



TOWN OF PALM BEACH

Office of the Town Clerk

REPORT OF THE SHORE PROTECTION BOARD MEETING HELD ON

APRIL 11, 1996

I. CALL TO ORDER: A meeting of the Shore Protection Board of the Town of Palm Beach was called to order by the Chairman, Garrison D. Lickle, at 2:00 PM on April 11, 1996, in the Town Hall Council Chambers.

II. ROLL CALL: On roll call, the following members of the Board were found to be present: Chairman Lickle, Vice Chairman George M. Moffett, II, and Board members: Eileen C. Curran, Edward Hennessy, Jr., Charles C. Isiminger, Wayne F. Dimm, Gerald H. Levy, Joel Martino, and Richard Raffo. Staff members attending the meeting were: Town Manager Doney, Director of Public Works Dusey and Ms. Reedy from the Town Clerk's office. Mr. Elwell joined the meeting in progress. Mrs. Schrafft did not attend the meeting.

III. APPROVAL OF AGENDA: Agenda was approved with corrections.

IV. Consideration of Shore Protection Board Meeting Report for February 15, 1996.

Report was approved as corrected.

The correction to be made was on page 13 of the February 15, 1996 Report, to replace the statement of Mrs. Curran to read: "Mrs. Curran asked if it was true that because the sand pump has not been operating, there is not enough sand in the system to prevent the erosion problem at Mid-Town from extending further southward."

V. Consideration of Shore Protection Board Meeting Report for March 14, 1996.

Report was approved as corrected.

The March 14, 1996 report did not include a reference concerning the success of the Deerfield Beach groin project, stated by Mr. Walesky: "He responded that he knew of only one situation where groins had been used effectively, and that was at Deerfield Beach, and he said that the groins at Deerfield had been successful for 30 years. This was to be incorporated in the report."

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Mr. Lickle asked Mr. Dusey if he could bring the Board up to date on the dredging by the Corps, and the Sand Transfer Plant before they move on to item six.

Mr. Dusey said the Contractor has placed one pipe under the inlet and is now drilling for the second. He said those pipes will then be connected, and one single pipe will be brought to the sand transfer plant which will begin operation immediately. Mr. Dusey said the Corps is now dredging, and sand is being placed to the south of the jetty. He said the Corps has a contract with the dredge company for 175,000 cubic yards of sand and he expects they will provide that amount.

Mr. Martino asked if the majority of the sand will be placed in the middle of the beach or towards the jetty? Mr. Dusey said the Corps are now dumping sand at Reef Road. Mr. Martino said he had spoken to Paul Davis who is with the local office of DERM, and he expressed concern because of a turtle crawl.

Mr. Martino felt that the Town should make an effort to find out just how much sand will be pumped, and where it will be placed. Mr. Dusey stated that the sand was being pumped south of the inlet. Mr. Martino said it was his understanding that very little sand would be pumped to the middle of the beach because the pump is not adequate, and the majority of the sand would be deposited near the jetty. He said he was disturbed by that possibility and would like to know if Mr. Davis was correct.

Mr. Doney said this could be confirmed with the Corps. He said he was not clear just what Mr. Martino was referring to when he spoke of the middle of the beach. Mr. Martino said he was referring to the area around Onondaga. He said he was concerned about the destruction of turtle eggs, and property rights are also a factor because the property owners must grant easements which have not been pursued. He said he would like the Board to look at this situation as a long term solution.

Mr. Lickle stated that he also is concerned about the placing of the sand. He said questions which they have asked have been answered in very general terms, and he wondered if someone from the Town was monitoring the beach activity?

Mr. Dusey said the Town is keeping a very close eye on this activity, but it is the Corps' contract, and the Town cannot tell them where to put the sand. Mr. Dusey said the Corps has a permit which allows the sand to be placed in certain areas. He said when there is a large amount of sand it cannot be placed in one location because that would violate their permit. Mr. Dusey stated that the sand will be placed from the south end of their permit area back up to the north jetty.

Mr. Martino asked what would happen if the flow of sand is bad because of the lack of power of the pump, and the Corps decides that the flow should be increased, and the pipe shortened? He said if

that should happen, eventually there would be less sand to the south and more to the north. Mr. Martino said his concern is that the Corps will lop off a hundred or so feet of the pipe causing more sand to be deposited to the north. Mr. Dusey said it will be distributed over the entire area.

Mr. Doney said he would like to address the matter of the turtles. He stated that the turtle situation becomes more critical as May 1st approaches. He said it is important to protect the sea turtles, but the greater public benefit of putting sand in the near shore area, and having the down drift beaches benefit was the goal.

Mr. Martino asked if the Town was trying to secure easements near the dunes? Mr. Doney stated that in the past the Town had not been successful in securing easements. He said if it becomes a legal issue the Corps would not be able to put the sand near the dune because of litigation.

Mr. Lickle suggested that the Board schedule this item for a future meeting and perhaps get some perspective from Mr. Randolph. Mr. Lickle also commented that Mayor Ilyinsky's letter to the Port of Palm Beach was wonderful, and he hoped that the letter would encourage the Port to participate in beach renourishment.

Mr. Isiminger asked if the inlet fills to the point that navigation is obstructed before the turtle nesting season is over, would the Corps be able to apply for emergency permitting, and if so, what would happen to the sand? Mr. Dusey said the Corps at one time received permission to deposit 40,000 cubic yards of sand offshore on condition that the Town received an additional 40,000 cubic yards the next time they dredged.

It was asked if there was any chance of getting the entire 200,000 cubic yards of sand while the dredge is in place, and possibly the Town could approach the Port Authority for additional funds. Mr. Dusey said the problem now is time. He said the Corps have until May 15th to complete the work.

Mr. Levy asked what was the expected date of operation of the sand transfer plant, and where will the sand be deposited as compared to the sand which is being dredged? Mr. Dusey said the plant should be working by the end of April, and the sand will be deposited about 100 or 150 feet south of the south jetty. He said extensive permitting is required to change the operation.

Mr. Dusey said that essentially they are putting the Sand Transfer Plant back the way it was, and the Town will be operating the plant until the Inlet Management Plan is approved, and that plan is now in State review. Mr. Dusey stated there is approximately 100,000 cubic yards of sand around the Sand Transfer Plant which is available to be pumped now, but that is a lot of sand and will be hard to distribute.

Mr. Levy asked if that procedure is counter productive? Mr. Dusey answered that the sand is not where they would like it to be, and the Town is trying to get the Inlet Management Plan approved. He said the plan is now in State review.

Mr. Levy said this is not a question of increasing capacity but of depositing sand further south. Mr. Doney replied that the DEP had agreed that the Sand Transfer Plant could be returned to its previous condition without requiring the process of permitting which would have brought up the jurisdictional questions of the Town of Palm Beach Shores and north. Mr. Doney said after considering all of the issues, the Mayor and Town Council decided to proceed with what the permitting agencies would allow to be done "without permit." Mr. Doney said the State would only allow the annual transport of sand from north to south so the plant can not exceed the transport amount.

Mr. Dusey said there was another consideration which is that while the Sand Transfer Plant was not operational, the Corps were placing sand south of the inlet. He said that sand total was approximately 130,000 cubic yards per year. Mr. Levy stated that it was his understanding that the Town loses 170,000 cubic yards of sand per year, and putting back 130,000 yards means the Town is losing 40,000 cubic yards of sand because it is not placed far enough south. He said if the sand can be put where it belongs he thought the Town should pursue it. Mr. Dusey said that's the idea, but it should be done on a planned basis. He said they are working now to keep the Town's beaches as healthy as they are, and hopefully to improve them.

Mr. Doney said the Town would not be able to secure the permits which would allow extension of the discharge pipe line until, according to the State Statutes, the Town has met the Inlet Management's requirement to implement the improvement of a master plan for the inlet.

Mr. Lickle stated that the Board, along with everyone else is interested in long term solutions, and certainly does not want to redesign the entire plan. He said he felt this was a self perpetuating issue which only creates work for the Corps at the taxpayers' expense when they are only moving the sand in a circle.

VI. Presentation by Mr. Thomas Campbell, President, Coastal Planning and Engineering, Inc., Boca Raton, Florida.

Mr. Campbell said it was his understanding that the Board is seeking an erosion control program for the Town of Palm Beach. He said in 1986 Cubit Engineering compiled a Comprehensive Program for the Town of Palm Beach. He said Coastal Planning has also worked on some of the studies for the restoration at the Town's Mid-Town beach prior to the installation of the PEP Reef so he is somewhat familiar with the Town's beach restoration plan.

Mr. Campbell said he primarily works with municipal governments, many of which are in Florida. He said he has worked with Captiva Island, Boca Raton, Delray Beach, Pompano Beach and

Broward County all of whom have undertaken some significant erosion control programs, a lot of which have been successful at not only performing well, but also at securing State and Federal funding.

Mr. Campbell suggested that the best way to proceed with erosion control is to update the Town's Comprehensive Coastal Management Plan. He said the plan has a number of elements many of which the Town has completed.

Mr. Campbell said that over the last 10 years a lot of things have changed and one of those changes has been erosion. In 1990 the Inlet Sand Transfer Plant was shut down, the State has modified or, is in the process of modifying their view of how to work with structures such as groins. He said it is important to remember that Florida has a very long coastline, and one solution may not be right for all areas. Mr. Campbell stated that any beach management plan should be updated after 10 years.

Mr. Campbell said around the turn of the century the Breakers built their Royal Poinciana Beach Club, and at that time their pier served as the port for this area. He said in the period from 1915 to 1925 the jetties were built for the Palm Beach Inlet, and there was plenty of room on the beach because the inlet had not affected the beach as yet.

Mr. Campbell explained that by 1987 there was a drastic change in the shore line with a large loss of beaches all along the Palm Beach shore. He said the inlet has had a major effect on the beaches in this area and still does today. Mr. Campbell said one thing that was not known at the time the inlet was constructed was that when waves hit the beach at an angle they set up a process called littoral drift, or sand moving down the coast. He stated that the littoral drift occurs in a number of ways, but in Palm Beach County the drift goes south more than north, and this necessitates the need for sand bypassing plants and inlets which transfers the sand from north to south. Mr. Campbell stated without the sand transfer a net erosion occurs which is what has happened in the Town of Palm Beach.

Mr. Campbell said the question for the Town now is, what should the future beach maintenance program be? He said one option is to restore the sand of the entire beach. Another option would be to install groins all along the beach, or are there other options? He said his answer would be yes to all those options, but the use of those options should be selective.

Mr. Campbell stated he has served on the National Research Council's Committee on Beach Nourishment and Protection. He said their main objective was to determine if beach nourishment is a feasible option, and their research has determined that it is. He said many states have discontinued the use of groins, but their Committee has determined that the groins were misused in many instances, and they can be used to hold the ends of beach nourishment, and control high erosion problems.

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Mr. Isiminger said the definition of groins states that "they should be used in conjunction with beach nourishment projects", and he wondered if the Committee had determined if structures could be used in situations other than beach nourishment projects? Mr. Campbell said their focus was beach nourishment and protection, but he felt there were situations, especially at the end of a littoral system where it is appropriate to consider structures so the sand doesn't move into oblivion. Mr. Campbell stated their Committee was concerned that they not protect one area at the expense of another. Also, he said beach nourishment is a major consideration and the use of structures should not be removed from consideration.

Mr. Isiminger said the Board has had several discussions regarding the use of groins and the term "inlet to inlet" has been used. He asked Mr. Campbell if he felt there was any merit in that theory? Mr. Campbell said he felt there was, and the groins would slow the littoral drift of the entire segment. He suggested that before the Town considers a total groin field they should examine the shore in segments because there may be a more efficient way to stop erosion when the shore is looked at segment by segment.

Mr. Isiminger asked Mr. Campbell if, when he speaks of "littoral system" does it make sense to say inlet to inlet since there are already interruptions at either end of the beach, and can that be defined as a system? Mr. Campbell said that is a possibility. He said there is a certain amount of sand which is moving to Ocean Ridge at this time. Also, Ocean Ridge has elected to do a beach erosion control program so, if you go inlet to inlet through Manalapan, whatever deficiency is transferred would need to be made up in the Ocean Ridge project.

Mr. Isiminger asked Mr. Campbell if he agreed that an inlet would be a more logical stopping point than some other point. Mr. Campbell said that was correct, however, he said if that concept was pursued it would not be necessary to go all the way to Manalapan.

Mr. Moffett asked if the littoral system extended all along the coast, and if not, when would we consider that the influence is out of the Town's system. He said if the Town starts operating the Sand Transfer Plant at the inlet, and the correct amount of sand is being transferred does Jupiter Inlet now become the Town's problem? Mr. Campbell said that is true to a certain extent.

Mr. Moffett said if you assume there is some exposure of the groins, and if you fill all the compartments with sand, then you would be extending the shore line, and you are back to the 200,000 cubic yards of sand migrating south. Mr. Campbell said that was correct. He said if there is only 50 feet of beach and you really want 100 feet, it would be inappropriate to install a groin field to catch that other 50 feet of sand. He said the additional 50 feet should be accomplished by dredging, not by groins.

Mr. Moffett said they had heard that at a certain point the groin exposure exacerbates erosion on the south side of the groin,

and he wondered if there was an estimate of where erosion would occur, say if half the groin is exposed, would erosion occur? Mr. Campbell said that would depend on the wave climate, and the amount of sand deficit which exists in the system. He said there is no specific point when erosion occurs.

Mr. Campbell stated that any plan the Town would come up with must take into account a number of factors. He said erosion is one of them, but environmental constraints, and offshore rock which is vital in some areas must also be considered. He said in those areas the beaches should not be over filled, and in fact in certain areas permits probably would not be issued for that purpose.

Mr. Campbell said the down drift beaches should also be considered. He said before the sand transfer plant was shut down north of the inlet, the dry beach was building at a rate of 21,000 to 22,000 cubic yards per year, but when the plant was shut down the rate of buildup increased. Mr. Campbell stated that from 1974 to 1990 while the Town was operating the sand transfer plant the total build up was roughly 88,000 cubic yards. He said the plant was only down four years and the entire build up of 88,000 cubic yards was lost because of the lack of operation of the plant. Mr. Campbell said a major component of the Comprehensive Plan is getting the Sand Transfer Plant back in operation, upgrading it and getting as much sand out of it as possible.

Mr. Moffett asked if it was known what the actual average transfer was while the sand plant was in operation? Mr. Campbell said he thought it was in the 70,000 cubic yard range.

Mr. Campbell said he would like to comment on the 1986 renourishment plan. He said most of the elements of the plan are either in progress, completed, or partially completed. Mr. Campbell referred to the section of the plan which was identified as "Reach 2" which basically runs in front of the Breakers hotel. He stated that the Breakers hotel was to be part of the Federal Nourishment Project, but he did not believe it was part of the fill which has been placed. He stated there are some groins in the Breakers area which have been very effective, but if the Town should want to do anything in that area they probably would have to work with the Breakers Hotel.

Mr. Doney stated that the project which Mr. Dusey has described has been completed and runs up to Barton Avenue. He said the Breakers Hotel was very active in the project, and employed an independent Coastal Engineer to review the Town's actions from the Coastal interrelationship to determine what, if any effect the Town's project would have on the Breakers Hotel. Mr. Doney stated that because of the north to south littoral flow there would be no effect on the Breakers. Mr. Martino said the Breakers had recently obtained permits to maintain their existing groins.

Mr. Campbell said the first element of the 1986 plan was to replace the bypassing plant. He stated that the second and largest element of the plan was to nourish the Mid-Town beach which is behind

schedule right now. The third element was to construct the Sloan's/Widener revetment by the DOT which has been constructed. The forth element was to maintain the seawalls, and the groins. Another element of the plan was to maintain the dunes south of Sloan's curve, but he was unaware of any maintenance being done. He stated that the last item of the plan was to monitor the beach.

Mr. Lickle asked if the Sloan's/Widener revetment project was approached in the same way as the Mid-Town beach revetment project which was an emergency stop gap? Mr. Campbell said he thought that was designed by the DOT. Mr. Doney said that project was fully designed and funded by the DOT.

Mr. Lickle asked if the Sloan's/Widener project would still be a revetment project in 1996 as opposed to a renourishment project with groins? Mr. Campbell said that would be strictly the preference of the Town. He said in 1986 they had considered groins but decided that revetment would better protect A1A. Mr. Doney said based on the ownership of the uplands which are privately owned except for several streets which continued to the beach, it was determined that the Town should not accept the financial responsibility for renourishment of that portion of the beach. He stated there were several other considerations which would need to be addressed before a design project of the beach would be undertaken.

Mr. Lickle said the individual property owners had grouped together as one applicant and obtained a permit to restore the existing groins in the Sloan's/Widener area, and the private owners were going to fund the project. He said the DOT then stepped in and said they had to protect A1A so the owners left the restoration up to the DOT.

Mr. Lickle asked if a revetment project accomplishes the same thing as beach renourishment? Mr. Campbell said it does in the sense of road protection, but for beaches as recreational facilities it does not. Mr. Lickle asked if a barrier protection device on the island of Palm Beach basically does the same thing as a revetment program? Mr. Campbell answered affirmatively.

Mr. Raffo stated that the Breakers had been allowed to repair their groins and he wondered how badly they were deteriorated. He said it was his understanding that if the groins were very deteriorated it would not be considered restoration. Mr. Isiminger said the groins were fully functional, but there was concern that they would not sustain a storm. He said the maintenance permit states that the height or length of the groins may not be changed.

Mr. Raffo stated in that case, the Town has many groins which could be repaired. Mr. Isiminger said he agreed. He referred to the groin at Sloan's/Widener curves which were permitted in the mid eighties to replenish the rock on the T-head sections, and to place additional rock on the segments going out to the T-heads. The question was asked as to what the difference is between a groin field and headlands? Mr. Campbell said that is where the groins have a

large head almost like a breakwater at the end of the structure. He said the headlands have a large cluster of rock at the end of the groin. He said Deerfield Beach has a combination of groins and headlands which was the only thing that worked.

Mr. Campbell said the next section is "Reach Three" which is the Mid-Town section of the beach. He said the 1986 plan is very similar to what was ultimately built. Mr. Campbell said that Mid-Town is a wonderful place for the Town to conserve sand. Mr. Campbell explained that unless the Town rebuilds the beach out to where it was in the 1800's there will not be a lot of bypassing in the Breakers Hotel area. He said if the Town can continue to feed sand to the Mid-Town beach it will create a feeder situation for the rest of the Town.

Mr. Campbell stated that the Town's beaches have had a lot of change north of the Breakers due to the inlet configuration, and the years in which that area has been deprived of sand. He said that area responds very well to sand transfer, and actually builds up, but not much of that sand makes it to the Mid-Town beach. He said Mid-Town was a good place to start the process of renourishment again.

Mr. Campbell said one of the reasons Mid-Town was chosen was because it's one of the public areas. He said there are a lot of public requirements when you deal with beach nourishment one of which is the potential for tax funding. He said all beaches that are built with tax payer money must establish an erosion control line which identifies the public beach.

Mr. Lickle said it seemed to him that Mid-Town is the eastern most portion of the Palm Beach area with the exception of the Breakers, and he wondered if that area is more susceptible to erosion? Mr. Campbell said any protruding beach tends to be affected more than other beaches. He said the damage is not from the Gulf Stream but from the attack of the waves. Mr. Campbell explained that when we look at the beach it looks pretty straight, but the ocean reacts to any kind of a wiggle in the beach, and wants to straighten it out.

Mrs. Curran referred back to the piers which were at the Breakers. She asked what, if any, roll the piers played at holding the sand, and also to withstand some of the waves? She said it is her feeling that the pier at Lake Worth does affect the beaches. Mr. Campbell answered that the piling on the piers acts as a permeable groin which allows passage of waves, and also breaks some of the wind energy.

Mr. Levy asked if Palm Beach had 200,000 cubic yards of sand, and it was deposited at the north end of the island, would the sand remain north of the Breakers? Mr. Campbell said he felt a lot of it would remain north of the Breakers. He explained that the area from Mid-Town south has a different problem which the sand transfer plant will not help. Mr. Campbell said if the Town deposited 200,000 cubic

yards per year in the northern area that area would benefit immediately and, it would eventually filter further south.

Mr. Campbell stated that the plan in "Reach 4" was to repair the sea wall, and the groins and to monitor the section of beach around Clarendon Avenue, but there were no plans for beach nourishment. He said those plans were basically to protect Ocean Boulevard.

Mr. Campbell said in "Reach 5" the revetment has been constructed around the Sloan's Curve area, and that achieves the road protection component. He stated that although the owners wanted a beach in that area they felt that the cost savings were sufficient to proceed with the revetment.

Mr. Campbell stated that "Reach 6" includes the Phipps Ocean Park area. He said in 1986 the beach in that area was relatively stable so the maintenance plan consisted mostly of dune maintenance which replaced the dune vegetation. He said "Reach 7" is the south area of the Town's beaches and that plan was to monitor the beaches.

Mr. Campbell said the changes were that the Sand Transfer Plant was shut down, the PEP Reef was installed and removed, the beach was nourished at Mid-Town and the DOT revetment was built. He said the Inlet Management Plan was prepared which was a major element not only to get the sand transfer approval, but it is also a vehicle in applying for State funding. Mr. Campbell said the State has softened their policy on groins, and is now allowing them to be installed in certain areas which was not the case in 1996.

Mr. Campbell suggested that the Town monitor the beach to determine the physical changes since 1986 because updated plans should reflect any changes which have occurred since 1986. Also, he said the Comprehensive Plan should be updated and, a 1996 plan should be developed and implemented. Mr. Campbell advised that selective use of groins should be considered to hold sand, and that consideration is consistent with the National Research Council. He stated the Sand Transfer Plant should be repaired and upgraded, and the dredging by the Corps should be expanded to provide more sand to the north area of the beaches. He said the beaches should be nourished only in selected areas where renourishment makes sense.

Mr. Campbell was questioned concerning the availability of State and Federal funding. Mr. Campbell stated that he is now working to change the Federal policy which is eliminating beach funding. He said he is working with American Shore and Beach in an attempt to find some common ground between the President and Congress on federal funding. He informed the members of the Committee that State funding through the Inlet Management Plan is possible, and he advised that pursuing State funds is important.

Mr. Campbell said Federal funding is more difficult to get but may be worth pursuing especially for long term projects. He said it takes a long time to get Federal approval of funds, but it is worth

while to apply for those funds. Mr. Campbell said what ever plan the Town opts for, they should not count on, or wait for Federal funding approval.

Mr. Raffo asked what the average waiting time is for State funding? Mr. Campbell said State funding is an annual cycle, and if you applied in 1997 you probably would know sometime in 1997 if the application is approved. He said typically two or three applications are necessary before funds are awarded. Mr. Campbell stated that it would be a bit harder for the Town of Palm Beach to be successful in an application for State funds because of the perception of the Town being a wealthy community.

Mr. Campbell referred to the 10 year program. He said redoing the program on a 10 year basis is a good plan, but implementation of that plan should begin immediately. He said you don't wait 10 years to start implementation.

Mr. Campbell advised the Town that they should pressure the County and the Tourist Development Council to expand the rules concerning funding. He said the source of the Tourist Development Control funding is Hotels, Motels and those types of businesses. He stated that the Breakers Hotel which probably pays a large portion of that tax is not eligible to receive funds from the TDC, and he felt that should be changed.

Mr. Levy said the Town of Palm Beach has very little public beach, and State or Federal funds are difficult to secure. He said basically the Town should continue any beach restoration as an expense that the Town would have to fund. Mr. Campbell said that probably is true, however, some areas such as Captiva Island have been denied funds, but have formulated an acceptable plan and are receiving very high percentages of funds.

Mr. Isiminger asked Mr. Campbell if he could give the Board more details concerning Captiva Island? Mr. Campbell said the Captiva program worked with Dr. William Strong, from Florida Atlantic University. Dr. Strong was hired directly by the Captiva Erosion Prevention District. Mr. Campbell stated that Dr. Strong did a complete economic study of who benefits from putting sand on the beaches of Captiva Island, and he determined who benefits from that sand by examining storm and recreational benefits, and increased property values. He said Dr. Strong has developed a series of zones which are assessed based on the property values and the benefits received from the beach restoration project. There is a system of assessments which Dr. Strong sets up and that goes to the County. He said no one should depend on State or Federal funds, but all areas which are involved in beach renourishment should apply for funds. Mr. Campbell said Captiva Island has very little public beach as does Palm Beach, but they receive approximately 50 percent funding from State and Federal funds combined.

Mr. Raffo asked if the Town decides to install groins, what material would he recommend? Mr. Campbell said he would recommend

rock as the primary material. Mr. Raffo asked Mr. Campbell if the Town asked him to draw up a plan for groins how long would it take, and is the next step to apply for State and Federal permits, and how long would that take? Mr. Campbell said the planning and permitting process probably would be one to one and a half years, but there is no certainty that permits would even be issued.

Mr. Raffo said the Town has discussed installing 78 groins, and he asked Mr. Campbell how long it would take to install the 78 groins. Mr. Campbell said it would take approximately two to three years. Mr. Isiminger asked Mr. Campbell how long it would take to receive permitting for a project of 78 groins? Mr. Campbell said the permitting agencies probably would resist permitting 78 groins, but he felt the agencies would work with the Town if they did a more site specific analysis.

Mr. Isiminger asked Mr. Campbell what he would consider successful projects, and why are they successful? Mr. Campbell said one project is Delray Beach, and that is successful because of the goals of the community. He said another project is Pompano Beach. Mr. Campbell said they do not have a lot of erosion because they have a sand transfer process at Hillsborough Inlet which puts a lot of sand on the beach. Mr. Campbell stated that Captiva Island is another successful renourishment project.

Mr. Isiminger said they have been told that the Town should not neglect the dunes because they are a key element to the entire system, and the last line of defense in storms. He said the dunes in the north end of Town are severely eroded, and he wondered if the State would allow the Town to place sand on those dunes on an emergency basis? Mr. Campbell said that may be possible. He said if there is a loss of vegetation the Town would be allowed to add sand to the dune as a stop gap measure which would give the Town time to work out long term solutions with the Inlet.

Mr. Isiminger asked Mr. Campbell if he is aware of projects which involve structures other than groins which have been successful? Mr. Campbell said he has been involved in the design and evaluation of some projects, but he has not seen the installation be successful over a period of time. Mr. Campbell said groins are the most accepted and traditional method for stabilizing beach renourishment.

Mr. Dusey asked Mr. Campbell who was designing the breakwater at Singer Island? Mr. Campbell said he has designed a series of emerging breakwaters for Palm Beach County which will be placed on Singer Island. Mr. Dusey asked if the breakwaters are parallel to the shore. Mr. Campbell answered affirmatively. He said the County has delayed installation of the breakwaters waiting for funding but, they probably will not receive any funding because Singer Island is the 32nd item on the State's agenda, and they probably will only fund the first five items.

Mr. Isiminger asked if they installed emerging breakwaters off Singer Island, would that have any influence on the migration of sand to the Transfer Plant? Mr. Campbell said it probably would have some influence but it would be minimal.

Mr. Isiminger said they have been advised that groins or similar structures be prefilled with sand, but the sand would need to be continually maintained within the compartments. He said if the groins were perfectly tuned and prefilled, there could be a storm that would completely empty the compartments which would take five years for the groins to refill resulting in very little bypass. He wondered if continual maintenance of the groins is necessary or should it depend on total quantities of bypass over a longer term? Mr. Campbell said the longer term is important. He said the temporary storage of sand offshore is not the same as catching the sand which is moving down the beach. Mr. Campbell said it is possible to design a groin field which would not need renourishment, and that is what the Town should endeavor to achieve. He said it would be necessary for the Town to guarantee the State and Federal agencies that they would renourish if it became necessary.

**VII. Consideration of Tentative Schedule of Future Meetings and Potential Additional Individuals to Invite for Presentations and Information Exchange - Please see Attached List of Past Guests and Scheduled Future Guests.
(Continued from Meeting on March 14, 1996)**

Mr. Lickle said the Board's next meeting is April 25, 1996 with Dr. Robert Dean. Mr. Dimm asked if Dr. Dean has been given a subject, and should they ask him if he would be able to suggest a model plan for the Town? Mr. Dusey said Dr. Dean would not have specific knowledge of the entire shoreline of the Town.

Mr. Lickle said he felt the next two meetings would be very interesting. He said so far they have heard the private side of beach restoration and now they will hear the public side. Mr. Lickle encouraged each of the Board members to do as much research regarding beach renourishment so they will be prepared for Dr. Dean and Kirby Green. He said that Kirby Green holds the answers to what the Board has been hearing. Mr. Lickle explained that if the Board doesn't get some answers as to where beach restoration is going in the future, then every thing they have heard so far is nothing more than a wish list.

Mr. Lickle commented that people like Dr. Dean are the ones who are either supporting or condemning the issues which the Board has been hearing about. He said he felt these are two key people, and hopefully they will be able to give the Board a feel as to what is plausible for the future of the Town's beaches. Mr. Lickle said they have questions now concerning beach renourishment, and they would like to know what kind of answers will be forthcoming in a year or so when the Town has applied for permits.

VIII. Confirmation of Date & Time for the Next Meeting of the Shore Protection Board. (April 25, 1996, at 2:00 P.M.)

The meeting schedule was unanimously approved as printed.

IX. Any Other Matters.

Mr. Lickle said there were two items under other matters.

Mr. Lickle stated he had heard a comment which suggested that the Board has shut out a geologist's view point. He said he wanted to make it clear that the Shore Protection Board is not forestalling anyone who has a valid view point from making a presentation to the Board.

Mr. Lickle said the question before the Board now is do they want to hear from a geologist? Mr. Dusey said there is a Dr. Finkle at FAU who is a coastal geologist and active in beaches who probably would speak to the Board. It was also stated that Dr. Finkle has quite a lot of notoriety and publishes the Journal of Coastal Research and is a well respected noted geologist. Mr. Isiminger suggested that the Board extend an invitation to Dr. Finkle.

Mr. Doney asked if the Board had allotted a specific amount of time for Dr. Finkle? He added that Dr. Dean and Kirby Green would probably take a substantial amount of time. After discussion by the Board members, Mr. Lickle advised that they should let the schedule dictate procedure, and if they can both make it on May 23rd that's fine.

Mr. Lickle said he had spoken with Mr. Elwell with regards to the Town Staff preparing a history of beach renourishment, and he would outline what the Board would like to accomplish. He said hopefully after combining the two reports it will give them some direction for the beach renourishment program.

Mr. Isiminger suggested that before the members of the Board submit suggestions they should wait for the outline from Mr. Lickle so the report will be uniform.

Mr. Doney asked if they will be presenting the format at the next Board Meeting? Mr. Lickle said he would have a format ready for the next meeting as to what form the submissions should take, and they will probably put the report together at the May or July meeting.

Mr. Doney said he will try to have an answer for the Board regarding the easements for the April 23rd meeting, but if that is not possible they may request that item be postponed until the May 9th meeting.

X. Adjournment.

There being no further business the meeting was adjourned at 5:05 P.M.


Garrison D. Lickle, Chairman