

**NC BEACH AND INLET MANAGEMENT PLAN
DENR TECHNICAL WORKING GROUP COMMITTEE MEETING**

Nov 27, 2007

9:00 am

Archdale Building, Ground Floor Hearing Room
Raleigh, NC

ATTENDEES

Mr. Jeff Bruton, DWR
Ms. Ann Deaton, DMF
Mr. Boyd Devane, DWQ (wetlands)
Mr. Darren England, DWR
Mr. Peter Elkan, Moffatt & Nichol
Mr. Jim Gregson, DCM
Dr. Matthew Godfrey, Wildlife Resources Commission
Ms. Jean Lynch, Parks and Recreation (sitting in, and likely replacing, Brian Strong)
Mr. Johnny Martin, Moffatt & Nichol
Mr. Pat McClain, Land Resources
Mr. John Morris, DWR
Mr. Jeff Shelden, Moffatt & Nichol
Mr. John Sutherland, DWR
Dr. Ken Taylor, Land Resources (NC Geological Survey)
Mr. Charles Theobald, DWR
Ms. Lauren Theodore, DCM
Dr. Paul Tschirky, Moffatt & Nichol
Mr. Steve Underwood, DCM
Dr. Jeff Warren, DCM

MEETING SUMMARY

John Morris opened the meeting at 9:10, introduced himself and thanked the participants for their attendance. Jim Gregson also expressed his gratitude to the working group members for coming to the meeting. Introductions were made around the room.

John Morris introduced the meeting by providing a brief summary of the events that are driving the BIMP – the first being the Appropriations Bill (NOTE: 2000) and the second being the CHPP (NOTE: authorized by Fisheries Reform Act of 1997). He noted that this was a massive task and little progress was made due to lack of resources. The partnership between DCM and DWR began over a year ago and the two agencies have worked together to develop one plan to meet the mandates; \$750,000 has been provided for the effort. Moffatt & Nichol has been contracted to assist with the work on the plan. The most obvious purpose of a BIMP for DCM is to assist with the decisions and review associated with beach nourishment activities. For DWR, one of the primary purposes will be to help develop funding priorities for beach nourishment projects. Also it will provide information for the General Assembly to put many of these complex coastal management issues into their correct context within a comprehensive framework. The

purpose of the DENR working group is twofold. First, what kind of data can you provide to the effort? Second, what program needs do you have that can be addressed by the BIMP?

Johnny Martin introduced himself as the BIMP project manager for Moffatt & Nichol. Martin began by providing a background of the company. Primarily, he reviewed the scope of work that had been distributed to the working group members. He also mentioned the three other members of the Moffatt & Nichol team that will assist in the completion of the BIMP: Chris Freeman of Geodynamics will be involved in the development of sediment budgets; Dr. Bill Cleary of UNC-Wilmington will provide information and expertise on coastal geology and its relationship to beaches and inlets; Dr. Chris Dumas of UNC-Wilmington will provide data on and further assess the economic value of beaches and inlets. The scope of work was reviewed and the services being provided were listed: 1) data identification and acquisition, 2) defining management regions, 3) stakeholder involvement, 4) development of alternative management strategies by region and sub-region, and 5) final report. Moffatt & Nichol already has many pertinent databases in house (e.g., shallow draft inlet study for General Assembly, CHPP data). Martin underscored that there will be data gaps that need to be filled in (identifying these gaps are part of this project) and the BIMP needs to be a living project with continued funding.

Jeff Warren gave a brief overview of the relationship between the US Army Corps of Engineers (USACE) and DCM's involvement with the BIMP project. An initial collaboration dealing with regional sediment management (RSM) began in 2005 when the Wilmington District was developing a RSM demonstration project for the Morehead City region (primarily because it is a data-rich environment). DCM contributed almost \$120,000 for high-resolution bathymetric surveys at Bogue and Beaufort inlets to assist with the USACE's modeling efforts to better understand the active coastal processes and determine a quantifiable sediment budget. DCM and DWR continue to meet with the USACE about RSM and beach and inlet management, however the USACE (Wilmington District) has been without available resources to direct towards the efforts.

Warren recounted the trip that DCM and Moffatt & Nichol recently made to the Mobile District to talk about RSM and the eCoastal enterprise GIS as part of the data gathering effort of the NC BIMP. The Mobile District was the first to develop a comprehensive RSM plan and program for the Gulf Coast states. As part of the process, the eCoastal platform was developed and is a combination of database architecture, data formatting and labeling as well as an interface into ArcGIS with additional software tools. DCM and Moffatt & Nichol decided to adopt the USACE's eCoastal framework for numerous reasons, including efficiency of fiscal and human resources as well as cross-platform compatibility with the USACE. From these talks, DCM worked with the USACE in Mobile and Wilmington to prepare a RSM proposal for funding that will allow personnel from Mobile to come to Wilmington and start collecting and digitizing priority data as the first steps in getting Wilmington online with eCoastal. The proposal requests \$72,000 for 12 weeks of data mining as well as work back in Mobile to format and create the Wilmington database. Warren pointed out that although 12 weeks and \$72,000 may not

seem like a lot, it represents successful leveraging of resources that is making NC the poster child for RSM and beach and inlet management. In addition, 12 weeks of having USACE personnel work in the Wilmington office probably translates to six months of an outside contractor trying to gain access to files, maps and computer data. Similarly, the \$72,000 likely translates to \$200,000 to \$300,000 worth of work if performed by non-USACE personnel. Warren thinks this proposal is likely to be funded in early 2008 by USACE's RSM program.

Lauren Theodore mentioned that she had done a literature review as part of this project. The BIMP website has many of these documents available (documents where there are no copyright issues).

Paul Tschirky from Moffatt & Nichol provided an overview on the types of data that are being acquired for the BIMP as well as how these data can be used to develop a sediment budget. Tschirky defined sediment budgets as net gain and net loss (sand either enters system, leaves system or remains in system) via alongshore and cross-shore processes. The more data that can assist with defining these numbers, and getting these data early on, will greatly assist these efforts. The first step will be development of a conceptual budget for the entire NC coast (but broken down into regions). No new modeling will be done as part of this initial effort; rather, the gathering of existing data and placement of that data into a conceptual framework. One question he posed to the working group, "Do you know of any datasets that exist that could help with developing this budget?"

Peter Elkan from Moffatt & Nichol discussed defining the erosion rate for the coast to help determine coastal vulnerability (i.e., How does erosion threaten coastal resources such as development and habitat?). A lot of work has already been done by DCM and other agencies, and documenting these data and methods is part of the BIMP effort. The USGS and NC Geological Survey have done projects that are statewide vulnerability analyses, and DCM has a digital shoreline database. Moffatt & Nichol is challenged with identifying areas with critical erosions and vulnerabilities.

Steve Underwood introduced the topic of development of beach prioritizations. This is the part of the project where all of the aforementioned data come together in addition to being a stakeholder-intensive process. The stakeholders need to understand that the BIMP might not be a rigid, cookbook-type of plan. The BIMP might be more similar to DCM's beach access program by providing a broad range of guidelines to develop priorities and letting these priorities remain fluid through time (priorities may shift circumstantially).

BREAK (9:55 to 10:07)

John Morris re-opened the meeting by stating to the work group members that now it was their turn to make comments. Matthew Godfrey introduced himself and Morris asked what kind of sea turtle nesting and stranding data was available through the Wildlife Resources Commission (WRC). Godfrey needed to check on the availability of the WRC's data and that most of the data were geo-referenced, however, he felt that

providing these data to this group and the BIMP effort would be no problem. Morris asked if there were any obvious issues that would affect turtle habitat. Godfrey said the biggest issues were placement of sediment on the beach. Is it compatible with sea turtle and bird reproduction? Turtles need to dig deep into the beach and different sediments have different properties for things such as gas exchange and color (color affects temperature of sand which affects gender of turtle). The timing of beach nourishment is also crucial to protect nesting. Morris stated to Johnny Martin that this was obviously a key issue in the BIMP. Godfrey also noted that Sue Cameron is the bird biologist for the WRC and she will likely have bird data to contribute; she was, however, unable to attend today's meeting.

Ken Taylor commented that the NC Geological Survey (NCGS) was working with DOT to look at sand resources along the NC coast. The datasets include USGS seismic data, core samples, sidescan sonar. NCGS has issues with how data are archived, especially older projects because the concept a decade ago was about publishing documents (i.e., the figures in a report were most important rather than how you got to the pretty picture). Taylor wants to focus on the data. The NCGS has a dedicated server they share with the NC Soil Survey with about 2 terabytes worth of data. NCGS also just finished up with a detailed geomorphic study for the National Park Service (Cape Hatteras and Cape Lookout National Seashores). A topic for discussion will be the sand resources that are being identified by the NCGS. The question will be, where are the best places to place this sand (i.e., Do the offshore sand resources match up with the beach based on the DCM sediment criteria). Taylor was enthusiastic about the collaboration with the USACE to mine the Wilmington office for the purpose of data inventory and acquisition. He also mentioned the vulnerability study NCGS did for NC Emergency Management. A lot of these data were generated from the HAZUS program based on census data and these data are available. Morris asked if NCGS had close ties with the US Minerals Management Service. Taylor responded to the affirmative and that MMS used some of the NCGS data because of limited federal funding. The NCGS is also finishing up 5-year collaboration with the USGS and other academic institutions to study the young geology of the coast (Quaternary). Lots of neat science was done with lots of data but the challenge of the BIMP is applied science. Morris asked Taylor if the federal policies were clear on where MMS had jurisdiction and Taylor answered in the affirmative giving examples from FL and TX. MMS permits come after lease sales and MMS is mandated to other things than search for sand. Underwood asked about the USGS-ECU-NCGS coop in the context of understanding how the subsurface geology was affecting the surface coastal processes. Taylor answered that he would provide everything he could. He also expressed his desire to get at the data early on instead of waiting for the final, published data (draft reports and gray literature can provide a lot of info for management decisions). Taylor also stated that he was the contact at the NCGS shop for BIMP-related data. NCGS is good at writing their metadata and confirmed that Moffatt & Nichol wanted coordinates in State Plane (they do, and that's what NCGS uses already).

Taylor felt it was important to get enough data to make the BIMP believable to the public. In many instances, lots of aerial photos exist but many important storm events and other processes happened between the datasets. Underwood was concerned about the

short, 18-month time window to complete the initial phase of the BIMP (i.e., the entire 18 months could be spent playing with data collection). Taylor understood and felt it was important that the plan should include prioritized items on what studies / data collection could be funded after certain events (e.g., if a storm occurs, what resources would be available, what data would be collected and who would collect it). Taylor also mentioned that many of the USGS datasets that were provided to NCGS have additional data fields entered by NCGS so the USGS might not know what was added or why. Make sure that people call the NCGS instead of the USGS.

Jean Lynch commented that State Parks does not collect a lot of data, however, the State Heritage folks do. The data include occurrences of state and federal rare species, plant and animal. The data include a wider range of species than those collected by the WRC sea turtle and shorebird programs. Heritage records are less detailed than WRC records; for example, WRC might have records for all loggerhead sea turtle nests on a 5-mile stretch of beach every year. The Heritage data for the same 5-mile stretch might have one point indicating that a loggerhead occurrence has been recorded there. Lynch mentioned the Pilkey's shoreline studies group has data that may be useful, including a compiled list of all known N.C. beach renourishment projects that have occurred throughout the years. Parks would have data from dredging events at Cow Channel and Carolina Beach marina. Lynch provided a list of the DPR's coastal properties: Jockey's Ridge State Park, Ft. Macon, Theodore Roosevelt Natural Area, Hammocks Beach, Carolina Beach, Ft. Fisher, and Bald Head Island (natural area). Morris mentioned that all of these areas should be shown in the BIMP data, and Lynch said they could provide the boundaries. Lynch pointed out that there are many more conservation lands than those owned by the state DPR: for example, federal, TNC, and town lands that are in conservation. Elkan mentioned that the CHPP process identified State-owned lands. Lynch commented that Parks continues to buy land so they could update those data.

Morris introduced Boyd Devane from DWQ, who stated they had numerous datasets that could be useful including information on buffers and setbacks, water quality designations, water quality issues associated with dredging events, maps of wetlands. Gregson asked about ocean outfall datasets. Devane had heard about some type of dataset and said he could find out more information. Sutherland commented that DENR has a project inherited from DOT to study and implement measures to reduce pollution from 8 ocean outfalls in Dare County. Moffatt and Nichol is also doing that project for the State. Johnny Martin said Moffatt & Nichol had data on those outfalls that are state maintained. Morris asked about the extent of the wetlands maps. Devane had not seen the maps in years. Morris mentioned that Environmental Health was doing water quality sampling on the beach related to water quality. Martin identified J.D. Potts and that we were in contact with them (Shellfish Sanitation).

Pat McClain (regional supervisor from Wilmington) had an interest in water quality and sand mine locations, however NCGS (Taylor) probably could provide most, if not all, of these data. McClain mentioned that his agency might have an interest in the location of sand dunes (let them migrate or hold them in place). Whatever is done, how does it

affect “downstream”? Morris asked about regulatory control on beach nourishment activities. McClain stated that they really didn’t have regulatory control on nourishment issues. Since erosion is an ongoing process, they just try and keep man-made erosion and water quality issues at the level of what nature does. McClain was happy to help the BIMP project in any way possible.

Morris asked Deaton to comment for Marine Fisheries. Deaton mentioned that the BIMP needed to keep the CHPP’s goals in mind (habitat impact). As far as data, if there are any maps or datasets that the BIMP needs, she would work with the group to make an official request to get the data or maps in whatever format was needed. Deaton commented that she hadn’t heard any comments about fish resources. That’s not really a “habitat” but something that should be considered in the BIMP so at least some info should be included. DMF had fish landing data that could be included. Deaton was also curious as to how the habitat info/issues/concerns could be incorporated into the analyses. Habitat should be a key part of management decisions instead of just being mentioned and taking a back seat to sediment and erosion. Underwood commented that sediment being removed and placed had potential habitat impacts and communities needed time to recover. The CHPP has been a fantastic achievement for the State. It has also helped the agencies leverage new positions based on the threats to fish habitat that came out of the CHPP, so habitat needed to be a big part of the BIMP. Underwood agreed with Deaton’s concerns.

Theodore stated that it seemed like priorities were also needed for borrow sites as well as beaches. Taylor reiterated the need for detailed sediment data to assess habitat conditions. Martin mentioned that one thing that could be done with the CHPP is to integrate strategies and use habitat as part of the strategy-building process. Morris asked if there were any additional concerns about what other DENR agencies needed. Morris commented that the USACE historically has been the leader in beach projects but the drying up of federal funds is pushing local communities to start developing their own strategies. The BIMP can help with these strategies and put a lot of the data and issues within context. Martin commented that they had already been in touch with numerous local governments such as Emerald Isle and they had indicated that they are willing to work and assist with the BIMP project. Morris asked the group if there were additional State agencies that should be within the working group. Jean Lynch wondered what the role of the work group was. Morris hoped that the group could meet periodically to discuss data, collaboration and progress towards the BIMP. Morris stated that informal discussions could occur with this group but that the members here could come to the BIMP Advisory Committee meetings to make comments (and hear other comments) in the broader context. Jeff Bruton mentioned that CGIA might have some applicable data. Taylor reminded the group that CGIA was a pay-for-service group. They could have been involved in building the database but the USACE eCoastal database has been chosen. CGIA might be able to tap into the final product (link their portal to any BIMP data). Underwood thought that including them at some point could still be helpful. Underwood also commented that the power of eCoastal was that it was already out there and the USACE was using it. However, additional soft money might be available to

CGIA for linking data in the future. At the least, Morris thought it would be helpful to have a planning meeting with CGIA.

With no further comments or suggestions, Morris again expressed his gratitude for everyone's participation and that he looked forward to seeing everyone again at future team meetings. The group was adjourned at 11:07.