MINUTES OF THE SPECIAL MEETING OF
THE EMERALD ISLE BOARD OF COMMISSIONERS
THURSDAY, JANUARY 8, 2004, 6:00 PM – TOWN HALL

Present for the meeting were Mayor Art Schools, Commissioners Nita Hedreen, Robert Isenhour, Pat McElraft, Floyd Messer, and John Wootten. Others present were Town Manager Frank Rush, and Town Clerk Rhonda Ferebee.

Also in attendance were Tim Reid, and Johnny Martin, Consultants with Moffatt & Nichol Engineers.

Mayor Schools began the meeting with a suggestion that they choose two Commissioners to work with Town Manager Frank Rush, in order to keep up-to-date with the status of this project as it proceeds.

Commissioner McElraft agreed and suggested Commissioner Wootten, and Commissioner Isenhour. Commissioner Isenhour and Commissioner Wootten both consented.

Mayor Schools then introduced Tim Reid, and Johnny Martin with Moffatt & Nichol Engineers. They gave a PowerPoint presentation of the status of the Coast Guard Road Stormwater Project.

(A copy of the report and related maps, as outlined by Mr. Reid and Mr. Martin are incorporated as part of these minutes and are self-explanatory.)

PRESENTATION – STATUS OF COAST GUARD ROAD STORM WATER PROJECT

Presentation Outline

a) Review of Comprehensive FEMA Study – 2000
b) Review of Efforts to Implement Recommended Alternative
c) Current Status of Project Design/Permitting
d) Review of Project Budget
e) Other Issues to Consider
f) Ocean Discharge
g) Next Steps

Mr. Reid and Mr. Martin followed the presentation outline as noted above. The following is a summary of the key topics as presented:

Review of Comprehensive FEMA Study – 2000

Mr. Reid noted that in the initial study of the 1.6 square mile project area, it was determined that hurricanes and pine beetle infestation had destroyed the vegetative uptake which had an impact on the surface waters. The recent regulations by (NCDWQ) North Carolina Division of Water Quality limited the use of the Doe Drive pump station to emergency status only (14" above road). At that time the Town had a proposal in place to install 7 additional pump stations, but DWQ said you can't use these until the emergency condition is reached, therefore this not being a viable alternative, FEMA and the (NCHMP) North Carolina Hazard Mitigation Program funded a study to investigate viable alternatives for flood mitigation.

Mr. Reid stated that the unique hydrology and geology of the study area necessitated the use of a coupled "surface water/groundwater" model. Meetings were then held with environmental agencies and resident questionnaires were used to evaluate alternative solutions. Based on the questionnaire results, treatment wetlands and ocean outfall alternatives were the two looked upon as being the best options. Groundwater injection was not favorable.

Mr. Reid said concerning ocean outfall, there had been opposition from the Division of Shell Fisheries, requiring posting along the beaches. The beach discharge again only allowed after the emergency conditions. He added that this would be expensive to construct.

Mr. Reid said that a package treatment system was not looked at again because it would require a point source of discharge either onto the beach or into the sound, there would be opposition from the Division of Shell Fisheries. He added this would be expensive also, with the possibility for damage during hurricane events.

The groundwater injection alternative, according to Mr. Reid, currently is not allowed in North Carolina.

The land based infiltration treatment system was the alternative preferred by all of the environment agencies. This design consisted of eight pumps stationed at various locations in the project area which deliver water to a single 40-acre site. Basically, with the originally recommended alternative, water would be pumped into the forebay, it would be filtered through a series of intermittent dikes within the first trough, go through a sand filter into the second area, then through another sand filter out through a spreader bar and into the sound. Mr. Reid said that based on the models available at that time, after the 100-year/48-hour

rainfall event, floodwaters would be drawn down to acceptable levels within approximately one week.

Review of Efforts to Implement Recommended Alternative

Mr. Reid said additional meetings were held with State and Federal agencies to refine the design in the Spring of 2002. Agency concerns addressed the relocation of forebay and sand filters to upland areas; detailed wetland delineation required to quantify impacts; spreader bar location and associated issues, and receiving capacity of site. Based on the agency concerns the forebay was moved to upland areas, interior dikes were removed, the sand filters were moved outside of the wetlands, and the spreader bars were also moved. EcoScience then performed a detailed wetland delineation and found a total of 13.39 acres of wetlands on site, of that Mr. Reid said were roughly 7.5 acres that were impacted by the project. He added there were about 4.5 acres of tidal wetlands, and about 18 acres of AEC (Areas of Environment Concern). The project at most would impact about 7.5 acres of wetlands. Mr. Reid said that a big concern with Division of Shell Fisheries was the spreader bar being engaged when the sound was open to shellfishing, and also the proximity of the spreader bar to the AEC.

Also, studied was the depth and duration of inundation of the wetland communities. Mr. Reid said they determined that what they were pumping over there would not change the environmental communities as they don't pump after every rainfall, but during flooding.

Mr. Reid said one of the biggest concerns is the impacts on adjacent property, increased flooding, and raised groundwater levels. All of these issues are tied to the receiving capacity of the site. He said they then had geotechnical investigations done. Nine monitoring wells were installed throughout the 40-acre site to determine the soil conditions. Through these wells they could also determine if the tidal influences affected water levels along the perimeter of the property, and most importantly determine the vertical and horizontal hydraulic conductivities. Mr. Reid said there were fifteen soil samples from the nine monitoring wells placed at various elevations, and the samples were 97 percent sand. He said these were very clean sands. He added - a lot of water can move through these soils because the sands are so clean.

Mr. Reid said that based on all of the models, they knew that the 1.2 million cubic foot requirement in order to maintain the grant provided by the (CWMTF) Clean Water Management Trust Fund could be met, and also at that point they determined the site would be capable of handling the design volume of 5.4 million cubic feet (the drawdown after a week).

Mr. Reid explained that after the initial pumping to the forebay, most floodwaters will be transmitted through groundwater flow, and given the percentage of floodwaters being transmitted through groundwater flow, the spreader bar may not theoretically be needed, but will be included with a valve to help provide additional relief during extreme events. They wanted to make it a part of this project because if the sound is closed, they felt the Town should be able to have the benefit of getting any surface waters on site - off the site quickly, and the surface flow is much quicker than going through the sand. The most pressing issue will now likely be limiting impacts to adjacent properties since the soils are so pervious. He noted that because the soils are so pervious, berms, sheetpiling and monitoring wells will be required. It was at this time also that EPA stated that water quality testing would be required to determine if there would be any impact to existing wetlands.

In the summer/fall of 2003 the water quality and geotechnical studies were completed. It was determined that pumping groundwater *only,* would eliminate EPA concerns of water quality impacts to onsite wetlands (mitigation) and allow pre-emptive use. Mr. Reid said S&ME completed 5 borings onsite to determine if an adequate confining layer existed for the construction of a sheetpile wall to limit transmission of floodwaters onto adjacent properties. S&ME also completed infiltration tests at eight pump locations to aid in design of perforated intake pipes below groundwater table.

<u>Current Status of Project Design/Permitting</u>

After meeting in mid-November with the Town Manager and Lands End Representatives, they discussed the possible use of the recently acquired Cook property, and moving the current location of (P2) Pump 2 to Tradewinds Drive south of current (P3) Pump 3 location, so there would be two pumps on Tradewinds.

Mr. Reid at this time, introduced Johnny Martin with Moffatt & Nichol. Mr. Martin discussed the modeling aspects of the project. Mr. Martin explained that the models were revised to investigate the following: revised location for (P2) Pump 2; the possible use of the Cook property; the length and depth of perforated intake pipes to prevent pump cycling; the need for sheet piles/berms to contain floodwaters onsite and limit impacts to adjacent property owners, and circumstances when spreader bar would be engaged. Graphics and animation were used by Mr. Martin to demonstrate these factors. Mr. Martin noted that based on discussions with EcoScience, and direction from Mickey Sugg with the US Army Corps of Engineers, the Cook site should be used “as-is” with no deepening or cleaning out due to wetland/wildlife habitat impacts. Mr. Martin set

up a model run to investigate the effects of pumping (P1) Pump 1 discharge to the existing “as-is” Cook property. Based upon the model runs, it would appear that the Cook property will be able to be used as a receiving site for (P1) Pump 1 with minimal impacts on adjacent properties. He noted that using the Cook property will save about 3,000 linear feet of pipe, cost for excavation, and less worry about utility conflicts.

Mr. Martin also discussed different options demonstrating the need for sheetpiles/berms to limit impacts to adjacent property owners. Given the model results as a whole, it would appear that the current designs of berms and sheetpiling could be improved by installing more surface connections to the secondary containment area so that pumped waters do not “pile up” as high to encourage groundwater flow onto adjacent properties. Depending on the outcome, they may have to further alter berm/sheetpile alignments, install small pumps at problem spots, etc.

Commissioner McElraft asked if pumping the groundwater would take away the surface water as quickly as pumping the surface water. Mr. Reid said it would not be as quick. Mr. Martin added that the groundwater system did allow you to pump pre-emptively though, which he felt was a benefit of the groundwater system approach.

Mr. Rush added for the Board that one thing to keep in mind is that the model runs that were utilized (shown in the animation) were based on all eight pumps going into the 40-acre site. That is somewhat conservative as they are hoping now that they can take (P1) Pump 1 at Island Circle and send that to the Cook property, so that would reduce the volume somewhat going to the site. Also, the model doesn’t factor in what Lands End has been doing and presumably will continue to do.

There was a question asked of Moffatt & Nichol concerning the maintenance of the pipes and whether it would silt up at the ends. Mr. Reid responded that they are pumping groundwater, without vines, organics, and grease. Mr. Reid added that these would be large corrugated plastic perforated pipes in a gravel leach field with a filter fabric around them.

Mr. Reid discussed the circumstances under which the spreader bar would be engaged. He indicated that due to agency concerns, the site has to be able to accommodate design volumes without utilization of the spreader bar. He said they recommend the Town develop a memorandum of understanding with Division of Shellfisheries on when the spreader bar can be engaged.

Review of Project Budget

Mr. Reid said initial schematic estimate from 2000 was $1.62 million, the updated costs for 2004 is $1.7 million. Factors that will affect construction costs based on initial estimates are: revisions to design to eliminate surface collection, utilization of Cook property, construction of sheetpile cut-off wall, any wetland mitigation requirements, and any construction phasing.

Other Issues to Consider

Moffatt & Nichol supported a phased-in approach, constructing pumps and piping in Deer Horn Dunes and Conch Court now. Mr. Reid said the discharge to uplands does not require a permit; it provides relief to a critical area; it will allow feedback on site impacts due to pumping; part of the final system so no lost costs; cost is roughly $200,000 to put those two pumps in.

Mr. Wootten added that this would provide a test of the water collection system.

Mr. Reid said the phase-in of construction would also reduce budgetary requirements for any single year.

Ocean Discharge

Mr. Reid said there had been discussion about obtaining permits to pump “clean” water to the ocean/beach. He stated that the agencies have no current definitive position, no legal requirement that states what must be followed, however, he said the direction of the agencies is that you can’t do this. The biggest reason being the Division of Shellfisheries requiring posting of beaches for beach outfall. He said this would also require fast construction, with time limits of when you can do this due to maritime creatures and their seasons. He added that Moffatt & Nichol could assist the Town in seeking an advisory opinion from the North Carolina Attorney General. If a favorable opinion was received on a permit to pump directly to the ocean he felt that this would still probably not be feasible due to the cost implications.

Next Steps

Mr. Reid indicated the next steps are to proceed with permitting of the original concept; seek approval for ocean and beach outfall; or a combination of both. He said the current project schedule calls for construction to start in September 2004. The current permit schedule is tight due to personnel changes at the agencies. He said if they go with the current system, taking the information they have right now, re-running some of the models, he felt the permit could be submitted in late February. Another meeting with all regulatory agencies would

be held to explain what would be submitted so that they would understand the full system.

Commissioner Isenhour asked if the two test pumps being discussed could be done without permitting other than going to the Corps of Engineers. Mr. Reid said that was correct, they could proceed with these two test pumps once they received concurrence from the Corps of Engineers.

QUESTION & ANSWER SESSION/BOARD COMMENTS

The audience was given the opportunity to ask questions and express concerns of the Board and the Consultants. There were many comments/questions from the audience and the Board/Consultants either answered their concerns or made a note to look into certain items that they felt may have a bearing on the project.

Mayor Schools called for a break at 8:50 p.m.

Mayor Schools called the meeting back to order at 9:00 p.m.

BOARD DIRECTION TO MOFFATT & NICHOL/TOWN MANAGER

After much discussion it was the consensus of the Board that Moffatt & Nichol and the Town Manager move as quickly as possible with the two pumps in the Deer Horn Dunes Drive and Conch Court areas (Pumps 6 & 8) which will provide a real test of their effectiveness. The Board also directed Moffatt & Nichol to concurrently pursue permitting for the overall project which will include all eight pumps along with the Cook property for a total of nine pumps.

ADJOURN

Motion was made by Commissioner Hedreen to adjourn the meeting. The Board voted unanimously 5-0 in favor. Motion carried.

The meeting was adjourned at 9:35 p.m.

Respectfully submitted:

Rhonda C. Ferebee
Town Clerk