

JEFFREY K. BARTON
Clerk to the Board



September 19, 2011

JOINT MEETING

INDIAN RIVER COUNTY COMMISSIONERS;
THE MAYORS OF THE CITY OF VERO BEACH,
CITY OF SEBASTIAN, CITY OF FELLSMERE,
TOWN OF INDIAN RIVER SHORES, AND TOWN OF ORCHID;
AND THE INDIAN RIVER COUNTY BEACH AND SHORE
ADVISORY COMMITTEE

COASTAL STRUCTURES WORKSHOP

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COASTAL STRUCTURES WORKSHOP

SEPTEMBER 19, 2011

The Board of County Commissioners of Indian River County, Florida, met in a Joint Workshop at the County Administration Complex, 1800 27th Street, Building B, Conference Room B1-501, Vero Beach, Florida, at 3:00 p.m. on Monday, September 19, 2011, to discuss coastal structures.

CALL TO ORDER

Chairman Bob Solari called the meeting to order at 3:00 p.m.

PLEDGE OF ALLEGIANCE

Chairman Solari led the Pledge of Allegiance to the Flag.

1. INTRODUCTIONS / PURPOSE OF WORKSHOP

Present for the County were Board Chairman Bob Solari, Vice Chairman Gary C. Wheeler, and Commissioners Wesley S. Davis, Joseph E. Flescher, and Peter D. O'Bryan. Also present were County Administrator Joseph A. Baird, County Attorney Alan S. Polackwich, Sr., Management and Budget Director Jason Brown, Public Works Director Chris Mora, Public Works/Coastal Engineer James Gray, and Deputy Clerk Leona Adair Allen.

Present also were City of Vero Beach Mayor Jay Kramer, City of Sebastian Mayor Jim Hill, City of Fellsmere Mayor Susan Adams, Town of Indian River Shores Mayor Thomas Cadden, and Town of Orchid Mayor Richard Dunlop.

Present from the Beach and Shore Preservation Advisory Committee were William Troxell, Robert Lindsey, Cheryl Gerstner, David Barney, and Jerry Weick.

Present from Coastal Technology Corporation was Michael Walther.

Present from the Florida Institute of Technology was Dr. Gary Zarillo.

2. PRESENTATION

2.A. PART 1: BEACH PRESERVATION PLAN

2.A.1. BRIEF HISTORY OF THE COUNTY'S BEACH PRESERVATION PLAN

County Coastal Engineer James Gray, using a PowerPoint Presentation (on file), announced that the purpose of this workshop is to explore the potential of sand retention structures in conjunction with the overall objectives of the Indian River County Beach Preservation Plan (BPP). He pointed out that the Workshop's goals and objectives are to: (1) provide a general understanding of coastal structures and the science and engineering behind their uses; (2) identify shoreline models used when evaluating coastal structure design; and (3) seek guidance on how to proceed.

Mr. Gray provided a brief history on the Beach Preservation Plan. He spoke about the critically eroded beach areas (sectors), and reviewed the implementation strategies that were considered.

2.A.2. REVIEW CURRENT AND PAST BEACH RESTORATION PROJECTS

Mr. Gray summarized the past and present progress of the beach restoration areas, and relayed that a total of 3,273,572 cubic yards of sand had been placed in Sectors 1 through 8 since 1978.

2.B. PART 2: REVIEW OF COASTAL STRUCTURE TYPES

2.B.1. LOCATED WITHIN INDIAN RIVER COUNTY (IRC)

Mr. Gray discussed the advantages and disadvantages of various shoreline structures within the County, such as jetties, rock revetment, seawalls, sand-filled geotextile tubes, sand

fences, and the Vero Beach Prefabricated Erosion Prevention (PEP) reef project off Humiston Park, known as a breakwater system.

2.B.2. OTHER COASTAL STRUCTURES

Michael Walther, M.S., P.E. Coastal Technology Corporation, using a PowerPoint Presentation (on file) spoke about the two offshore coastal structures (groins and breakwater systems) used throughout Florida. He identified and analyzed the Florida Statutes relating to Florida's Beach Management Program; discussed the theories and performance of groin and breakwater structures, and displayed aerial examples of how these structures are used to protect shoreline areas. Mr. Walther elaborated on the data that was collected and analyzed on the PEP Reef project in Vero Beach; he discussed the previously proposed multi-purpose reef in Brevard County; provided examples of the submerged breakwaters and groins in Palm Beach County; and gave an overview regarding the use of concrete reef balls in Dade County. He concluded his presentation by highlighting the impacts to adjacent shorelines and the submerged structures that could minimize or avoid these impacts.

Jimmy Egan, Green Resources Council, questioned the success and downdrift of sand since the placement of the PEP reef.

Renee Renzi, Waverly Place, questioned how many groins the County would require, and how the cost would compare to the replacement of sand.

Pete Sharman, Sebastian, did not feel beach erosion could be controlled, and suggested creating a permanent barrier reef out of concrete rubble.

Tom Hammond, Vero Beach, wanted to know when and where most of the beach erosion occurs.

Tuck Ferrell wanted more information regarding the dissipation of the wave energy when using reef balls.

Scot Caviness, Vero Beach, believed the PEP reef was creating a sandbar offshore.

Mark Tripson felt the PEP reef was working.

2.C. PART 3: FEASIBILITY DESIGN / SHORELINE MODELING

Dr. Gary Zarillo, Ph.D., PG, Florida Institute of Technology, Melbourne, using a PowerPoint Presentation (on file), provided an overview of modeling technology, and the analogy of submerged shore protection structures in Indian River County. He reviewed his checklist of goals and objectives for evaluating the performance of the various types of submerged shore protection structures, analyzed expected results and comparisons, spoke about breakwater configurations, and demonstrated computer-animated model impact forecasts.

David Barney, Beach and Shore Preservation Advisory Committee, questioned design issues, and regulatory requirements regarding the installation of breakwater structures.

Mr. Egan, Green Resources Council, questioned the PEP reef's effectiveness and whether it would have a negative impact on the down drift of sand.

Ms. Renzi, Waverly Place, wanted to know the cost and how the municipalities would pay their share of the expense.

Mayor Cadden questioned the accuracy of the PEP reef model.

Mayor Dunlop commented on prior and current PEP reef studies, as well as the positive reef effects during Hurricanes Francis and Jeanne. He believed protection structures work and

favored installing them, rather than adding more sand to the beach. He favored taking a positive, long-term approach and putting the structures in the hot spots of the beach first. He stressed the need to continue battling erosion - if the beaches are lost, so will be the tourists, real estate values, and possibly the Disney Resort.

2.D. PART 4: FUNDING

Management and Budget Director Jason Brown, using a PowerPoint presentation (on file), provided a summary of the County's Beach Preservation funding. He described the funding sources of beach renourishment – the 1.5 cents of the Four Cents Local Option Tourist tax, the One Cent Sales tax, the Sebastian Inlet Taxing District, possible State Grants, and the Federal U.S. Army Corps of Engineers. He pointed out that every ten years, the County adopts a Beach Preservation Plan, and with the last one in 2008, the next one will be due in 2018. He reviewed the current plan, total expenses, estimated State Grants, and the local funding required annually.

Chairman Solari questioned the amount of money that would be reserved for beach renourishment at the end of the Sector 3 project since State Grants are no longer being received. Director Brown acknowledged there would be a substantial shortfall, and provided savings, loss, and projection details.

Chairman Solari felt this would be a good starting point to see how many dollars are available, given the new economic situation since 2008, so we can match the type of projects going forward with the available funds, or suggest to the Cities how much additional funds would be needed to accomplish certain projects.

William Troxell, Beach and Shore Preservation Advisory Committee, questioned the cut in Federal funding, and how it would affect the U.S. Army Corps of Engineers. Mr. Gray affirmed that Federal funding would be cut considerably.

Mayor Adams wanted to know how much money had been spent over the past 15 years on beach renourishment. Director Brown reported that over the past 10 years, about \$59 million had been spent.

Mr. Troxell did not think the County would receive any future grants.

Commissioner Flescher wanted to know how much money since 2008 had been spent for sand replenishment; and Director Brown approximated \$3 million.

Commissioner Flescher also wanted to know what percentage of the waterfront project has been completed. Mr. Gray conveyed that there will be about 6.6 miles of restored beach for Sector 3; 2.5 miles for Sectors 1 and 2; and 2 miles for Sector 7.

Mayor Dunlop wanted to know how much of the restoration for Sector 3 disappeared with Hurricane Irene. Mr. Gray disclosed that the profile survey showed the sand was redistributed through the system and to the south, not lost.

Mayor Kramer wanted to know whether Brevard County is doing anything about their sand moving from north to south. **Dr. Zarillo** revealed that Brevard County is adding beach fill.

3. DISCUSSION AND RECOMMENDATION

Chairman Solari solicited comments and/or concerns from the assembly.

Mayor Kramer voiced concern that the PEP reef could negatively affect the shape of local beaches.

Mayor Cadden suggested seeking a licensed agency that could provide the information necessary to get a proposal approved. He did not support paying for a study if Tallahassee will not approve it.

Mayor Adams did not think a licensed agency could help until there is a study done to prepare a proposal. She believed a study should be conducted to identify the existing hot spots, and supported moving this project forward with due diligence.

Mr. Troxell agreed with Mayor Adams regarding the identification of hot spots and attacking those areas with permanent structures, in lieu of pumping sand into Sector 5.

Robert Lindsey wanted to move forward while observing new technologies.

Mr. Barney felt the hot spots had already been identified and that new technology needs to be reviewed to maintain the sand on the beaches. He felt there was a working plan in place, and we just need to figure out how to pay for it.

Jerry Weick provided his comments on the PEP reef.

Commissioner Flescher believed the areas with coastal structures has stood the test of time, and felt the beaches are now in better condition. He voiced concerns over continuous beach replenishment and the lack of funds to continue. He asked if there was anything more concrete as to why certain jurisdictions were able to place the structures, and whether they have been proven effective.

Mr. Walther explained how every application he reviews has different sets of data presented, and that there is no set rule in the regulatory area as to what is and is not acceptable.

Commissioner Flescher wanted to know if it was possible to propose a model based on the type of structures that might be effective in this County, modeled on successful projects in other areas.

Mr. Walther felt there was nothing precluding the County from taking these steps, and believed the agencies would become involved when the proposal and filing of a permit are moved forward.

Commissioner Davis wanted to know the true results of the PEP reef, and whether the beach to the north and south appear different. He also wanted to see if the PEP reef holds and retains sand during normal events. He favored a study to prove that the PEP reef works; to show the hydrology; and reveal whether the beaches are better than before the reef was installed; however, he did not want extreme events, like hurricanes, to be used as examples.

Mr. Tripson told about a college student from Florida Institute of Technology, who conducted a study in 2008 or 2009, and found that the PEP does work.

Mr. Gray explained that the PEP reef had certain design criteria established, and the success of the reef was based on evaluating that design criteria. He said that it may not have been effective at attenuating wave criteria because it had settled in the sand, but it has been retaining sand on the leeward side of the structure and bringing sand onto the beach. He revealed that the Corps of Engineers' study reported it did not work because it did not stop wave energy from reaching the beach, due to the design aspect.

Vice Chairman Wheeler felt the PEP reef may be doing something, but wondered if the County was receiving the value for the money that was spent. He said that what he heard today is what he has been hearing for 25 years – that there is no solid solution. He wanted to find the most practical and cost efficient way to replenish the sand, and believed that transporting sand from the south beaches to the north beaches would be the answer.

Dr. Zarillo and **Mr. Walther** gave examples of situations within Florida where sand had been transported back to hot spots.

Mr. Tripson voiced frustration that three years ago he had hauled \$20,000 worth of sand and the permitting and engineering cost him \$45,000.

Commissioner O'Bryan reiterated that the permitting agencies would not reveal anything definitive, or make a commitment until presented with the actual plan in writing. He did not think anything could be proposed until after the modeling, to ensure what would work best. He favored moving forward with a Task Force (consisting of two Mayors and beach advisors) to further define the scope of the model, and he wanted the Riomar South Beach area (which has always been stable) to be observed since those reefs must be working, then factor that information into our model. Commissioner O'Bryan felt the most effective way to put sand on the beach and get it back into the system on a routine basis would be to permanently establish a feeder beach program whereby once the beaches are restored (somewhere near the south end of Sector 2, and the north end of Sector 3) 50,000 cubic yards of sand would be moved (annually) into the feeder beach where it could drift south naturally. He inquired whether there was anything that could be done to help push the sand more south to north, like refracting an eastbound wave to make it southeast so it pushes sand in, instead of blocking it north to south. He wanted to move forward with a task force for a tighter scope of services, and bring it back for discussion.

Chairman Solari reiterated earlier comments. He suggested the Beach and Shore Preservation Advisory Committee and Mayors Dunlop and Cadden be charged with the Task Force. He said the most important thing, after hearing from the Commissioners, is that everyone has a commitment to the beach, and moving forward would be certain. He wanted staff to take into account what had been said today, and start looking for the best path in moving forward.

Chairman Solari opened the floor to public comments.

Jim (surname inaudible) stressed that the PEP reef may not be working as designed, but it is currently protecting the beaches. He felt it was important to try all available structures so they can be observed and evaluated to see what options work best.

Mark Tripson supported the creation of a Task Force, and suggesting contacting the U.S. Army Corps of Engineers and Governor Scott for support.

Commissioner Davis wanted to know if the consensus was to have a Task Force that would address concerns and consist of two Mayors, and the subcommittees of the Beach Shore Preservation Advisory Committee.

Commissioner O'Bryan wanted to task the Beach and Shore Preservation Advisory Committee to work with staff and other interest parties to further define the scope of service.

A brief discussion ensued regarding representatives and/or conflicts for serving on the Beach and Shore Preservation Advisory Committee, the scope of a proposed model, a Request for Proposal (RFP), and the information being taken back to the Counsels for approval.

Commissioner O'Bryan suggested tasking Management and Budget Director Jason Brown to review the Beach Preservation plan and projections, and recalculate the financial model under the assumption of zero State and Federal funding.

ALL BACKUP DOCUMENTATION, RESOLUTIONS, AND ORDINANCES ARE ON FILE IN THE OFFICE OF THE CLERK TO THE BOARD AND ARE HEREBY MADE A PART OF THESE MINUTES

4. ADJOURNMENT

There being no further business, the Chairman declared the meeting adjourned at 5:52 p.m.

ATTEST:

Jeffrey K. Barton, Clerk

Bob Solari, Chairman

Minutes Approved: _____

LA/Coastal Structures Workshop