have with the surrounding land owned by Miller Couse. Mr. Couse and I agreed on \$114.00 per acre plus taxes.

I thank you for your consideration and look forward to hearing from you.

Sincerely,



William R. Kennedy, President
Sugar Cane Services, Inc.



PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

Return To:
 Michael Stahl
 Palm Beach County
 Environmental Resources Management
 2300 North Jog Road, 4th Floor
 West Palm Beach, Florida 33411

Temporary Partial Assignment of Easement For Beach Restoration

THIS TEMPORARY PARTIAL ASSIGNMENT OF EASEMENT PREMISES, made this _____ of _____, 2014, between the County of Palm Beach (County), a political subdivision of the State of Florida, whose mailing address is 301 North Olive Avenue, West Palm Beach, Florida 33401-4705, hereinafter referred to as "Grantor" and the Florida Inland Navigation District, an independent special taxing district established under the laws of the state of Florida whose mailing address is 1314 Marcinski Road, Jupiter, FL 33477, hereinafter "Grantee".

WHEREAS, Grantor is the recipient of the easement granted by Ocean Trail Unit Owners Association, Inc. to Palm Beach County recorded at Official Record Book 11374, Page 148 on September 30, 1999, "Original Easement"; and

WHEREAS, Grantee has requested that Grantor partially assign the Original Easement to Grantee in order to allow Grantee to place sand within the easement area and within the fill template designated by the permits issued by the Florida Department of Environmental Protection and the United States Army Corps of Engineers; and

WHEREAS, the Original Easement is assignable pursuant to its terms,

NOW, THEREFORE, in consideration of the mutual benefits to be derived from the beach restoration and placement of maintenance dredged material and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties, the Grantor hereby partially assigns to the Grantee on a temporary, nonexclusive basis the Original Easement on, over, upon, under, through, and across the property as follows:

LEGAL DESCRIPTION

Attached Hereto and Made Part Hereof
 (hereinafter referred to as the "Easement Premises")

Grantor hereby reserves the right to continued exercise of the rights granted to Grantor by the Original Easement and free use of the property in a manner not inconsistent with the rights granted herein to Grantee and further retains the right to grant compatible uses to third parties subject to the following terms and conditions:

1. **Not a Public Dedication.** Nothing herein contained shall be deemed to be a gift or dedication to or for the general public and this Easement shall be strictly limited to and for the purposes expressed herein.
2. **Use.** Grantee's use of the property shall be limited to a temporary, partial easement and right-of-way in, on, over and across Easement Premises for use by the Grantee, its assigns its representatives, agents, and contractors, to rehabilitate a public beach together with appurtenances

thereto, including the right to deposit sand; to accomplish any alterations of contours on said land; to construct berms; to nourish and renourish periodically; to move and remove equipment and supplies; and to perform any other work necessary and incident to the construction and maintenance of the Atlantic Intracoastal Waterway Project, together with the right of public use and access within the limits of the easement. Subject to the other provisions of this Agreement, Grantee shall have the right of ingress and egress to the Easement Premises as is necessary or desirable for the use of any right granted herein.

Notwithstanding anything in the law or herein to the contrary, Grantor's use and enjoyment of and interest in the Easement Premises is and shall remain paramount and superior to the Grantee's Easement granted hereby, and the Easement granted hereby shall be strictly limited to that specifically stated herein and shall not permit any other use.

3. **Indemnification.** Grantee shall be liable for its own actions and negligence and, to the extent permitted by law, shall indemnify, defend and hold harmless County against any actions, claims, or damages arising out of Grantee's negligence in connection with this Easement. The foregoing indemnification shall not constitute a waiver of sovereign immunity beyond the limits set forth in Florida Statutes, Section 768.28, nor shall the same be construed to constitute agreement by Grantee to indemnify Grantor for Grantor's negligent, willful or intentional acts or omissions.
4. **Insurance.** At all times during the term of this Agreement, Grantee shall maintain workers compensation insurance as required by Florida law together with liability insurance in an amount as is required by Palm Beach County for its contractors performing like work, as such amount of required insurance may from time to time be adjusted.
5. **Notification.** Grantee shall provide to the Grantor copies of all plans, specifications, contracts and schedules associated with any proposed use of the Easement Premises prior to any construction activities.
6. **Termination.** It is understood and agreed by the parties hereto that the rights granted herein shall terminate on May 1, 2024.
7. **Venue.** This Easement shall be governed by, construed and enforced in accordance with, the laws of the State of Florida. Venue in any action, suit or proceeding in connection with this Easement shall be in a state court of competent jurisdiction in Palm Beach County, Florida.
8. **Amendment.** This Easement contains the entire understanding and agreement of the parties with respect to the subject matter hereof. No amendment shall be effective unless the same is in writing and signed by all parties.

(The remainder of this page intentionally left blank to be followed
by two (2) execution/signature pages.)

IN WITNESS WHEREOF, the Grantor and Grantee have set hereto their hands and seals on the day and year above written.

Signed, Sealed and Delivered
in the presence of:

GRANTEE:
FLORIDA INLAND
NAVIGATION DISTRICT

Witness

Name – Typed or Printed

Name – Typed or Printed

Witness

Title

Name – Typed or Printed

STATE OF: _____

COUNTY OF: _____

The foregoing instrument was acknowledged before me this _____ day
of _____, 2014, by _____
who is personally known to me or who has produced _____
as identification and who did/did not take an oath.

Signature

ATTEST:

SHARON R. BOCK, CLERK
AND COMPTROLLER

By: _____
Clerk

GRANTEE:
(Sealed)

PALM BEACH COUNTY, FLORIDA BY ITS
BOARD OF COUNTY
COMMISSIONERS

By: _____
Pricilla Taylor, Mayor

APPROVED AS TO LEGAL FORM
AND SUFFICIENCY

By: _____
Assistant County Attorney

APPROVED AS TO TERMS AND
CONDITIONS

By: _____
Robert Robbins, Director

LEGAL DESCRIPTION

BEACH PLACEMENT AND ACCESS EASEMENT

ALL THAT PORTION OF THE FOLLOWING DESCRIBED PARCEL LYING EASTERLY OF THE SEA W ARDMOST + 12 FOOT CONTOUR LINE (NATIONAL GEODETIC VERTICAL DATUM, 1929).

05-41-43, THAT PART OF GOVERNMENT LOT AS IN OFFICIAL RECORD 3553 PAGES 1998/2000 KNOWN AS COMMON AREA FOR OCEAN TRAIL CONDOMINIUMS 1 THRU 5.



 FIND Owned
Channel
ICW Right-of-Way

DMMA PB-JIB

