Feb. 15 CRC Steering Committee Meeting
New Bern, NC

10 a.m. start

Jim Gregson began the meeting by reviewing existing rules re: permanent erosion control structures – 07H .0308 specific use standards for ocean hazard areas.

There are certain exceptions to the rules: to protect a bridge which is the only access to a barrier island; to protect a state historic site that is imminently threatened by erosion; if the structure is necessary to maintain a commercial navigation channel of regional significance; CRC may renew a permit issue pursuant to a variance granted prior to July 1995.

CAMA amended in 2003 putting the ban on hardened structures into law. Eliminated the CRC's ability to hear variance requests for these structures.

Spencer Rogers asked why the exceptions to the rules were adopted? Temporary rule in 1989 to specifically address Bonner Bridge; permanent rule adopted around 1991. Other exceptions followed. Rogers stated all three situations addressed by the exceptions were pending issues at the time, and the commission chose to write exceptions rather than addressing each of them as separate variances.

Discussion of whether a permit could currently be granted in inlets under the exception for navigation channels, if there is no other viable alternative. Bob Emory asked if that option is currently available if someone wanted to go that route. Jim Gregson stated that it is, but would be site-specific.

Paul Tschirky then presented background information on the terminal groin study and draft report.

HB 709 directed CRC to conduct study, and look at specific items.

CRC/CRAC role; role of the Science Panel. Emory noted they are not providing a formal peer review, but rather are serving in an advisory capacity. Tracy Skrabal noted their comments are still very important, and should be incorporated as much as possible. There are some comments where there is clear consensus from the panel, some cases where there is not clear consensus.

Coastal and geological assessment – method/approach for this section, including shoreline change, nourishment, dredging, geologic setting. Analysis overview for this section.

Tschirky used Fort Macon as an example to show how the data was gathered and analyzed for each of the five structures in the study, e.g. shoreline change pre- and post-structure; shoreline change netting out beach nourishment impacts and taking dredging volumes into account; geological setting of the inlet.

Summary results – shoreline change shows all shorelines on structure side of the inlet were eroding prior to construction. After netting out nourishment activity, the beach along 3 miles generally displays a reduction in erosion. Beach volume changes on the opposite side do not show a clear trend.

Discussion of how to explain this analysis in the report, to show how results were arrived at. How did M&N decide to use 25% and 50% as scenarios to show possible dredging impacts?

Skrable stated there are a lot of assumptions built into this analysis. Much of the conclusion rests on the quality of the data you have to work with, e.g. when the datasets were gathered. How to draw a conclusion from this data? Not sure she sees all of this synthesized in the summary section. This is the part that most people will have difficulty understanding, but is likely the most important part of the study.

Tschirky responded that sometimes there is a gap in data because of the time of construction, or because of the dates of available data.

Bob Emory noted that Rob Young's comments stress caveating the conclusions based on the quality of the data available. That should be noted in the conclusions.

Anne Deaton asked Tschirky, how would he respond if someone asked if groins result in increased nourishment? Did dredging need increase after construction?

Tschirky – a lot of these sites aren't nourished prior to the structure, but structure put in to retain the nourishment partly. It's hard to answer that question. Dredging is a disconnected event.

Environmental Analysis:

Layton Bedsole presented Dial Cordy's approach to collecting and analyzing available environmental data. The team tried to find as much pre- and post-construction data as possible, and looked at adjacent and nearby sites to get a regional perspective.

Species evaluated: shorebirds, sea turtles, benthic species, fisheries, habitat change, water quality.

Pre- and post-construction data were available at only two sites, and were not specifically related to groin construction.

Dawn York presented information related to Amelia Island. Data collected included sea turtle nests; shorebird observations and nesting data. Changes in how and when data were collected make comparison difficult.

Would be useful to note month and year of construction in the graphs. (Nov. 2004)

Summary: minimizing natural overwash at end of an island prevents natural processes which may effect habitats; anchoring end of island may curtail natural migration patterns; fillet material should be compatible to minimize effects; resources continue to use locations were groins exist, however species suitability may be affected. Available data and short timeframe resulted in non-conclusive site specific results.

Deaton asked what about the breakwater, other engineering activieis in this area? Reports she has read of Amelia Island suggest they needed the breakwater to make the groin work.

Rogers stated that the science panel felt the other structures in this area had relatively minor impact.

Deaton stated that a good point to make is that these were the best sites that could be found, and all of them have other structures, etc. in addition to the groin.

John Fussell stated he wanted to make the point that the figures that show observational data may not show a whole lot. What do you expect the reader to conclude after looking at these charts?

York stated they wanted to show a trend over time, not necessarily a number for specific years. They didn't want to give the reader any false assumptions, but just to present the data.

Deaton stated she would like to see some conclusions drawn from this data. People otherwise will interpret this however they want.

Skrabal stated she appreciated that Dial Cordy have modified these findings from the last time we saw them; moving in the right direction. If there is data in this chapter that doesn't answer a question, it needs to say that in the report. She didn't feel they had what was necessary to do this study effectively.

Joan Weld asked if they could draw some implications rather than conclusions from some data. York felt that would be making too many assumptions and predictions.

Bedsole stated the best implication he could give is that the resources are still using the area. In the same numbers? Can't answer that based on the data we have.

Harry Simmons commented that there is a lot of talk about the impact of a terminal groin compared to a natural inlet system. In NC every inlet has some sort of intervention already -- e.g. sandbags -- that are already affecting some of the same things a groin would affect. Did the study look at only pristine inlets vs. heavily engineered inlets?

Skrabal stated that since the charge was to evaluate data regarding impact of terminal groins, she would like to see a summary of the quality of the data, and whether or not any conclusions can be drawn from it.

Break for lunch; restart at 12:45

Economic Study

Tschirky presented background on how they decided to look at the economic impact of erosion due to shifting inlets in NC. How do we pick an area that represents an area at risk? Decided to use the science panel's updated inlet hazard areas and 30-year risk lines to determine properties at risk.

Dr. Dumas calculated current property and infrastructure value within those areas, and the tax base in those areas on both sides of the inlet. The section also discusses changes in market value (eg, if second row houses become first row).

Tschirky used Bogue Inlet as an example to show IHA and 30-year risk lines.

Note this doesn't show what would be protected by a terminal groin, but what is at risk due to shifting inlets. The study is not suggesting that every inlet will or should be protected by a terminal groin. Economic impacts vary widely by inlet and side of inlet.

Emory asked if Tschirky recalled the total amount of property value.

Tschirky stated that one number used was a total tax value of $1.4 billion, but he felt, and the science panel also felt, that number is misleading. It is more accurate to look at these numbers on each side of each inlet.

Tschirky stated this is an area where they got a lot of input from the science panel. They had originally suggested looking at the IHAs, then thought that might be too large an area. The panel came to the conclusion that the area in front of the 30-year risk line was the best area to use. He noted that the legislation doesn't ask us to determine what a terminal groin may or may not protect.

Skrabal noted that the average person picking this up will want to look at that total number; also doesn't feel this work connects with the work done in the rest of the report.

Johnny Martin stated that the original scope of work was to look at sea level rise and other factors, and to look at scenarios with and without a terminal groin. When that idea was presented to the science panel, there was great concern in using just DCM's erosion rates. That's why they decided to use risk lines, which takes into account sea level rise and some other factors.

Skrabal stated there is a great risk with the way it's written now that it will be misinterpreted.

Tschirky agreed they could make some stronger statements in that regard and clarify what the numbers represent.

Emory noted that the report also needs to be very clear that terminal groins would not necessarily protect any or all of these areas.

Construction techniques

Johnny Martin discussed innovative construction techniques used to mitigate adjacent shoreline impacts from structures. Limits on height and length, slope profiles, porosity of structure, materials used.

Parametric study with available data for the five sites – difference in shoreline change rate for each structure; how structures might have lessened nourishment needs.

Summary – longer length has more effects; higher elevation ahs more effect; leaky groin at Amelia has minimal impact and limited length of benefit; groin structure shape has influence; material types affect sediment transport rates and shoreline behavior.

Gregson asked about the science panel discussion about techniques that would make terminal groins easier to remove if needed; will that be included in the report?

Johnny stated they will lengthen that section in the report.

Jim – may be helpful to have discussion about ease of removal for different types

Harry Simmons – if you wanted to make a structure leaky, are you limited in what you can use to build it?

Johnny – yes, sawtoothing could be the answer

Bob – is it possible to remove a big rock structure?

Issue is how much of it you can remove; big stone structure you can only remove 80-90% of it.

Tracey – need to look at types of inlets, if it's possible to get a barge in, affects design and costs

Discussion of different structure materials and how they could be used. Discussion of how to quantify beach nourishment costs and sand availability. These would be somewhat site specific.

Bob Emory noted that if nourishment is part of the long term management of the structure, that needs to be pointed out in a visible way.

Construction/maintenance costs

Developed ranges of potential costs based on typical dimensions and typical NC slopes. Looked at the five study sites to determine average cost/foot for different materials.

Annual maintenance costs are estimated at between 5-10% of initial cost, 10-15% including sea level rise and storms.

Initial nourishment costs (fillet) should also be included ($1.2-3.6 M).

Permitting and design costs – 20%; monitoring; removal costs

Potential locations

Looked at environmental conditions at each of the study sites. Most existing sites include navigable, dredged inlets. Nourishment and some level of inlet management would likely be required to limit potential impacts and inlet behavior.

Joan Weld asked what was learned about who paid for these structures. Was there a pattern?

Different structures have been paid for in different ways – by communities, States, state park (Amelia), Captiva erosion control district; counties.

Emory stated that if we can make some general statement about the effects of a groin on nearby shoreline, the last two bullets in this summary are about as close as we can get to that. Going back to wildlife/habitat, if we were looking for two bullets to add to that list?

York recommended the first two bullets in that section's summary:

- Minimizing natural overwash at the end of an island prevents natural barrier island processes which affects inlet habitats and species use
- Anchoring the end of an island may curtain an inlet's natural migration patterns thereby minimizing the formation of sand flats.

Potential recommendations discussion

Bob Emory noted that the reason for doing the report was for the CRC to take the next step and make some recommendations to the Legislature. They asked for recommendations on the advisability and feasibility of using terminal groins. It would be helpful to have discussion on potential outcomes. Emory and Jim Gregson presented a preliminary list of potential outcomes, which was added to by the group:

Initial set of potential recommendations:

1. Retain the hard structure ban and get rid of the exceptions to it.
2. Retain the ban and the exceptions (status quo)
3. Retain the ban with existing and new exceptions (only in dredged inlets?)
4. Restore the CRC's former authority, including exceptions, and deal with groins by variance (included in first groin bill in 2008?)
    a. With standard variance criteria
    b. With specific variance criteria (established specifically for groin variances)
5. General Assembly gives CRC authority to develop rules for the permitting of terminal groins.
6. Emergency rule authority
7. Do more study – not enough time or money in this study to answer the question

Todd Miller asked Jim Gregson to talk a bit about general CAMA permitting requirements.

Gregson stated that the law says a permit goes through a list of adverse findings, and that in the absence of those the permit shall be granted. The only absolute item that prohibits a permit is if it is inconsistent with the local land use plan. A permit can be denied based on a finding of significant adverse impacts.

Rogers asked how is that process is different as a variance.

Gregson stated a variance is based on a petition to CRC based on a specific rule.

Bob Emory: What would give DCM/CRC more flexibility – variance or permitting situation?

Gregson noted that the Commission always has more flexibility than staff does. Prior to 2003 the CRC could grant a variance for any hard structure, not just terminal groins. He also noted that this issue is so inlet specific, a lot of these questions could only be answered by environmental review.

Spencer stated he was concerned that DCM doesn't have anyone on staff who could evaluate the impacts. In FL that's done by third party review, paid for by the applicant. If you get variance authority, how do you request third party review in that process?

Emory asked the group for any final advice for the larger CRC meeting on Wednesday?

What are you trying to achieve; what are your goals?

Emory stated he detects the recent interest to be to protect property; might also result in fewer sandbags.

Discussion of the format of the Wed. CRC meeting.

Adjourn at 3:10 p.m.