

**REPORT OF THE SHORE PROTECTION BOARD MEETING
HELD ON THURSDAY, JANUARY 26, 2012**

I. CALL TO ORDER

The meeting of the Shore Protection Board was called to order on Thursday, January 26, 2012, at 9:30 a.m. in Town Council Chambers.

II. ROLL CALL

The following members were present: Chairman E. Llwyd Ecclestone, Vice Chair Bobbie Lindsay Buck, Mr. Kane Baker, Mr. Pat Cooper, Mr. Gerald Frank, and Mr. Lee David Goldstein. Mr. Lewis Katz arrived later in the meeting.

III. PLEDGE OF ALLEGIANCE

Chairman Ecclestone led the Pledge of Allegiance.

IV. APPROVAL OF AGENDA

Motion to approve the agenda was made by Board Member Goldstein and seconded by Board Member Frank. The motion carried 6-0, with Board Member Katz absent.

V. ELECTION OF CHAIR FOR THE 2012 SHORE PROTECTION BOARD

Mr. Goldstein nominated Mr. Ecclestone to remain as Chair of the Shore Protection Board. The motion was seconded by Mr. Frank. The motion carried 6-0, with Board Member Katz absent.

VI. ELECTION OF VICE CHAIR FOR THE 2012 SHORE PROTECTION BOARD

Mr. Goldstein nominated Mrs. Lindsay Buck to remain as Vice Chair of the Shore Protection Board. The motion was seconded by Mr. Baker. The motion carried 6-0, with Board Member Katz absent.

VII. APPROVAL OF THE MINUTES OF THE DECEMBER 6, 2011, MEETING

Motion to approve the minutes of the December 6, 2011, meeting was made by Board Member Cooper and seconded by Board Member Goldstein. The motion carried 6-0, with Board Member Katz absent.

VIII. COMMUNICATIONS FROM SHORE PROTECTION BOARD MEMBERS

Board Member Baker spoke about the strong November and December winds saying that the beaches held up well and he was encouraged by the offshore sand placement.

Board Member Cooper expressed his frustration with the lack of a permanent solution to the movement of sand. He asked for a thorough discussion about groins and other experimental structures in the United States and other places in the World.

Board Member Goldstein asked for an update on the Reach 7 project and the phase II extension of the sand transfer pipe. Paul Brazil, Director of Public Works, responded that Taylor Engineering had been retained for the second project in Reach 7 to include fill or structures or a combination of both to be located north of Phipp's Park into the Sloan's Curve area. He reported that Coastal Technology Corporation was refining the alternatives and would make a presentation in March. Mr. Brazil stated that preliminary permitting had begun on the second phase of the Sand Transfer Plant and staff was working through alternatives regarding the location of the discharge, would it be dry beach placement, would placement be below the mean high water, and the effects of the alternatives. Town Manager Peter Elwell added that a workshop for residents would be scheduled for the February Shore Protection Board meeting to give an update on the details and receive feedback from the community. Regarding the Reach 7 project, Town Manager Elwell clarified that the structures were planned for in or near the area north of Phipps Ocean Park, the hot spot.

Board Member Katz arrived at the meeting at 9:35 a.m.

Board Member Frank spoke about Ortona, Bahamian, and offshore sand. He asked where the Ortona sand would be used. Mr. Brazil responded that the only project planned for Ortona sand was Reach 8. He talked about the legal challenge to the original Reach 8 project using offshore sand and stated that the coarser the sand the better the probability the Town would receive a permit. He added that typically Ortona sand would be used for dune projects because it is more cost effective in smaller volumes.

Vice Chair Lindsay Buck talked about the extension of the pipeline for the Sand Transfer Plant. She suggested an architectural rendering be done of the possible profiles of the extension as it comes out of the buried sand.

Motion was made by Vice Chair Lindsay Buck to authorize up to \$5,000 from the coastal program operating funds for architectural drawings of the possible profiles of the Sand Transfer Plant extension in the water and on the beach, from North County Road and from the seawall at the beach. The motion was seconded by Board Member Goldstein and unanimously approved.

Board Member Katz asked for a side by side comparison of the cost per cubic yard and quality of the Ortona sand and sand from the Bahamas. Town Manager Elwell replied

1 that later in the meeting there would be a discussion regarding sand available to the Town
2 for projects.

3
4 Chair Ecclestone stated that his three-year program included a definite program of trying
5 to harden down the beaches, whether groins or break walls, so the Town does not have to
6 constantly do large sand fills. He added that he would like a more cost effective program
7 for the future.
8

9
10 IX. COMMUNICATIONS FROM CITIZENS - 3 MINUTE LIMIT PLEASE

11 Lew Crampton, 2335 South Ocean Boulevard, chair elect of the Citizen's Association of
12 the South End, stated that the Association's position was that the Town could do better
13 than Plan B and still have a beach restoration program that is affordable and can be
14 permitted. He gave the Association's position on the Reach 7 and Reach 8 projects and
15 funding.

16 Connie Gasque, 267 Root Trail, addressed the Board regarding contamination of the
17 Ortona sand and the need to insure that the sand is washed.
18

19 In response to a comment from Ms. Gasque, Town Manager Elwell spoke about the
20 natural resources in Reach 2 and the challenges they presented in doing a larger sand
21 project in that area. He stated that there was no intent to cover 23 acres of hardbottom. He
22 further stated that the subject would be discussed more thoroughly in February. A
23 discussion followed on the Reach 2 project.
24

25 Allen Wyett, 1145 North Lake Way, gave the history of the first Shore Protection Board
26 and the failure of its master plan. He suggested the Shore Board give deep consideration
27 to the Erickson plan recommendations and the use of sand from the Bahamas.
28

29 Chair Ecclestone asked if approval from the U.S. Army Corps of Engineers (Corps), a
30 federal agency, was needed for any Town projects (using Bahamian sand). Town
31 Manager Elwell answered that everything that is done in the water requires federal
32 permits, and everything that is done in the water and on the beach and dune system
33 requires a state permit.
34

35 Richard Hunegs, 3360 South Ocean Boulevard, of the Save Our Shores Organization
36 asked that any proposal take into consideration the failure of past efforts, be the best plan,
37 not necessarily the cheapest plan, and not put anyone at risk.
38

39 Mary Rosoff, 2275 South Ocean Boulevard, shared pictures of the erosion in front of The
40 Reef Condominium. She said she felt confident that the Shore Board had things under
41 control.
42

Chairman Ecclestone urged everyone to install a seawall in front of their home or condominium as a final protection to the building. He stated that it would be the resident's responsibility to build the wall, but the Town would help engineer it.

Larry Goldberg, 3360 South Ocean Boulevard, spoke about a number of issues. He suggested that the 12,000 cubic yards of sand to be placed below mean high water south of the Lake Worth Pier which caused the need for an Environmental Impact Study (EIS) be eliminated because it would not provide much storm protection, or increase the quantity of sand to get real protection and then go for an EIS. He asked for communication to the residents of Palm Beach in a clear transparent manner including keeping the Town's website current.

Peter Petty, 801 South Olive Avenue, West Palm Beach, stated that the residents should know the anticipated potential costs for environmental impacts on nearshore hardbottom on Reach 2, as well as Reach 7 and Reach 8.

Gary Lickle, 400 South Ocean Boulevard, spoke about his service as a former chairman of the Shore Protection in the 1990's. He stated that in 1929 the Town had exactly the same problem it faces today. He further stated that the single most important thing the Town had done was to create a Shore Protection Board to sort through the massive amounts of possibilities, expertise and regulations and come up with the best plan based on the dollars available and the regulatory restrictions.

Rodney Blair, 2275 South Ocean Boulevard, addressed the Board regarding the riptides at the hotspot at Phipps Ocean Park. He expressed concern with the Town's liability for visitors who go into the water with the riptides. Town Manager Elwell responded that in areas where there are factors beyond the Town's control, the Town's liability is limited. He explained that the Town is trying to maintain the shoreline and takes measures to warn the public about potential hazards at the public parks.

Sandra Gladstone, 3400 South Ocean Boulevard, stated that groins affect the littoral flow of the sand. She said there should be more cooperation with the other communities because Palm Beach is a barrier island. Chair Ecclestone responded that the Town has an agreement with Palm Beach County for the EIS and does have agreements with the other communities.

X. [2011 TOWNWIDE SEDIMENT BUDGET REVIEW AND EROSION RATES DISCUSSION \[Robert Weber, Coastal Coordinator, and Michael Jenkins, P.E., Ph.D., Coastal Engineering Team Leader, Applied Technology & Management, Inc.\]](#)

Mike Jenkins, Coastal Engineering Team Leader, Applied Technology & Management, Inc. (ATM), reported that physical monitoring is conducted on an annual basis in the fall and provides information on the state of the beach in terms of shoreline and volume. He gave a PowerPoint presentation on the volumes of sand in the upper beach, dune, beach, and nearshore (sand in active system) comparing the short term changes (October 2010 to

November 2011) and long term changes (August 1990 to November 2011). He noted that there had been a lot of erosion this year due to the most recent significant wave events.

Vice Chair Lindsay Buck commented that the priorities that the Board had set follow the long term trends and the problem areas as discussed by Dr. Jenkins.

Board Member Baker reiterated his opening comments saying he had visually seen the impacts from the recent weather and had studied the graphs and maps provided by Dr. Jenkins and he was encouraged. He stated that the sand borrow areas were a gift to the Town and were the cheapest and best sand.

Board Member Cooper said he thought that the accretion in Reach 8 would have been closer. He asked if the pier was responsible or if it was the action of the coastal shape or the bottom? Dr. Jenkins replied that it was all of the above. He explained that the pier does act a little as a structure but it is an open structure and is very subtle.

XI. [OFFSHORE SAND SEARCH COMPLETION REPORT \[Michael Jenkins, P.E., Coastal Engineering Team Leader, Applied Technology & Management, Inc., and Gary Zarillo, P.G., Ph.D., SEA, Inc.\]](#)

Dr. Jenkins reviewed the offshore sand search study purpose and noted that all tasks had been completed. He reported that three areas of potential sources of sand were investigated within the south area: one immediately south of Mid-Town, the second from Sloan's curve slightly to the north, and the third off of Reach 8. He reported that there was a range of sand within the areas with very fine sand on top and coarser sand underneath. He explained that all the sand is dredged and a mixture of that sand would be placed on the beach. A discussion followed on grain size. Dr. Jenkins reported that the identified south borrow areas could have a potential volume of approximately four million cubic yards of sand. He stated that Plan B now requires approximately three million for every ten years. He added that there is an additional four million in the north end search area which together would provide a sand supply of over 25 years.

Board Member Frank asked about straining for rocks and hard material coming onto the beaches. Dr. Jenkins responded that there were requirements to address if there is rock and screening is a viable potential if there is excessive rock.

Dr. Jenkins reported that of the 4 million cubic yards of sand, about 2.7 million cubic yards are fine sand and about 1.3 million cubic yards are coarse (> .3 mm). He cautioned that if only the coarse sand is used, it would drastically reduce the available volume for future projects.

Dr. Jenkins discussed probable costs. He reported that the costs were based on recent numbers, primarily the North Boca Raton project done two years ago, and did not include mobilization, which is a separate lump sum cost of about \$2 million. He further reported

1 that the costs range from \$7.30 to \$11.50 a cubic yard depending upon how far away the
2 borrow area is located to where the sand would be placed.

3
4 Dr. Jenkins commented on the use of Bahamian sand advising that he had not done a
5 detailed or exhaustive study. He reported that the only current project in Florida using
6 Bahamian sand was Florida Department of Environmental Protection (DEP) project in
7 Long Key State Park. He further reported that the material is about 0.43 mm coarse but
8 was a different composition. He stated that his engineer had spoken with their contact at
9 Ocean Key in the Bahamas and their order of magnitude cost was \$50 per cubic yard to
10 be considered for use in the Town.

11
12 Board Member Cooper asked for clarification that the sand from the borrow areas would
13 not be acceptable to the regulatory agencies for use on Reach 8. Dr. Jenkins replied that
14 there is a reservation regarding the use of the sand for Reach 8 and size had been stated as
15 the fundamental reason. There was discussion regarding the mean diameter range.

16
17 Board Member Baker asked about ownership of the sand. Dr. Jenkins responded that the
18 sand offshore belongs to the state and the Town asks permission. He explained that
19 because the Town had done detailed studies and received permits to do the studies, it
20 would be difficult for someone else to come in and claim the sand.

21
22 Dr. Jenkins responded to questions from Vice Chair Lindsay Buck regarding the use of
23 Bahamian sand. He stated that the Town could submit a permit to place Bahamian sand
24 on its beaches. He further stated that barges would be utilized with the sand being
25 discharged directly from the barge onto the beach. He cautioned that his statements were
26 theoretical. He explained that there would be monitoring and control requirements
27 because it was a new sand source. Vice Chair Lindsay Buck summarized that there would
28 be additional costs with the Bahamian sand that would not occur with the local sand. She
29 stated that the Bahamian sand would be \$50 per cubic yard versus \$10 per cubic yard for
30 local sources.

31
32 Board Member Cooper asked about the requirement for an EIS if the sand from the
33 Bahamas is dry. Dr. Jenkins replied that the Town would have to do an EIS, whether dry
34 or not.

35
36 Vice Chair Lindsay Buck asked about participation by state agencies on imported sand.
37 Dr. Jenkins responded that the state could cost share in it but the Corps could not
38 participate in a non-domestic source because they have a "Buy American" clause. He said
39 he did not know if FEMA could cost share in Bahamian sand. Robert Weber, Coastal
40 Coordinator, stated he would get an answer and disseminate it to the Board members.

41
42 Vice Chair Lindsay Buck asked if the Bahamian sand would have a longer life. Dr.
43 Jenkins replied that an analysis had not been done but from general engineering, it would
44 not be five times better. He explained it would depend upon the project and the rates.

**REPORT OF THE SHORE PROTECTION BOARD MEETING
HELD ON THURSDAY, JANUARY 26, 2012**

1 Board Member Goldstein asked the difference between the Bahamian sand and the
2 Ortona sand lasting on the beach. Dr. Jenkins answered that there had not been a direct
3 comparison between the two. He stated that the Bahamian sand had only been used once
4 on Fisher Island in the early 90's. Dr. Gary Zarillo of ATM recommended due diligence
5 saying that the aragonite needles of the Bahamian sand were a different shape and the
6 nominal grain size may be 0.4 mm but the hydraulic equivalent in the water column may
7 be something different.

8
9 Board Member Katz clarified that if the Bahamian sand was compared to the sand from
10 Ortona the comparison would be \$50 to \$45.

11
12 Town Manager Elwell asked for a comment or professional opinion on the permitting
13 hurdle for Bahamian sand when there is a plentiful, native source nearshore but with a
14 smaller grain size. Dr. Jenkins responded that it would be a challenge to get a permit on a
15 large scale, but the Town might be able to do a small scale test case. He explained that
16 the regulatory agencies would ask why the Town was using a more expensive alternative
17 when it had identified a cheaper, more consistent, and reliable source. He cautioned it
18 could take a long time to get permits.

19
20 Town Manager Elwell asked if the mixed sand, not just the highest quality, would
21 perform well enough to be within the order of magnitude and meet the Town's eight year
22 life cycle expectations or would the Town have to focus on just the coarser material. Dr.
23 Jenkins responded that the mixed sand was consistent with the plan currently developed,
24 and that the sand or something similar had been used at Mid-Town since 2003. He stated
25 that the erosion rates were based on a source very much like the borrow sites and the
26 assumptions made in the plan are consistent with not only this source but with the data
27 used in measuring performance. Town Manager Elwell stated that this was significant
28 information because it was the difference between using only three million cubic yards of
29 really good sand and having eight million cubic yards of mixed sand that is good enough
30 to run the Town's program.

31
32 Board Member Goldstein asked about using the coarser sand on Reach 8 to save the cost
33 of using Ortona sand. Town Manager Elwell expressed concern that if the best sand was
34 skimmed off first, the Town would lose the value of the lesser quality sand. Board
35 Member Goldstein stated that for Reach 8 it would be 130,000 cubic yards costing \$5
36 million for Ortona sand versus \$1 million for the offshore sand. He recommended the
37 Town not place any sand under the mean high tide line and save the cost of mitigation of
38 the 14,000 cubic yards. Dr. Jenkins responded that it could be considered from an
39 engineering and technical standpoint, but he would defer to Coastal Systems regarding
40 the permitting issues.

41
42 Board Member Cooper responded to Board Member Goldstein's comments stating that if
43 1,289,000 cubic yards of coarse material was removed, it would leave 2,739,000 of fine
44 material which would be useless. He further stated that at \$10 per cubic yard, the cost for

the coarse material would be \$12,890,000 and the cost to replace the finer sand at \$40 would be approximately \$109 million.

Board Member Cooper suggested the idea of using the Bahamian sand on a test/experimental beach at markers R130-R134 where there were volumetric declines. Vice Chair Lindsay Buck agreed with the idea of a test beach.

Vice Chair Lindsay Buck suggested other independent engineering firms weigh in about the quality of the sand with the mix.

XII. REACH 8: SHORT TERM AND LONG TERM COASTAL MANAGEMENT EFFORTS
[Robert Weber, Coastal Coordinator]

Beach Nourishment Permitting & EIS Development
Dune Restoration Permitting

Mr. Weber reminded the Board that in October 2011 the Town received a letter from the Corps requiring that the South End Palm Beach Restoration Project have an EIS performed and staff was tasked with finding a way to incorporate the Town into the current EIS process underway by Palm Beach County. He reported that a scope of work to include the southern portion of Reach 8 south of the pier and a proposed cost of approximately \$130,000 was received from Taylor Engineering, consultant for the County EIS. He stated that the Town needed to provide information back to the Corps on whether it would be moving forward with beach renourishment and an EIS or changing direction. He reported that Penny Cutt of Coastal Systems International had confirmed in conversations with the DEP that the Town could have a dune project permit above the mean high water level on the dry beach and achieve a Coastal Construction Control Line (CCCL) permit for that effort while still in the Joint Coastal Permit (JCP) permitting effort for the beach renourishment. He explained that the JCP permitting process would be lengthy if the Town goes through with the EIS and may add two years to the permitting process.

Mr. Weber reviewed the options:

- 1) Continue the JCP permitting effort requesting the \$130,000 from Town Council.
- 2) Continue the JCP permitting for beach nourishment (\$130,000) and asking Town Council authorization for an additional \$27,000 to start CCCL permitting if the Town wants to place sand on the dry beach in the Reach 8 area in the short term.
- 3) Discontinue the JCP permitting, shift the funds that remain in the purchase order with Coastal Systems currently for the beach nourishment to a dune restoration project. This would not require authorization of additional funds from the Town Council.

Town Manager Elwell noted that option 3 would be dune restoration with placement on the dry beach. He stated that of the three options, because of the delay that would occur

1 with pursuit of an EIS for the area south of the pier, option 1 was offered for information
2 and comparison and staff discouraged pursuing the EIS and doing nothing else at this
3 time. He advised the Board to choose option 2 or option 3 so whether or not an EIS or
4 fuller scale beach project is pursued for that area, action would be taken in the nearer
5 term to place additional sand on the dry beach south of the pier. He explained that option
6 3 was pursuing the dry beach placement permit with the intent of doing the work as a
7 repetitive project south of the pier without pursuing the EIS. He further explained that the
8 focused decision was on the value of the EIS and continued attempt to get a permit for
9 the larger scale beach nourishment project of only about 12,000 cubic yards.

10
11 Board Member Goldstein commented that the decision had been made to pursue the EIS
12 because it would provide the opportunity to repair the beach after a weather event and
13 there would also be state funds available for the project. He said if the Board spends the
14 \$130,000 and \$27,000 now, it would provide the leeway to make decisions later
15 depending upon the weather. He added that the Town would have the opportunity with an
16 EIS of not placing sand below the mean high water line and saving the \$1.5 million for
17 mitigation.

18
19 **Motion was made by Board Member Goldstein and seconded by Board Member**
20 **Frank to approve option 2.**

21
22 Board Member Frank asked staff if the \$1 million appropriation from the state would be
23 available if the Town was pursuing permitting. He also asked how long the permitting
24 would take for the dune. Town Manager Elwell responded that it was becoming more and
25 more likely that the Town would lose the state appropriation and the money would be
26 directed to other areas. He stated that the Town might be able to save a limited amount of
27 the appropriation if the short term approach of the CCCL permit above the mean high
28 water line is pursued. Mr. Weber reported that there was approximately \$2.4 million
29 included in the current grant agreement for the entire portion of the south end restoration,
30 Reach 8, north and south. He further reported that there was another state reversion
31 process to further reduce the appropriation to \$1 million to be utilized north of the pier,
32 with no money for south of the pier. Town Manager Elwell noted that the plan as
33 previously presented includes repetitive work on the landward side of mean high water in
34 the area south of the pier. He stated that staff had proposed in the ten year plan the Town
35 funding for the repetitive work upland of mean high water for the south end of Reach 8.
36 Mr. Brazil addressed the schedule issue saying that a typical CCCL permit takes 6-9
37 months and the Board should plan on 12 months for dry beach placement. A discussion
38 followed.

39
40 Town Manager Elwell said the order of magnitude if the Town continues with the beach
41 project compared to what could be expected from the repetitive dry beach placement is
42 about 25,000 cubic yards minimum each time. Ms. Cutt said that the Town could always
43 do an addendum to an EIS. Town Manager Elwell summarized the decision to whether
44 there was enough value left in the current project being pursued in the regulatory process

1 to warrant spending \$130,000 on the EIS and continuing to try to hold that permit in case
2 it is needed.

3
4 Vice Chair Lindsay Buck stated she did not believe the truck haul project was good value
5 for the money. She spoke about the costs for the project as currently proposed. She stated
6 she was in favor of option 3, doing the dune projects now (which would cost a lot less
7 money), pursuing a repetitive permit (which would cost nothing more), and switching the
8 project from a truck haul to an offshore borrow site. She further stated it would not cost
9 more if the portion south of the pier was eliminated. Town Manager Elwell clarified that
10 if the Board chose option 3, the part of the project north of the pier would be included in
11 Reach 7. He further clarified that the area south of the pier would be the EIS versus
12 compared to repetitive CCCL projects. In response to a question from Board Member
13 Goldstein, he stated that regular sand could be used on the beach south of the pier. He
14 explained that the dredge would already be located in the area for the Reach 7 project. He
15 noted that dredged sand was not suggested for every project south of the pier because
16 there was not enough quantity to warrant mobilizing the dredge, so trucked sand would
17 be used.

18
19 Board Member Cooper asked about applying for critically eroded beach status from the
20 DEP. Mr. Brazil answered that DEP had said it was doubtful the Town would gain the
21 status. Town Manager Elwell reported that staff believed there was a strong argument
22 that DEP should grant the status because the area ten miles to the north and to the south is
23 critically eroded, this area is in obvious eroded condition, and because it is appropriate
24 under state law to have a continuous area.

25
26 There was discussion regarding the County EIS and the changes to the original Reach 8
27 project. Mr. Weber reported that the current JCP project proposed a total of 207,000
28 cubic yards of sand with 74,000 cubic yards south of the pier. Town Manager Elwell
29 added that if the 12,000 cubic yards of sand in the water were removed, the Town could
30 go for a dry beach placement permit.

31
32 Mr. Hunegs urged that that Karyn Erickson be allowed to speak before the Board votes.

33
34 Board Member Katz stated he was not prepared to vote on any of the options. He asked
35 that the recommendation be tabled and revisited at the next Shore Board meeting.

36
37 **Board Member Goldstein withdrew his motion to approve option 2 and Board**
38 **Member Frank withdrew his second.**

39
40 **Motion was made by Board Member Katz to revisit options 2 and 3 for the Reach 8**
41 **project at the next Shore Protection Board meeting. The motion was seconded by**
42 **Board Member Goldstein.**
43

Chair Ecclestone clarified that option 1 would be eliminated. Board Member Katz asked staff to provide the pros and cons of options 2 and 3. Board Member Frank asked for more clarification.

The motion to delay action on the recommendation for one month was unanimously approved.

XIII. COMMENTS REGARDING THE TOWN STAFF RESPONSE TO THE ERICKSON CONSULTING ENGINEERS, INC., REPORT ENTITLED AN INDEPENDENT REVIEW OF THE TOWN OF PALM BEACH COASTAL MANAGEMENT PLAN, OCTOBER 2011 [Karyn Erickson, P.E., Principal, Erickson Consulting Engineers, Inc.]

Karyn Erickson of Erickson Consulting Engineers, made observations regarding the Reach 8 discussion. She stated that if the Town was going to consider using the sand from one of the two borrow sites and if it was directly placed, it would be below the mean high water and would have to be de-watered and truck hauled. She said that the \$10 price would be closer to \$20.

Regarding the viability of the Bahamian sand, Ms. Erickson strongly recommended the Town contact the DEP regarding use of that sand.

Ms. Erickson addressed the south end borrow sites and the proximity to the shoreline saying that the sand would likely slough into the borrow site and might be an issue with the regulatory agencies. She suggested the Town look at the engineering. She stated that Bahamian sand had a very high fall velocity and was coarser, heavier sand and would have a more positive impact in reducing the coverage and mitigation requirement in Reach 8.

There was discussion on the cost, attributes, and permitting restraints of Bahamian sand. Chair Ecclestone asked Ms. Erickson for a map with the location of Ocean Cay. He asked if the Board wanted to pay an engineer to see if the Bahamian sand is permissible. Board Member Goldstein asked if staff could find out if the Town could do an experimental beach. Board Member Katz said the Board should take the time to look for the right sand instead of the cheapest and quickest. Ms. Erickson recommended the Board have a report prepared on the Bahamian sand source with respect to its permissibility, cost, advantages and disadvantages. Chair Ecclestone asked that the report include the location of the island, who owns it, a sample of the sand, what they charge to load it. He said he believed this was a separate project, not related to Reach 8. Board Member Cooper agreed saying it could be an experimental program that might ameliorate the EIS. Town Manager Elwell summarized that an agenda item would be prepared for the next meeting that would be a proposal for an exploratory project, not in relation to any specific project but as an alternative source of sand for Town projects.

Ms. Erickson gave her response to the Town's comments on her independent review of the Town's coastal management program giving three points: 1) concerns with the

erosion and information presented by Dr. Jenkins, 2) implications and findings of the sand source study, and 3) recommendations made by Erickson Consulting associated with the cost of the project and recommendation to the Town Council. Regarding her first point, she stated that the severe erosion rates in Reach 1 support her recommendation of the need to place three million yards of sand over the next ten years. She asked that the Town consider the erosion rate with coarser sand when looking at a cost analysis.

Ms. Erickson reviewed her second point regarding the south end borrow sites, their proximity to the beach, and permissibility issues. She suggested the Town contact Palm Beach County for their opinion of the borrow sites and any potential reduction in longshore sand flows.

Ms. Erickson commented that there was an enormous reduction in the price of moving from Plan A to Plan B. She stated that the reduction could be greatly improved with an increase of \$12 million for an additional one million cubic yards of sand.

Chair Ecclestone asked about offshore breakwaters or groins south of the Lake Worth pier. Ms. Erickson responded that the Board should look at a better quality sand source and breakwaters or structures south of the pier.

Board Member Katz asked for clarification that Plan B with an additional million cubic yards of better quality sand on different reaches would make a significant difference in protecting the Town. Ms. Erickson replied that it would make a difference with the caveat if the plan is extended out one year that there was an additional nourishment project planned. She stated no sand would be placed this year. She said that by reducing the sand quantity and replacing it with better quality sand, the price would increase.

Vice Chair Lindsay Buck asked if where the one million cubic yards of sand would be placed and in what year. Ms. Erickson replied that the higher quality sand would be placed in Reach 7 and Reach 8. She explained that the basis for her recommendation was unrealistic pricing for the sand and the plan being costed using the least cost for material for the structures.

Mr. Brazil questioned Ms. Erickson's statement regarding placing half the volume of better sand and being equivalent. Ms. Erickson answered that the coarser sand would last significantly longer. She explained that the basis for her statement was the sand that was placed in the last renourishment project, with a 2:1 overfill ratio. She further explained that she calculated sand from the north borrow site and mixed the sand with the south borrow site, still looking at an overfill ratio, and it would not behave equivalent to a cubic yard of stable sand and the correct sand size for the beach. Mr. Brazil reported that the sand placed at Mid-Town was similar to what had been found in the borrow area and it had an eight year life. He asked if the sand that had been placed was coarser, would there be an expectation that it would last for sixteen years? Ms. Erickson responded that a comparison couldn't be made because Mid-Town had been renourished three times and the longer a beach is renourished, each renourishment will last sequentially longer

periods of time. She suggested that coarser sand would last 1.5 to 2 times longer. She stated she was specifically recommending the coarser sand in Reach 7 and 8 where there is a more significant issue with hardbottom and stability and a very strong erosion hotspot with a deficit of sand coming into this reach. Mr. Brazil reported that the Town would be doing the second round of nourishment at Reach 7 and would be using 0.25 mm sand from offshore. He asked if coarser sand were used at the hotspot, would it last twice as long. Ms. Erickson answered that it might last twelve years as opposed to six.

Town Manager Elwell stated that there seemed to be agreement on the relative scale of the program with the main detail being the source of the sand.

(Note: The next item discussed was XVII. 2012 SPB Meetings.)

XIV. RECOMMENDATION TO TOWN COUNCIL REGARDING THE SCOPE, COST, AND FUNDING OF THE TOWN'S COASTAL PROGRAM [Peter B. Elwell, Town Manager]

Town Manager Elwell stated there was a need to make a conceptual commitment to a long-term coastal plan. He reminded the Board that the planning effort would be ongoing, dropping off a year of action, and adding a year of plan each year. He asked the Board to view the plan as a specific recommendation to year one with specific funding for those projects and to commit to it. He explained that years 2, 3, 4 and further were a planning document. He reported that the Board had expressed an interest in sand sources and exploring aragonite more fully, which may yield changes in the scope of the projects. He said there was agreement about adding structures in certain areas: the north end of Reach 7, the south end of Reach 8, and the south end of Mid-Town. He reminded the Board that back in the spring it had endorsed the recommendation Plan B recommendation with the addition of \$200,000 for additional review of structures in Reach 8. He stated that the Board then asked that the plan be put on hold to receive and review the Erickson report, which has now been done. He urged the Board to act and decide on a plan to send on to the Town Council for them to consider as the scope and scale of the program for the next ten years.

Chair Ecclestone said he wanted a bigger amount to look at groins or structures. He suggested the Board approve Plan B as modified and send it to Town Council; then discuss alternate thoughts to the Plan. Town Manager Elwell agreed saying that alternatives being considered may result in changes to the middle or end of the program, as opposed to the first year of the program. He said that year by year, the Board can make the right changes to ensure the program is as strong as it can be.

Board Member Katz questioned the per year funding of Plan B saying that the average is \$5 million per year but the cost for the sand in the next three years for Reach 7 and Reach 8 would be about \$12 million. Town Manager Elwell explained that the plan would be fluid from year to year, with some years being more expensive than the norm. He stated that most years would be less than the statistical average, about \$2 million to \$3 million.

He further stated that the Town Council would address the funding issue when dealing with the Board's recommendation. A discussion followed.

Town Manager Elwell suggested that adoption of the plan be the first order of business at the February meeting. It was agreed that the February 23 meeting would start at 8:30 a.m. with the Sand Transfer Plant workshop for residents held at a time certain of 10:30 a.m.

Town Manager Elwell summarized that the consensus was for staff to bring to the Shore Board an updated table reflecting the proposed plan for 2013-2022 and be prepared to go line by line through it to explain the rationale behind the numbers and the data. He said that the Board would then approve it or make modifications.

XV. FLORIDA STATUTES CONSULTANTS COMPETITIVE NEGOTIATIONS ACT (CCNA) PRE-QUALIFICATION SELECTION PROCESS FOR COASTAL ENGINEERING CONSULTANTS [Peter B. Elwell, Town Manager]

XVI. SHORELINE CONDITION ASSESSMENT [Robert Weber, Coastal Coordinator]

(Note: Item XV. Florida Statutes Consultants Competitive Negotiations Act (CCNA) Pre-qualification Selection Process for Coastal Engineering, and Item XVI. Shoreline Condition Assessment, were not discussed. They were moved to the February meeting.)

XVII. 2012 SPB MEETINGS [Peter B. Elwell, Town Manager]

A. Topics for Future Meetings

- Public Workshop for Sand Transfer Plant Phase II Project
- FY 2013 Coastal Program Budget
- Offshore Dredging Technologies Overview

B. Schedule

[February 23, 2012](#)

Town Manager Elwell reported that the next Shore Board meeting was scheduled for February 23, 2012, but it would have to end by 1:30 p.m. because a Code Enforcement meeting was scheduled for that date. He further reported that the intent at the next Board meeting was to hold a workshop with residents regarding the extension of the pipeline for the Sand Transfer Plant. He said he was not confident the meeting would conclude by 1:30 p.m. Board Member Cooper said he had a conflict on February 23. Following

**REPORT OF THE SHORE PROTECTION BOARD MEETING
HELD ON THURSDAY, JANUARY 26, 2012**

discussion, there was agreement that the meeting would be held on February 23
beginning at 8:30 a.m.

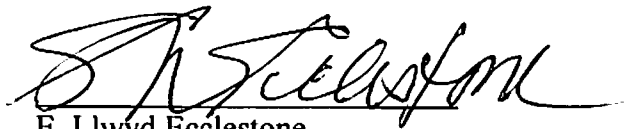
March 22, 2012

April 26, 2012

XVIII. ADJOURNMENT

Chair Ecclestone adjourned the meeting at 2:42 p.m.

APPROVED:


E. Llwyd Ecclestone
Chairman