MINUTES
BEACHFRONT MANAGEMENT COMMMITTEE
JANUARY 30, 2013
10:00 a.m.

Present: David Lybrand and David Cannon, Committee Members; Iris Hill, ex-officio; Steven Traynum and Tim Kana, CSE.

Absent: Roy McLaurin

The minutes or the January 4, 2013 meeting were approved as read.

Dr. Kana pointed out formatting issues between two reports the Committee had been sent. There were references missing and an error in Scenario 1. The figure used was 178 feet from the houses to the end of the groin and it should be from the houses to the 5.5 foot contour. Dr. Kana said that would be changed on his end prior to the submission of the final report. Mr. Traynum said the figure did not change any of the analyses, it just effected a paragraph on page 22, which should be changed from 178 feet to 290 feet. Mr. Cannon and Mr. Lybrand both relayed their appreciation to CSE for a job well done. Mr. Traynum and Dr. Kana then addressed questions from Mr. Lybrand and Mr. Cannon. David Lybrand had a question about the heights of groins 11 and 12. The CSE study shows them to be about 2 feet lower than others. Mr. Lybrand asked if that was "as-built," to which Dr. Kana replied it was based on the 2010 survey, but would double check the data. Dr. Kana reminded Mr. Lybrand that the groins were matched up with the 5.5 foot contouring, which could introduce a little difference. There is a cross-section that varies from groin to groin and there are a few that seem to be lower than others. This effects the trapping capacity. Mr. Cannon had a question about the trapping capacity and wanted to know how that was determined. Dr. Kana referenced a cross section chart in the report, pointing out that it would differ from groin to groin. Mr. Cannon asked if there was an average groin, and Dr. Kana replied that he grouped groins 1 – 21 together because they had similar profiles, and that 22 – 28 vary much more because of different structure types and lengths. Mr. Cannon wanted to know how groins 26 and surrounding ones came up with a surplus. Dr. Kana explained that it had to do with the contouring number, so that 26 and 27 had a different trapping capacity. He pointed out that CSE was still recommending lengthening each groin. Mr. Cannon asked for clarification on the NEB. Mr. Traynam explained it was an Army Corps of Engineers term relating to the greatest net benefit. Administrator Hill pointed out that the project had to show a positive cost to benefit, and if it does not, it is not a feasible project. The Army Corps modifies what can or cannot be done based on whether or not it will be beneficial, so that it can at least be a project that they can approve through the federal government for funding. Mr. Cannon asked a question about a chart in the Corps plan that recommends a relatively short groin length. Mr. Traynam spoke

with Mark Gravens, who did the report for the Corps, who said the Corps came up with the beach profile that was of most benefit. The smaller numbers on the report were what they originally proposed, but after Mr. Traynam questioned some things, he said there was justification in suggesting some of the higher numbers. Dr. Kana brought up the point that the Town of Edisto Beach should take into consideration, when looking at the different options proposed by SCE and the Army Corps of Engineers, the FEMA community ratings (and the accompanying insurance premium ratings) and the impact the groin lengthening project would have on it. If the Town provides a protective dune in front of properties, you reduce your potential of damages and FEMA will grade this favorably. This grade translates to reduced insurance premiums. Further discussion with FEMA is recommended to asses rating improvement. Mr. Cannon asked a question about the life of steel sheet pilings. Dr. Kana reported that the pilings currently being used at Hunting Island are marine grade A690, and the ones at Folly standard steel that is more widely available. The structural engineers project that it will last over twenty years in surf zone conditions. Mr. Lybrand asked if any composite sheet pilings were currently being used. CSE did an extensive amount of research for the Folly Beach restoration and there is a fiberglass reinforced plastic sheeting that has a unit cost that is 10 – 20% higher. No one knows the life expectancy since the product has only been around for ten to fifteen years. Mr. Traynam explained that the critical line is the structural line or the house line, and that all of the analyses is not based on where the groin is in relation to the road, it is based on where the groins are in relation to where the houses are. Mr. Lybrand said he had questions about the proposed recommended lengthening of the groins varies as much as forty feet, and he wondered if "Rule 5" was applied. At the suggestion of the Administrator, Mr. Lybrand explained that Rule 5 refers to the length (seaward end to vegetative line) divided by the spacing between the groins and the result should be between two and three. He has taken measurements himself and the total was 2.65, which fits the Rule 5 formula perfectly. A discussion ensued about the elevation and the use of buried groin in the computation. Dr. Kana explained that the 5.5 foot contour also matches with the typical run up limit. The 5.5 contour was an arbitrary point to pick but it made sense morphologically because it related to where the high water mark is on the natural beach. Mr. Lybrand contended that is where the differential in length comes up is picking that point. He also stated that if need the vegetation to move forward, you need to extend the groin seaward. Mr. Traynam and Administrator Hill agreed that CSEs Scenario 1 and the plan proposed by Edisto Beach were fairly close, with only a few exceptions. For example, Mr. Lybrand came up with 88 feet and CSE came up with 40 feet at groin 5. It was determined by CSE that table 6, which compares all the suggested designs was missing from the report. Administrator Hill asked if you use the center line of the road, the extensions would be more similar. CSEs numbers are based on the houses, whereas Mr. Lybrand used the center line of Palmetto Boulevard. The Committee would want to have a standard, consistent length if they were to make a recommendation. Dr. Kana said that the similarities between Scenario 1 and the Committee's plan are close enough that in a final design analysis, you could set a firm standard to say we will not go by existing houses due to the variation, but by the center line of the road, so that all the extensions are the same. Dr. Kana suggested that starting along the 900 block where there is a substantial jog, you have to start shifting away from that criteria. The approach CSE came up with was to give everyone equal

protection. In Scenario 1 and the Committee's proposal would provide incremental, noticeable protection, but it will not give really good storm protection. There will still be chronic wash over problems. CSE presented an alternative that defines a particular template that includes the protective dune, a recreational beach of substantial width, groins that extend far enough out to hold the template. Scenario 2 presents all those aspects. Dr. Kana suggested the Town think about all different aspects, not just the cost of the project, but the community rating, damage reduction during the next storm, maintenance efforts, durability and how frequently we want to have a mobilized dredge. Mr. Lybrand then brought up trapping capacity. He suggested coming up with some calculations of what the profile will look like in five years and that's where we place the fill material as we extend the groins, and leave that profile in the wet area alone. In Scenario 1, CSE considered the minimum trapping without any dune to be at 80% of the full trapping (table 4, page 37). A discussion of fill trapping capacity ensued. Mr. Lybrand asked about the proposed dune. Mr. Traynam said it would be approximately 19 feet high and 25 feet wide at the crest, 70 feet wide at the base. This is six feet higher than the existing dune. Scenario 1 has no projected dune. Administrator Hill asked how it related to what the Army Corps of Engineers is proposing. Mr. Traynam replied that the Corps is proposing a dune 15 feet high and 60 feet wide at the base. Mr. Cannon asked what the native ground elevation was. Dr. Kana replied that on the road it was about +8. Administrator Hill asked what the highest elevation on our dunes was, and Mr. Traynam said there were some that might be close to +14. The crest of the ridge at the Pavilion is +10. A discussion of the adjustment of NAVD and NGBD ensued. Mr. Lybrand gave some historical background on the groins. He suggested that a demonstration project be done using groin 16 as an example. Dr. Kana stated that to get protection commensurate to what you have at groin 16, you are going to have to trap much more than a few cubic yards per foot. Modern groin guidelines suggest that if you depend on the literal transport system to fill those cells to capacity, then you will create some down coast impact. That will be an uphill battle once we get into permitting. Mr. Lybrand asked if we could get permitted to scrape sand from St. Helena sound where would it be done? Dr. Kana replied that the relative quantities of sand would be looked at and the average unit quantity would be calculated from the profile. The data would be normalized, then take from the area where there is a surplus and move it to the area where there is a deficit. Dr. Kana said it was definitely worth looking into. Dr. Kana made the point that if we do a large scale, Scenario 2-type project, economic effects will ripple through the community with increase in property values. If we keep what we have now, he suspects property values will not go up, and they may go down in some parts as the beach continues to erode. He gave an example of Bogue Banks, NC where they set up a special tax district and property owners on the ocean front beach absorbed 50% of the cost of the project, which ended up being about a $2500 increase in property tax per year for six years, since they saw the most benefit from the project. The conversation then turned back to the demonstration project. Administrator Hill stated that the plan was to have a joint meeting with the Army Corps of Engineers and OCRM. They meet quarterly together and the Town can be on the agenda to propose a demonstration project but we would have to know where we would want to have it and what we are planning on doing. Mr. Traynam asked if the Town was planning on integrating that with the 2016 nourishment. Ms. Hill said that we are still moving forward with the 2016 nourishment. Dr.

Kana asked if we would try to combine that with the permitting to lengthen the groins. Administrator Hill said that would be something that Town Council would have to decide. Ms. Hill asked how much the permitting process cost. Mr. Traynam said if we were going to look at lengthening groins and moving forward with the nourishment for 2016, it was time to start the permitting process. He said a lot of the preliminary design that would go into a permit had already been done by CSE, therefore that had already been paid for. It would require more time with environmental effort and coordination with meetings. Dr. Kana said that the soft cost for the $10 million plan would be about 10%. He pointed out that CSE had in the past delivered projects for well under those percentages, but that was the number the Town needed to allow for soft costs. Ms. Hill pointed out that the Army Corps of Engineers was already doing some of the things needed, so that should reduce cost. Mr. Traynam said they would be building on that information but CSE would have to do some additional things, to make sure things had not changed since the Corps did their study. Ms. Hill requested that CSE send her a draft proposal with the cost. Dr. Kana asked if she wanted it to be turn-key, with permitting costs, design and nourishment, as it was done in the past. Administrator Hill said she would like all that included in the proposal. She then asked the Committee if they wanted to propose a locally preferred plan to Council from either scenario presented by Costal Science Engineering. The question was asked if it was possible to permit for Scenario 2 and then build for Scenario 1. Mr. Traynam replied that you should be able to. The discussion then turned to the possible usage of ATAX funds. Administrator Hill asked the Committee what level they wanted to recommend doing the permitting for and if they wanted to recommend a locally preferred plan to Council. She explained that the Army Corps of Engineers defines a locally preferred plan as anything that goes above and beyond their recommendation would be covered entirely in cost by the Town. The Army Corps recommends a maximum of 60 feet on any groin. We still have to pay 50% of that, and beyond that we would pay 100%. David Lybrand suggested a meeting with Bill Izner to verify trapping capacity and talk in general terms about permitting. Dr. Kana suggested taking the plan developed by the Committee and the plan for Scenario 2 and coming up with a compromise on groin length that includes every groin in the permit application. That does not mean you have to do every groin, but you can if you decide to. Administrator Hill asked how difficult it would be to modify a permit. Dr. Kana said it was relatively simple. If you have a permit for the full scope, you can do less, you just cannot do more than the permitted project.

In conclusion, the Committee recommends the Town apply for a permit for CSEs Scenario 2. The Committee recommends to Council that we pursue a locally preferred plan based on the comparison and adjustment of numbers provided by the Committee and CSEs Scenario 1. Those numbers would be adjusted to whichever is higher. For example, if the Committee suggests a groin length of 60 feet and CSE recommends a groin length of 80 feet, the locally preferred plan would suggest 80 feet. Mr. Traynam said he would adjust the numbers and send a new table 6 to Administrator Hill. The Committee also asked CSE to provide a scope of work to do groin lengthening and nourishment for 2016 based on Scenario 2.

The meeting was adjourned at 12:10 pm.