

APPENDIX A – SUBPART 1

- **Public Forum Meeting Minutes**
- **PDT Meeting Minutes**
- **Comments Received Following October 15, 2003
PDT Meeting**
- **Minutes of Public Hearing Held on December 8, 2003**

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MEETING NOTES

Meeting Purpose: Bogue Inlet Channel Relocation Public Forum Meeting

Date: May 29, 2002

Location: Emerald Isle, North Carolina

Time: 12:30 pm to 3:45 pm

Commission Number: 4500.00

Report Prepared By: Cheryl Miller

Attendees: Art Schools (EI Mayor), Frank Rush (EI Town Manager), Emily Farmer (EI Commissioner), Pat McElraft (EI Commissioner), John Dorney (NCDWQ), Tere Barrett (NCDCM), Joanne Steenhuis (NCDENIZ-WQ), Keith Harris (Corps), Larry Calame (Corps), Mickey Sugg (Corps), David Allen (NCWRC), Tracy Rice (USFWS), John Ellis (USFWS), Ron Sechler (NMFS, HCD), Ted Tyndall (NCDCM), Bennett Wynne (NCWRC), Nicole Mihnovets (NCWRC), Tom Jarrett (CPE), Cheryl Miller (CPE)

The following issues were discussed during the meeting. Written agency comments are to be provided to the Corps and Town by June 30, 2002.

Comments/Discussion by Regulatory Agency Representatives

Mickey Sugg (Corps)- Is the proposed channel relocation a temporary or permanent fix? Channel design must be adequate to assume major flow through inlet. Amount of beach nourishment material needed should not dictate channel dimensions.

(Town)- Currently in the process of amending the Bogue Banks beach nourishment permit to address the use of a hydraulic dredge

Tracy Rice (USFWS) - Reiterated that use of a hydraulic dredge for the Bogue Banks nourishment project would reduce the likelihood of sea turtle take

Tom Jarrett (CPE) - likelihood of sea turtle take during proposed channel relocation would be very low, ebb shoal not likely habitat for sea turtles, proposed project would employ hydraulic dredge

Tom Jarrett (CPE) - adjacent marsh habitats- review of historic aerial photography suggests that flood tide delta protects adjacent Dudley Island- no matter what the position of the channel

NCDWQ/DCM - Noticed that when the channel is more centrally located

(like **Y**) - the flow to adjacent estuarine habitats is more open. Questioned the tidal stage of the aerial photos because tidal stage would influence the perception of the shoal position

Corps- Emphasized adequate alternatives analysis and examination of the no-action alternative (i.e. where will the channel end up? How far east will it move? Will it migrate back west?) Examine conditions under different channel positions versus no-action alternative.

Several questions concerning fill deposition within 1.5 miles of the Pointe – what about 100,000 cubic yards? Town representatives stated that previous fill of 60,000 CY lasted two weeks. Is there a need to plug old channel?

NCWRC- Island 2 is state-owned land, serves as valuable bird nesting habitat, proposed project design must avoid Island 2

Melba McGee- contact for NC State review, NC State Clearinghouse

Corps- proposed project involves alteration of Federal navigational channel. Corps has determined that NEPA EIS will be required

NCWRC- FMP for several fish and invertebrates [blue crab (crab sanctuary), mullet, red drum, summer flounder, spotted sea trout, penaeid shrimp]. EIS must address EFH and NC state agency concerns

USFWS- Cited example of inlet macroinfaunal study in South Carolina but no adequate baseline data set exists for Bogue Inlet. Requested seasonal sampling of macroinfauna for at least one year prior to project. Sampling can occur concurrently with EIS document development. Draft biological monitoring plan must be submitted to agencies for review and approval.

General discussion issues

Geomorphic analysis- How do differences in the shape of the shoals provide for different habitat types? Are there seasonal differences in the amount of habitat type based upon shoal size?

Bogue Inlet- one of top 3 bird habitat inlets in North Carolina, spit habitat for piping plover

If there is accretion- who owns the land? Can it be redeveloped? Can the Town acquire land at the north end? State already owns land at the north end

Corps must initiate Section 7 consultation with USFWS/NMFS

Effects upon commercial fisheries/navigational channel?

N.C. Archives of History- magnetometer survey of the inlet

Hammocks Beach State Park concerns- Island 2, Bear Island erosion concerns- loss of habitat for least terns, black skimmers, other shorebirds, Increased sedimentation in Cow Channel

Requested mitigation for any potential negative impacts

Estuarine environments- analysis of constancy based upon swinging of inlet position- important for EIS

Public/Interested Party Comments

Orrin Pilkey- discouraged the use of ebb tidal shoal sand for beach fill- stealing sand from the Bogue Banks system

Stated that the search for beach nourishment sources must go offshore- do not mine tidal delta. If anything- Pilkey prefers use of flood shoal rather than ebb shoal

Cited Shallotte Inlet project- increased erosion on Holden Beach

Recommended panel of out-of-state scientists for consultation regarding use of tidal delta sediments for beach nourishment

Public comment- The no-action alternative is not really “no-action” because the existing condition does not leave inlet dynamics to mother nature due to Corps maintenance dredging. If no action is taken, Town residents estimate the loss of approximately 100 homes on the Pointe.

Jim Stevenson- NC Coastal Federation

Questioned if the meeting was considered the scoping meeting under the NEPA process? Advocated requirement of NEPA EIS and statutory scoping meeting. Corps representatives confirmed that this meeting would not be considered the NEPA scoping meeting.

Emphasized that obtaining sand for placement upon the beach should be the by-product of this project- not a primary purpose. Stated that NC CAMA rules for development do not appear consistent with the proposed project- State rules do not allow manipulation of inlet hazard areas, public access issues

Believes that the proposed 600 foot width for new channel is much too wide

Emphasized the need for mitigation for adverse impact to flood tide delta and adjacent habitats.

PDT Meeting Minutes

Minutes of February 4, 2003 Meeting of the Bogue Inlet Project Delivery Team

1. **Mickey Sugg** stated that the primary purpose of the meeting was to discuss the full range of possible alternatives. The alternatives should be reasonable in terms of technology and economics and must be evaluated for their impacts on the environment and economy. Ultimately, the EIS process will define a preferred alternative.

2. **Mickey** opened the discussion with the no-action alternative. He mentioned two possibilities, one without sandbags and one with sandbags. For the without sandbag case, the inlet shoreline would continue to migrate to the east at some historical rate for some period of time. **Tom Jarrett** mentioned that a reanalysis of the inlet shoreline history resulted in a range of possible shoreline change rates of 60 ft/yr, 75 ft/year, and 90 ft/yr. All three of these rates are based on measured changes in the inlet shoreline between 1984 and 2001. Since the existing sandbags have essentially reached the end of their permitted life, the existing bags would be removed at the beginning of the analysis. The without sandbag alternative assumes that the shoreline will continue to migrate to the east for 10 years. There was some discussion as to whether or not the 10-year period for continued erosion is reasonable. To address this, the analysis is being done in 2-year increments in order to determine when the damages and economic impacts associated with continued erosion of the inlet shoreline equals the costs for the channel relocation project.

3. For the with sandbag case, **Jarrett** indicated that the sandbags are assumed to remain in place for a period of 2 years, as allowed by State of NC rules. Once their 2-year life is over, the bags would be removed and the shoreline would again migrate to the east until it threatens the next line of houses. At that time, a new row of sandbags would be installed and again would remain in place for 2 years. Over the 10-year analysis period, three sets of sandbag revetments would be constructed. The end result of the sandbags would be to reduce the rate of erosion and the associated damages and economic losses by about 60%. **Jarrett** noted that all no-action alternatives would have to include the cost of nourishing the west end of Emerald Isle using an offshore sand source. Based on the contract cost for the east end of Emerald Isle, this cost would be around \$4.5 to \$5.0 million.

4. **John Kilgona** mentioned that he expects the existing sandbags to be gone within a year and that continued erosion of the inlet will lead to the reopening of the Coast Guard Channel. **Jarrett** stated that this looks like it could happen in 5 to 6 years, however John believes it will happen much sooner (2 to 3 years). In any event, the reopening of the Coast Guard Channel could lead to the deterioration of the existing sand spit since its source of sand would be cut off. The prediction is that the sand spit would become an overwash terrace, which would offer a completely different type of habitat compared to the sand spit.

5. While there are avenues available to possibly extend the life of each sandbag installation, there seemed to be general agreement that the 2-year life being used is reasonable.

6. **Charles Vincent** initiated a discussion on the use of hard structures to protect the Pointe shoreline. **John Kilgona** noted that the shorelines along the Coast Guard Channel had bulkheads and was wondering why they could not be extended to cover the inlet shoreline. **Jarrett** mentioned that State rules allow hard structures on estuarine shorelines but that the inlet shoreline is considered to be in the ocean hazard area where hard structures are prohibited. The discussion then turned to the possible stabilization of Bogue Inlet with jetties. Jetties would not only benefit the shoreline but would also improve the navigability of the inlet. Mickey raised the issue regarding the purpose of the project, was it for navigation or shoreline protection. **Frank Rush** and **Mayor Schools** stated that the primary purpose of the project was to protect the Pointe shoreline with the secondary benefit of providing high quality beach nourishment material for the west end of the town.

7. **John Kilgona's** main concern over the project is that it will probably have to be repeated again in the near future and that some long-term solution needs to be worked out that will prevent the town from having to assess additional taxes for future channel relocation projects. He highly favors some kind of combined project that will benefit both navigation and the shoreline through proper management of the sand resources in the inlet. **Glenn McIntosh** said that the Corps will be looking at Bogue Inlet as a source of sand for the long-term protection of Bogue Banks. **Jarrett** suggested that any consideration for using Bogue Inlet as a long-term source of beach sand should focus only on the channel corridor as mining the outer sections of the ebb tide delta could be risky. The existing inlet is not an efficient mover of sand as evidenced by the excess of material on the west end of Bogue Banks and the deficit on Bear Island.

8. **Jarrett** talked about the existing authorities that the Corps has, one for storm protection and one for navigation and that the benefits for one can't be used to justify the other. In that regard, **Jarrett** suggested that if there is interest in improving the navigability of Bogue Inlet, efforts should be made to get a Corps study authorized to look at the inlet for navigation improvements. However, as **Glenn McIntosh** pointed out, the Corps O&M budget is shrinking and the likelihood of new small craft navigation projects receiving favorable consideration is rather remote. If the Corps is looking at Bogue Inlet as a source of sand for the long-term protection of Bogue Banks, perhaps the cost of providing navigation improvements would be rather low if the inlet is used as a continuing source of beach nourishment. At this time, however, the timeline associated with the Corps beach protection study would not mesh with a future study of the inlet for navigation improvements.

9. Returning to the hard structure issue, **Mickey** asked how big of a structure should be considered and what would be the biological and economic impacts. Also, he asked if the structure would deprive Bear Island of sediment. **Jarrett** mentioned that any consideration of a hard structure would be a waste of time and money given the State rules. **Harry Simmons** said, that although he would not necessarily favor this, you could go through the variance process to try and get approval for a hard structure. While one could certainly make an appeal to the CRC for a variance, the process takes several years and the chance of obtaining a variance would be small. Agreement was reached that a terminal groin or similar structure would be included in the discussion of alternatives but will not be considered a reasonable alternative. Also, the type of structure required to only protect the Pointe shoreline would not have any beneficial impact on navigation in Bogue Inlet. **Mickey** pointed out that this needs to be stated in the EIS.

10. **Todd Miller** asked the question regarding gains and losses of sand for the alternatives. He mentioned the erosion of the ocean shoreline on the west end of Emerald Isle that is predicted to occur with the channel relocation project. **Jarrett** indicated that a diagram will be prepared to show where material is likely to be lost and where it probably accumulates. **Jarrett** mentioned that around 1.5 million cubic yards would be eroded from the west end of Emerald Isle following the channel relocation (*actually the volume is more like 2.1 million cubic yards*). Approximately 1 million cubic yards would be required to fill the seaward portion of the existing channel. Once the channel is repositioned, the ebb tide delta will assume a new configuration, which in turn will involve the redistribution of sediment.

11. **Jarrett** stated that the volume of material required to fill the existing channel would be the same with or without a dike closure of the existing channel. In this regard, construction of a sand dike across the existing channel would take around 200,000 cubic yards. Construction of the sand dike would accelerate the rate of filling of the seaward portions of the existing channel.

12. In the December meeting, **Todd Miller** raised the concern over the transport of fines into the sound during the construction of the dike. **Jarrett** indicated that the jet probes and vibrocores found only 1.5% silt or less, however, estimates will be made as to how far into the sound the fines could be carried during the construction of the dike.

13. A question was raised regarding the expected life of the channel relocation project. That is, how long would the channel remain in a position that it does not again threaten the Pointe. **Jarrett** stated that a project life has not been established and predicting such would be very tricky given the historic erratic behavior of the channel. Since the new channel would be moved 3,000 ft to 3,500 feet to the west, it should take a while for the channel to again move next to the Pointe. **Jarrett** said that an attempt will be made to make such a prediction.

14. **Mickey Sugg** questioned if the beach nourishment project on the west end of Emerald Isle would have any impact on the movement of the inlet shoreline. **Jarrett** responded that the nourishment project would end about 1.5 miles east of the inlet and that it would not have any impact on sediment transport rates. **Jarrett** noted the excessively large volume of sand presently residing on the west end of Bogue Banks as a result of the present inlet configuration and that simply adding more material east of this area would not have an impact. **Mickey** indicated that a discussion along these lines should be included in the EIS.

15. There was general agreement that the channel relocation alternative will include several sub-alternatives covering a wide range of channel dimensions. The channel sub-alternatives will be used to establish the minimum size channel required to capture the majority of the flow through Bogue Inlet.

16. **Todd Miller** asked if reopening the Coast Guard Channel would cause the existing channel to move away from the Pointe shoreline. **Jarrett** stated that there were problems at the Pointe in the past when the Coast Guard Channel was open. The opening of the channel would lead to the deterioration of the sand spit as discussed previously. Due to its relatively small size, the volume of water flowing out of the Coast Guard Channel would probably not be great enough to force the ebb channel away from the Pointe. In any event, **Jarrett** said he would ask **Bill Cleary** to take a close look at the possible impact of the Coast Guard Channel and have him report his findings at the next PDT meeting. **Mickey Sugg** stated that he did not consider the Coast Guard Channel as a workable alternative. While the reopening of the Coast Guard Channel was not considered to be a feasible alternative, the EIS will include a discussion of the Coast Guard Channel.

17. There was some considerable discussion regarding the size of the repositioned channel. **Jarrett** indicated that the minimum depth under consideration is 12 feet mean low water (mlw) due to the operational constraints associated with ocean certified pipeline dredges. Also, these dredges generally have a minimum swing distance of 150 feet. **Jarrett** pointed out that as long as the channel is large enough to capture the flow, adjustments will occur that will tend to return the channel to depths and widths comparable to those of the existing channel. If the dredged channel is relatively small compared to the existing channel, this could lead to excessive scour as the channel adjust to the flow conditions. The scoured material could end up in the marshes or attach to existing sub-tidal shoals. Some of the material could obviously be transported seaward. If the channel is too big, shoaling could impact sediment budgets on the adjacent islands. While the goal is to limit the size of the channel, consideration of post-construction adjustments and the impacts that these adjustments will have is also a consideration. Obviously, the larger the channel the greater the direct impacts on the sub-tidal system. **Mickey** said that the EIS should cover the channel adjustments and the impacts of these adjustments.

18. The design of the channel is being based on a combination of factors including the numerical model, dimensions of the existing channel, and channel stability criteria.

19. Regarding the redistribution of sediment following the channel relocation, **Justin McCorcl** asked what was the level of certainty associated with the predictions. **Jarrett** responded that a range of possible shoreline changes on the west end of Emerald Isle will be presented based on the measured changes in shoreline position and the degree of accuracy of the measurements. Present estimates of the amount of time required for shoreline to adjust and existing channel to fill is around 8 to 10 years based on the rate of sand transport in the area. **Jarrett** noted that the rate of sand transport was based on a 20-year wave hindcast that included storms. However, if the area is impacted by a series of storms like those between 1996 and 1999, the time frame could be accelerated.

20. **Tracy Rice** wanted to know if different channel alignments would be considered. **Jarrett** responded saying that the preferred alignment was based on the work of **Bill Cleary** and that the selected alignment appeared to provide the least impact on Island 2 and Bear Island. **Bill** will be available at the next meeting to address this issue.

21. **Mickey** suggested that the EIS provide a full discussion of the possible range in channel size with discussion of the impacts of large and small channels. He suggested that a minimum channel and maximum channel be presented.

22. **Mickey** questioned if a sheet pile structure is still being considered for closure of the existing channel. **Jarrett** indicated that he had performed a cursory cost analysis of the sheet pile wall and found the cost would probably be prohibitive. Also, given the size characteristics of the material that would be used to close the channel, the dredge should be able to accomplish the closure in 4 to 5 days by simply pumping material directly into it. There was some discussion as to whether there would be any ecological benefits associated with the sheet pile wall, but there was no general consensus.

23. With regard to the need for the dike, **Ron Sechler** favored an alternative that would hasten the recovery of the inter-tidal habitat. He believes that closure of the existing channel would lead to the more rapid development of the sand spit and the infilling of the existing channel, thus restoring sub-tidal habitat loss as a result of the channel dredging. As far as the dike construction was concern, **Ron** suggested beginning on the Emerald Isle side with material being discharged directly into the channel in such a manner that the material does not flow back across the sand spit.

24. **Todd Miller** wanted to know the sequence of events and if there would be enough material to close the existing channel. **Jarrett** explained that construction would

progress from the ocean toward the sound with this material being pumped to the ocean shoreline. Once the new channel reaches the landward end of the existing channel, material would be pumped to close the existing channel. Based on quantity estimates, there is enough material in the landward end of the channel to close the existing channel. There was additional discussion of previous inlet/channel closures including St. Simon Sound (*correction, it was Port Royal Sound/Hilton Head Island*) in South Carolina, a breach in Folly Beach caused by Hurricane Hugo, Buxton Inlet opened by the Ash Wednesday Storm of 1962, and the Hurricane Hazel breach through Long Beach (Oak Island).

25. **Mickey** asked how high the dike would be. **Jarrett** said the crest elevation would be at +6 ft NGVD but that this could be lower to possibly 4 ft NGVD to match elevations on the existing sand spit. **Tracy Rice** expressed some concern on the crest elevation of the dike. (*Note: The final crest elevation can be lowered once the channel is closed.*)

26. **Todd Miller** asked the sand spit would buildup and if the sand spit would have any dunes. The sand spit would form from material moving off the west end of Emerald Isle and from the collapsing ebb tide delta off the west end of Emerald Isle. The sand would move into the inlet and eventually weld to the sand dike. There are no plans to construct dunes on the sand spit. If dunes form naturally, the volume of sand they would hold would be relatively minor and would not have an impact on the overall sand budget of the area.

27. There was some discussion on the possibility of stockpiling material for use in closing the existing channel similar to what was done for Mason Inlet. The discussion focused on stockpiling material on the existing sand spit or perhaps on the inter-tidal shoal between the new channel and the existing channel. There was general agreement that this approach was not practicable.

28. Concerns were raised over ownership of the new land that would be created as a result of the project, namely, the new sand spit. Since this is a legal question, the Town of Emerald Isle agreed to look into the issue. Several points of contact were mentioned including Joe Kalo (NCSU), Joe Henderson, and Robin Smith.

29. **Tracy Rice** suggested that certain contingencies needed to be developed and included in the EIS. The contingencies should include nourishment of Bear Island, response to impacts to Dudley Island, erosion of the oceanfront on the west end of Emerald Isle, and dredging to reposition the channel.

30. **Tracy** also suggested that the no-action alternatives should include relocation of homes with habitat restoration of the abandoned lots.

31. **Mickey** has scheduled the next PDT meeting for 10:00 am on February 19 at the Emerald Isle Town Hall. The agenda will include:
- a. Presentation by **Cleary** on the Geomorphic Analysis of the Inlet
 - b. **Dave Rabon**, FWS, to discuss endangered species, biological assessment, and essential fish habitat.
 - c. **Erin Haight**, CPE, Summarize data collected and discuss potential impacts on benthic communities and salt marshes.
 - d. General discussion on the environmental impacts of the proposed project.
32. **Frank Rush** wanted to know what the timeline is for the EIS and if the January 2004 construction start date was still good. Indications are that January 2004 may be out of reach. **Jarrett** will put together a new timeline and provide to the Town.
33. **Todd Miller** asked if Town will go forward with nourishment of west end using offshore sand source if inlet project not permitted in time to perform work in January 2004. Frank stated it would be his recommendation to wait until the inlet project is permitted. He believes that the condition on the west end of Emerald Isle is not so critical that it could not wait another year. However, the decision will be up to the Town Board. **Jarrett** asked **Chris Freeman** to look at his shoreline data and provide the town with some update on the recent behavior of its shoreline.
34. Another meeting of the PDT was scheduled for March 12th. **Mickey** asked the participants to email him if any additional thoughts come to mind after the meeting.
35. The meeting was adjourned at around 12:30 pm.

List of Participants
February 4, 2003 Bogue Inlet PDT Meeting

Name	Representing	Phone Number
Tom Jarrett	CPE-NC	910-392-0453
Mike Marshall	NC DMF	252-726-7021
Harry Simmons	NC Shore & Beach	910-200-7867
Tracy Rice	USFWS	919-856-4520 ext 12
Todd Miller	NC Coastal Federation	252-393-8185
John Fussell		252-240-1046
Glenn McIntosh	USACE	910-251-4621
Justin McCorcle	USACE	910-251-4699
Mickey Sugg	USACE	910-251-4811
Chris Freeman	UNC-CH	252-726-6841 ext 145
Dave McHenry	NC Wildlife Resources Comm.	252-946-6481 ext 345
Brian Strong	NC State Parks	919-715-8711
Charles R. Vincent	Bogue Banks Beach Preservation	252-354-2501
Art Schools	Mayor Emerald Isle	252-354-3424
Frank Rush	Town Manager Emerald Isle	252-354-3424
Jane M. Koroly	Cedar Point	
W.B. Ennett	Cedar Point	252-393-8123
James Phillips	Swansboro	252-326-5401
John Kilgona	Emerald Isle	252-354-7084
Wendy Cluse	NC Wildlife Resources Comm.	252-725-5328
Nicole Mehnovets	NC Wildlife Resources Comm.	252-247-9453
Greg "Rudi" Rudolph	Carteret County	252-393-2663
Ron Sechler	NMFS-HCD	252-728-5090
Noelle M. Lutheran	NC DWQ	910-395-3900
Michelle Duval	Enviro. Defense Fund	

Minutes of February 19, 2003 Meeting of the Bogue Inlet Project Delivery Team

1. **Mickey:** The agenda for the meeting included (a) **David Rabon**, FWS, discussion of endangered species consultation and the biological assessment, (b) Essential Fish Habitat consultation, (c) Discussion of resources and data collected to date, (d) Discussion by resources agencies of what information they have on the resources, (e) some discussion of the monitoring plans, and (f) presentation by **Bill Cleary**, UNCW, on the geomorphic analysis of Bogue Inlet.

2. In response to a question by **Rudi Rudolph** concerning alternatives, **Mickey** indicated that he would compile a list of alternatives and provide the list to the PDT. The list of alternatives includes a broad range of possibilities including the channel relocation.

3. **Frank Rush** indicated that the Town of Emerald Isle had formally requested that no detailed consideration be given to the use of hard structures. **Jarrett** indicated that options involving hard structures have been written off and will only be mentioned in the final EIS and will not be covered in any detail.

4. **Bill Cleary**, UNCW, provided a detailed presentation of the studies he has made of changes in the inlet. The study included an overview of changes since 1938 but concentrated on changes since 1973. Thirteen sets of aerial photographs were used in the detailed analysis with measurements being made to determine changes in: (a) the channel position and orientation, (b) inlet width, (c) Bear Island and Emerald Isle inlet shorelines, (d) ocean shoreline positions for a distance of about 7,500 feet from the inlet, (e) ebb tide delta configuration, (f) Dudley Island, (g) and Islands 1 and 2.

5. **Cleary** noted 3 phases in the inlet's evolution since 1973. From 1973 to 1981, the channel was repositioned to a point midway between the two islands and actually migrated slightly to the west during this period. From 1981 to 1986, the channel began to move to the east and a large marginal flood channel developed west of the channel. This led to the development and build-up of the large middle ground shoal between the channel and Bear Island. The final period extends from 1986 to 2001 during which time the channel has migrated to the east at an average rate of around 93 feet/year. He noted that the Coast Guard Channel did not have any significant impact on the behavior of the inlet or the location of the ebb channel.

6. **Todd Miller** asked if looking back to 1938 would make any difference on the inlet migration tendencies. **Cleary** demonstrated that the channel was well to the west, next to Bear Island in 1938, and including inlet data back to that point in time would not change conclusions regarding the channel movement.

7. **Cleary** discussed changes in the inlet's minimum width indicating that the overall widening of the inlet since 1973 has been due to erosion of both the Bear Island and Emerald Isle inlet shorelines. The average rate of erosion of the Emerald Isle inlet shoreline since 1984 has been about 60 feet/year.

8. **Cleary** stated that the average changes in the oceanfront shoreline position close to the inlet averaged 10.6 feet of accretion/year on Emerald Isle and about 11.0 feet of erosion/year on Bear Island. As the channel migrated to the east, significant erosion has occurred on Bear Island and a large amount of accretion has occurred on Emerald Isle. These changes are also associated with the configuration of the ebb tide delta. As the apex of the delta shifts toward Emerald Isle, wave sheltering increases on Emerald Isle as does the onshore movement of swash bars. On the other hand, the east end of Bear Island is exposed to wave action with swash bars migrating into the middle ground shoal portion of the inlet, not the Bear Island shoreline. This has apparently contributed to the increased elevation of the middle ground shoal area.

9. **Cleary** explained that the movement of the inlet channel and the associated buildup of the Emerald Isle sand spit has resulted in the erosion of the east portion of Dudley Island. This erosion is the direct result of the spit forcing Eastern Channel to the north against Dudley Island.

10. **Cleary** pointed out that Islands 1 and 2 are ephemeral features that did not exist until the mid 1990's and may have been products of Hurricanes Fran and Bertha, which occurred in 1996. **Cleary** noticed that Island 2 has apparently migrated to the west approximately 1,000 feet between 2001 and the latest photo taken in 2002. **Mickey** asked how long would it take for Island 2 to migrate out of the area to which **Cleary** responded that he couldn't say for sure, but the island will definitely disappear over time.

11. Based on his measurements and analysis, **Cleary** predicted the following changes as a result of the channel relocation project: (a) the east end of Bear Island would accrete and the west end of Emerald Isle would erode. The amount of accretion on Bear Island would vary from around 500 feet near the inlet to 70 feet near the midpoint of the island. Erosion on Emerald Isle will range from 60 feet at a point 5,000 feet or so from the inlet to around 410 feet close to the inlet. (b) The Emerald Isle spit should not be significantly impacted and should stop growing as a result of material being prevented from moving down the existing channel. This should benefit Dudley Island, as Eastern Channel would no longer be forced up against the island.

12. There was a question on location of the present inlet hazard area, however, **Cleary** pointed out that he disagrees with the current definition, as it does not adequately take into account the area actually influenced by changes in the inlet. The old hazard area was based primarily on inlet migration whereas the actual area of influence can extend well beyond the historic inlet location.

13. **Ed Murphrey** asked what historic inlet configuration was the most efficient. **Cleary** indicated that returning to a previous inlet condition would not be possible due to restriction on dredging that would be needed to remove accumulated sediment from some of the connecting channels. He pointed out that this was a weakness in the Mason Inlet project where dredging of Banks Channel behind Figure 8 Island was not allowed.

14. **John Wells** initiated a discussion concerning the increase in the amount of material that has apparently been stored in the inlet since 1973. **Cleary** said that he cannot determine this without historic hydrographic surveys. **Jarrett** suggested using inlet surface area as a proxy but noted that this would not be a very reliable measure of shoal volume. **Cleary** did indicate that inlet sediment volume has apparently increased and is one of the factors driving the channel to the east. **Cleary** concluded that inlets are a sediment sink and with existing restrictions on dredging, will continue to lose beach sediment to the inlet.

15. **Frank Rush** asked **Cleary** to give his opinion on whether the side cast dredging has affected the inlet. After some discussion on the side cast dredge operation and observations of past inlet changes that occurred in the absence of side cast dredging, **Cleary** concluded that the dredging activity had very little if any impact.

16. **Rudi** raised a question concerning the length of time required for the oceanfront shoreline adjustments to occur. **Cleary** indicated that adjustments would take some time. **Jarrett** provided an estimate of 2 years for bar material to adjust followed by 4 years for beach material to move to the west. Total adjustment period around 6 years. These are times if existing channel closed. If channel not closed, adjustment period could be as long as 10 years. In other words, shoreline adjustments will occur relatively slow not in one year.

17. **Ed Murphrey** asked if a deeper ebb channel would affect depths in other parts of the inlet. **Jarrett** said that total cross-sectional area of the inlet will remain about the same so as one channel gets deeper or is made deeper other inlet channels may shoal.

18. **Todd Miller** asked a question regarding the inlet width and if **Cleary** could provide his assessment of what will happen to the Emerald Isle inlet shoreline. **Cleary** indicated that, due to the buildup of material on the middle ground shoal area of the inlet, it would take a rather large storm event to breach the shoal. If the sandbags are removed from the Emerald Isle shoreline, the inlet shoreline would continue to erode.

19. **Todd Miller** asked if increases in shoal elevation will result in Bear Island migrating to the east? **Cleary** said he expects the same trend to continue with expansion of the inlet throat and erosion of the Bear Island spit.

20. **Todd Miller** initiated a discussion of the residual protection that would be provided following the shoreline adjustments on Emerald Isle. Would the remaining dune system provide protection to the existing development? **Jarrett** indicated that an assessment will be made of the protective value of the adjusted profile to determine the level of protection that will remain following the predicted shoreline changes.

21. **Ed Murphrey** asked if channel not moved will Dudley Island continue to erode. **Cleary** said yes, that the spit is a major player. **Mickey** asked if the spit will still be a major player if channel relocated. **Cleary** responded that nourishment of spit would be cut off with closure of existing channel, therefore, he would expect spit not to continue to

grow. **Ed** also asked if spit could be used for beach nourishment but **Cleary** pointed out that environmental constraints would not allow this.

22. **Frank Rush** asked **Cleary** to provide his estimate of where the inlet shoreline would end up if the bags are removed. **Cleary** said probably 800 feet or more to the east and could be greater if rate increased. This could be affected by changes in the channel orientation. If the inlet channel movement is accompanied by a swing in the channel orientation toward Emerald Isle, additional areas east of the inlet could be impacted.

23. **John Wells** asked how changes have been affected by storms. **Cleary** said he did not see much influence of storms in his data. Storms could have an impact on Islands 1 and 2. **Jarrett** pointed out that the major shift in channel position that occurred between 1981 and 1984 was not due to storms.

24. **Cleary** responded to some questions regarding the Mason Inlet project. While he was not directly involved in the project, he had suggested that the connecting channels, particularly Banks Channel behind Figure 8 Island, be cleaned out to improve circulation and flow. This was not allowed and in his opinion, this was a major flaw in the project and will result in future problems.

25. **Mickey** asked if removing sand from the inlet and depositing it 5 miles away will have an impact on the inlet? This was followed by a discussion of the overall sediment redistribution in the inlet associated with the channel relocation project. First, **Jarrett** provided his estimates of the suspended sediment plumes that would be created during the construction of the closure dike. Based on concentration of silt in the ebb tide delta material, pumping rates from the dredge, and flows through the inlet channel, the sediment plume would extend approximately 3,500 feet into the sound from the dike location and 4,500 feet seaward of the dike. Concentrations of suspended sediment on the sound side would be around 6 ppm while ocean side concentrations would be around 4 ppm. Since there is no way to convert suspended sediment concentrations to NTU's (turbidity measurement) cannot predict what turbidity levels would be but appears there would not be a problem with meeting the State 25 NTU standard. **Erin Haight** pointed out that an NTU of 25 looks like chocolate milk. Construction of the dike would require 200,000 cubic yards and could be accomplished in 9 to 10 days or perhaps less if dredge production rate exceeds the assumed 900-cy/hr rate used in the estimate. **Jarrett** noted that production rates for ocean certified dredges can reach 1,500 cy/yr. The crest elevation of the dike would be +4.5 feet NGVD or about the elevation of the existing spit.

26. With regard to the overall sediment redistribution, construction of the channel would remove around 1 million cy, 200,000 cy would be used to construct the dike, 1.5 million cy would be redistributed from the existing ebb tide delta off Emerald Isle to shoal the existing channel and weld to the beach, 565,000 cy would erode off the west end of Emerald Isle and move into the inlet as a recurved spit, channel scour associated with the flattening of the side slopes from 1V:5H to 1V:20H or 1V:50H would result in about 150,000 to 200,000 cy being transported seaward along the channel and 120,000 to 150,000 transported toward the sound, and there would be an overall reshaping of the ebb

tide delta that would result in some accumulation on the outer portions of the ebb tide delta west of the new channel. Material eroded to flatten the channel side slopes would be transported along the bottom of the channel as bed load. Transport into the sound would probably occur up to 6,000 feet from the inlet throat up Eastern Channel with some material possibly being deposited between Island 2 and Dudley Island. Uniform deposition of the scoured channel material would raise the bottom elevation by 0.25 foot. Uniform distribution will obviously not occur, therefore some areas could accrete as much as a foot. This raised the question regarding the potential impacts on channel maintenance dredging for which there is no definitive answer. Dredging records for the connecting channel are sparse and probably mixed in with the dredging reports for the inlet channel. Therefore, impacts on dredging will be difficult to determine and quantify.

27. In response to **Mickey's** original question on impacts of the sediment removal, the net change in the sediment in the inlet would be the difference between 800,000 cy or so used for beach nourishment and the 565,000 cy of beach material expected to be transported into the inlet. In terms of the overall impact, the volume difference is probably less than 1% of the sand presently in the inlet system.

28. **Tracy Rice** asked a question regarding sediment transport rates. **Jarrett** responded that the net transport is about 270,000 cy/yr to the west but transport along the west end of Emerald Isle may presently be in balance as evidenced by the stable shoreline. With the redistribution of the ebb shoal material off the west end of Emerald Isle, net sediment transport along the west end of Emerald Isle will gradually increase from near zero to around 270,000 cy/year. As a result, removal of the 565,000 cy of material from the beach will take around 4 years. This combined with the 2-year adjustment period for the ebb tide delta material results in a total adjustment period of 6 years.

29. **Mickey** addressed questions concerning the impact area. The permit area will include 5.5 miles on the west end of Bogue Banks, 8,000 feet down Bear Island, landward to the AIWW and seaward for about 10,000 feet. **Mickey** said he would provide a definition of the final permit area to the PDT.

30. **Todd Miller** asked a question about the project cost and if weather would have an impact. **Jarrett** said cost estimates carry a 15% contingency for weather and other unforeseen problems that could affect the cost of the project. However, based on the expected production rate of the dredge, the actual construction time should be less than 60 days. The Shallotte Inlet project only required 56 days to pump 1.8 million cubic yards to Ocean Isle.

31. **Jarrett** raised the issue concerning cost constraints for the project and asked if the PDT would be comfortable if the final channel design was determined by the costs and the funds available from Emerald Isle to accomplish the task. The final channel selected, however, must still meet all of the channel stability criteria.

32. **Ed Murphrey** asked if the State's dredge (referring to the DOT dredge) could be used to construct the dike or if a second dredge could be used for the dike construction.

Jarrett indicated that the dredge would have to be able to meet the production requirements for dike construction and the State's dredge would probably not be able to meet this requirement. As far as using a second, smaller dredge to construct the dike, it too would have to meet the production requirements and result in some overall cost savings for the project. **Jarrett** indicated he would evaluate this option.

33. **David Rabon**, FWS, provided a summary of the requirements of the Endangered Species Act. The COE is the permitting agency for this project and must consult with the FWS on impacts of Federal listed species. He has agreed to conduct informal consultations, which provides a higher degree of flexibility to discuss project impacts and conservation measures. Most of the discussions will be between the FWS and the COE, however, the applicant (Emerald Isle) may be included in some of these discussions. First step in the informal process is the preparation of a Biological Assessment (BA) that list all impacted species, discusses the potential impacts of the project on these species, and list conservation measures that would minimize the potential impacts. This must be done on a species by species basis. FWS has reviewed a draft BA and has provided comments and suggestions for improving the BA. The COE will make a determination of the type of impact expected, i.e., "may affect" or "no effect" impact. If COE determines that there could be an effect and the FWS agrees, this would trigger the formal consultation process leading to the preparation of a Biological Opinion (BO). The BO is FWS's assessment of whether or not a Federal listed species will be placed in jeopardy by the project. If FWS has to prepare a BO, the project could still go forward providing FWS determines the project will not jeopardize the species. The BO could authorize incidental takes providing the COE follows the guidance provided in the BO.

34. **David** pointed out that we are still in the informal consultation stage and stressed that the BA must be complete in its description of species impacts and the kinds of conservation measures that will be taken. The requirement for a BO will be determined at the time the permit is formally requested. If a BO is required, total preparation time could be 135 days, which includes 45 days for FWS to prepare the BO. Time could be shorter or longer if changes come up. Rather than having to continually modify the BO, its best to stay in the informal process and produce a BA that meets all of the requirements. **David** stressed that the BA must be clear on the impacts and provide details of the proposed conservation measures for each species.

35. The BA will need to cover both parts of the project, i.e., channel relocation and beach nourishment. **Mickey** indicated that the requirements for the beach nourishment phase will probably be similar to the requirements for the existing Bogue Banks nourishment project but that some additional conditions could be added.

36. The discussion turned to possible conservation measures that the Town of Emerald Isle would be willing to consider. These measures included restricting vehicular access to the spit area, control of pedestrian traffic during certain times of the year, and/or establishment of the spit as a conservation area. The Town has apparently enacted some restrictions on future development in the area. The question of ownership of the spit and

newly created land, either directly or passively as a result of the project. The Town indicated that it had taken on this responsibility and will continue to pursue it.

37. With regard to the BA, CPE will revise in accordance with FWS comments and resubmit to the COE. **David** stated to be sure to include an assessment of direct and indirect impacts. **Mickey** responded that the permit area is different from the scope or project area and that direct and indirect impacts within the permit area will be included in the BA. A question was raised about the impacts of the current side cast dredging. **David** said that analysis of impacts of the project is based on existing conditions; therefore, the baseline should include impacts of the dredging operation.

38. Following lunch, **Erin Haight** discussed the monitoring plans and described the difficulty locating a firm with the proper marine insurance. A contract has now been worked out with CZR and the first bird monitoring will occur next week (week of 24 February). Normal bird and salt marsh monitoring will begin in March and will continue until construction. The benthic and salt marsh monitoring plans have been revised in accordance with comments from **Larry Eaton**. Modifications include moving the salt marsh stations closer to the edge of the marsh in order to measure sediment deposition, establishing a control point south of Island 2, and sample east and west of the proposed channel. Three diversity indexes will be determined and have added a sensitivity index in accordance with **Larry's** suggestions. **Erin** indicated that **Sue Cameron** has made additional comments but she had not received them. **Mickey** said he would forward comments to **Erin**.

39. The discussion turned to details of the bird-monitoring program including sampling times, sampling during high and/or low water, weekend days versus weekdays, and the need to include Bear Island. The schedule for bird monitoring includes once a month for December through February then every 10 days between March 1 and April 30 and every two weeks from May 1 to November 30. **Erin** requested some flexibility for the 10-day requirement given uncertainties with weather and tide conditions. **Erin** mentioned that the monitoring will extend 3 years post-construction. Based on recommendation of the PDT, the bird monitoring will be expanded to include the eastern 3,000 feet of Bear Island as well as the other areas included in the original plan. **Erin** mentioned that the inclusion of Bear Island could extend the monitoring time to two days rather than one and this would have an impact on the cost of monitoring.

40. **Ron Sechler** discussed the need to address essential fish habitat (EFH) including SAV's. He suggested several sources of information that could be accessed, primarily aerial photographs that could be used to evaluate SAV's. He also mentioned that the characteristics of the fishery resources will have to be identified and will need to look at the impacts of the project on the complete life cycle of the federal species. This will include the impact of the project on larval fish movement. The EFH could be included as a section in the EIS but would have to be essentially a stand-alone document that covers all of the issues. With regard to the timeframe of the EFH document, it would be done within the context of the EIS. A draft of the EFH document should be developed for review by NMFS.

41. **Mike Marshall** talked about near shore spawners and crabs and direct impacts revolve around the timing of the project. Clams are located back in the sound around the marsh islands. Impacts on the shellfish habitat could possibly be addressed by looking at the SAV's.

42. A discussion followed about the existing beach nourishment project, which allows beach disposal between November 16 and March 31. Also, the existing permit expires in December 2004 and the question was asked if it would be difficult to extend the permit. **Mickey** pointed out that a separate permit would be required for the inlet project including disposal of the inlet material on the beach. The new permit will likely have the same conditions on beach nourishment as the existing permit. **Jarrett** suggested that the permit should be extended anyway as a backup for the Town of Emerald Isle in the event the permit for the channel relocation is denied. **Mickey** agreed that extension of the existing permit would be a good idea. **Todd Miller** asked a question concerning the quality of the inlet material to which **Mickey** indicated that the quality was better than that coming from offshore and that the permit for the inlet material would probably only include some minor changes. **Mickey** indicated that we have not discussed beach impacts to date.

43. **Rudi Rudolph** suggested using aerial photos to identify different habitats. **Jarrett** said that would be possible providing an agreement could be reached as to what constituted a habitat based on interpretations of aerial photos. That is, if everyone agreed that submerged-shallow areas, existing marsh areas, and subaerial spits, are identifiable habitats, these could be measured from a photo to establish baseline conditions. Following project construction, repeat aerials could be evaluated for the same habitats to determine changes in the physical makeup of the area. Based on these observed changes in habitat, perhaps some mitigative responses could be developed. For example, if the project causes a loss of marsh habitat, new marsh could be constructed.

44. **Todd Miller** requested information on project costs and benefits. An analysis of the without project condition will be provided prior to the next meeting along with some preliminary cost estimates for the various channel alternatives. Also, revised monitoring plans and the revised BA will be provided prior to the next meeting.

45. **Mickey** indicated that the next meeting of the PDT will not be on March 12 as originally scheduled. He plans to hold the next meeting sometime in late March or possibly the around the first of April. **Mickey** will notify the PDT when a date is set.

List of Participants
February 19, 2003 Bogue Inlet PDT Meeting

Name	Representing	Phone Number
Tom Jarrett	CPE-NC	910-392-0453
Mike Marshall	NC DMF	252-726-7021
Tracy Rice	USFWS	919-856-4520 ext 12
Todd Miller	NC Coastal Federation	252-393-8185
John Fussell		252-240-1046
Glenn McIntosh	USACE	910-251-4621
Mickey Sugg	USACE	910-251-4811
John Wells	UNC-CH	252-726-6841
Brian Strong	NC State Parks	919-715-8711
Charles R. Vincent	Bogue Banks Beach Preservation	252-354-2501
Art Schools	Mayor Emerald Isle	252-354-3424
Frank Rush	Town Manager Emerald Isle	252-354-3424
Nicole Mehnovets	NC Wildlife Resources Comm.	252-247-9453
Greg "Rudi" Rudolph	Carteret County	252-393-2663
Ron Sechler	NMFS-HCD	252-728-5090
Susan Cameron	NCWRC	910-325-3602
Matthew Godfrey	NCDMF	252-726-7021
Tere Barrett	NCDCM	252-726-7021
David Rabon	USFWS	919-856-4520 ext 16
David Allen	NCWRC	252-448-1546
Ed Murphrey	Pointe Association	252-746-3784
Erin Haight	CPE	561-391-8102
Bill Cleary	UNCW	910-962-2420
Dorothy "Doje" Masks	Town Commissioner	252-354-3740
Dick Eckhardt	Town Commissioner	252-354-2826

Minutes of April 16, 2003 Meeting of the Bogue Inlet Project Delivery Team

1. **Mickey Sugg** presented the agenda for the meeting which included: (a) Discussion of the Permit Area and Project Area, (b) beach nourishment, (c) recreational values in the permit area, and (d) ownership of newly created lands.

2. **Frank Rush** introduced **Mary Helen Casey** of Lands End as a new member of the PDT. **Frank** indicated that the Town Board of Commissioners had agreed to delay nourishment of the west end of Emerald Isle in hopes that a permit would be issued for the inlet project in time to move the channel and nourish the west end of Emerald Isle during the November 2004 to March 2005 time period. The Town Board has concerns over the quality of the offshore borrow material and would much prefer to use material from the inlet channel relocation project to nourish that portion of its town shoreline. **Frank** expressed concern over the continued deterioration of the Pointe area noting that several structures have now become threatened due to exposure of their foundations. The existing sandbags are continuing to do their job but he recognized that the bags will not last much longer. He emphasized the need to move the permit process along in a timely manner.

3. **Ed Murphrey** initiated a discussion regarding studies required by the various State and Federal agencies and inquired about an overall project schedule. **Mickey Sugg** pointed out that all agencies are involved in the PDT process and that the purpose of the PDT is to identify data requirements and study needs. **Tom Jarrett** indicated that a schedule has been developed for the EIS. The status of the schedule will be discussed during future PDT meetings.

4. **Tom Jarrett** handed out a CD containing an Engineering/Geology report that contains evaluations of the various project options and projected physical impacts. The CD also contained an analysis of the without project condition. The Engineering/Geology report forms the basis of the projected project impacts. The PDT was asked to review the report and provide comments within 30 days (comments to be submitted by 20 May 2003).

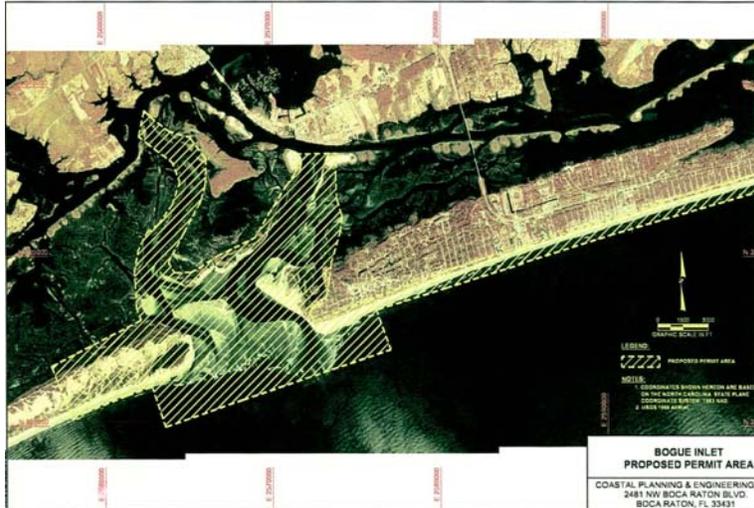
5. **David Allen** raised the question of why the proposed channel has a variable width. **Jarrett** restated the desire to duplicate the cross-sectional area of the existing inlet as close as possible in order to limit the amount of dredging required and assure that increased flows through the inlet do not result in some period of increased tide ranges in the sound. The Engineering/Geology report contains details of the plan formulation and the basis of the channel design.

6. **John Kilgore** and **Charles Vincent** raised questions regarding future maintenance of the channel and disposal of the dredged material. The Bogue Inlet channel relocation project is a one-time undertaking by the Town of Emerald Isle and any future maintenance of the channel will be the responsibility of the Corps of Engineers. The Corps will continue to use shallow draft side cast dredges to maintain the channel as it only has authority to follow existing deepwater. Any change in the operation of the inlet

is outside the scope to the channel relocation project and would have to be addressed by separate study involving the Corps of Engineers.

7. **Mickey Sugg** indicated that a field trip would be part of a future PDT meeting once the resources in the area are defined.

8. **Mickey Sugg** described the proposed boundaries of the Permit Area. The Permit Area (see Figure) includes all of the ocean beach for 5.5 miles down Emerald Isle, including the dune system, the ebb tide delta of Bogue Inlet, 8,000 feet of ocean shoreline on Bear Island (not indicated on Figure), the channel located immediately behind Bear Island east to Bogue Inlet, all of Western Channel back to the AIWW, the inlet throat, and all of Eastern Channel back to the AIWW. *(Note that subsequent to the PDT meeting; the Permit Area has been modified to include all of the inlet hazard area on the west end of Emerald Isle.)*



As described by **Mickey**, the Permit Area includes the area likely to have either direct or indirect impacts. The boundaries of the Permit Area were based on the assessment of potential physical changes associated with the channel relocation project and associated beach nourishment. The primary basis of the Permit Area boundaries is the sediment redistributions expected to occur either during or immediately following the relocation of the channel. *(Note: these changes are described in the Engineering/Geology report and have been discussed during previous PDT meetings).* All of the resources and various habitats such as SAV's, shellfish bed, marsh area, sand flats, intertidal shoals, spit areas, etc., must be located and described in detail for the Permit Area.

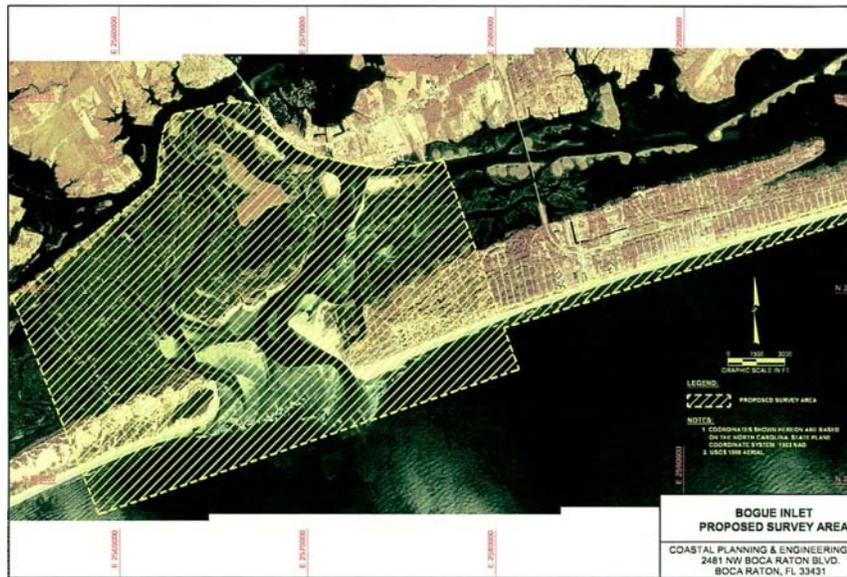
9. **Mickey** then described the Project Area which includes a much larger area behind the islands and includes the entire ocean shoreline of Bear Island and larger expanses of the sounds behind the islands. The Project Area is used to determine the significance of impacts within the Permit Area. Resources present within the Project Area will also have to be identified.

10. There was considerable confusion over the difference between the Permit Area and the Project Area. **Mickey** indicated that in order to modify the proposed limits of the Permit Area there must be some basis for including other areas. **Tracy Rice** questioned the ability of models to accurately predict changes that would accompany the project and pointed out differences between predictions and actual impacts for the Mason Inlet project. **Tracy** also wanted the Permit Area to include west end of Emerald Isle that

would be impacted if the channel is not relocated. *(Note: While the initial discussion during the PDT meeting seemed to preclude this area, the Corps subsequently reviewed the Permit Area requirements and has now included all of the area on the west end of Emerald Isle located within the State defined Inlet Hazard Area.)*

10. **Erin Haight** presented information that is presently available from the various State and Federal resource agencies regarding the presence of SAV's, shellfish, and marsh. **Terre Barrett** pointed out that much of the information available from the various agencies is old and needs to be updated, particularly information on SAV's and shellfish and that some information is needed to define elevations within the marsh complexes. **Ron Sechler** agreed that new information is needed regarding SAV's. *(Note:*

Subsequent to the PDT meeting, discussions were held with NMFS and DCM regarding specific needs for additional data including some ground truth. Following a meeting between CPE, the Town of Emerald Isle, Corps of Engineers, and DCM, held on 1 April, the resources within the area shown on the figure designed as Proposed Survey Area, will be inventoried to include new aerial photographs and ground truth.)



11. **Erin Haight** reviewed the monitoring results accomplished to date. CZR, the contractor performing the monitoring, has conducted benthic surveys and is monitoring birds every 10 days. Some banded piping plovers have been spotted. Results of the bird monitoring will be provided to NCWRC and FWS in accordance with protocols established for the Mason Inlet project.

12. **Mickey Sugg** reviewed the permit conditions associated with the Bogue Banks beach nourishment project. Monitoring of the beach nourishment project includes infauna, turtles, ghost crabs, sand temperature, near shore fish, and compaction. A copy of the monitoring plan was provided to each individual. **Mickey** indicated that beach nourishment using inlet material will probably have similar monitoring requirements. A report on the ongoing monitoring program for Bogue Banks is due out shortly and should provide an indication of how resources have responded to the nourishment activity. **Jim Stephenson** questioned what criteria are being used to determine if the beach environment is recovering. **Mickey** stated that they are looking at other beach nourishment projects and recorded recolonization trends. **Jim Stephenson** cautioned that

other areas may be different in physical process and fauna and may not be able to directly apply those results to the Bogue Banks area.

13. **Mathew Godfrey** pointed out that for turtle nesting, need to look at biological indicators such as an increase in the number of false crawls. He said that gas and water retention in the fill material may be different from the native sand and could impact turtle nesting success. **Godfrey** also said that need to look at regional trends in turtle nesting to account for natural cycles. **Emily Farmer** asked how long the turtle monitoring will last to which **Mickey** responded 6 years.

14. Additional discussion on the beach monitoring program included the possible need to survey for Seabeach Amaranth along Bear Island. The State Parks presently has its own monitoring program and found concentrations of Seabeach Amaranth on the east end of the island. The State Parks conducts two surveys a year, both in the fall.

15. **Jim Stephenson** asked how the proposed Section 933 project will impact the monitoring program. **Mickey** indicated that the Corps is presently considering this.

16. **Emily Farmer** stated that the EIS should include some discussion of the quality of the material obtained from the offshore borrow areas versus the quality of the material that would be obtained from the inlet. **Jim Stephenson** inquired about the compatibility of the inlet material. **Jarrett** responded that the inlet material is essentially the same as the native beach with the percentage of fines and the percentage of coarse material very similar to that found on the native beach by Sara King (UNC-CH). Final compatibility will be based on the analysis of native material obtained by the Corps for the Bogue Banks feasibility study. **Tracy Rice** indicated that she is not concerned about the compatibility of the inlet material.

17. **Mickey Sugg** led a discussion on the recreational values for the area and whether or not access restrictions would be imposed. The sand spit area had been a popular spot prior to erosion impacting access (both pedestrian and vehicular). **Emily Farmer** expressed some reservations for totally restricting public access, noting that the Town received a considerable number of complaints when erosion wiped out the access point at the end of Inlet Drive. **Frank Rush** indicated that there were already some restrictions in place that cover the period from Labor Day to 30 September. **Jarrett** suggested that some modification in the access following project construction could be used as a means to mitigate for project impacts. **Emily Farmer** indicated that perhaps some restrictions that would prevent people from walking on the dunes or sensitive portions of the spit might be possible as long as there was a strip along the shore where people could still go. **Mickey** asked the Town if it has a record of the number of driving permits issued for the beach prior to the access being lost. **Frank Rush** indicated that the Town has such records.

18. According to **Sue Cameron**, access to Island 2 is already restricted between April and August. She indicated that she could provide a map showing the restricted areas.

19. **Mickey Sugg** opened the discussion over the ownership issues associated with any new land that would be created as a result of the project. He passed out copies of the State Statutes (NCGSA Chapter 146-6) that seemed to apply. Resolution of the ownership issue is the responsibility of the Town. **Mickey** suggested that the Town contact Professor Joe Kalo at UNC-Chapel Hill and Alan Jernigan at NC Attorney General's office, (919-716-6600). **Frank Rush** indicated that he has not been able to determine if the spit area lies within the town limits of Emerald Isle. In any event, the intent of the town is not to allow development in the spit area.

20. The next meeting of the PDT will be on 11 June 2003 and will include a boat trip through the project area. PDT members wishing to go on the boat trip need to contact **Mickey** as soon as possible.

Minutes of June 11, 2003 PDT Meeting on Bogue Inlet

1. The first half of the meeting included a boat trip through the inlet including Eastern Channel and portions of the AIWW behind Bogue Inlet.
2. The formal meeting of the PDT was held during the afternoon in the Cedar Point Town Hall. **Mickey Sugg** laid out the agenda for the meeting that included a detailed presentation of the upcoming surveys and mapping of the resources in the area and a discussion of the EIS/project schedule. A list of attendees is at the end of these minutes.
3. The EIS schedule was distributed and discussed. **Tom Jarrett** emphasized key dates on the schedule and the critical nature of the review times allocated for each phase of the EIS process. The preliminary draft of the EIS will be provided to the PDT on 22 August. A PDT meeting is scheduled for 10 September, or approximately midway during the review period of the preliminary draft of the EIS. Comments on the preliminary draft should be submitted by 20 September. **Mickey** indicated that comments could be submitted directly to him via email.
4. The revised Biological Assessment was submitted to the Corps on 6 July, slightly ahead of schedule (**the Corps submitted the BA to the Fish and Wildlife Service and the National Marine Fisheries Service on 24 July**). The Essential Fish Habitat Analysis is scheduled to be submitted on 23 June (**Note: EFH analysis was submitted to Corps on –July and sent to NMF, DCM, and FWS on 24 July**).
5. The meeting focused primarily on the new resource mapping effort that was formulated following the last PDT meeting. **Craig Krumpel**, CPE, discussed the plan in some detail. The plan includes digital mapping of the permit and project areas using high-resolution aerial photographs and ground truth to confirm interpretations made from the aerial photos. **Todd Miller** raised a question regarding the coverage area, particularly the west channel. A discussion followed that indicated that the permit area was based on modeling and geomorphic studies. **Craig** pointed out that data will be collected in all areas but that the data for the project area will not be as extensive as the permit area. **Tere Barrett** pointed out that additional coverage could be required once she has had time to review the data for the permit area.
6. At the time of the PDT meeting, the aerial photos had not been taken due to weather, tides, and problems obtaining permission from the Marine Corps to fly over restricted air space (**Note that the aerial photos were obtained on 30 June**).
7. **Craig** explained that the topo mapping of the adjacent shorelines and the hydro survey of the inlet, which are being done by **Chris Freeman**, will go into GIS system. The accuracy of the surveys will be within 4-5 cm. The mapping will provide a good baseline data set. The survey will include representative cross-sections of the marsh areas and will cover Island 2.

8. **Mickey** asked if the mapping will include ground truth to which **Craig** responded that ground truth will be obtained in the permit area. Ground truth will be required in areas where the photo clarity is not sufficient to make accurate interpretations. This will primarily be in suspected SAV areas. May require some grab samples along the channel boundaries and in fringe areas.

9. There was some discussion on the significance of impacts and how this would be determined. **Mickey** indicated that significance of the impact on a particular resource would depend on the abundance of the resource within the project area. **Mickey** said that the degree of impact on a particular resource should be made part of the permit. **Tere** said that short term impact would be relatively easy to identify, however, impacts that occur over an extended period of time would be difficult to associate with the channel relocation project versus natural changes. **Tom Jarrett** said that most of the physical changes within the inlet associated with the new channel will probably occur within the first 6 months. This does not include the expected adjustments in the adjacent shorelines or the development of the sand spit off the west end of Emerald Isle which will likely take years. **Craig** said that aerial photos of the project area will be obtained at least 2 times and possible 3 times post-construction for comparison with the base conditions determined from the June 30 photos.

10. A discussion followed on the status of mapping shellfish. **Tere** contacted **Trish Murphey** to see if she was intending to send any additional data. Trish indicated that she was not aware of any additional requirements. The State shellfish data only identified habitat types that are likely to support shellfish and does not include actual shellfish counts.

11. There was some additional discussion on the significance of project related impacts. In general, significance will be based on the cumulative impacts on all resources not necessarily on impacts to individual resources. The EIS should include some prediction of impacts and include mitigation plans that would activate in the event anticipated impacts are exceeded.

12. **Todd Miller** inquired about the economic analysis. **Mickey** said the economic analysis was on the CD containing the engineering and geological analysis handed out at the previous PDT meeting and that the Corps economists were looking it over. Todd also asked about the ownership issue. **Mickey** said that the Town is looking into that issue.

13. **Noelle Lutheran** mentioned the 401 process needs to be included in the schedule. **Tom** said that the previous versions of the project schedule included the 401 process but was not included in the latest versions since it is part of the overall EIS process. **Craig** assured that all of the proper procedures for 401 will be followed.

14. The next meeting of the PDT is scheduled for 10 September.

June 11, 2003 Bogue Inlet PDT Meeting

Name	Representing	Phone Number
Mary Helen Casey	Lands End	252-354-2925
Ed Murphy	Pointe Association	252-746-3784
Tere Barrett	NCDCM	252-726-7021
Tom Jarrett	CPE-NC	910-392-0453
Todd Miller	NC Coastal Federation	252-393-8185
Craig Kruempel	CPE	561-391-8102
Erin Haight	CPE	561-391-8102
John Fussell		252-240-1046
Mickey Sugg	USACE	910-251-4811
Brian Strong	NC State Parks	919-715-8711
Charles R. Vincent	Bogue Banks Beach Preservation	252-354-2501
Art Schools	Mayor Emerald Isle	252-354-3424
Frank Rush	Town Manager Emerald Isle	252-354-3424
Jane M. Koroly	Cedar Point	
John Ellis	USFWS	919-856-4520
Sue Cameron	NCWRC	910-325-3602
Greg "Rudi" Rudolph	Carteret County	252-393-2663
Ron Sechler	NMFS-HCD	252-728-5090
Noelle M. Lutheran	NC DWQ	910-395-3900
Harry Simmons (boat trip only)	NCSBPA	910-200-7867

Minutes of September 10, 2003 Meeting of the Bogue Inlet Project Delivery Team

1. **Mickey Sugg** went over the agenda which included:

- Status of the EIS
- EIS Schedule
- EIS Organization (Table of Contents)
- Erosion Rates
- Habitat Mapping
- Direct and Indirect Impact Analysis (Table)
- Rating System for Direct and Indirect Impacts
- Mitigation and Conservation Measures

2. A list of attendees is attached at the end of these minutes.

3. **Mickey** explained that he schedules the PDT meetings based on information that has been developed since the last PDT meeting, therefore, he does not have a set schedule for the meetings.

4. The Corps received a draft copy of the preliminary Draft EIS around August 22. Based on a review of that document, the Corps determined that significant changes are needed to comply with a new format. The contractor (CPE) is making the necessary changes and will resubmit the preliminary DEIS on 19 September. Once the Corps reviews the revised document, it will be sent to the PDT on CD's in Adobe format.

5. The revisions required for the preliminary DEIS resulted in some changes in the EIS schedule (copies of the revised schedule were provided to the PDT). **Mickey** recommended a 30-day review period for the preliminary DEIS rather than 45 days as shown on the schedule. The next PDT was also adjusted to be near the end of the 30-day review period. The new date for the next PDT meeting will be on October 15, which will be 5 days before the end of the PDT review period. *(A revised schedule based on the 30-day review period is attached to these minutes).*

6. **Mayor School** emphasized the need to adhere to the new schedule. He introduced **Tom Campbell**, President of CPE, and indicated that CPE is doing all it can to meet the schedule. In that regard, **Tom Jarrett** pointed out that face-to-face meetings are planned with the Corps and the State following each document review period. Three such meetings are now on the schedule and will follow the review of the preliminary DEIS by the PDT, review of the DEIS, and Final EIS (FEIS). **Craig Kruempel** encouraged the PDT to provide its comments as soon as possible, preferable prior to the end of the review period, so that all of the issues and comments can be incorporated into the DEIS.

7. In response to a question by **Ed Murphrey** regarding the status of items listed on the schedule, **Craig** said the revised Essential Fish Habitat will be going out by September 19 and the Biological Assessment is presently being reviewed by the Fish & Wildlife

Service. A Cumulative Effects Assessment is also being revised in accordance with Corps comments. Information contained in these documents will be incorporated into the DEIS. **Mickey** pointed out that some items may not be complete in the preliminary draft and that all consultations have not been completed at this time.

8. **Mickey** discussed the organization of the EIS indicating that it is basically a disclosure document. The EIS will be arranged so that all alternatives are presented in an unbiased manner with evaluation made of the direct and indirect impacts of each “reasonable” alternative provided in the document. He indicated that by the time the reader reaches the end of the document, the preferred alternative should be obvious.

9. **Mickey** reviewed the Table of Contents (outline) for the EIS in some detail. Alternative D shown in the Table of Contents (TOC) is not an alternative and will be deleted from the EIS. Also, alternative E (Suspension of Corps of Engineers Channel Maintenance), Alternative H (Hardened Shoreline Alternative), and Alternative I (Inlet Sand Management) are not reasonable alternatives and will be eliminated from further consideration. The five remaining alternatives will be covered and evaluated in the EIS. Chapter 4 of the EIS will define the Affected Environment (resources) and the order of these resources will be followed in other chapters of the EIS. In addition to the resources listed in the TOS, **Mickey** added the following resources: Land Use; Hydrodynamics (tidal flow); Infrastructure; Littoral Process. Chapter 5 will evaluate the environmental consequences of each alternative with the impacts on each resource evaluated for each of the 5 alternatives.

10. **Todd Miller** asked if alternatives for Hammocks Beach State Park would be included. **Justin McCorcle** said the EIS is structured to consider alternatives for responding to erosion of the Emerald Isle inlet shoreline. The impacts of each alternative on Hammocks Beach State Park and other resources will be evaluated.

11. **Todd Miller’s** concern over the shoreline positions that are predicted to occur following the channel relocation were discussed in some detail. One method of addressing the concerns through the establishment of erosion thresholds was discussed. The erosion threshold suggested for Emerald Isle would be a maximum landward shoreline position while the erosion threshold on Bear Island would be based on historic shoreline change rates. However, **Todd’s** major concern was with the possible maximum shoreline recession on Emerald Isle and wanted to include shoreline positions on Emerald Isle dating prior to 1973. **Todd** noted that the east end of Bear Island eroded over 800 feet and that a similar response on Emerald Isle could cause considerable problems. **Tom Jarrett** said that the maximum retreat on Bear was a function of the seaward protrusion of the island associated with the ebb tide delta and that the seaward protrusion on the west end of Emerald Isle is not that large. **Charles Vincent** mentioned that some of the accretion on the west end of Emerald Isle was due to the disposal of dredged material by the Corps and therefore, all of the material that would be eroded is not there naturally. **Tom Campbell** said what **Todd** was looking for is some type of disclosure to indicate the worst case shoreline position that could reasonably be expected as a result of the project. Accordingly, CPE agreed to review all previous shoreline positions and provide

plots of the historic shorelines and an assessment of the maximum and minimum shoreline positions contained in the historic record. The minimum shoreline position at each transect measured during the 1943 to 2001 period (i.e., most landward shoreline position for each transect in the historic record) would be presented as a reasonable estimate of the maximum shoreline retreat that could accompany the channel relocation. *(Note: this same information will be provided for Bear Island).*

12. **Craig Kruempel** introduced **Chris Freeman** who is conducting the hydrographic and topographic surveys of the inlet complex and adjacent islands. **Chris** presented some of the three-dimensional plots of his data. All of the survey data along with digital photographs of points within the back barrier will be incorporated into a GIS. All of the topographic work has been completed and **Chris** will be using an instrumented jet ski system to complete the hydrographic work in the back barrier channels. The survey work will be completed this week weather permitting.

13. **Craig** gave a demonstration of the type of information that will be included in the GIS for the back barrier points. The information will include: location of the data point, survey information (i.e., elevation), and a digital photo. For the ocean shorelines, the GIS will include the vegetation line, profile lines, survey lines parallel to the shoreline, and the location of various shorelines (mean high water, mean sea level, & mean low water).

14. **Mickey** mentioned the need to obtain a 401 water quality certification from the State. **Noelle Lutheran** indicated that a Water Quality Variance may be required, but the 401 Certification may be able to cover the need for a variance if the project exceeds the 25 NTU limit. **Noelle** indicated that the variance process can be rather lengthy. **Doug Huggett** indicated that a CAMA permit cannot be issued until the water quality certification is complete. CPE will immediately begin discussion with the NC Division of Water Quality to initiate the WQ certification process.

15. **Craig Kruempel** passed out maps delineating various resources within the Permit Area and the surface area of the resources which were determined from the digital aerial photos obtained on June 30, 2003. The information interpreted from the aerial photos is being confirmed by ground truth surveys conducted by CPE's subcontractor CZR. At the request of **Tere Barrett**, **Mickey** reviewed the definitions of the Permit Area and Project Impact Zone. **Craig** mentioned that a shellfish survey will be conducted this week involving a representative of the NC Division of Marine Fisheries and CZR. In response to a question by **Mickey**, **Craig** indicated that the resource map will be used to determine the physical impacts on the various resources for the 5 alternatives. The map will be used to determine direct and indirect impacts within the Permit Area. Indirect impacts will include the filling of the existing channel, shoreline adjustments, spit growth, etc. included in previous projections. Timing of these impacts will be included. The maps along with the hydrographic and topographic surveys and ground truth will provide the base conditions on which to measure future changes in these resources following project construction. **Craig** said post-project aerials and surveys will be obtained 1.5 years after construction. The need for future monitoring will depend on the results of the first survey. **Todd Miller** expressed some concern that there would not be any information on

SAV's outside the Permit Area. **Craig** indicated that there will be information outside the Permit Area but not to the same degree as inside the Permit Area. For example, some ground truth for SAV's will be obtained outside the Permit Area. **Craig** pointed out that an overlay of the SAV information developed from the June 30, 2003 aeriels agrees well with the SAV information from the 1992 survey. This seems to indicate that the SAV's are rather persistent. The combined information from the latest photos and the 1992 survey provide good base information on SAV's. **Ron Sechler** indicated that he was comfortable with the monitoring plan.

16. **Ron Sechler** introduced **Don Field** of the Beaufort Laboratory who is an expert in photo mapping of SAV's. **Don** noted the problems CPE had obtaining permission to over fly the Marine Corps' restricted airspace which only provided a 3-hour window on June 30. As a result, the photos were not taken at the best sun angle and tide conditions, however, **Don** believed that the photos were generally good and could, along with ground truth, be used to evaluate the presence of SAV's in the area. **Ron Sechler** said that there were very few to no SAV's in the Permit Area but SAV's do exist in the Project Impact Area.

17. **Todd Miller** again questioned the exclusion of the "horseshoe" area around Huggins and Dudley Islands from the Permit Area. The Permit Area was based on the results of the numerical model and predictions of sediment distribution during and following the channel relocation. **Jarrett** pointed out that most of the post-construction adjustments will involve the transport of sediment along the channel bottom and is not expected to move outside the boundaries of the main channels (Eastern and Western Channels). Sediment plume predictions during project construction did not extend any appreciable distance into Eastern or Western Channels. Post-project monitoring will include resurveys of the back barrier transect lines to determine if any sedimentation has occurred in these areas.

18. Most of the afternoon session was devoted to the presentation of the project direct and indirect impacts in tabular form. The discussion moved back and forth as to whether the table should be organized by habitat type (marsh, subtidal, intertidal, etc.) or by resource (birds, fish, vegetation, etc.). The discussion included ways to represent direct, indirect, short-term, and long-term impacts within the Permit Area. **Rudi Rudolph** suggested that the table should be organized in the same manner as the other Chapters of the EIS (i.e., Chapters 4 and 5) which are organized around the various resources. Eventually, the PDT agreed to this format with some expansion on the species within each resource (e.g., birds to include colonial, skimmers, and waders). Also, the table will only include the relevant resources. Rather than try to summarize the write-up of the impacts contained in Chapter 5 with a single word or phrase, the table will include short sentences that will clearly indicate if the impact is direct, indirect, short-term, or long-term. With regard to the definition of short-term or long-term impacts, this will vary depending on the impact and will be defined separately in the detailed narrative provided in Chapter 5. **Todd Miller** pointed out that short-term impacts are not by definition insignificant. The PDT agreed to include two summary tables, one listing the physical impacts of each alternative on the various habitats and a second summarizing the impacts described in Chapter 5.

19. **Ron** indicated that he had reviewed the EFH analysis and had made specific suggestions to only include the federally listed species (note: the draft included State species). **Craig** said that the revised EFH analysis will be going out on September 19 and includes the changes recommended by **Ron**.

20. With respect to biological monitoring along the beach, **Mickey** suggested that the requirement to monitor benthic organisms on the beach could possibly be eliminated given the quality of the sand that will be obtained from the inlet compared with the material obtained from the offshore borrow areas. **Doug Huggett** recommended keeping the requirement in the permit but allow some assessment of the need to continue the monitoring after some verification period.

21. **Mickey** initiated a discussion of possible mitigation and conservation measures. He mentioned the possibility of Emerald Isle purchasing some undeveloped lands as conservation areas. **Sue Cameron** indicated that the measures should include a bird management plan given the improved public access to the inlet shoreline that will accompany the project. **Mickey** said that the Town has initiated some efforts to control public and vehicular access during critical times of the year. **Todd Miller** questioned who would supervise the bird management plan. Sue also expressed concern over Island 2. **Mickey** said that the island is presently undergoing rapid changes now and it may be difficult to assign project culpability.

22. The Town is still looking into the ownership issue regarding new lands that will be created as an indirect result of this project. The Town is also considering the establishment of conservation easements. **Todd Miller** was concerned with the new land being in private ownership and suggested giving the new land to Hammocks Beach State Park. The Town is somewhat skeptical about this. **Justin** indicated that conservation easements will be addressed.

23. Procedural matters associated with the processing of the EIS and application for the CAMA permit were discussed. The State cannot officially consider a request for a permit until the EIS process is complete and the Corps files its Record of Decision approving the project. Once the Record of Decision is completed, the State may require a minimum of 75 days and a maximum of 150 days to process the CAMA permit request. Also, the issuance of a CAMA permit will be contingent on the completion of the water quality certification. **Ted Tyndall** said that given the level of involvement of the State resource agencies in the PDT process the CAMA permit process should be in good shape. Time will be required to write the actual permit.

24. **Justin** said the Corps will have to process the 404(1)(b) guidelines, however, the information that will be included in the EIS will probably cover all of these requirements.

25. The next meeting of the PDT will be on October 15 during the PDT review period of the preliminary DEIS. All PDT members are encouraged to perform timely reviews of the document and be ready to offer specific comments and recommendations at that

meeting. Written comments and recommendations should be provided to **Mickey** as close to October 20 as possible in order to obtain the maximum benefit from the face-to-face meeting between CPE, the Corps, and the State scheduled for October 21 and 22.

List of Participants
September 10, 2003 Bogue Inlet PDT Meeting

Name	Representing	Phone Number
Tom Jarrett	CPE-NC	910-392-0453
Erin Haight	CPE-FL	561-391-8102
Craig Kruempel	CPE-FL	561-391-8102
Tom Campbell	CPE-FL	561-391-8102
Mickey Sugg	USACE	910-251-4811
Charles R. Vincent	Bogue Banks Beach Preservation	252-354-2501
Tere Barrett	NCDCM	252-808-2808
Ted Tyndall	NCDCM	252-808-2808
Greg "Rudi" Rudolph	Carteret County	252-393-2663
Sean McElhone	NCDPR	910-226-4881
Ed Murphrey	Pointe Association	252-746-3784
David Allen	NCWRC	252-448-1546
Ron Sechler	NMFS-HCD	252-728-5090
John Wells	UNC-CH	252-726-6841
Susan Cameron	NCWRC	910-325-3602
Mary Helen Casey	Lands End	252-354-2925
Howard Hall	USFWS	919-856-4520
Matthew Godfrey	NCWRC	(252) 728-1528
Mike Marshall	NCDMF	(252) 726-7021
Art Schools	Mayor Emerald Isle	252-354-3424
Michelle Duval	Environmental Defense	919-881-2601
John Fussell	Local Citizen	252-240-1046
Harry Simmons	NCSBPA	910-200-7867
Todd Miller	NC Coastal Federation	252-393-8185
Doug Huggett	NCDCM	919-733-2293
Noelle M. Lutheran	NC DWQ	910-395-3900
Jane M. Koroly	Cedar Point	

Justin McCorcle	USACE	910-251-4699
Lawrence Eaton	NCDWQ	
Don Field	NOAA-Beaufort	
Brian Strong	NC State Parks	919-715-8711
Chris Freeman	UNC-CH/Geodynamics	252-422-3209

Minutes of October 15, 2003 Meeting of the Bogue Inlet Project Delivery Team

1. **Mickey Sugg** opened the meeting indicating that most of the meeting would be devoted to reviewing the preliminary draft of the EIS (PDEIS). He indicated that we would review each section with the emphasis on major problems and concerns. Comments on the PDEIS should be provided by November 3 and can be submitted by mail or email. The Corps, State, and CPE will meet on 28 October to go over comments received by that date. This early meeting is needed in order to allow time to complete the Draft EIS by November 7. The Corps has scheduled a public hearing for December 8 and needs to get the public notice out 30 days prior to the meeting. Given the short period of time between closure of the comment period on the PDEIS and release of the DEIS, **Mickey** encouraged the PDT to get their comments in as early as possible.
2. **Mickey** asked **Erin Haight** to provide an update on the resource mapping. **Erin** said that the mapping was 90% complete and would be included in the DEIS.
3. **Mike Wicker**, US Fish and Wildlife Service introduced himself and said he would be participating in the project until its conclusion.
4. **Mickey** suggested deleting some of the subheading in the Table of Contents which was accepted by the PDT. **Mickey** also said that an executive summary would be included in the final but has been omitted from the PDEIS until selection of a preferred alternative.

Review of Section 1 of the PDEIS

5. **Todd Miller** had raised a previous question concerning applicable laws, specifically ones addressing mining and erosion control. **Mickey** checked with Judith Rhiner (sp?) and Dan Sams with the NC Land Quality Mining Section and was told that mining permits would not be required if the material is not being stockpiled for use somewhere else. Also, erosion control permits will not be needed as long as the first line of vegetation is not impacted. **Mickey** suggested waiting on review comments on the DEIS by the State to see if mining and erosion control laws need to be addressed.
6. **Todd** also said that the EIS needs to include the State Coastal Area Management Act (1974), the State's water quality standards as they relate to impacts on wetland.
7. **Noelle Lutheran** said that the project would have to comply with the North Carolina Administrative Code (15A NCAC 02B.0200) regarding water quality standards for surface water.
8. The Migratory Bird Act also needs to be discussed in Section 1.
9. **Todd Miller** initiated a discussion on land ownership, i.e., as it relates to new lands that would be created either directly or indirectly as a result of the project. The Town has received an opinion from the State Attorney General indicating that land raised above

mean high water in the areas north of the COLREGS Line either as a direct or indirect result of the project would be owned by the adjacent upland property owners. Therefore, the State of North Carolina would own any land that accretes to that portion of the Emerald Isle sand spit that it presently owns while accretion in other areas would revert to the upland property owners. **Mickey** said that the Attorney General's opinion needs to be summarized in the DEIS.

10. **Mike Wicker** expressed the importance of resolving the land issues early and include some definitive mitigation/conservation measures in the EIS. He said it would be a mistake to delay resolution of these issues until the final EIS. **Mike** suggested that a meeting with the affected property owners should take place to iron out details of any conservation measures that would involve land ownership issues or conservation easements. There was some general discussion of problems related to conservation easements including liability issues, enforcement, and willingness of all of the affected property owners to agree to the easements. **Mayor Schools** said the town is trying to set up a meeting with the property owners but have had scheduling problems. The town hopes to hold the meeting in November. *(Note: additional discussion on the land issues occurred during the afternoon session which was devoted to mitigation/conservation measures.)*

11. **Sue Cameron** expressed some disagreement with the project needs and opportunities as they relate to the restoration of the inlet habitat. **John Fussell** agreed saying that the inlet environment is transitory and is in a constant state of change. The primary area along the inlet shoreline that would possibly be enhanced is the 700-foot sandbag area, which is presently in a degraded condition.

Review of Section 2 of the PDEIS

12. **Mickey** said that he had some organizational suggestions. There were no comments from the PDT regarding Section 2. **Mickey** question **Noelle Lutheran** if the Division of Water Quality would need a public hearing or if the Public Hearing scheduled for December 8 could serve both purposes. This will have to be addressed later following the release of the DEIS.

Review of Section 3 of the PDEIS

13. No comments from PDT. **Mickey** indicated that elimination of infeasible alternatives is covered in Section 5.

Review of Section 3 of the PDEIS

14. **Sue Cameron** offered to work with **Erin** on the discussion related to migratory and other birds. Sue suggested combining inlet and beach resources as they relate to birds into one. **John Fussell** mentioned that Wilson's plovers depend on inlet resources and that their numbers are on the decline. **Mickey** said the discussion should focus on the results of the bird monitoring and provide specific information on the types of birds

observed in the Bogue Inlet area rather than on birds that could use the area. This information will be included in the DEIS and will be based on the monitoring results to date. **Sue Cameron** will provide a definition for colonial and shore birds.

15. **Sue Regier** said that the description of Hammocks Beach State Park needs to clarify that the park includes Bear Island, Huggins Island, and a site on the mainland. **Mickey** said the acreages of each should be given.

16. **John Fussell** said need to clearly define the habitat needs for piping plovers and other birds. **Howard Hall** said such a description can be found on the FWS website which includes a description of the critical habitat for piping plovers.

17. **Mike Wicker** again emphasized that the primary concern of the FWS is birds. While there may be some minor impacts on other species they manage, birds are paramount. Therefore, the DEIS needs to contain some very specific management proposals rather than generalizations.

18. **John Fussell** observed that the number of seabeach amaranth plants have increased and that the end of the island environments may be important to their propagation. **Howard Hall** suggested contacting Dale Suiter of the Raleigh FWS office to find out the result of ongoing research on seabeach amaranth. **Rudi** reported that the number of plants in the recently nourished areas along Bogue Banks increased from 1,200 last year to over 4,000 plants this year.

19. **Todd Miller** stated that the inlet shoals are used heavily by boaters. He indicated that boats also regularly land their boats on the north end of the spit as this is the only deepwater point. This activity will have to be addressed in the formulation of any conservation measures.

20. **Matthew Godfrey** noted that some of the information on turtles is out of date. He said he would work with **Erin** to update the information.

21. **Mickey** asked if diamond back terrapins probably don't use the inlet proper but may be found in the back marshes. Diamond back terrapins have State status but not Federal.

22. **Mike Marshall** said that the EIS does not need to include catfish and yellow perch but should address larval transport into the inlet. **Erin** said that larval transport is covered in the CEA and some of that information will be added to the DEIS.

23. **Mickey** asked if the statement that turbidity would not exceed 25 NTU was too strong. **Noelle** said that she had not completed her review of the EIS but believed that the statement was based on engineering studies. **Todd** said that **Jarrett** had responded to his questions regarding turbidity and material losses associated with the dike construction.

24. **Jarrett** said that turbidity issues for the project need to be weighed in light of the ongoing maintenance dredging activity that disposes 200,000 cy/yr into the channel.

Dredging and open water disposal has actually ranged from 400,000 cy to 600,000 cy during the last 3 years. Relocation of the channel and construction of the sand dike, which will involve the disposal of 200,000 cy into the existing channel, will essentially replace maintenance dredging for at least one year and possibly two years. **Noelle** said that will need to go through the water quality permit process first to see if a permit is denied prior to moving on to the variance process. **Mike Wicker** said that one of the main concerns with turbidity is its temporal impact. **Jarrett** said that the engineering analysis of suspended sediment during the construction of the dike indicated that sediment would not be transported north of the confluence of the inlet channel and Eastern Channel. **Mickey** said that dike construction would only take 6 to 10 days. **Todd** asked if material would be stockpiled adjacent to the channel and then pushed into the channel during slack water. **Jarrett** said the plan is to pump material directly into the channel without stockpiling. There would not be enough time around slack water to push the volume of material needed to construct the dike into the channel. **Todd** questioned the currents used to model the dike construction. **Jarrett** said that the currents were based on the results of the numerical model with the channel fully opened and with the dike 50% complete. The currents during the entire dike construction period remained about the same.

25. **Mickey** said that land use needs to be broken down between the inlet shoreline and the ocean beach.

Table 8 Discussion

26. **John Fussell** asked a question regarding the definition of direct, indirect, and cumulative impacts. **Howard Hall** said that he distinguishes direct and indirect by time and space. Cumulative impacts would be based on the impacts of the present project weighed against the impacts of similar projects. What he is looking for are cumulative impacts that would “break the camels back”. **Mickey** explained that direct impacts would occur during the time of construction while indirect impacts would occur over time, for example, the movement of sediment from its disposal area to some other location.

27. **Jarrett** said that Table 8 is a summary of the impacts outlined in Section 5 and that the revised table reflects some changes in Section 5 that were made following the initial distribution of the PDEIS. (*Note: A copy of the revised Section 5 was mailed to the PDT on 16 October 2003*).

28. **Mike Wicker** said that bird management is going to be the major issue for FWS. He stressed the need to develop the details of the management plan as early as possible. He indicated a willingness to meet and work with the town, property owner, and agencies to hash out the details of the management plan. **Mike** said David Rabon will provide comments on the Biological Assessment by early next week and could have some specific recommendation at that time. **Mike** said that development of the management plan is not just saying what we want but what are we going to get? **John Kilgore** questioned the need for a management plan since we are simply restoring habitat that had

been there before. **Jarrett** said that we are looking for ways to enhance the environment not simply restore it.

29. **John Fussell** said that piping plovers depend on migratory inlets and overwash areas yet Table 8 indicates that fixing the inlet will result in more piping plover habitat. This also raised questions with the representation given to turtle habitats and seabeach amaranth. As a result of these comments, Table 8 will be revised to tone down the positive impacts on piping plovers, turtles, and seabeach amaranth associated with Alternatives E and F. The only potential improvement in turtle habitat will be in the area presently protected by the sandbags.

30. **Todd** suggested listing Hammocks Beach State Park as a separate resource. However, **Mickey** pointed out that the impacts on the State Park are included in the discussion of impacts on the various resources.

31. **Todd** questioned how uncertainty, i.e., the uncertainty with the predicted changes in the inlet and adjacent shoreline, would be addressed in the mitigative measures. **Erin** said that the DEIS will include a figure showing the historic shoreline positions on both Emerald Isle and Bear Island. **Mickey** indicated that the uncertainty issue would be addressed in the mitigation section that is to be added to Section 5.

32. **Doug Huggett** said that statements regarding sea turtle nesting on Bogue Banks during the last couple of years should only present the data and not draw any conclusions unless there is a scientific basis or study that supports the conclusions.

33. **Sue Cameron** questioned the omission of negative impacts on Dudley Island for Alternatives E and F noting that erosion of the island is likely to continue under all alternatives. **Jarrett** agreed saying that there would be a respite period without erosion under Alternatives E and F until the sand spit redevelops. Table 8 and the write-up in Section 5 will be changed to reflect this.

34. **Sue Regier** asked if there would be any impacts on Cow Channel, specifically, could the project cause and increase in shoaling? **Jarrett** said that the numerical model did not show any changes in the hydraulics for Cow Channel or the Atlantic Intracoastal Waterway and without some change in the sediment transport parameters there would not be any impact on Cow Channel. **Sue Regier** indicated that some secondary channels leading from Western Channel connect with Cow Channel and asked if sediment could be transported through these channel and deposit into Cow Channel. **Jarrett** said that the sediment that would be scoured during the one to two month channel adjustment period would be transported along the bottom of the channel as bed load and would not move into Cow Channel.

35. **Mike Wicker** reiterated his willingness to work with the town and the property owners to develop a bird management plan that all could accept. **Mayor Schools** said that the town wanted to meet separately with the property owners to discuss options. After that meeting, he would welcome the interaction with the FWS and other agencies.

36. **Mickey** said that the DEIS will include a specific mitigation plan for the preferred alternative. **Mickey** said the elements of the mitigation plan will include conservation easements, posting, and impacts to Bear Island.

37. The PDT agreed to meet after lunch to hash out mitigative measures.

Mitigation Measures

38. **Doug Huggett** said that need to take into account lessons learned from the Mason Inlet project. For example, fencing the area to prohibit public access is against Division of Coastal Management regulations. **Mickey** said that the mitigation plan for Mason Inlet is based on providing information to the public to explain the purpose of the bird management plan and explain why access to certain areas is restricted. **Mickey** said it is important that visitors to the inlet understand the restrictions. **Mike Wicker** said that he had talked with Walker Golden of the Audubon Society said that the Audubon Society was interested in participating in a bird management plan for Bogue Inlet.

39. There was some general discussion on land ownership and where restrictive access should be located. **Sue Cameron** said that the area located on the extreme north end of the existing sand spit is important foraging habitat for piping plovers and other birds. This area should be protected by ropes and/or posting. **Todd** indicated that boaters often pull their boats into the slough. **Rudi** questioned why restrictions could not be established now given that the land in question is already State land. **Rudi** asked why is the town being asked to impose these restrictions? **Sue Cameron** said that the project would result in a change in use, specifically restoration of public access.

40. **Todd** asked if the town intended to reestablish public access to the inlet. **Mayor Schools** said that the citizens would like to have the access restored; however, if access is judged to be detrimental, then the town would not let it happen. Presently, vehicular access to the beach is only allowed between October 1 and March 31. **Rudi** said that if access is reestablished, vehicular access north of the ramp should be prohibited, i.e., vehicles would only be allowed to drive toward the ocean once on the beach.

41. **Mickey** said he recalled having seen some mitigative measures in a previous draft; however, **Erin** pointed out that they are in the draft Biological Assessment (BA). **Mickey** said that he would send out that section of the BA to the PDT.

42. **Frank Rush** provided an update on the planned meeting with the Pointe property owners. He hopes to get them together on a Saturday in early November to go over the various options and explain the changes anticipated with the project. He said there are a couple of options; first would be to have the property owners deed everything west of a line to the town or include everything west of a line into a conservation easement. **Frank** said that the property owners would need to retain enough land that would allow them to meet the CAMA setback should the structure be lost to fire or some other catastrophe.

Frank also said that he wanted to have the town boundaries amended to include the inlet area.

43. **Mike Wicker** said he favored deeding property to the town. Also, extending the town boundaries to include the inlet area would go a long way to resolving issues. **Frank** said that he presently does not have any authority to control dogs.

44. **Mickey** initiated a discussion on Fishery management. **Mike Marshall** said what we have talked about is what we think will happen, what about things that happen that were not predicted? **Jarrett** said that monitoring of the area would include a duplication of the recent aerial photos and ground truth approximately 1.5 years post-construction and based on the results of that monitoring, mitigative requirements would be developed at that time. Of course, this puts a big unknown on the town as far as future costs are concerned. While impacts outside the Permit Area are not anticipated, there was agreement to include some know shellfish areas outside the permit area to monitor for sedimentation and other negative impacts. **Noelle** agreed that monitoring of selected areas outside the Permit Area should be included in the plan.

45. **Mickey** questioned the need to continue benthic monitoring in the beach nourishment area. He asked **Mike Marshall** to get with **Ron Sechler** to see if they want to include benthic sampling along the beach nourishment area.

46. **Todd** asked how far are you taking things that can go wrong? For example, what if the channel migrates to the west, should mitigation plan include what would be done if that happens? **Mickey** said that would be included in the proposed mitigation plan. **Mickey** mentioned that the town is considering the possibility of purchasing land that could be given to the State to mitigate for any future impacts.

47. **Doug Huggett** said that if thresholds are included in any plan that the details need to be tightly defined and the response to exceeding the thresholds made very clear. **Mickey** said that mitigation for unanticipated changes on Bear Island and Emerald Isle would be included in the new mitigation section for Chapter 5.

48. **Ed Murphrey** mentioned the concept proposed by Coastal Science and Engineering to establish 1,000-foot lines east and west of the relocated channel and should the channel migrate outside of this corridor then the channel would be repositioned. **Mickey** pointed out that this would fall under the inlet management alternative which has been eliminated due to costs and time associated with implementing such a plan. Management of the inlet may be included in the long-term storm damage reduction project being formulated by the Corps of Engineers. **Ed** asked if it would be a big deal to change the maintenance practices to keep the channel in a fixed location to which **Mickey** responded, yes. This type of change would require new congressional authorization.

49. **Mickey** restated that the comments should be submitted to him via mail or email by November 3 or earlier if possible. The Corps and State will meet with CPE on 28

October to go over comments received by that time. The Public Hearing will be on December 8.

50. The next meeting of the PDT will be December 4, 2003 at 10:00 am in the Emerald Isle Town Hall.

List of Participants
October 15, 2003 Bogue Inlet PDT Meeting

Name	Representing	Phone Number
Tom Jarrett	CPE-NC	910-392-0453
Erin Haight	CPE-FL	561-391-8102
Mickey Sugg	USACE	910-251-4811
Dave Melteny	NC Wildlife Res. Comm.	252-946-6481
Doug Huggett	NC DCM	919-733-2293 ext 245
Gary Beecher	NC DWQ	910-395-3900
Noelle Lutheran	NC DWQ	910-395-3900
Greg "Rudi" Rudolph	Carteret County	252-393-2663
Bill Ennett	Cedar Point	252-393-8123
Ed Murphrey	Pointe Association	252-746-3784
Mike Marshall	NC Marine Fisheries	252-726-7021
Sue Regier	NC Div. Parks & Rec.	919-715-8694
Susan Cameron	NCWRC	910-325-3602
Mary Helen Casey	Lands End	252-354-2925
Mike Wicker	USFWS	919-856-4520 ext 22
Howard Hall	USFWS	919-856-4520 ext 27
Matthew Godfrey	NCDMF	252-726-7021
Todd Miller	NCCF	252-393-8185
Art Schools	Mayor Emerald Isle	252-354-3424
Frank Rush	Town Manager Emerald Isle	252-354-3424
John Kilgore	Emerald Isle	252-354-7084
Michelle Duval	Environmental Defense	919-881-2601
John Fussell	Local Biologist	252-240-1046
Ted Tyndall	NC DCM	252-808-2808

Minutes of December 4, 2003 Meeting of the Bogue Inlet Project Delivery Team

1. **Mickey Sugg** opened the meeting indicating that the main item on the agenda was the review of the draft monitoring/mitigation plan prepared by the Town of Emerald Isle. **Mickey** reminded the PDT that the Public Hearing would be held at 6:30 on Monday 8 December in the Emerald Isle Recreation Center gym and that the comment period for the Draft EIS would close on 26 December 2003. **Mickey** also said that this may be the last meeting of the PDT and thanked everyone for their participation stating that he though that the PDT had accomplished a lot. A 9th meeting of the PDT is possible should something come up requiring its attention, but for the moment, he did not anticipate the need for another meeting.

2. **Rudi Rudolph** and **Ed Murphrey** also thanked the PDT members for their participation and the Corps of Engineers and CPE for publishing the DEIS in a timely manner. **Mickey** referred to the Corps website which contains the DEIS broken down into smaller segments that can be accessed without overloading slower connections.

3. **Frank Rush** indicated that the Town of Emerald Isle website also contains a link to the Corps website for access to the DEIS. Frank then introduced **Robert (Bob) Isenhour**, newly elected to the Emerald Isle Board of Commissioners.

4. **Doug Huggett** indicated that he had sent 15 copies of the DEIS to the State Clearinghouse. Once the Clearinghouse publishes the availability of the document in its Environmental Bulletin, the public normally has 45 days to comment. (*Note that notice of the DEIS was published in the Environmental Bulletin on 12/4/2003 with the close of the comment period given as 1/3/2004*). While the close of the Clearinghouse comment period follows that of the Corps, **Doug** noted that most State agencies that will comment on the Draft have representatives on the PDT, so that most of the pertinent comments should be submitted by the close of the Corps comment period (26 December 2003). **Doug** indicated that the final EIS would go through a similar Clearinghouse review which will include a 30-day comment period. **Frank Rush** asked if the delay in the Clearinghouse review of the DEIS would impact the schedule. **Jarrett** indicated that with the final EIS scheduled for release on 29 March 2004, there will be sufficient time to prepare the final including the Clearinghouse comments.

5. **Doug Huggett** discussed some internal problems within DCM that could impact the CAMA permit process. First, the staff will be moving from Raleigh to the coast about the time the CAMA permit is being considered. Also, **Doug's** staff will be short handed due to the transfer of two employees to other state agencies. **Doug** indicated that DCM will do everything possible to move the permit along but the move and the loss of the employees will affect everything DCM is doing.

6. **Ed Murphrey** asked if there was anyway to accelerate the release of the final EIS. **Jarrett** said that an earlier release date for the final would depend on the comments received on the DEIS and the amount of time needed to prepare responses to each and

every comment. If no new issues are raised, then the response to the comments should move along in a timely manner, however, CPE cannot commit to an earlier date until we have had a chance to review the comments. If the CAMA permit process takes longer than anticipated, the project could be advertised for construction prior to the issuance of the permit with the condition that the contract would not be awarded until the permit is granted. This could lead to higher bid prices and should be avoided if at all possible.

7. **Mickey** asked **Doug** if there was a public notice associated with the State Clearinghouse review. **Doug** indicated that the announcement in the Environmental Bulletin served that purpose. However, there is a public notice for the CAMA permit which runs concurrently with the review of the final by the environmental agencies.

8. **Mickey** initiated a discussion of the mitigation/conservation measures proposed by the Town. **Frank Rush** indicated that the town had had a meeting with the affected property owners on the west end of the Town and that all property owners agreed to transfer any land that accretes west of their historic property lines would be deeded to the Town. The town is well on the way to developing the necessary legal documents. The Town has conducted additional research on the land thought to be owned by the State and has determined that the land may still be in private ownership. However, the Town knows who the property owners are and all are supportive of the project and should be willing to deed the property to the town. The Town has also approached Representative Jean Preston regarding State legislation to allow the Town to extend its boundaries to the west. The legislation will be introduced during the short session, scheduled for May 2004, and since there is no controversy associated with the extension of the Town boundary, **Frank** does not anticipate any problems or delays.

9. **Frank** discussed item number 5, bird management plan. He suggested establishing a 100 to 150-foot wide corridor from the water line for public access with the remainder of the spit area designated as a bird habitat. The only concern from the existing property owners at the Pointe was some assurance that they would continue to have access to the inlet from their properties. **Frank** pointed out that the Town of Emerald Isle has an existing dog leash ordinance which would be applied to the spit area once the town boundaries are extended. However, **Frank** indicated that the town has limited enforcement capability.

10. There was considerable discussion regarding restrictions on public access to the spit area and whether or not the Town of Emerald Isle could impose an ordinance to restrict access to certain parts of the spit deemed to be important habitat for birds. **Mike Wicker**, USFWS, indicated that they would like to see areas roped off and posted to restrict access to critical areas. This approach was also favored by the **David Allen** and **Sue Cameron** of the NC WRC. However, **Doug Huggett** and **Tere Barrett** said that State law requires that the public be allowed access to the dry sand beach area located seaward of the vegetation line not just the waterline. In this regard, an ordinance restricting public access would not be allowed by State law. Also, given the anticipated changes in the configuration of the sand spit following the relocation of the channel, bird habitat areas would continually be changing which in turn would change the areas in which public

access would need to be restricted. **Doug Huggett** indicated that yearly adjustments in the boundaries of the bird management area could be made a condition of the permit; however, DCM needs some specific recommendations with regard to public access areas relative to the waterline as well as some idea of the area that would be roped. Once specific recommendations are formulated, DCM would seek public input on the plan through the EIS and permitting process. **Doug** indicated that a compromise plan could be worked out to accommodate both the public access issue and the objectives of the bird management plan and did not think that this would be a show stopper. **Jarrett** mentioned that a meeting between NMFS, FWS, NCWRC, DCM, and the Corps is scheduled for December 9 and that specific recommendations regarding the bird management plan could be developed at that meeting. *(Note: As a result of the December 9 meeting, the FWS and NCWRC agreed to develop specifics of the bird management plan that will ultimately be coordinated with the DCM following a review by the Town. CPE is to provide maps showing possible future shorelines as the new spit develops off the west end of Emerald Isle following the channel relocation. The existing condition of the spit along with the future shoreline projections would be used to develop the bird management plan.)*

11. Other issues with regard to the bird management plan were discussed including the length of time the management plan would be in force, the need to have someone on the ground for educational purposes and assure that the restricted areas are being observed by the general public, and the length of time to continue bird monitoring. **Sue Cameron** indicated that NCWRC may be able to provide educational support but could not definitely commit at this time. There was also some discussion of using an outside group such as the Audubon Society to provide this type of service. These details would also have to be worked out and included in the final EIS. With regard to the bird monitoring, **Mick Wicker** suggested extending the monitoring for 3 years post-construction but keeping the overall cost essentially the same as presently programmed for 2 years.

12. **Mickey** opened discussion on item 1 in the management/conservation plan – salt marsh monitoring. **Tere** suggested increasing the number of monitoring events from annual to quarterly. **Frank** pointed out that the post-project monitoring plan was based on the pre-project salt marsh monitoring plan agree to by the PDT and that increasing the number of events from 1 to 4 per year would increase the cost from \$15K per year to \$60K per year.

13. **Mickey** asked if some of the infauna monitoring could be replaced by habitat monitoring using aerial photos. **Doug** said this could be a problem in that new habitat would not necessarily translate into more infauna. **Ron Sechler** indicated that NMFS has some concern over the net loss of 25 acres of shallow water habitat that would occur as a result of the project construction (50 acres loss due to channel and 25 acres gained from dike construction). While NMFS would favor using some of the channel material to replace the loss habitat by filling the existing channel, they recognize the town's desire to use the inlet material for beach and that NMFS would be willing to consider some increased habitat monitoring to determine how the inlet adjusts over 2 years post-construction. This is something that will be discussed further at the December 9 meeting.

Noelle Lutheran said NCDWQ may require infauna sampling as a water quality indicator; however, she was not sure if that was the case. **Mike Wicker** said that he would discuss this with Larry Eaton (NCDWQ).

(During the December 9 meeting, NMFS and FWS suggested substituting a university research project to evaluate the impact of the project on infauna along the ocean beach and in the inlet in place of the present infauna sampling plan. Mickey Sugg is to coordinate a meeting between the agencies and universities to see if this approach is workable.)

14. **Ron Sechler** wanted to make clear that the additional habitat monitoring would not replace the SAV monitoring since different photo and ground truth techniques are involved. SAV monitoring will occur approximately 18 months after project construction which would place the SAV monitoring sometime during the summer months.

15. **Tere Barrett** said that items 1.a., 1.b, and 1.c. need to include a statement that the town will negotiate corrective action with the agencies should the monitoring show significant negative impacts. **Frank Rush** was concerned with the unknown cost associated with such a commitment. The DCM pointed out that the project modeling and predictions are indicating no impact to birds, infauna, or salt marsh. However, if the model predictions are wrong, they need some way to respond. The monitoring would provide the information necessary to determine if impacts occur and if so, mitigative responses would have to be developed post-project. **Doug** indicated that all monitoring reports would be provided to the DCM as part of their permit and that DCM along with the Corps would evaluate the monitoring results to determine if any significant impacts have occurred. Response to the impacts would be developed in concert with the Town, Corps, and DCM. **Mickey** indicated that the final decision as to whether an impact is significant or not is the responsibility of the Corps of Engineers. **Doug** assured **Frank** decisions regarding the significance of impacts and mitigative requirements will be reasonable.

16. **Todd Miller** asked **Frank** what is the Town's upper limit regarding mitigative commitments. **Frank** said that is what he is trying to determine.

17. With regard to item 6 of the monitoring/mitigation plan, only item a., beach profile surveys, would remain. **Rudi** indicated that the county is committed to 5 years of monitoring. Items b. and c. are included in the project description in the EIS. Item c., the 50-year shore protection project in not mitigation but was included to let property owners know that things will be done to respond to the erosion predicted for the west end of the town's shoreline.

18. For item 7, Bear Island, **Brian Strong** expressed some concern over increased shoaling of Cow Channel. **Jarrett** said that he had requested historic dredging records from the State Park to establish existing rates of shoaling. **Brian** said that he had not been able to assemble the complete record but did provide **Jarrett** with approximate dredging amounts. *(Note: the maintenance records provided indicated that 5,600 cy*

was removed by mudbucket dredge last year with approximately 25,000 cy removed by pipeline dredge in 2000. Two other operations occurred since 1989 with both involving about 25,000 cy.) There was also some discussion over possible shoaling of the shallow channel immediately behind Bear Island. **Jarrett** indicated that no shoaling is anticipated in that area. Any sediment displaced during the first few months following channel construction are expected to move into Eastern Channel and Western Channel.

19. **Mickey** indicated that the monitoring/migration plan would be revised based on this discussion and also as a result of the meeting on December 9. He asked the PDT to provide him with any additional input that comes to mind following the meeting. The monitoring/mitigation plan will be included in the final EIS.

20. **Doug** said that any modification to the monitoring requirements for the existing project (item 8 in the draft monitoring/mitigation plan) would have to be requested by Carteret County, the project sponsor.

21. **Mickey** said that the existing turtle monitoring plan needs to be included in the inlet monitoring/mitigation plan even though it would still be accomplished under the existing County permit.

22. Impacts on Island 2 were briefly discussed. While no impacts are predicted for Island 2, as the island is undergoing continuous changes under existing conditions, **Sue Cameron** said that is why it is important to assure the protection of existing and new areas that are likely to develop following project construction.

List of Participants
December 4, 2003 Bogue Inlet PDT Meeting

Name	Representing	Phone Number
Mickey Sugg	USACE	910-251-4811
Tere Barrett	NC DCM	252-808-2808
Doug Huggett	NC DCM	919-733-2293 ext 245
Charles Vincent	BBBPA	252-354-2501
Robert Isenhour	Emerald Isle Commissioner (elect)	252-354-3691
Ed Murphrey	Pointe Association	252-746-3784
Greg "Rudi" Rudolph	Carteret County	252-393-2663
Dave McHenry	NC Wildlife Res. Comm.	252-946-6481 ext 345
Mike Marshall	NC Marine Fisheries	252-726-7021
Ron Sechler	NOAA Fisheries	252-728-5090
David Allen	NCWRC	252-448-1546
Susan Cameron	NCWRC	910-325-3602
John Wells	UNC-CH	252-726-6841
John Fussell	Local Biologist	252-240-1046
Mike Wicker	USFWS	919-856-4520 ext 22
Noelle Lutheran	NC DWQ	910-395-3900
Michelle Duval	Environmental Defense	919-881-2601
Todd Miller	NCCF	252-393-8185
Bill Ennett	Cedar Point	252-393-8123
Frank Rush	Town Manager Emerald Isle	252-354-3424
Tom Jarrett	CPE-NC	910-392-0453
Mary Helen Casey	Lands End	252-354-2925
Brian Strong	NC State Parks	919-715-8711

Comments received following October 15, 2003 PDT meeting

From: Tom Jarrett

Sent: Wednesday, October 01, 2003 10:42 AM

To: toddm@nccoast.org

Cc: crv89@earthlink.net; Steve.Benton@ncmail.net; ncsbpa@mindspring.com; john_wells@unc.edu; caroline.bellis@ncmail.net; rudi@co.carteret.nc.us; frush@emeraldisle-nc.org; Mickey.T.Sugg@saw02.usace.army.mil; matthews.kathy@epa.gov; Tere.barrett@ncmail.net; glenn.mcintosh@saw02.usace.army.mil; mduval@environmentaldefense.org; Craig Kruempel; Erin Haight; Robert.E.Sattin@saw02.usace.army.mil; jims@nccoast.org; david_rabon@fws.gov; ron.sechler@noaa.gov; john.dorney@ncmail.net; aschools@emeraldisle-nc.org; bennett@ec.rr.com; brian.strong@ncmail.net; dale_suiter@fws.gov; allend@coastalnet.com; david.mchenry@ncwildlife.org; doug.huggett@ncmail.net; emurphrey@copypro.net; Hugh.Heine@saw02.usace.army.mil; tdelmore@ec.rr.com; jfuss@clis.com; johnk@clis.com; larry.eaton@ncmail.net; mhcasey@hotmail.com; godfrey@coastalnet.com; mike.marshall@ncmail.net; noelle.lutheran@ncmail.net; ron_lewis@co.onslow.nc.us; sam.bland@ncmail.net; camérons@coastalnet.com; David.L.Timpy@saw02.usace.army.mil; fox.rebecca@epa.gov; christopher.c.frabotta@saw02.usace.army.mil; howard_hall@fws.gov; john_ellis@fws.gov; justin.p.mccorcle@saw02.usace.army.mil; ted.tyndall@ncmail.net; Trish.Murphey@ncmail.net

Subject: Re: Questions on EIS Draft

In a message dated 9/30/2003 5:09:57 PM Eastern Daylight Time, toddm@nccoast.org writes:
Tom,

I have just started reviewing the draft EIS for Bogue Inlet and had a few quick questions regarding the construction of the dike in the inlet channel:

(1) Does the estimate of the volume of sand it will take to build the dike include what will be lost into the surrounding waters? The calculations in the engineering report seem to indicate that's the case--the dredge will pump for 9.5 days averaging 900 cubic yards/hour.

[Reference Section 6 of the Engineering, Geology, and Geotechnical Report.](#) The time required to raise the dike to elevation 2.5 feet above NGVD was 6.5 days requiring 141,200 cubic yards. Once raised to this level, the dike would be capped with an additional 8,100 cubic yards to raise the dike to its final elevation of 4.5 feet NGVD (equal to the elevation of the sand spit). Thus the total volume for the dike is 149,300 cubic yards. This computed volume was increased by about 35% to account for losses resulting in a total construction volume of 200,000 cubic yards.

(2) If a percentage of sand pumped is lost to the environment during dike construction, what will be the final volume of sand in the dike itself? Is it possible to provide a three dimensional illustration that shows the length, widths, and height of the finished dike?

[Again reference Section 6 in the Engineering Report.](#) The bottom width of the dike was based on the fall velocity of the median grain size (.188 mm) of the material that would be removed to construct the dike and the full cycle of current velocities flowing in the existing channel. The velocities in the channel were based on the results of the numerical model for the channel fully opened and with the dike 50% complete. The schematic of the dike cross-section shown in the report (figure 6.6) indicates a bottom width of 700 feet where the existing channel depth is -6 feet NGVD. Note that the inferred side slopes of the dike would be around 1V:35H, which again would be dictated by tidal currents and the travel distance of the material. The bottom width would be wider for deeper sections of the channel. For example, the maximum depth of the channel where the dike would be constructed is about -12 feet NGVD which would result in a total bottom width of around 1,100 feet. Since only 1.25% of the material is less than .062 mm (i.e., silt) most of the material would be retained in the dike. The sediment plume from the dike construction is shown on Figure 6.1 and would not extend beyond the juncture of Eastern Channel and the inlet channel. The allowance for an additional 35% in the construction volume to account for losses includes this 1.25% silt content.

[We will attempt to provide a 3-D view of the dike at the next PDT.](#)

(3) It states in the report that for the purposes of the model, an average width of 1,200 feet was used for the channel. The report also states that the width of the channel is actually between 1,650 and 1,800 feet. Why wasn't the actual width of the channel used for the model? Would using the larger distance increase the amount of sand needed for dike construction by another 30%?

Actually, in checking the computations for the dike construction, I realized that I used a width of 1,450 feet rather than 1,200 feet. We will make this correction for the DEIS.

The width of the channel varies from approximately 0 feet at a depth of -12 ft NGVD, 350 feet at a depth of -8 feet NGVD, 1,000 feet at a depth of -6 ft NGVD, 1,450 feet at 0 NGVD, and 1,700 feet at elevation +4.5 ft NGVD (see Figure 6.2 in the Engineering Report). The cross-sectional area of the channel at this location is approximately 9,400 sq ft measured relative to NGVD. The 1,450 foot width used to determine the volume required to construct the dike was based on the width of the channel at mid depth (i.e., 0-ft NGVD). For the cross-section of the channel shown on Figure 6.2, using a width of 1,450 feet results in an average depth of the cross-section of around -6.5 feet NGVD. This average depth at NGVD was used to determine fall distances for the medium particle size which led to the estimated volume to construct the dike.

In other words, the volume of material needed to construct the dike was actually based on the cross-sectional area of the channel not just the channel width. As discussed above, the computed volume was increased by 35%.

(4) DOT is estimating it will lose about 30-40% of the sand it pumps to fill the inlet on Hatteras Island using a 30" pipeline dredge. Would that loss rate be similar to what would happen at Bogue Inlet? What size pipeline dredge will be used at Bogue Inlet?

Construction of the dike was based on the use of a 30-inch pipeline dredge. As noted in the Engineering Report, a dredge of this size pumping material through the relatively short pipeline should be able to pump 1,500 cubic yards/hour, however, our estimate of the time required to construct the dike was based on a production rate of 900 cy/hr. Again, the volume estimates include assumed losses of 35%.

Thanks for the clarifications on these issues.

Todd

Thanks for your early comments. Keep them coming.

Tom

From: Todd Miller [toddm@nccoast.org]

Sent: Monday, October 06, 2003 4:52 PM

To: Sugg, Mickey T SAW

Cc: Tom Jarrett; Frank A. Rush

Subject: 1.7 PERMITS, LICENSES AND ENTITLEMENTS -- Several Omissions
Mickey et al:

There are several significant omissions in the following section **(1.7 PERMITS, LICENSES AND ENTITLEMENTS)** that you may want to address:

1. Clean Water Act: The existing section focuses on NPDES (does this mean that a dredge pipe discharge needs an NPDES permit?), wetland, and 401 requirements. While it mentions water quality standards, and doesn't provide any background on what they are and the various water quality classifications that are impacted by this project. Specific water quality classifications and standards that are applicable to this project should probably be listed, including those assigned to SA, ORW, SB and HQW waters. It should also be noted that the NC General Assembly has it's own set of water pollution laws that are applicable to this project as well.
2. The NC Coastal Area Management Act of 1974 including it's numerous regulatory requirements (i.e., no permit can be issued that results in a violation of water quality standards).
3. The NC Sedimentation and Erosion Control Act of 1973.
4. The NC Mining Act.
5. Public Trust Laws and Common Law Rights: NC has enacted laws that deal with public trust rights to raised properties. There are also constitutional public trust rights as well. These need to be explained since they will have a major impact on land ownership issues that the project will have to address.

Todd

Todd Miller
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www.nccoast.org

From: Sue Regier [sue.regier@ncmail.net]
Sent: Monday, October 20, 2003 3:17 PM
To: Erin Haight
Cc: Brian Strong; sam bland; sean mcelhone; Paul Donnelly
Subject: Acreages for Hammocks Beach SP

Erin,

Here is the acreage information I said I would get you after the meeting last Wednesday. This is my first day back in the office since I saw you at the meeting.

There are three sections to Hammocks Beach State Park totalling 1,137 acres.

The largest section of Hammocks Beach State Park is Bear Island containing approximately 892 acres. 700 acres of Bear Island is a Registered Natural Heritage Area with the Natural Heritage Program.

This Registry recognizes the fact that Bear Island is an undeveloped barrier island with the natural dynamics of the coastal forces shaping the island and its habitats. Bear Island contains a mosaic of the Dune Grass, Maritime Wet Grassland, Maritime Shrub, and Maritime Evergreen Forest natural communities.

The second largest section is Huggins Island containing approximately 210 acres (approximately 115 acres of this is uplands with Maritime Evergreen Forest - the remainder --95 acres-- is Maritime Swamp Forest and Tidal Marsh)

The smallest section is the Mainland section containing about 35 acres.

From our perspective, when you say Hammocks Beach State Park it refers to all three sections not just Bear Island.

Also, both Bear Island, Huggins Island, and Dudley are Significant Natural Heritage Areas under the Natural Heritage Program's classification. Bear Island is also a Registered Natural Heritage Area.

Brian will be sending the information of the dredging of Cow Channel that you requested at the meeting last Wednesday. Let me or Brian know if you have further questions.

Sue

--

Sue Regier, Head
Resource Management Program
NC Division of Parks and Recreation
voice: 919-715-8694
fax: 919-715-3085

email: Sue.Regier@ncmail.net

From: McHenry, David G. [david.mchenry@ncwildlife.org]

Sent: Monday, October 20, 2003 10:40 AM

To: Tom Jarrett

Cc: crv89@earthlink.net; Steve.Benton@ncmail.net; ncsbpa@mindspring.com; john_wells@unc.edu; caroline.bellis@ncmail.net; rudi@co.carteret.nc.us; frush@emeraldisle-nc.org; Mickey.T.Sugg@saw02.usace.army.mil; matthews.kathy@epa.gov; Tere.barrett@ncmail.net; glenn.mcintosh@saw02.usace.army.mil; mduval@environmentaldefense.org; Craig Kruempel; Erin Haight; Robert.E.Sattin@saw02.usace.army.mil; toddm@nccoast.org; jjms@nccoast.org; david_rabon@fws.gov; ron.sechler@noaa.gov; john.dorney@ncmail.net; aschools@emeraldisle-nc.org; bennett@ec.rr.com; brian.strong@ncmail.net; dale_suiter@fws.gov; Allen, David H.; McHenry, David G.; doug.huggett@ncmail.net; emurphrey@copypro.net; Hugh.Heine@usace.army.mil; tdelmore@ec.rr.com; jfuss@clis.com; johnk@clis.com; larry.eaton@ncmail.net; mhcasey@hotmail.com; Godfrey, Matt H.; mike.marshall@ncmail.net; noelle.lutheran@ncmail.net; ron_lewis@co.onslow.nc.us; sam.bland@ncmail.net; Cameron, Sue; David.L.Timpy@usace.army.mil; fox.rebecca@epa.gov; christopher.c.frabotta@saw02.usace.army.mil; howard_hall@fws.gov; john_ellis@fws.gov; justin.p.mccorcle@saw02.usace.army.mil; ted.tyndall@ncmail.net; Trish.Murphey@ncmail.net

Subject: RE: Minutes of the Oct 15 PDT meeting

Follow Up Flag: Follow up

Flag Status: Flagged

Tom,

Thanks for the meeting notes. I have only one clarification I would like to suggest. Number 11 states that " There was general agreement to limit the impacts to the 700 feet of inlet shoreline presently protected with sandbags." I believe this should be rewritten/clarified to note that the limit of any possible restoration of inlet shoreline from any new channel construction should be the sandbag area, which currently represents a degraded condition. However, this is even a tenuous assertion because it really isn't direct restoration anyway as this area would be expected to fill in relatively quickly (?) along with much of the remaining portion of the natural inlet channel. Consequently, the net gain or loss of inlet shoreline from the project needs to be tabulated (if it is not already in the EIS) to get a perspective on the project's overall impacts. For example, immediately following construction, a mid-line oriented channel would create X linear feet of fairly straight inlet shoreline and eliminate Y linear feet of meandering natural inlet (minus the 700 feet of degraded sandbag area). Granted the longer-term balance in inlet shoreline habitat would vary as any newly constructed channel begins to move (if it does) and areas of the preexisting inlet fill in.

Thanks,

Dave McHenry

NE Coastal Region Coordinator

Habitat Conservation Section
NC Wildlife Resources Commission
252/946-6481 extension 345

-----Original Message-----

From: Jtomjarrett@aol.com [mailto:Jtomjarrett@aol.com]

Sent: Saturday, October 18, 2003 4:25 PM

To: crv89@earthlink.net; Steve.Benton@ncmail.net; ncsbpa@mindspring.com;
john_wells@unc.edu; caroline.bellis@ncmail.net; rudi@co.carteret.nc.us;
frush@emeraldisle-nc.org; Mickey.T.Sugg@saw02.usace.army.mil;
matthews.kathy@epa.gov; Tere.barrett@ncmail.net;
glenn.mcintosh@saw02.usace.army.mil; mduval@environmentaldefense.org;
ckruempel@coastalplanning.net; ehaight@coastalplanning.net;
Robert.E.Sattin@saw02.usace.army.mil; toddm@nccoast.org; jims@nccoast.org;
david_rabon@fws.gov; ron.sechler@noaa.gov; john.dorney@ncmail.net;
aschools@emeraldisle-nc.org; bennett@ec.rr.com; brian.strong@ncmail.net;
dale_suiter@fws.gov; allend@coastalnet.com; david.mchenry@ncwildlife.org;
doug.huggett@ncmail.net; emurphrey@copypro.net; Hugh.Heine@usace.army.mil;
tdelmore@ec.rr.com; jfuss@clis.com; johnk@clis.com; larry.eaton@ncmail.net;
mhcasey@hotmail.com; godfrey@coastalnet.com; mike.marshall@ncmail.net;
noelle.lutheran@ncmail.net; ron_lewis@co.onslow.nc.us; sam.bland@ncmail.net;
camerons@coastalnet.com; David.L.Timpy@usace.army.mil; fox.rebecca@epa.gov;
christopher.c.frabotta@saw02.usace.army.mil; howard_hall@fws.gov;
john_ellis@fws.gov; justin.p.mccorcle@saw02.usace.army.mil; ted.tyndall@ncmail.net;
Trish.Murphey@ncmail.net

Subject: Minutes of the Oct 15 PDT meeting

Minutes for the Oct 15 PDT are attached. Please look them over and let me know if I have missed any points or misinterpreted what was said.

Thanks,
Tom

From: Matthew Godfrey [godfrey@coastalnet.com]
Sent: Monday, October 20, 2003 4:37 PM
To: Erin Haight
Subject: Re: Bogue PDEIS - Turtles

Hi Erin,

The Duke grad student is Kristin Hart, and her email is: kmh5@duke.edu I heard that she just left for field work for at least a week, so you might not be able to contact her right away.

Sue Cameron forwarded me the .doc version of section 4 of the draft EIS. I have gone through the sections that include info on sea turtles, and have tried to add suggestions, corrections, or simple questions. Many of the references were not listed in the Literature Cited section and I don't know them all offhand (particularly the Ripple reference). I have suggested other references that may be more suitable. I was a bit confused why section 4.6.2 (page 30) makes more reference to the Chesapeake Bay than inshore waters of North Carolina. I think it would be more appropriate to stick to the waters of NC in this document; there are a number of publications and reports available on the subject such that you don't have to resort to using so much information from the Chesapeake Bay.

I am willing to take another look at the turtle sections after they have been revised. If you do send it to me, please include a list of literature cited.

thanks,
Matthew

At 09:12 AM 10/20/03, you wrote:

>Matthew:
>You stated during the 10/15/03 PDT meeting that you had comments
>regarding
>the turtle sections in the PDEIS. I'm not sure how extensive your
>comments are and what would be the best way to supply your comments to
>me. If possible, we'd prefer that your comments come in sooner rather
>than later so that we are not rushed to address them. So please let me
>know if you'd prefer a phone conversation or sections of the PDEIS to edit.
>Also, you indicated that there is a Duke graduate student who is familiar
>with diamondback terrapins. Could you please forward her contact
>information to me?
>Thanks again for your assistance and guidance.
>
>Erin A. Haight
>Environmental Scientist
>Coastal Planning & Engineering, Inc.
>2481 N.W. Boca Raton Blvd.
>Boca Raton, FL 33431
>Phone (561)391-8102

From: Matthew Godfrey [godfrey@coastalnet.com]
Sent: Tuesday, October 21, 2003 3:13 PM
To: Christie Barrett
Subject: Re: Sea Turtle CEA Draft corrections

Hi Christie,

I quickly looked over the revised version, and it looks fine. One thing that you might consider changing is every reference to Ripple 1996. If I remember correctly, this is more of a coffee-table book than a biological text. For a general overview of green turtle biology, there is: Hirth, H. F. 1997. Synopsis of biological data on the green turtle *Chelonia mydas* (Linnaeus, 1758). 97(1), U.S. Dept. of the Interior, Fish and Wildlife Service.

For a general overview of Kemp's ridleys:

Marquez, M. R. 1994. Synopsis of biological data on the Kemp's ridley turtle, *Lepidochelys kempi* (Garman, 1880). NOAA Tech Mem. NMFS-SEFC-343. For hawksbills: Witzell, W. N. 1983. Synopsis of biological data on the hawksbill turtle *Eretmochelys imbricata* (Linnaeus, 1766). FAO Fisheries Synopsis FAO, Rome, 78pp.

For loggerheads:

Dodd, C. K. J. 1988. Synopsis of the Biological Data on the Loggerhead Sea Turtle *Caretta caretta* (Linnaeus 1758). Biological Report 88 (14), USFWS, 110pp.

For leatherbacks:

Pritchard, P. C. H. 1971. The leatherback or leathery turtle, *Dermochelys coriacea*. IUCN Monograph IUCN, Morges, Switzerland, 39pp.

Also, I am not sure what the NCWRC 1998 reference refers to (probably a letter or communication) but I assume you will provide copies should anyone ask to see it.

best,
Matthew

From: NC WILDLIFE RESOURCES COMMISSION [camerons@coastalnet.com]
Sent: Wednesday, October 22, 2003 1:53 PM
To: Erin Haight
Cc: Melissa Green
Subject: Bogue Inlet Channel Relocation - PDEIS

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Erin,

I've attached section 4 with my comments on piping plovers and waterbirds. I've edited what you have and also added comments on the overall content of some sections with suggestions on things you may want to change. In general, I think the most important point to get across in this section is what birds utilize Bogue Inlet and the value of natural inlets to waterbirds. I also think John Fussell's suggestion of going into more detail on the biology and different microhabitat needs of piping plovers is a good one. That information can be found in the Federal Register for Critical Habitat and the Piping Plover Recovery Plan (both available online). A couple of good references that may help you are:

"The Sibley Guide to Bird Life and Behavior" by David Allen Sibley -
gives some good general information

Parnell, J.F. and M.A. Shields. 1990. Management of North Carolina's Colonial Waterbirds.
Sea Grant Publication UNC-SG-90-03. Brown, S., C. Hickey, B. Harrington, and R. Gill, eds.

2001. The U.S. Shorebird Conservation Plan, 2nd ed. Manomet Center for Conservation
Sciences, Manomet, MA. - available online at <http://www.manomet.org/USSCP/files.htm>

Kushlan, J.A., et al. 2002. Waterbird Conservation for the Americas:

The North American Waterbird Conservation Plan, Version 1.

Waterbird Conservation for the Americas, Washington, DC, USA, 78

pp - available online at www.waterbirdconservation.org

I would also like to clarify some terms. The term 'waterbird' refers to any bird species that uses aquatic habitat. It includes several subsets such as shorebirds (refers to a group of migratory birds commonly called sandpipers and plovers, but also includes oystercatchers, avocets, and stilts; most of these birds can be found along shorelines, especially in migration, but they are also found inland, upland, on arctic tundra or at sea) and colonial waterbirds (refers to birds that nest in groups called colonies and includes terns, skimmers, herons, egrets, gulls, ibis and pelicans).

Please feel free to call me if you have question on my comments or questions on waterbirds in general. Thanks for giving me the opportunity to comment.

Sue Cameron
North Carolina Wildlife Resources Commission
Waterbird Biologist
253 White Oak Bluff Road
Stella, NC 28582
910-325-3602
camerons@coastalnet.com

From: NC WILDLIFE RESOURCES COMMISSION [camerons@coastalnet.com]
Sent: Friday, October 24, 2003 2:53 PM
To: Erin Haight
Subject: RE: Bogue - Colonial Waterbirds

Follow Up Flag: Follow up

Flag Status: Flagged

Erin,

It may be easier if I just tally the information you are most interested in presenting rather than sending you a huge chunk of the database to wade through. Are you most interested in presenting data from 1977 (when the coast-wide surveying effort began) and comparing it with the most recent data (2001)? Also, which species would you like to show? I think it is most important to discuss species that have used or could use Bogue Inlet for nesting. Many of these species are showing declines and are the ones we are most concerned about. Common terns, gull-billed terns and black skimmers (all early successional nesters) have shown some of the most significant declines. Other early successional nesters such as least terns are vulnerable to the same threats as these other species. I also think it's important to mention the loss of nesting sites for these species. Not only are fewer of these species nesting in the state, but they are also nesting in fewer locations. This means there are fewer suitable nesting sites and these species may be more vulnerable to catastrophic events. In other words, if the birds are nesting at fewer sites, a catastrophic event at one nesting site could destroy a large portion of the nesting effort in the state. I feel like I'm rambling now, but my point is, we really need to think about the entire coastline when evaluating these projects. O.K, after all of that...I've attached a file with some numbers for the species I mentioned. I hope this helps. Let me know if you want to add any other years or species.

Sue Cameron
North Carolina Wildlife Resources Commission
Waterbird Biologist
253 White Oak Bluff Road
Stella, NC 28582
910-325-3602
camerons@coastalnet.com

-----Original Message-----

From: Erin Haight [mailto:Ehaight@coastalplanning.net]
Sent: Friday, October 24, 2003 11:15 AM
To: camerons@coastalnet.com
Subject: Bogue - Colonial Waterbirds

Sue:

Regarding the tern and skimmer nests, I've included the reference link for the National Park Service site regarding terns and skimmers in 1977, for your information.

http://www.nps.gov/caha/colon_bird.htm

As discussed during our phone conversation today, we are interested in referencing the NCWRC data instead. Could you please provide your historic data set, or a summary of, for inclusion into the report.

Thanks again

Erin A. Haight
Environmental Scientist
Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431
Phone (561)391-8102
Fax (561)391-9116
www.coastalplanning.net

From: NC WILDLIFE RESOURCES COMMISSION [camerons@coastalnet.com]
Sent: Wednesday, October 29, 2003 1:56 PM
To: Mickey.T.Sugg@saw02.usace.army.mil; Erin Haight
Subject: Additional Comments on DEIS for Bogue Inlet channel relocation

Hi Erin,

I've attached some comments on Section 1 and 5 of the DEIS. Thanks for giving me the opportunity to review. Take care.

Sue Cameron
North Carolina Wildlife Resources Commission
Waterbird Biologist
253 White Oak Bluff Road
Stella, NC 28582
910-325-3602
camerons@coastalnet.com

Comments on DEIS of Bogue Inlet Channel Relocation Project

I have already provided comments on Section 4. The following comments refer to Section 1 and Section 5 of the DEIS. Some of these issues were already brought up at the meeting on 10/15/2003, but I would like to reiterate those concerns here.

- 1) In Section 1.3.1, I do not believe that "restoration of beach and inlet habitat" should be a goal of the project. The inlet and beach habitat doesn't need to be restored. Barrier islands and inlets migrate naturally and piping plovers and other waterbirds have evolved to live in this dynamic beach environment. The Federal Register for Critical Habitat for piping plovers states "The integrity of the habitat components depends upon daily tidal events and regular sediment transport processes as well as episodic, high magnitude storm events; these processes are associated with the formation and movement of barrier islands, inlets and other coastal landform." The entire section 5 on waterbirds and piping plovers is misleading because it implies birds need this work so they have habitat, which is not true.
- 2) Section 5 of the DEIS needs to better explain and take into consideration the increase in human disturbance that will occur at the end of Emerald Isle as a result of this project. While the document acknowledges that "...access to historically isolated inlet shorebird habitat will be established which could increase the potential for predator and human effects to inlet shorebird resources", it does not take this into consideration when evaluating impacts and the document does not discuss this in all of the necessary places. For example, there is no mention of increased access to the point in the section on piping plovers or colonial waterbirds. The increased access to the spit will definitely increase disturbance to nesting, foraging and roosting piping plovers and other waterbirds. In addition, it could open the point to ORV use which will also increase disturbance and degrade habitat. These effects can be alleviated if a waterbird management plan

is put into effect. The increased disturbance is both an indirect and a cumulative effect.

- 3) I disagree with the finding of negative impact to piping plovers and waterbirds if no action is taken, if the houses are relocated or if sandbags are kept in place. The document claims these alternatives allow the continued erosion of western Emerald Isle and thus the loss of Critical Habitat for wintering piping plovers and habitat for other waterbirds. For example, section 5.7.1.2.1.1 states that “under the no action alternative, inlet shoreline habitat will likely be lost to erosion which will necessitate an adaptation in colonial waterbird behavior to locate and utilize alternative sites.” With the erosion on the western end of Emerald Isle there is also a build up of sand on the beach east of the sandbags and the development of the large spit at the point. The document needs take into consideration the value of natural inlets and to look at the inlet as a whole. Erosion in one section of Emerald Isle is offset by accretion in other areas and birds will move within the inlet complex in response to these changes.
- 4) The DEIS fails to adequately address Island #2. This island, while ephemeral in nature, may not disappear naturally for many years. As far as I know, no modeling was done or estimates of erosion rates given for this island. The only mention of Island #2 in the DEIS is that it “appears to be migrating to the west and may eventually disappear.” It seems that we really don’t know what will happen to Island #2 under any of the scenarios. Because of this lack of knowledge, I feel that the island has been written off. Will the mapping that is being done, answer any of the questions about what is happening and will happen to Island #2? Did Cleary have any predictions on how long it would take Island #2 to disappear under natural conditions? While I understand that the island could disappear naturally, isn’t it possible that relocating the channel may accelerate this process?
- 5) In several sections in the DEIS, it states that waterbirds nest in the intertidal areas. This is not true. Piping plovers and other beach nesting birds nest above the high tide line on coastal beaches, sandflats at the ends of sandspits, blowout areas behind dunes and washover areas.
- 6) On page 28, section 5.4.3.3.2.1 it reads, “relocating the houses on western Emerald Isle will result in the further abandonment of the shoreline and continued erosional losses of Critical Habitat for wintering piping plover as the inlet shoreline and sand spit recede.” Under several of the alternatives (no action, sandbags, moving houses), the sand spit will actually continue accreting into Bogue Sound. This is great habitat for piping plovers and other waterbirds. A similar statement is made in section 5.7.1.1.2.1. You need to clarify where you are talking about. The entire spit is not eroding, just a small ocean facing section. There inlet beach is actually accreting in other areas.
- 7) Colonial waterbirds have very different foraging requirement than shorebirds. Section 5.7.1.2 treats colonial waterbird just like shorebirds in the analysis of effects of the different alternatives. Most colonial waterbirds feed primarily on fish not macro invertebrates like shorebirds. This section should discuss fish resources and marsh habitat, which is used for foraging by many colonial

waterbirds. Gull-billed terns are an exception to the rule and forage on crabs and insects in addition to fish.

- 8) Throughout the bird sections, you imply that a breach in the spit (by Coast Guard Channel) would be a mostly negative occurrence. It could actually have a number of positive effects. The type of habitat that would be formed by this breach is prime foraging habitat for shorebirds including piping plovers. It would also provide good roosting habitat for shorebirds and colonial waterbirds and if some portion of this stays above the high tide line, it would provide great nesting habitat
- 9) Section 5.7.1.3 on Other Waterbirds needs to be rewritten (see comments on Section 4). Other waterbirds that utilize areas around Bogue Inlet include rails (use marsh habitat), loons (forage and roost in the sound, inlet and ocean) and red-breasted mergansers (forage and roost in the sound, inlet and ocean). Most of the impacts you discuss apply to shorebirds, not other waterbirds. With other waterbirds we are concerned primarily with marsh and subtidal habitat, and fish resources.
- 10) Check your use of the terms shorebirds and colonial waterbirds. At times you mention colonial shorebirds in the colonial waterbird section and use the term colonial ocean shorebird resources (e.g. section 5.7.2.2.3.1).

**North Carolina Department of Environment and Natural Resources
Division of Parks and Recreation**

Michael F. Easley, Governor William G. Ross, Jr., Secretary Dr. Philip K. McKnelly, Director

October 30, 2003

Mr. Mickey Sugg
US Army Corps of Engineers
Wilmington Regulatory Field Office
Post Office Box 1890
Wilmington, North Carolina 28402-1890

Dear Mr. Sugg:

I am writing in regards to the proposed Bogue Inlet channel relocation and beach nourishment project at Emerald Isle, North Carolina. Staff with the North Carolina Division of Parks and Recreation (Division) would like to submit the following comments concerning the draft Environmental Impact Statement dated September 24, 2003.

Description of Bear Island

Section 4.1.2 Bear Island, contains a discussion of the natural resources of Hammocks Beach State Park. The discussion is brief and focuses mainly on location, dimensions, etc. I would suggest that additional information that describes the unique features of the Park be mentioned in the discussion. I have include some information that could be included in the re-write.

There are three sections to Hammocks Beach State Park totalling 1,137 acres. The largest section of Hammocks Beach State Park is Bear Island containing approximately 892 acres. 700 acres of Bear Island is a Registered Natural Heritage Area with the Natural Heritage Program. This Registry recognizes the fact that Bear Island is an undeveloped barrier island with the natural dynamics of the coastal forces shaping the island and its habitats. Bear Island contains a mosaic of the Dune Grass, Maritime Wet Grassland, Maritime Shrub, and Maritime Evergreen Forest natural communities.

The second largest section is Huggins Island containing approximately 210 acres (approximately 115 acres of this is uplands with Maritime Evergreen Forest - the remainder --95 acres-- is Maritime Swamp Forest and Tidial Marsh). The smallest section is the Mainland section containing about 35 acres. Also, both Bear Island, Huggins Island, and Dudley are Significant Natural Heritage Areas under the Natural Heritage Program's classification.

A number of rare plant and animal species are endemic to Bear island. Rare plant species known to occur in the area include: Seabeach Amaranth, Winged Seedbox, Four-angled

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Flatsedge, and Moundlily Yucca. Rare animal species include: Loggerhead Turtle, Green Turtle,

Wilson's Plover, Black Skimmer, Common Tern, Least Tern, Giant Swallowtail, Loammi Skipper, Eastern Painted Bunting, and Manatee. In addition, the tidal flats located around Bear Island are important feeding and roosting areas for shorebirds including the federally endangered Piping Plover.

One of the most important aspects of the Park is the unique educational opportunity it presents. Visitors are ferried to the island which affords an excellent opportunity for park staff to education visitors on the marsh and island. In addition, the park recently completed a new visitors center with a focus on coastal ecology.

Shoreline Loss

The report discusses the impact of residual currents along the inlet shore causing potential erosion. Would this be true for the shoreline along Bear Island? If so, this potential loss should be discussed in the report. In addition, how long will this potential impact occur for.

Recreation

Section 5.12, Recreation Resources, have any estimates or modeling been developed that would determine if turbidity from the relocation project will impact swimming on Bear Island or any other recreational activities (swimming, fishing, etc.).

Navigation

Section 5.13, Navigation, I would like to know if Alternative F – Channel Relocation with Beach Nourishment, will result in any short term or long term impacts on Cow Channel. Will the project accelerate silting issues associated with the channel.

Mitigation

There is no discussion of mitigation in this document. Where will this discussion occur? DPR is still concerned about what will be done to mitigate any impacts to Bear Island that occur outside of the project scope. This remains DPRs #1 concern.

Impacts

What is the timeframe of the project. For example, when can we expect that impacts to Bear Island or other resources be judged to be outside of the Bogue Inlet project. In addition, how will it be determined that impacts from storms or other natural occurrences were not exacerbated by the Bogue Inlet project.

The Division appreciates this opportunity to comment on the proposed Bogue Inlet channel relocation and beach nourishment project. The Division requests that the US Army Corp of Engineers seriously considers these concerns in your review. If you have any further questions regarding these comments please call me at (919) 715-8711.

Sincerely,

Brian L. Strong

Resource Management Specialist

cc: Hammocks Beach State Park
Erin Haight, Coastal Planning & Engineering
Mr. Tom Jarrett, Coastal Planning & Engineering

From: Brian Strong [Brian.Strong@ncmail.net]
Sent: Thursday, October 30, 2003 9:46 AM
To: Mickey.T.Sugg@saw02.usace.army.mil
Cc: Tom Jarrett; Erin Haight; sam.bland@ncmail.net; sean mcelhone; Paul Donnelly
Subject: Draft EIS Comments

Enclosed are DPR's comments on the Draft EIS. Hard copy to follow. Let me know if you have any questions.

Brian

--

Brian Strong, Resource Management Specialist
Resource Management Program
NC Division of Parks & Recreation
DENR
MSC 1615
Raleigh NC 27699-1615

TEL: 919 715-8711
FAX: 919 715-3085
EMAIL: brian.strong@ncmail.net
<http://www.ncsparks.net>

From: Mickey.T.Sugg@saw02.usace.army.mil
Sent: Thursday, October 30, 2003 9:41 AM
To: Erin Haight; Craig Kruempel; Tom Jarrett
Subject: FW: Bogue Inlet PDEIS - Turtles

Comments from Matthew Godfrey

-----Original Message-----

From: Matthew Godfrey [<mailto:godfrey@coastalnet.com>]
Sent: Thursday, October 30, 2003 9:16 AM
To: Mickey.T.Sugg@saw02.usace.army.mil
Cc: McHenry, David G.
Subject: Bogue Inlet PDEIS - Turtles

Dear Mickey,

I am writing to you in regards the revised Section 5 of the Bogue Inlet BDEIS, specifically those parts that are related to sea turtle resources. With respect to this revised Section 5 (emailed to us by you on 16 October 2003), I have several concerns about the wording and the tone of the anticipated direct and indirect impacts of the channel relocation project.

In general terms, the overall vision of the project seems to be mixture of different objectives. As was brought up by several of the biologists present at the PDT meeting of 15 October, the wording of this document is such that it implies that habitat restoration for turtles (and birds) in the inlet is a primary concern of the project, and that without some kind of manipulation of the inlet shoreline (i.e. via channel relocation), this "habitat" would continue to be degraded and therefore negatively impact sea turtles (and other species). I disagree with this conceptualization of the issues, primarily because inlet habitat (including the inlet shoreline) tends to be dynamic and almost always in flux. I cannot imagine what particular state of the inlet would constitute being labelled as "restored."

In specific terms, there are certain lines or statements in Section 5 that I find disingenuous with respect to sea turtle resources. They are as follows:

Page 22, Section 5.4.1.3.1, line 5: "...sand bag revetments to protect homes once they become threatened will present a barrier to nesting sea turtles along the inlet shoreline." In fact, most sea turtles do not nest on inlet shorelines, but prefer ocean facing beaches. This behavior probably is the result of evolutionary processes favoring those turtles that nested on ocean beaches (more stable) rather than inlet shoreline (less stable).

Page 22, Section 5.4.1.3.1, line 8: "During the 2003 nesting season, there was one report of a false crawl due to a sea turtle encountering a sand bag before nesting could occur." I am not sure who made this report, but I

have been unable to confirm it. Nicole Mihnovets, the Bogue Banks Sea Turtle Biologist, informed me of a turtle crawl that occurred near the western edge of Emerald Isle beach, in which the turtle crawled up the sand to an eroded beach cliff and then returned to the sea without nesting. The nearest sandbags were at least 50 meters away.

Page 22, Section 5.4.1.3.2, line 5: "Therefore, turtles will continually encounter sand bags or debris from destroyed structures when attempting to nest along the inlet shoreline." Again, loggerheads and other species of sea turtle do not normally nest along inlet shorelines.

Page 22, Section 5.4.1.3.3, line 1: "Alternative C does not support the Town of Emerald Isle's project objectives of structure protection and restoration of beach and inlet resources necessary for sea turtle nesting." I would argue that the word "necessary" should be replaced by "sufficient," but more importantly I would argue that this project is not necessary for continued sea turtle nesting on Bogue Banks or Emerald Isle. Nest density on Bogue Banks is low, so that there is little chance of nest destruction caused by turtles digging into nests laid by other turtles. Although this project may conceivably cause the western end of Bogue Banks to extend further west, creating more ocean-front beach habitat that could be used by turtles, I would argue that this is not required for continued turtle reproduction and/or survival in North Carolina at the present time.

Page 24, section 5.4.1.5.1, second paragraph, line 2: "The medium-grained, well sorted material dredged from Bogue Inlet is expected to have little effect on the success of sea turtle nesting activities." I am not sure what this statement is based on, but Carteret County is funding the ongoing research project in Bogue Banks to look at the impacts of renourishment on sea turtle reproduction. At the current time, we have not collected enough data to reach a conclusion such as that expressed by the draft EIS.

Page 24, section 5.4.1.5.2, line 1. Same comment as above

Page 24, section 5.4.1.5.2, line 3: "The nourished beach should provide significant nesting habitat for sea turtles and thus, is likely to result in positive cumulative impacts for sea turtles along the beach in Phase 3." It is unclear what is "significant" nesting habitat. There is no guarantee that beach created by nourishment will necessarily result in increased nesting and/or have no impacts on overall reproductive success of sea turtles. We hope that the ongoing research being conducted on Bogue Banks will provide some insight in the future, but we do not have a sufficient sample size at the current time to reach any definitive conclusions.

Page 77, Section 5.6.2.1.1, line 5 from top of the page: "While the material obtained from the offshore borrow areas contained higher concentrations of shell than the native beach, the higher shell content has apparently not negatively impacted turtle nesting success along Bogue Banks during the 2003 turtle nesting season." Given that the full set of data from the 2003 nesting season has not been thoroughly analyzed, I cannot imagine what the basis is for this statement.

Page 77, Section 5.6.2.1.2., Second Paragraph, Line 1: "The offshore borrow material contains higher concentrations of shell and shell hash, however,

turtle nesting success during 2003 appears to indicate that the high shell content has not negatively impacted turtle nesting." Same comment as above.

Page 79, Section 5.6.2.3.1, Line 4: "During 2003, there was one documented false crawl associated with a turtle encountering the existing sand bag revetment." According to WRC data, there was no turtle crawl associated with a sandbag in 2003.

Page 80: Section 5.6.2.5.1, Line 3: "The medium-grained, well sorted material dredged from Bogue Inlet used for nourishing the west end of Emerald Isle is expected to have little negative effects on the success of sea turtle nesting activities." Again, we are currently conducting research on the impact of renourishment on sea turtle reproductive success, and at the current time there are not sufficient data to provide such an answer.

Page 80: Section 5.6.2.5.1, Line 7: "The new beach and possible sand dune development along the inlet shoreline should provide suitable nesting habitat for turtles." Loggerheads and other species of sea turtles tend to choose ocean-facing beaches to lay their eggs, avoiding the highly dynamic inlet beaches.

Page 83, Section 5.6.3.5.3, line 1 "Although offshore sea turtle resources are outside the scope of the project objectives, the use of inlet material for beach nourishment would preserve offshore sea turtle habitat." I am not sure if this statement is justified.

In terms of Section 4 of the draft EIS, I have already contacted Erin Haight directly with comments concerning the natural history of sea turtles and their occurrence in the project area.

Best wishes,
Matthew

=====
Matthew H. Godfrey
Sea Turtle Project
North Carolina Wildlife Resources Commission
307 Live Oak Street
Beaufort, North Carolina 28516 USA

tel: (1) 252-728-1528
email: godfreym@coastalnet.com

From: David H Allen [allend@coastalnet.com]
Sent: Friday, October 31, 2003 10:40 AM
To: Erin Haight; mickey.t.suggs@saw02.usace.army.mil
Cc: Sue Cameron; Henson Tom (Henson, Tom); Dave McHenry
Subject: Prelim. Draft EIS Section 4
Dear Erin and Mickey,

In addition to the extensive comments Sue Cameron sent you recently, I'd like to add a few things to our comments on Section 4 of the preliminary Draft EIS.

1. In Sec. 4.4.3.1, you should make it clear that although the Atlantic Coast population of piping plovers is listed as threatened, we also have piping plovers in North Carolina from the Great Lakes population in the winter that are listed as endangered.
2. Sec. 4.4.3.1.1 is a bit confusing. Please make it clear the critical habitat was designated in wintering piping plover habitat in North Carolina because we have birds here from the endangered population of birds from the Great Lakes.
3. In this same section please make it clear that the entire inlet area (Bogue Inlet spit, Dudley Is, Islands 1 and 2, and much of Bear Is.) are listed as critical habitat for wintering piping plovers, and that all the constituent elements are present.
4. In Sec. 4.7 please state that the least tern, common tern and black skimmer are all listed by the state as Special Concern.

Thank you.

David H. Allen
Coastal Region Faunal Diversity Supervisor
North Carolina Wildlife Resources Commission
183 Paul Dr.
Trenton, NC 28585
(252) 448-1546

From: Todd Miller [toddm@nccoast.org]

Sent: Tuesday, November 04, 2003 2:42 PM

To: Mickey.T.Sugg@saw02.usace.army.mil; Tom Jarrett; Frank A. Rush

Subject: Comments of Bogue Banks Draft EIS

Attached are comments on Section 5 in the draft document. My comments are in red type. Sorry to have to provide comments in this fashion, but it's the best I could do in the time I had to look at it.

In summary, I remain concerned that the EIS presents just one set of potential impacts of the proposed project that are based on what the applicant hopes will happen regarding the channel location. The applicant hopes the channel will stay in the middle of the inlet or move back to the east. While that could happen, Tom Jarrett has also said that there's no way to predict which way the channel will migrate, and it could just as easily go west. For this reason, there needs to be the same level of assessment given to the potential to what the impacts would be if the channel moves west. This is an issue I've raised as a member of the PDT for months, and I expected to see it more adequately addressed in the EIS. Adding a couple of paragraphs to the back end of the document is not an adequate way to address this issue. Furthermore, given the rapid erosion that has occurred on Bear Island since the 1980s, I question if the methodology used to determine the maximum amount of shoreline recession on Emerald Isle (should the channel move west) is an accurate way to forecast the potential for future shoreline changes. I'd like to understand this methodology better, and see how well it would have predicted the actual erosion that has occurred on Bear Island in the past 15 years. For this document to be useful to decision-makers, it needs to tell them all the possible outcomes that may result so that they know what risks they are taking in deciding to either do or not do the project. Equal weight and attention needs to be paid to impacts that could result if the channel moves west towards Bear Island. Until that is done, the document is flawed.

A complete mitigation package with projected costs needs to be included in the document to have an accurate cost/benefit analysis of the project. It needs to specifically provide for who owns land that is created (and currently exists) on the spit, how wildlife will be managed, how public recreation will be provided for and managed, what commitments the Town is making to compensate oceanfront property owners if they lose land as a result of this project, what commitments the Town is making if the State Park is damaged by this project, etc.

I understand that the Town is doing a title search on the existing spit and will provide evidence that it is already in public ownership. If it is not, than the ownership issues regarding the spit need to be addressed.

The dike will be made at the tail end of the dredging operation. If it takes more than 200,000 cubic feet of material, where will that material come from since all the projected dredging will have been completed once 200,000 cubic feet are taken? Is the project authorized to dredge more than 1 million cubic feet, and if so, where will that material come from and are the impacts of additional dredging something that need to be evaluated in this document?

Does the town need to obtain permission to proceed with the project from the oceanfront property owners on Emerald Isle who are projected to lose part of their lots when the channel is moved? Will there be any cost to the Town to obtain permission to erode these properties? What liability does the town have if it undertakes a project that it knows will erode these lots? Is there any?

Todd

Todd Miller
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www.nccoast.org

From: Melissa Green
Sent: Wednesday, November 05, 2003 3:13 PM
To: Erin Haight
Subject: FW: Project impacts on shellfish and SAV

FYI.

Melissa V. Green
Marine Biologist
Coastal Planning and Engineering
2481 NW Boca Raton Blvd
Boca Raton, FL 33431
(561)391-8102 (954) 249-6240
mgreen@coastalplanning.net

-----Original Message-----

From: Mike Marshall [mailto:Mike.Marshall@ncmail.net]
Sent: Wednesday, November 05, 2003 3:14 PM
To: Melissa Green
Cc: Mickey.T.Sugg@saw02.usace.army.mil; Tere Barrett; ted.tyndall
Subject: Project impacts on shellfish and SAV

Melissa,

Several staff and I have looked at the list of projects you sent to recall if they caused any effects on SAV and shellfish. First, let me explain that there is very little SAV in the southern part of the state with the southern limit of significant grass coverage occurring about New River. So, there would be little if any SAV effects from mid Onslow County south. There are a relatively large number of the listed projects in this area also. Staff could not recall any sea grass impacts caused by the listed projects and know of no studies that indicate any.

We also do not know of any shellfish impacts for listed projects from Morehead City north. Unfortunately, the biologist supervisor from the southern district, where impacts would be most likely due to close proximity of inlets and shellfish resources, has not been available to look at your list. I spoke with his supervisor and he indicated that shellfish impacts for the listed projects in the southern area could generally be described as minimal and indirect. He knew of a few instances where projects had possibly changed shoaling patterns near

inlet areas that covered small areas of hard clam habitat. Indirect impacts also involved shoaling as the flow of natural channels has been diminished or cut off causing reduction of the shellfish resource in a few cases in those areas. None of these impacts were major and the only projects he could point to were Masons Inlet and some Lockwood Folly Inlet work. I do not think the biologist supervisor for the southern area would disagree with that assessment but he may be able to provide a few more specific instances. I will contact him when he returns and perhaps we can give you some more specifics for a later draft.

Feel free to call about any questions.

Minutes of Public Hearing Held on December 8, 2003

MINUTES OF THE PUBLIC HEARING
BOGUE INLET DRAFT ENVIRONMENTAL IMPACT STATEMENT
DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
MONDAY, DECEMBER 8, 2003 – 6:30 P.M.
EMERALD ISLE PARKS & RECREATION CENTER

The public hearing was called to order at 6:35 p.m. by:

Major Randy Powell, Deputy Commander for the Wilmington District Army Corps of Engineers. “I’d like to welcome everyone here tonight to the public hearing for the Bogue Inlet Channel Response Erosion Project. I want to reiterate that the purpose of tonight’s meeting is to provide all interested persons the opportunity to present their views regarding the town’s proposal in the Draft Environmental Impact Statement document.”

“At this time I’d like to introduce a number of folks from the Wilmington District Office: sitting up here is Ken Jolly, he’s our Chief of Regulatory, we also have Mr. Keith Harris, he’s the Wilmington Field Office Chief. We also have Mickey Sugg, he’s the Project Manager for this project. Mr. Glenn McIntosh is the Project Manager for projects out in this area. Mr. Chris Frabotta, who’s our Navigation Project Manager, Ms. Penny Schmidt who’s our Public Affairs Officer and Mr. Justin McCorkle who’s with our Office of Council. I’d also like to recognize Mr. Huggett and Ms. Barrett from the North Carolina Division of Coastal Management and Mr. Rush the Town Manager from the Town of Emerald Isle and Mr. Schools the Emerald Isle Mayor. We also have with us tonight Nita Hedreen, a Commissioner-Elect, Bob Isenhour a Commissioner-Elect, Pat McElraft Commissioner, Floyd Messer Commissioner, and Dorothy Marks Commissioner. “

“At this time I’m going to turn it over to Mr. Ken Jolly who’s going to go over the process”.

Ken Jolly, USACE Chief of Regulatory, Wilmington District ... “Good evening, I’m Ken Jolly, Chief of Regulatory for Wilmington District. Briefly, I’d like to just give you an overview of the permit process that’s in place under Section 10 and Section 404. During development of the project, the Town of Emerald Isle in coordination with the Corps, has identified waters and wetlands subject to our jurisdiction regulated by Section 10 of the Rivers and Harbors Act as well as Section 404 the Clean Water Act. Tonight’s hearing will provide Wilmington District with information that will be considered during our evaluation of the draft EIS pending an application by the town for the Department of the Army permit. Section 10 of the Rivers and Harbors Act authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits after notice and

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opportunity for public hearing for structures or work impacting navigable waters of the United States.”

“Section 404 of the Clean Water Act authorizes the Secretary of the Army to issue permits for the discharge of excavation or fill material within waters or wetlands. The decision to issue a Department of Army permit is based upon an evaluation of the probable impacts, including secondary and cumulative impacts, other proposed activity, and its intended use on the public interest. Evaluation of the probable impacts that the proposed activity may have on the public interests requires a careful weighing of all those factors that become relevant in each particular case. The benefits that may be expected to occur or to accrue from proposal must be balanced against foreseeable detriments. This decision whether to authorize proposal or not, and if so, the conditions under which it would be allowed to occur are therefore decided by the outcome of the general balancing process.”

“That decision should reflect the national concern for both protection and use of important resources. All factors that may be relevant to the proposal must be considered including cumulative impacts of the project. These include, and a few of those factors are: conservation, economics, aesthetics, fish and wildlife values, flood control, safety, needs and welfare of the people. There are a number of them there.”

“Importantly, criteria that must be considered in the decision whether to issue a permit includes: the relative extent of the public and private need for the proposed work; the practicability of using reasonable alternatives and methods, to accomplish the objectives of the proposed work, when there are unresolved conflicts as to a resource use; and the third criteria, the extent and permanence of the beneficial and detrimental effects that the proposed work is likely to have on public and private uses to which the area is suited. “

“I’d like to close with just letting you know that all oral and written statements that you provide today no doubt will be made part of the hearing record. We do appreciate you being here tonight and would like to introduce Mickey.”

Mickey Sugg, USACE Project Manager“Thank you Ken. First I want to apologize with my voice, it’s kind of been scratchy, I’ve been having the crud like most people have this week. This evening’s proceedings are being recorded and a transcript will be a part of the official part of the project records. The transcripts will be available at our District Office in about 2- 3 weeks for reviewing and for copying if you need to make copies. Our District Office, the number that you need to contact is available on the back of the front end table when you came in, a little card that said Ms. Rita Shaver, so if you do want a copy of the transcript just call Ms. Rita and she’ll make that available for you. It is recommended that

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anyone wishing to review the transcript please call our office and make sure it is available. “

“As you came in there were a few handouts sitting on the table, one of them being a public notice that we issued November 5th. Within that public notice it did have some information in there that you may need to be aware of in terms of when the commenting deadline is. For any written comments you need to provide them to our office by December 26th, and that does fall on a Friday. Also, in that notice you will see that there was another notice that was issued in our Federal Register and that was dated November 13th, and that along with the November 5th public notice has that deadline of December 26th for your final commenting period. Also included in that you’ll see we do have a website address on there, so for any of you all who may have not received a written copy or CD copy of the Draft EIS you can go on our website, and our GIS Specialist spent a lot of time in formatting where you can go in and click, look when you first go in our webpage, our homepage, look at the top right and you’ll see fast tracks and just double click. It’s the Bogue Inlet Emergency Response Project, double click on that and it’ll take you right to all the Draft EIS, and she has it broken down where for some of you that have home computers and have slow lines, it is pretty quick. It’s not just one document, she’s really broken it down in several parts so it won’t be very time consuming for those that may have slower lines. “

“Just to inform you of our procedures after comments have been received. A final Environmental Impact Statement will be prepared which will include these public hearing records. At the time the Final EIS is submitted to our office that is the time when the town will formally apply for a Section 10 and Section 404 permit to conduct their preferred alternative. Once we receive the application and the Final EIS, at that point we will issue a public notice which will have a commenting deadline of 30 days. You will be given the opportunity through this notice to present your views on the Final EIS document as well as on the permit application. It will also be at this step that the state permit application will be formally submitted. With that said, I would like to introduce you to Doug Huggett, who will talk a little bit about the State clearing house procedures.”

Doug Huggett, North Carolina Division of Coastal Management.....”Thank you Mickey, and as Mickey said I am Doug Huggett, I am the Major Permits Coordinator for the North Carolina Division of Coastal Management. I’m going to keep my presentation brief so we can get on to the meat of the meeting. But, I do want to say that the Division of Coastal Management, among other state agencies has been very heavily involved in the coordination of this project since it’s early inception, both with coordinating with the Corps of Engineers, the applicant and their agents, as well as a stakeholder group that has been put together of various state and federal environmental agency folks, as well as other

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environmental groups and members of the public, as well as local government. So, there's been a lot of coordination that's been ongoing for quite some time to get us to the stage where we are right now. In addition to that coordination, the Division of Coastal Management has taken a lead role on a couple of different processes that I would like to...for the State of North Carolina...that I'd like to briefly describe."

"The first one is a process known as the State Environment Policy Act or SEPA as its known. What the SEPA process entails is the preparation of an environmental document for projects such as this, and the environmental document is submitted to a distribution network of state agencies, members of the public, allowing those folks to comment on projects and have their comments considered in the final design of the project. In this case, I think Mickey alluded to, there has also been an environmental document or as it now stands a Draft Environmental Impact Statement that's been prepared as part of the federal process under the provisions of the National Environmental Policy Act which is known as NEPA. The SEPA process allows, for the State of North Carolina, allows that if a NEPA document is prepared, that document will satisfy the SEPA requirements as long as the document is submitted to the State of North Carolina for comment. That saves the applicant having to go into kind of a double jeopardy mode preparing two environmental documents for two different focus groups. In this case a Draft Environmental Impact Statement has already been prepared and the Corps of Engineers have provided that document to Division of Coastal Management and we forwarded that on to what is known as the State Clearinghouse for North Carolina, which is a distribution center for these kind of environmental documents. What is happening now is the document has been submitted to various state and resource agencies, agencies like the Department of Transportation, the Department of Commerce, agencies such as that. The public is also given a chance to comment through various public notices during this State Clearinghouse review process. The Draft Environmental Impact Statement is on the street now for that comment and comments will be received by the State Clearinghouse on this project up until January 3rd of 2004. If anybody needs some contact information for the State Clearinghouse you can see me sometime during the meeting and I'll go ahead and help you out with that."

"What happens at the end of the State Clearinghouse process is, the State Clearinghouse will package any comments that are received from any state agency as well as members of the public, and forward those comments on to the applicant, or in this case, the applicant and the Corps of Engineers, and they will go ahead and consider those comments in the preparation and development of

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the Final Environmental Impact Statement. At that point in time, legally the SEPA criteria for the State of North Carolina has been satisfied, the document has been submitted to state agencies and they've had a chance to comment on it. But because of the scope and scale of this project we all decided pretty early on that a second review through the State Clearinghouse process was necessary in this case, so the way we're going to accomplish that is when the Final Environmental Impact Statement is prepared sometime next year, that document will also be submitted to the State Clearinghouse and a similar review process will be initiated at that point in time, and agencies and members of the public will be able to comment back to the applicant and Corps of Engineers on the final document. Both of those two processes ensure compliance with the State Environment Policy Act, so again if anybody has any questions about contacting the State Clearinghouse to be able to provide comments, I'd be happy to glad to help you out with that later."

"Then the second process that Coastal Management is taking at least a partial lead role in for the State of North Carolina is the permit application process. As I believe Mickey and Ken pointed out, there is a federal permit required for this project. There are also at least two state permits that are going to be required. The first is a Coastal Area Management Act or CAMA permit which Division of Coastal Management does coordinate. There will also be a state water quality certification process...or certification will be required for the project and that will be handled by the Division of Water Quality. They've been heavily involved in the coordination of the project up until now too and there are a couple of Water Quality Representatives sitting in the back that I think if you have any questions about their procedure you could ask them at the conclusion of the meeting. But the CAMA permit process which is what my agency coordinates, is a coordinated agency review process whereby the application package is submitted to, in this case, at least 10 state agencies for their review and comment. These agencies include agencies such as; Division of Water Quality, Division of Marine Fisheries, Wildlife Resources Commission, Division of Environmental Health, agencies such as that."

"At the same time that we are reviewing the permit application and having these agencies comment back to us, as part of our process, we're also doing a public notice on the permit application giving members of the public at least 30 days to comment back to us on permit application. When all the parts of the puzzle as I like to call it are back in, that being the public notice period has run its course and all of the state agencies have commented to us, Division of Coastal Management sits down, we also do our own review of the project to ensure its consistent with our own regulations and policies, and we will put all of those little pieces to the puzzle down on the table in front of us to figure out what our next step is. That

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next step is traditionally issuance of a permit with conditions to ensure compliance with state environmental regulations or hopefully it won't be the case here but there is opportunity for permit denial. That is a decision that is made when we sit all the pieces of the puzzle down on the table. That permit review process is initiated by the staff in the Morehead City office of the Division of Coastal Management and is finalized ultimately by the Major Permit staff currently residing in Raleigh, but there is a lot of coordination back and forth on a project of this nature so as we get into the permit review process, if anybody has any procedural questions, both the Coastal Management office in Raleigh or the Coastal Management office in Morehead City will be glad to answer any questions. That's really all I have right now so I'll turn it back over to Mickey, and again if anybody does have any procedural questions or needs contact information I'll be glad to provide that at the end of the meeting."

Mickey Sugg, USACE Project Manager...." Thank you, Doug. As Doug mentioned there has been a large amount of cooperation between...or coordination between the State Coastal Management office and ourselves since the conception of this proposal. With that said, I'd like to go into the program right now to reintroduce two of the Corps Federal employees. I think there is a lot of confusion between this project and a lot of other Federal projects that are going on in the vicinity and to try to eliminate some of that confusion I'm going to reintroduce Glen McIntosh who's going to go over some Federal projects that are occurring in this area."

Glen McIntosh, USACE...."The Corps has two Federal projects that are ongoing up here that I'm responsible for and one is called the Morehead City Harbor Section 933 project as well as the Bogue Banks Shore Protection project, the 50 year beach renourishment project. The Morehead City Harbor Section 933 project is taking the material out of the Morehead City Harbor and placing it on the beach. We dredged the Morehead City Harbor, which is two phases known as the inner harbor and the ocean bar, or the entrance channel. We dredged the inner harbor every two years and put the material at Brandt Island. Every 8 to 10 years Brandt Island up at this focal site reaches capacity and we take the material and place it on the beach at Fort Macon and Atlantic Beach. This year or about three years ago the State of North Carolina in a Resolution from Carteret County approached the Corps about doing a Section 933 for Morehead City Harbor, the inner harbor portion into Brandt Island and it was also expanded to include the ocean bar portion. So, we dredged the ocean bar every year, and that's why before the Federal 50 year report was started in October, every year that we scheduled and had budgeted for pumping out Brandt Island as well as doing the inner harbor and doing the ocean bar."

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“We started a report about two years ago we submitted a report in August of this year to the Secretary of the Army Civil Works for approval. The Environment Agency reviewed the report and the draft report in the February, March, April timeframe. Colonel Alexander, our District Engineer, signed the Finding of No Significant Impact and ultimately the report was submitted forward. We opened bids for the inner harbor Brandt Island portion in August – early September. We awarded the contract on 30th of September and we had good bids and we could have placed the material on Atlantic Beach, Fort Macon and all the way down Pine Knoll Shore on Section 933 option. That got tied up in court and ultimately we’ve had to terminate that contract and we’re waiting on court process, appeal process, whether we move forward or not on that portion of the Morehead City Harbor project.”

“We opened bids this afternoon for the ocean bar work. We evaluate those bids, barring any error found in the evaluation process we will be able to award a contract for the ocean bar as well as the 933 Option. That option is taking material from the ocean bar and placing it on the beach at Atlantic Beach, I’m sorry, Indian Beach and Salter Path. We have the right to exercise that option up until the 15th of January. Once we evaluate the bids, if the money is available to do the option we will start work in January. We have a tight window on that and all work has to be completed by the end of March because it’s a hopper dredging contract and we have the turtles out in the ocean, and we have a limit on taking turtles, if we take any at all.”

“The other option, or the other initiative going on up here is the 50-Year Shore Protection project. We are at the feasibility stage with that. We’re in the process of evaluating the offshore bar sites to put the material in Beaufort Harbor as well as the possibility of Bogue Inlet somewhere down the road. We hope to submit a draft report and draft EIS for the public to view somewhere around December 9, 2004, and all the agencies and the public will have the opportunity to review that process. We meet on a monthly or every other month basis with the folks up here at Bogue Banks, and that would provide, assuming the report is approved and we’ll do planned inspection as provided with each project through Bogue Banks it will be... last for 50 year. The renourishment cycle is still under evaluation, could be three, could be five years, to come back and redo the authorized beach improvements. The study area goes from Bogue Inlet to Beaufort Inlet. It’s about 24 miles of beach under evaluation, so those two initiatives are not related to what this meeting is all about. We wanted to give you a summary of what is going on so you won’t get confused between these three projects.”

Mickey Sugg, USACE, Project Manager....” Thanks Glen. Obviously with the nature of this project you’re working in looking at relocating an inlet, and one of the major concerns is navigation. Whether we’ll still have, since the local citizen’s concern is still having the availability of going in and out of the ocean, and with that I would like Chris Frabotta, who’s our Project Manager with the Navigation Branch to come in and kind of discuss the Federally Maintenance Project within the inlet.

Chris Frabotta, USACE, Project Manager Navigation Branch”My name is Chris Frabotta, I’m the Navigation Project Manager for the Wilmington District Corps of Engineers. My job is to utilize federally authorized funds, federally appropriated funds, to maintain federally authorized channels within the Wilmington District, which is essentially within the boundaries of North Carolina. These projects include the Atlantic Intracoastal Waterway which our portion of it extends from the North Carolina – Virginia state line down to the North Carolina – South Carolina state line. It’s about 308 river miles, channel miles, and all the associated connecting channels. Approximately 30 miles of channels associated with or going to the port of Wilmington. Five miles of channel, five plus miles of channel to the port of Morehead City, various shallow draft projects and coastal inlets of North Carolina, of which Bogue Inlet is one of them. I brought a chart with me.”

“This right here is pretty much the Bogue Inlet complex and this way is North – Emerald Isle there, this is the Atlantic Intracoastal Waterway, the connecting channel from the inlet to the Waterway and the inlet proper. The inlet proper that comes from the ocean to the deep water gorge between the two islands is an 8 foot project that means we maintain it to 8 foot mean low water, and be glad to go ahead and talk about that right now. The actual inlet itself is dredged by government clients. It’s dredged by either sidecasters that we have in the government (?) Or by hopper dredge that we have also. That project for FY 04 which we’re currently in now, started October 1 through September 30, calendar year 04. We have approximately \$780,000 to perform the dredging work and maintain that inlet to 8 feet. That work will be done by Corps dredges, it was last done in September of ’03 and the last survey that we have was from mid-November which indicates we have a patrolling depth of about 7 feet out there. So, I’m sure there are some mariners around here they all know that the channel kind of wags around all the time and our policy, Wilmington District policy, is to follow the deep water, and the way we do that is we take quarterly, perform aerial images of all the inlets in Bogue Banks. At low tide we identify where the deep water is and then we go back with our survey pencils, survey the deep water, and sit down in the office with the Chief of Navigation, myself, and a

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couple of other guys with Operation, and figure out which alignment would have the least dredging or would cost the least and we'd go ahead and do that. We maintain those surveys of that inlet or for all of our inlets and all of our projects, and also the aerial images. We maintain it on our website that I'm sure you have on that handout and there's a link down at the bottom left, click to navigation."

"So that's the actual inlet which comes from the ocean to about right here. This channel here is the connecting channel from the AIW, the Atlantic Intracoastal Waterway to Bogue Inlet and we usually contract that out, the hydraulic pipeline dredge. This year at Y'04 we have no funding in that project right now. Historically you've seen in the past, usually maybe once a year, every two years, depending on shoaling and funding we'll pump this material via pipeline somewhere about 1,500 to 2,000 feet east of the inlet. The last portion of the federally authorized channels within the Bogue Inlet complex is the AIWW. Let me back up, this is a 6 foot project, this channel. So it's 8 feet for the ocean to the inlet and it's 6 feet from the inlet to the AIWW, and moving forward to the AIWW, the Atlantic Intracoastal Waterway is authorized to 12 feet. Currently this year, this FY, we had zero funds for dredging. We do have sufficient funds to do hydrographic surveys, real estate issues, and mosquito controls, some other things, but we don't have any money this FY for dredging. As far as FY '05 goes, we're not authorized to release the information until the Administration's budget comes up in February. When that comes out we'll be able to give you a good idea on how much funds we would have for the intracoastal waterway, and connecting channels, and the inlet itself, in FY'05. That's all I have."

Question from the audience...."Could you tell us why there was no funding. I understand who gives you the funding. Do you know why that it was not provided to you this year?"

Chris Frabotta, USACE Project Manager Navigation Branch"Let me tell you what has happened in the past three years. We've gotten about \$890,000 for FY '02, '03, and '04 in the President's budget, and for FY'02 and for FY'03 that's two fiscal years we've been able to do some dredging in the AIWW through congressional acts. So, the President puts his budget together, and then the Congress looks at it, either adds to it or cuts from it, then the Senate looks at it and makes their hack at it, and then they come together in a conference and agree or disagree and finalize the budget, and after that we're still groomed to get congressional acts. In the past three FY's, or the past two FY's, not including this FY'04, we've gotten approximately \$2.5 or \$3.5 million respectively per FY to dredge out primarily the inlet crosses because we see that a lot of our shoaling takes place where the, right there, at the AIWW, where the connecting channels come up. As far as, why aren't we getting any funding, that is really up to the Administration, the Congress, and Senate."

Question from the audience... "Just one other question, were there any other areas that did not receive funding or are we just unique?"

Chris Frabotta, USACE Project Manager Navigation Branch "No sir it's not unique, most of our inlets Lockwood's Folly, Shallotte inlet, Carolina Beach inlet, received funding to maintain the inlets with government (?), sidecasters and the hopper dredge that we own. The AIWW itself it's low use navigation and it's evaluated from commercial tonnage, it's evaluated actually by ton miles. So if you take a ton of steel, one ton of steel for a hundred miles that a hundred ton miles, and for this project to be fully funded we need a billion ton miles commerce per year."

Mickey Sugg, USACE Project Manager..... "Thanks Chris. With that said at this time I'd like to turn the program over to the Emerald Isle, their consultant, Mr. Tom Jarrett and Erin Haight with Coastal Planning and Engineering. They're going to give a brief summary of the applicants preferred alternative and kind of give you an update of how things are progressing."

Tom Jarrett, Coastal Planning and Engineering..... "Again, my name is Tom Jarrett, I'm with Coastal Planning and Engineering. My office is in North Carolina, the main office for Coastal Planning and Engineering is out of Boca Raton, and Erin Haight is here representing that office, she's our Marine Biologist, that did the onerous work of putting together the Draft Environment Impact Statement. We'll try to go along very quickly here to try and give you a brief overview of what the Bogue Inlet project is really all about. As most of you folks probably know the Bogue Inlet channel has been migrating to the east at least since the mid 1980's. It variates but on the average it's been moving anywhere from 60 to 90 feet per year toward the east. As a result of that it's been chewing away at the west end of Emerald Isle. The property owners and the Town have responded by constructing temporary sandbag abutments to protect homes and infrastructure. The temporary sandbag, those temporary sandbags structures do have a time limit. I think the Town was able to get an extension for the sandbags through 2005, but according Division of Coastal Management rules, those bags have to come out at the end of that permitted time. When that occurs there's going to be some major shifts in the channel. Let me back up, the channel still continues to move to the east. It is pretty evident here that the sandbags are holding the Point, but you can see just north of the sandbags where the shoreline is offset, that's an indication that the channel is still trying to move to the east and is threatening and raising some concerns about the possible breach of the old Coast Guard channel."

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“Again, a major concern, if we could do something to protect the Point properties and infrastructure, and also secondary concern or desire, is to obtain some really high quality beach nourishment material for Phase II of the, excuse me, Phase III of the Emerald Isle beach nourishment project. Phase III begins at the Pinta Drive which is the end of the Phase II beach nourishment and extends down to Spinnakers. It covers about 24,000 linear feet of shoreline. As you all know, there were some problems, or appeared to be some problems with the quality of the material that was obtained from offshore sources.”

“During the EIS process, we looked at multiple alternatives, including simply no action, just do nothing, not even including any kind of sandbags, just let the shoreline continue to migrate to the east. That pretty much provides a base value of potential damages and problems that you’d run into if that process is allowed to continue unabated. The second one, would be to simply abandon the properties that are threatened. Pick them up, move the homes off the Point to some other location within the town limits of Emerald Isle. Of course, that would remove the land from the town’s tax base, but would maintain the structure value at some other location. Pretty expensive deal to the individual property owners of course to pick these structures up and move them. Some of them may not physically be possible to relocate, but anyway that was the second alternative. We looked at third, which is probably the more likely one that would happen in the event that a permit is not issued, and that is that the individual property owners and the town would continue to combat the movement of the channel through the construction of these temporary sandbags.”

“But, as I mentioned earlier, these existing sandbags abutments, have to be taken out in 2005. As a result of their removal, you’re going to start losing properties. You can’t, under the rules, build another set abutments to protect an existing structure once it’s been protected once. So, in other words, once those sandbags were removed, that exposed building was pretty much lost. So you have to wait until the erosion threatens a new structure, then that individual property owner could then apply for a permit, erect a sandbag, and that could stay for two years. If its sandbags the town built to protect the road it could stay possibly five. But anyway, it’s a whole sequence of events whereby the shoreline would move a bit, the property owners would construct sandbags, protect it for a couple of years, take them out then the shoreline would move again, and another row of structures would then be threatened and protected.”

“The fourth alternative was to simply steer toward channel lengths dredging. There was some concern that perhaps the method used by the Corps to maintain their channel actually contributed to or encouraged the useful migration of the channel. So some felt that if that process was suspended, then the channel

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would make a correction in and of itself, but we eliminated that with some detailed consideration because it was just simply too speculative, and there was really nothing in the record to indicate that channel maintenance was a major contributing factor to the movement of that channel.”

“We get into a couple of other alternatives. One would be to do a channel relocation, not an inlet relocation. I think Mickey referred to it as an inlet relocation, this is not moving the inlet it’s just relocating the channel inland to a more centralized location. In this alternative, described as E within the Draft Environmental Impact Statement, the material taken out of the channel would be stockpiled and I’ll explain this in a little bit more detail. Would be stockpiled, basically on the spit north of the Point for later deposition within the existing channel, so what you end up with is a relocated channel and closure of the existing channel.”

“Then the preferred alternative, and that would be simply to relocate the inlet channel to a more central location, use the bulk of the material taken to construct the channel for beach nourishment, along with Phase III of the Beach Nourishment project, and then another portion of the material would be used to construct a dike across the existing channel to hasten the closure of that dike. I was ahead of myself, I should have mentioned the alternatives A through E would all involve the use of an offshore borrow area. So, in addition to whatever costs are incurred, for either do nothing or implementing Alternative E, you’d still be faced with the need to nourish Phase III of the Beach Nourishment project with an alternate source of material, probably the offshore source.”

“Quickly, the shoreline projections that we were using to evaluate the no action alternative the relocate homes alternative, and basically the sandbag alternative, was based on a shoreline erosion rate of 60 feet per year. That’s the low end that we found from 1985 to the present, and we actually had some rates during that period that approached 90 feet per year. In trying to keep this thing, moderate if you will, we did our evaluations based on the 60 foot per year rate, and what that ends up doing is moving the shoreline ten years hence, and we only did the analysis in two year increments over a period of ten years because once you get out into the future it would really be getting somewhat speculative as to whether or not this will continue or mother nature will do its own correction and relocate the channel.”

“But anyway, we were looking basically at a point in time when channel relocation became the best thing to do in terms of cost. You don’t have to go too far down the road since any other alternative would still require the town to spend over \$5 million dollars to nourish Phase III from some other source. So, any

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costs that are associated with these other alternatives would then be added to that \$5+ million dollars, so a couple years of erosion, you've already accumulated \$1.5 to \$2 million dollars worth of damage to your infrastructure. "

"Again, Alternative E would basically move the channel to a central location. Use a portion of material to construct a sand dike across the channel. We would stockpile the material at some upland site, and then once this channel is open to the sea, this material would then be picked up with earthmoving equipment to fill in the channel. The reason for that is two-fold. Number one it would of course immediately restore the Point shoreline and provide the protection to the property owners in this area. But more importantly, in terms of the resource agencies concern, it would hasten the time in which the dredging impacts, the removal of the sub-bottom habitat, the shallow water habitat, would then be basically reformed through the artificial filling of the existing channel. Of course, that still eliminates the source of sand for nourishment of Phase III, so you still have to go offshore somewhere to get material to nourish Phase III."

"Again, the Preferred Alternative is still to relocate the channel, not the inlet, but to move the channel about 3,500 feet to the east, to a position that it actually occupied in the mid 1970's, and to use a portion of material to construct a sand dike across the inner part of the existing channel to close off the flow. Once that channel is closed off there will be a natural recovery, if you will, of the spit. What's going to happen is there will be material moving offshore from the abandoned portion of the ebbtide delta, there will be material moving off the west end of Emerald Isle. All of this material will merge onto the shore, form a spit and rebuild the point shoreline in some kind of configuration. This is just simply a schematic of what we expect would occur."

"Again, the channel that we're recommending in the document, would be 13.5 feet deep, 13.5 feet below the national geodetic vertical data, which is about 12 feet below mean low water. The width varies from 150 feet near its landward end, widens to 500 feet out across the major part of the ebbtide delta, and then narrows again to 200 feet as we exit the ebbtide delta. All those dimensions were based on hydraulics at the inlet and the existing cross-sectional area of the inlet with the present channel. So we're trying to maintain the same basic hydraulic characteristics of the inlet once the channel is relocated, and the existing channel is closed."

"Current estimates a little over a million cubic yards would be needed... would be removed to construct this channel. The bulk of it, a little over 800,000, would be used to nourish Phase III, 200,000 would be needed to construct the dike. The

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work would be accomplished using a cutter section pipeline dredge, ocean certified structure, has about a 30 inch discharge, 27 to 30 some odd inch discharge. This type of dredge would be used to construct a similar project in Shallotte Inlet to nourish Ocean Isle. It accomplished a little over a million, almost two million cubic yards, about 1.9 million cubic yard was dredged out of Shallotte Inlet, and pumped onto Ocean Isle over about the same distance we're talking about here for Emerald Isle, about 4 miles, and that was done in 56 days. So we expect similar kind of production for this particular job. Maybe a little shorter, we're dealing with about half the amount of material plus 200,000 of it would be pumped a very short distance to construct the sandbags. With that I'm going to turn it over to Erin, and let her briefly go over the pre-project monitoring that's been going on and also cover some of the habitat mapping that has been accomplished to identify the resources throughout the whole permit area."

Erin Haight, Marine Biologist, Coastal Planning and Engineering ..."Thank you Tom. In coordination with the different agency folks and environmental organizations and groups who are concerned about Bogue Inlet, we developed three different monitoring plans that focused on different resources found within Bogue Inlet. One of the monitoring plans that we developed focused in on piping plovers, but also include other shore birds, colonial water birds, and other water birds in the area. "

"The second monitoring plan that we developed is for salt marshes. Obviously, there are several salt marshes in the vicinity of the inlet, and we wanted to develop a plan that monitored those salt marshes around the inlet that could be influenced by sediment influx, sediment change. "

"The third biological monitoring plan focused on micro invertebrates, an informal species that are found within the inlet, and that are utilized by fish and birds. This is a map of the inlet, actually north faces to your left, and the cross-hatching shows the areas where we monitor for piping plovers, and shore birds and water birds. I'll point to some of the areas, this is actually the Bogue Banks spit. Here is Emerald Isle, the Point shoreline. This is island number one, some of you may be familiar with, and this is the northern part of the shoal platform, and island number two. Down here is Bear Island, the east end of Bear Island, and to the north here is the south end of Dudley Island. "

"Working with the agencies, we've found that these areas were heavily utilized by the different birds found within the inlet, found to migrate, and migrate to the inlet, and found to be a resident of the inlet. The monitoring plan actually started, our monitoring efforts started in April 2002, followed with the migratory periods of the

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birds, specifically piping plovers, and they're as frequent as every 10 days, and up to once a month when the birds less frequent the area. This bird monitoring efforts, for pre-construction will extend for one year, and after construction will extend currently for two years, post construction."

"This is a map of Bogue Inlet that shows the points here, the dots, are areas where we've been conducting the micro invertebrate and infauna monitoring. This monitoring plan followed a seasonal change, infauna species and micro invertebrates such as coquina clams, polychaetes, and anthropoids are subject to influences from seasonal change, so our monitoring plan is conducted during each of the seasons, the spring, the summer, fall and winter periods. At each of these locations are all within the same vertical location, are staying within the vertical depth of about -2.1 feet. Depending on access we all know that the inlet is moving quite a bit, there tend to be some issues with access sometimes, so we do have one area down in the south that's been fluctuating a bit, but staying pretty consistent for monitoring, but what we did do is focused in on seven different points of monitoring. Three of the points that fall along the west end of Emerald Isle are where the existing channel follows, and three additional monitoring locations are where the preferred alternative is located. A seventh monitoring location is along island two where it's considered a control point. "

"The third monitoring plan as I said before focused in on the salt marsh monitoring. At three locations, sorry this is vertical, north is pointing to the left. The three red triangles are the salt marsh monitoring locations, and at those locations we have fixed monitoring stations that basically during the end of the growth period, the [redacted] measure [redacted] heights for [redacted] growth, measure sedimentation depths and collect organic samples. So one of the monitoring points is north of Bear Island, the other is to the east side of Dudley Island, and the next one if the north side of Emerald Isle, or just north of the Coast Guard channel. This monitoring plan also follows a one year pre-construction, two years post-construction. "

"During coordination efforts we also found that there wasn't enough information available for submerged aquatic vegetation in the area. The state has done some research in the past on SAV or vegetation, submerged aquatic vegetation, but current data is not available. We've put together a habitat mapping plan to go out and identify the current locations for the SAV habitats. The other was for shellfish mapping in the area, for clams, oysters. This map shows the different locations. So far what we've done for SAV mapping in the area."

"What we haven't talked about yet is the permit area that we've been focusing in on for some of the research. This red line actually identifies a permit area that

was put together with the Corps and different agencies, and concerned parties to the project. It includes, it was identified under the different sedimentation rates that were predicted for the relocation of the inlet. Based on historical data for the SAV that was provided, actually by NOAA, we did research based on those locations we went out and found, did some ground keeping where SAV might be located. To date we've found some locations, actually we did some additional, but inside of Dudley Island here and up along the northern section of the western channel, and up along the northern section of the eastern channel. "

"The next slide shows the habitat mapping efforts for shellfish. We looked at different strata that the state has developed a, I'm sorry the state based on their historical records, they found two different layers, two different types of shellfish habitat. One is intertidal hard but non-vegetative shell habitat, and the other is intertidal hard without shell content, and this map based on our current field mapping efforts shows in the pink, which is difficult to see, but the pink is the intertidal hard but the strata-v, two other locations which we found up here on the eastern channel as well and the western channel were the strata-w habitat, which are pretty much consistent with what the state has found in the past in the area. That's about it, I'll turn it over to Mickey."

Mickey Sugg, USACE, Project Manager....."Thank you Tom and Erin. Thanks Tom for clarifying this is a channel relocation not an inlet relocation. At this time I'd like to yield the floor to those who signed up to speak, to disclose their position. For those of you who may have come in and didn't sign up or may have missed the sign up sheet, we're going to go through those who did sign up and there at the end I'll open the floor for you that didn't sign up, just raise your hand, I'll acknowledge you and you can come up and talk. As I call your name please come up to the podium and again speak clearly and loudly so it can be understood by our recorder. You will have five minutes to speak. At four minutes I'll have a white sheet of paper that says you've gone to four minutes, and when you hit the five minute mark I'll just politely stand up just to notify you that you are at your five minute mark, and again try to keep it limited to five minutes because there are people behind you that would like speak as well. At this time I'm going to go ahead and call up our first speaker, and that would be Mr. John Jones."

John Jones...."I'm John Jones from Cedar Point. I've been here 79 years so I have observed quite a bit of the inlet movements in that time. It was first, same situation on Bear Beach that it is now on this.... I'm also a member of the Atlantic Intracoastal Waterway Association and I would like to suggest that a study be made in an effort to dredge from Swansboro to Morehead City, and take this material and use it for beach nourishment. I realize there may be some unsuitable material in that area but I don't think there would be that much of it, you'd be killing two birds with one stone. Instead of taking it from the ocean you

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would be doing two things, could be even considered wider and deeper than the approved project depth. We could also have some nice hurricane harbors for boats during hurricanes. The next thing I'd like to suggest is if the project goes through as it is that enough of the sand be put on the west side of the Point, from the sandbags out, from the area out so that a nice scenic parking overlook could be constructed. The inlet is a very unique area, different from any of the western access areas and the public should have access to it. You have nowhere in Carteret County that you can go look at an inlet, even at Fort Macon there are always dunes or something in between so that you can't park, and this would be an excellent idea to have a parking area for as a scenic overlook like you find in the mountains and other places, and it would be very nice for disabled persons to be able to go out and park. I would also suggest a possibility that that area could be a part of Hammocks Beach State Park so that more money could be available in the future to keep it up. That's basically what I have to say."

Mickey Sugg, USACE, Project Manager"Thank you Mr. Jones. With that I'd like to hand it over to Mr. Willis, Mr. James Willis."

James Willis...."I want to talk to the people here tonight, not the bureaucrats. I believe the shoreline change part of the EIS, that's what most of y'all are interested in. The shoreline change at either the Point or the ocean beach, and I'd love to the first part of this is exactly right, believe it or not, praise be to God. What they're saying is when they put this project in, this ocean beach is going to erode, the beach that's out so far, just east of the Point. The reason it's going to erode is because they're going to close off this channel that's washing material away from the Point over to here and they're digging a deeper channel through this ocean bar which transports its sand over from Bear Island, because it is a transport usually from Bear Island over to Bogue Banks. So if you cut off these two sources of sand, this material is going to be washed by the current onto the east and so they got it right. But you read on a little further and they've got it wrong. They say its present position could take a minimum of fifteen years and a maximum of approximately thirty-five years if the relocated channel does not behave in this manner. The prediction of future shoreline changes could be compromised, for example, if the channel moves to the west, that is if this new channel moves over towards Bear Island, this could result in greater amounts of erosion along the Emerald Isle shoreline while the Bear Island shoreline could be positively impacted. In other words, what they're saying, I believe is if this channel moves to the west then we're going to still get erosion on this shoreline. That's wrong. If the sand is still moving over this way, now Bogue Inlet if you look at it over a period of time, the channel and the inlet usually move together. If this channel located here moves farther to the west it means the sand is coming in from the east of Bogue Banks, you've had a reversal in the way the sand moves and will fill in all the way out here. What you'll get, since this will

have to be the updrift point if the channel is moving west, you'll get probably accretion or no erosion over here if it moves west. Now if it starts moving east again you're going to have the same problem develop again, and you all need to get ready for this fifteen or twenty years down the road. It's going to start moving west again, and you're going to have to have another project. So, I just wanted to correct this thing here about it moving to the west. Now Tom thinks that it's going to fill in along here in front of the Point if this is corrected. Folks I'll tell you I wouldn't hold my breath for it to fill in, you go down there to Beaufort Inlet, they've got a strong (groin filled down there?), they've got a large [REDACTED] going, and they've had Lord knows how much sand dumped right there close to the inlet. Yes, they're getting accretion down there finally, but when the Intracoastal Waterway is filled, cut off from this area, no groin fill in here, you'll be lucky to just stabilize it as it is without... Now I hope, I hope that you'll get a big northeaster to come in there and blow all this sand in there, and maybe get some accretion down on that Point but don't hold your breath until it is. I reckon that's all I've got to say Tom."

"Mickey Sugg, USACE, Project Manager...."Next I'd like to introduce Mr. Lee Lipsitz."

Lee Lipsitz...."Following Jim is always very difficult. I'm here representing the Point-Wyndtree Property Owners Association. I'm not going to speak to you in a technical way, I just want to offer our thanks to all the people that are going to make this project, bring it to fruition. I first want to thank Mickey Sugg and the Corps of Engineers for their shepherding the process, and it's been a long process. Hopefully it will lead to a finish. I want to thank Tom Jarrett and his organization for being the pilot and the leader of this project. I want to thank Frank Rush and the town government who have been very positive about this from day one, and the organization that I represent is the Point-Wyndtree, we're the people that are most affected by this project and we look forward to it being a very positive project, and we thank all the people involved even Jim Willis. Thank you for speaking Jim."

Mickey Sugg, USACE, Project Manager...."Thank you Mr. Lipsitz. At this time I'd like to ask Mr. Joe Wright to come up front please."

Joe Wright...."I'm Joe Wright and like Lee I don't have a lot of technical stuff to talk about because it's not my field. I would like to thank all of the people who are looking after all of our interests. I hope that there are as many people looking after those of us who live down there, that are going to lose our homes if this doesn't get through, I hope they're looking after our humane interests as much as the interests of the animals, birds, reptiles, insects, the amoeba, and the paramecium. So this is an emotional appeal. I'm a homeowner down there, and I really don't want to lose my home, thank you."

Mickey Sugg, USACE, Project Manager...."Thank you Mr. Wright. At this time I'd like to introduce Mr. Bob Isenhour."

Bob Isenhour...."Well I'm going to go in a little bit different direction here. Everyone in this room tonight knows how important this project is to Emerald Isle. The realigning of Bogue Inlet which will save 7 or 8 houses of our citizens which are in jeopardy today, and saved today only by those temporary sandbags, as Tom has pointed out, they are only good for a couple of years. Fortunately we've gotten a little reprieve on that for those folks. But, it's much more than just the houses. The infrastructure of the town will be severely eroded and destroyed if this is allowed to continue at a substantial cost to rebuild. While at the same time, we will have lost not only the infrastructure but we will lose a number of houses down there. We could lose thirty to fifty houses and that would be a substantial reduction in Emerald Isle tax revenue, as well as our tax base. There are other issues too, of course with the realignment of Bogue Inlet, such as the safety issue of boaters and fishermen. Nonetheless, we understand that the various agencies that have an interest in this project are concerned about the bird nesting and their foraging, the possible impacts to the salt marsh, the micro invertebrates, and all of that, and Doug mentioned it with some of the agencies. I'm sorry those agencies aren't here tonight. I think CAMA even alluded to it. Emerald Isle is trying to cooperate with those various agencies and with these concerns. But, we've got to have some cooperation too. The people of Emerald Isle have already taxed themselves to pay for beach nourishment which is a hardship on a lot of people who are retired here and living on a fixed income. Requiring extended monitoring, now I believe you mentioned that there was one year pre-monitoring and two years... now is that written in stone because from what I heard at the PDT meeting, PDT means Project Development Team meeting, last week that definitely is not written in stone, and that's a real concern. That's a concern to all of us who are responsible for the finances of Emerald Isle. It could well, if it extends much beyond that, create a definite hardship for some of the citizens of Emerald Isle because in order to pay for this we would have to raise their taxes. I'm basically here tonight to ask for cooperation in these matters from the various biological communities so that this project can go forward, and meet the proposed deadlines in 2004. Thank you."

Mickey Sugg, USACE, Project Manager"Thank you Mr. Isenhour. At this time I'd like to ask Mrs. Nita Hedreen please."

Nita Hedreen...."Good evening. I signed the wrong sheet. But I'm up here, and I completely support this project. I don't know the detail that Mr. Jarrett, and Mr. Rush, and some of the other leadership and some of the experts we have here

tonight, but I do know we have a lot of homeowners who are very concerned about the future of their property and how the loss, or the threatened loss, would impact them, and will impact our future. I'm currently on the Land Use Plan committee, and our Planner, of course I don't know that he has the expertise that you folks do, but he has in our document that the inlet is eroding at about 110 feet a year, when it was projected that it was going to be 25. Well at 110, and these figures were based on 60, then that puts us at 2.5 to 5 years if you believe what he says, so it's as you were saying, it's speculative how quickly it will erode but eventually it's going to and it's going to impact even larger parcels, and our infrastructure, and it's just going to affect the way we live and the way we can enjoy all the beauty and benefits down there. Thank you very much."

Mickey Sugg, USACE, Project Manager...."Thank you Mrs. Hedreen. At this time I'd like Mrs. Barbara Harris to come forward please. She must have took off, okay Mr. John Grady."

John Grady...."I would like to speak to some of the bureaucrats tonight. First of all if FEMA has approved \$832,000 to replace sand lost during Hurricane Isabel why is there so much trouble getting the bureaucratic groups, the Corps of Engineers, the Division of Coastal Management, to approve this project that has been approved, and funded by FEMA. That's on our nourishment part. The homes that we're talking about down at the Point, they're very important to these people that own them, live in them, and are fighting the waters lapping up against the bottom of their houses. It might not be that important to some of you folks in your office back in Wilmington, or wherever you are, but these people have a major problem. Not only these folks, but this town has a major problem. Not only the town, the county has a major problem. If we lose those homes, we lose the infrastructure of this town, the tax base, the folks in this county are going to hurt bad, but these people are going to hurt the most. I have seen several hundred feet of sand washed away in the last few years. I personally could drive almost to Swansboro for my grandchildren to fish. Today it's all gone. My concern is who is responsible for keeping these channels dredged. Somebody has been asleep at the wheel and I was in education 34 years. I thought we had some acronyms, but we have nothing compared to what I've heard tonight, and I didn't understand half of what you folks talked about. But these people in this town, we need some help and we don't need it batted back and forth between bureaucratic groups. We need action and we need it yesterday. Thank you."

Mickey Sugg, USACE, Project Manager...."Mrs. Pat McElraft."

Pat McElraft...."Bob Isenhour said pretty much everything I was going to say. I just wanted to say to you all how important, and I know you know how important it is to these people, but not only to these people, but to every citizen in Emerald Isle. One of the reasons our beach nourishment referendum passed was because people knew that we were going to take part of that money and do this project if hopefully you all will let us do it. It's important to everyone on this island to protect those homes, the infrastructure, and like they said it's not just 8 homes, it's possibly 30, 40, and you can see if it continues on. The sandbags aren't going to be there after 2005, and we hope that the inlet will be moved by then so that we can protect those homes and we can also bring the environmental concerns into this too because the piping plover have no place to nest now, the turtles have no place to nest. When they were here before when the Point was wide and they had lots of beach there, and lots of area for them to nest, they can't nest in the water. We've got to do something. Jim Willis was talking about this project will start moving back in probably 13, 15 years, whatever, maybe even sooner, but I'm hoping that the Corps of Engineers looking at the 50 year plan will also consider keeping that area dredged for us so we won't have this problem again. Use that sand to nourish our beaches. You said in the beginning that some of the requirements for permits were conservation. This project should be called an Environmental Restoration Project because it will be bringing back habitat for those turtles and for those birds, for the piping plover, for flood control. We know that when the sandbags are gone that we do need that flood control. The safety, there have been many drownings down in the Point area. It's very deep, very dangerous. Fishermen can't even go down there anymore. So we have our fishing industry that we have to worry about too, and also keeping that area dredged out there at a deeper area will, I hope, prevent people that are in the commercial fishing industry from having to go all the way to Beaufort, spend all that gas going all the way to Beaufort to go out to do their fishing. That's what they're having to do now because it's so shallow. But if we could keep that inlet open later, nourishing our beaches with that sand in the 50 year project, hopefully that will solve that problem too. One of the best beneficial effects of this will be also to bring a wonderful beach quality sand to our nourishment project. There has been a lot of concern from various people about the sand that we put on the beach. Well that was the only options we had and now we do have another option. Please give us that opportunity. Please let's all work together on this and get this opportunity to fix two problems, and maybe three or four problems with the navigation situations with this project. Please we need your help, all environment agencies, we desperately need your help. These are not rich folks out here. People think Emerald Isle has an abundance of money. We don't. These people are paying to refurbish and renourish a public trust

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beach right now with their own money. They voted to do that, and when you're talking about mitigation, when you're talking about post-project monitoring, fine, let's do that, but let's also remember these taxpayers that are going to have to pay out of their pockets for those things, these are not rich folks. Thank you."

Mickey Sugg, USACE, Project Manager...."Thank you Ms. Pat. That was all that had signed up. Is there anybody who would like to speak that didn't sign up? I think the Mayor wanted to say a few words."

Art Schools, Mayor of Emerald Isle...."I want to thank everybody for coming out tonight. Also, a lot of what Pat was hinting at, we go to these PDT meetings, there's a lot of great exchanges of information. One of the things that frustrates me some is that we talk some about the damage we're doing but we don't talk a whole lot about the great stuff we're doing. We've got some of the best coastal engineers as there are anywhere, environmental engineers that do tons of work in Florida. They haven't done that much work up here, but as soon as they've got the experience and know what's going on, and I'm convinced that we're probably environmental wise, just looks like to me we're doing an awful lot of good benefit. So I'd just like to thank everybody for participating and if you ever have any more questions or concerns about it be sure and let us know."

Mickey Sugg, USACE, Project Manger...."One last chance to speak. If nobody would like to say anything else let the record show that no verbal comments are offered, and as indicated earlier, the purpose of tonight's hearing was to afford an opportunity for the public to review and comment on the Draft EIS and the project that was presented here tonight. Just to remind you all statements and comments received both verbally and written, you can provide written comments to me. For some of you who may be shy to stand up and talk in front of a crowd you can provide written comments to me, and all of these will be again, part of a public record, and will be also included in the Final Environmental Impact Statement. Remember that the hearing record and commenting deadline is on the 26th of December. Again I'd like to thank you for running a very polite meeting and I thank you for your interest in this project, and your cooperation. With that said I'd like to close the public hearing. Thank you again and have a safe drive home."

Public hearing was closed at 8:05 p.m.

Respectfully submitted:

Rhonda C. Ferebee
Town Clerk