

January 26, 2012 - Draft
February 3, 2012 – Rev. 1

Barefoot, Vanderbilt, Clam Pass, Park Shore and Naples Beach Renourishment

The 2005/06 renourishment project was limited in placement scope quantities due to FDEP's concerns that sand would migrate to the near shore hardbottom marine habitat and smother it. What was provided was a six year beach design life that is currently being stretched to eight to nine years.

The BCC directed staff in the 2011 joint Collier County and City of Naples workshop to maximize the interval between renourishments. Staff modeled the coast and developed four options for a Conceptual Design.

- Option 1 – Execute the TS Fay FEMA design
This would place 175,000 CY's of fill sand at a cost of approximately \$10M on the beach. This sand placement would only restore the damage from TS Fay and not extend the life of this project whatsoever. It would not address any hot spot locations and would not include any Jetty work to stabilize the beach. Only a minor permit modification for an extra nourishment would be required.
- Option 2 – Execute the 2005/2006 design
This would place 482,000 CY's of fill sand on the beach at an estimated cost of \$19M. This would continue with the six year design project life that most likely can be extended. This project would not maximize the renourishment cycle and does not address the Clam Pass or Barefoot Beach renourishment needs. Additionally, it does not address the beach hot spots, the groins at Park Shore or the need for a jetty spur south of Doctors Pass.
- Option 3 – Execute the 2005/2006 design with beach and hot spot enhancements
This would place 612,000 CY's of fill sand at a cost of approximately \$24M on the beach. It would also include: The removal of the groins at Clam Pass (\$400K); the renourishment of Clam Pass Park Beach (30K CY's at \$950K); and the repair/rebuild of Barefoot Beach (100K CY's at \$2.8M) which has lost 200 Linear width of beach over the last 15-20 years. This approach does not maximize the renourishment cycle and continues with a six plus year design that has the potential to be stretched to a longer life. It does however begin to address significant hot spots that have been identified through beach monitoring and modeling.
- Option 4 – Execute a ten-year project that maximizes the renourishment cycle
This option would maximize the time between renourishment events with a 787K CY renourishment with an estimated cost of \$31M. This plan will increase the beach height (5 feet NAVD or 6.3 feet NGVD) as well as the construction width in sections as required to increase critical mass to resist erosion and produce a true ten year

beach renourishment. A jetty spur on Doctors Pass is included to minimize erosion on the down drift beaches. In addition to renourishment of the Vanderbilt, Park Shore and Naples beach, this option includes renourishment for Clam Pass Park beach, the rebuild/repair of Barefoot beach, removal of groins in Park Shore beach, the jetty spur to Doctors Pass and addressing the additional hot spots with additional critical mass through increased sand placement. A FDEP permit modification is required for this modification.

Savings on the project cost could be expected if it was possible to achieve the following items:

- Approximately \$5M- \$7M could be achieved if the TS Fay PW was extended.
- \$1M could be saved if this project is combined with similar projects from the Captiva Erosion Control District and/or the City of Longboat Key to share mobilization costs and take advantage of economies of scale. The economies of scale are significant as well as early bidding before contractors have committed their production capacity to other projects.
- \$1M - \$2M savings can be expected if schedule flexibility is enhanced to allow year round renourishment. Examples of schedule flexibility that would result in a price reduction are: stockpiling sand off shore in the non-peak renourishment timeframe; early contracting that would allow maximum planning and minimizing equipment mobilization costs; schedule that permits renourishment during off season and/or low equipment utilization periods; ability for the contractor to pursue “projects of opportunity” with clear and specific guidelines/restraints and schedules that identify start and completion dates and with approval, allow the contractor the flexibility to manage the schedule.
- Maximizing FDEP’s cost share contribution to this project.
- If the schedule cost savings are to be pursued, a FDEP permit modification must be applied for that will permit year round renourishment or renourishment during a portion of turtle nesting season.

Renourishment during turtle nesting season

Turtle nesting season begins on May 1st and ends on October 31st of each year. The FDEP, USACE, FWS and FWC will allow year round renourishment and FWC and FDEP have indicated they have “No Objections” to granting a permit for year round renourishment. No Collier County Ordinance prohibits renourishment during turtle nesting season.

However, Collier County has always strived to be excellent environmental stewards and avoid any negative impacts to nesting by renourishment during turtle nesting season. Additionally, the Conservancy of SW Florida recognizes the importance of healthy, cost

effective beaches to our local economy and both organizations agree and support without objection the following renourishment schedule.

1. Renourishment to begin on September 15, 2013 on the Naples beach segment which has the lowest nesting density of all beaches within Collier County. This will require any nest laid after 7/7/13 on a Naples beach segment to be relocated to a designated relocation area. Offshore mobilization can proceed prior to 9/15/13 and the landing of the offshore pipeline on the beach prior to 9/15/13 is permitted. Pipe and equipment staging on the beach will not be allowed before 9/15/13.
2. Renourishment will proceed from south to north renourishing the Naples, Park Shore, Clam Pass, Vanderbilt and Barefoot beaches. All renourishment activities will be complete by 6/1/14. This equates to an 8.5 month renourishment cycle.
3. A permit modification will be supported by the Conservancy of SW Florida to begin renourishment on 9/15 and complete all renourishment activities by 6/1 the following year.

Recommendations:

1. Seek a permit modification to allow beach renourishment from 9/15 to 6/1 of the following year.
2. Options will be developed and presented to the BCC for their decision making as funding; schedule coordination and scope definition is resolved.
3. Scope manage this project based on direction from the BCC to match available funding with sand placement quantities at the time of renourishment.
4. Assure appropriate staffing, training and permitting of turtle monitors and relocation specialists. Work with State and Federal agencies in the development of this plan.
5. Aggressively pursue partnership with the City of Longboat Key and Captiva Erosion Control District to reduce mobilization costs and take advantage of economies of scale. Additionally, pursue early bidding before contractors have committed production capacity to other projects.
6. Maximize leverage with FEMA and FDEP to secure project funding.



**Great Lakes
Dredge & Dock
Company**

2122 York Road
Oak Brook, Illinois 60523
630.574.3000

1 November 2011

J. Gary McAlpin, Director
Coastal Zone Management
3299 Tamiami Trail East, Suite 103
Naples, Florida 34112

Dear Gary,

Re: Upcoming Beach Projects

Thanks for taking time to meet with Sam Morrison, our Area Manager and me at the FSBPA conference. It is always good to see you. I wanted to reiterate some of the constructability comments we shared during that discussion which also included the folks from Captiva as well as Steve Keehn from CPE.

1. Mobilization Savings. For sure, one of the biggest costs on a large scale dredging project is mobilization. We often encourage our clients and consulting engineer friends to combine similar projects whenever possible to allow for cost efficiencies. Based on our past experiences and your anticipated plans, combining projects with the Captiva Erosion Control District appears to be the right thing to do. As we discussed, there are no hard and fast numbers to apply, but with mobilization costs in the general in the range of \$2,000,000 to \$5,000,000 per project there are certainly significant cost savings to be realized.
2. Environmental Windows. Working around the turtle windows can result in significant cost savings also. Most of the industry's annual hopper dredge work gets compressed into the winter months by Federal budget delays and endangered species issues. This impacts our costs not only by increased scheduling pressures, but also puts the work into the more difficult weather months when working in the ocean becomes more dangerous and costly. Our industry typically has our best equipment availability in the summer months and as a result, the Corps and other clients look to schedule whatever projects that have such flexibility for those months when costs are reduced and schedules are more reliable.
3. Scheduling. Flexibility is always important for a vessel operator, like a hopper dredging company. There are two ways for you to show that flexibility and win favorable pricing. One is to bid the project with sufficient lead time to allow the contractor to get his support equipment (pipeline, etc) to the job site on a reasonable schedule. What is important for this point is that it is not critical when the work starts, it is more important when it ends. If you have scheduling issues, identify them, but provide flexibility wherever you can. In line with that, the second way is to provide as much completion time as possible and then not object to the contractor performing other projects often called "opportunity projects". While it is difficult to quantify the cost benefits to you upfront, we can tell you that we do lower our prices for those projects on the order of 5% to 20% when such flexibility is allowed.

Gary McAlpin

1 November 2011

4. Partnering. One of the best things you can have with industry is a good relationship. While in any given contract or project there may be issues and conflict, in a perpetual business like ours, we have to assure each other's success. Engaging us in the conversation upfront is valuable to us on a lot of levels as we hope it is for you. You have always been straight with us and that has allowed us to put our best price on the table.

Good luck as this project moves forward, we look forward to working with you again. Please don't hesitate to contact Sam or I with other questions or comments.

Regards

Great Lakes Dredge & Dock Company



William H. Hanson
Vice President

CC: Sam Morrison, GLDD

Subject: Collier County and FWC Video Conference Call

Date / Time: Tuesday, January 17th, 2012 – 10:00 am

Purpose: Discuss plan that would allow construction of next Collier County Nourishment Project to extend into sea turtle nesting season (requiring a modification to Permit No. 0222355-001-JC)

Collier County is interested in requesting a modification to Permit No. 0222355-001-JC which would, in part, allow construction of the next beach nourishment project to extend into sea turtle nesting season, if necessary. The duration of the project (including mobilization and demobilization), especially if the project is constructed jointly with other nearby counties, will likely make construction entirely outside of nesting season impossible; therefore, the County seeks the flexibility to construct during nesting season when necessary. Collier County is committed to sea turtle conservation, and believes that through proactive coordination with FWC a plan can be developed that will balance the need for nourishment of Collier County beaches with conservation measures that will avoid or minimize impacts to nesting and hatchling sea turtles. Collier County proposes the following suggestions as possible ways to accomplish this goal, and welcomes comments and discussion from FWC.

Advance Planning and Coordination:

- **Local Coordination and Management:** Collier County will ensure that all project activities comply with local codes and ordinances, and the County Manager can provide a letter which states this compliance and approves the project. The City of Naples is a partner in this project and can provide similar assurances.
- **Prepare Necessary Resources:** Collier County will ensure that the necessary resources are available which will enable the County to conduct all sea turtle conservation measures (i.e., nesting surveys, relocation, data collection). If necessary, the County would apply for another FWC sea turtle permit and/or secure outside help with proper credentials, which would allow more trained personnel to assist with these activities.
- **Plan Potential Relocation Sites:** For each construction reach, find potential suitable nest relocation sites that will protect nests and hatchlings from construction activities while also maintaining a safe environment with minimal impacts from lighting. Potential areas include those stretches of Collier County beaches not receiving nourishment, as well as areas back towards the dune in cases where fill will only be placed on a portion of wider beach sections. Wide beaches in less developed areas (such as gaps between large condominiums), parks and gaps in the fill are potential candidate sites. For example, Lowdermilk Park or the condominium gap in Parkshore between R49 and R50 have potential. Significant coordination with FWC will go into the final selection of relocation sites.

Pre-Construction Planning:

- Determine construction optimal direction and timing: Once a contractor has been determined and it is time to schedule construction, Collier County will coordinate with FWC to devise a construction plan that would minimize impacts to turtle nesting. For instance, if construction is going to begin in sea turtle nesting season, it will make sense to start the project in the Naples Beach segment (which has the lowest nesting density of the project reaches) and then work north from there. By scheduling the construction in this way, the construction in the higher nest density areas may avoid peak nesting season. Minimizing impacts to higher nesting areas also reduces the management and effort required by sea turtle personnel responsible for relocation and monitoring.

Implementation of Sea Turtle Protection Measures:

- Compliance with all permit conditions: Collier County will conduct the pre-application meeting with FWC and the contractor. Throughout construction the work will comply with all FWC and USFWS permit conditions to avoid or minimize impacts to sea turtles, and FWC will be contacted with any questions or concerns that may arise.