

**NC BEACH AND INLET MANAGEMENT PLAN (BIMP)
STAKEHOLDER MEETING #2 – Public Information and Input
OVERVIEW**



**REGION 1 – Brunswick Electric, Supply, NC
Tuesday, March 3, 2009**

INTRODUCTION

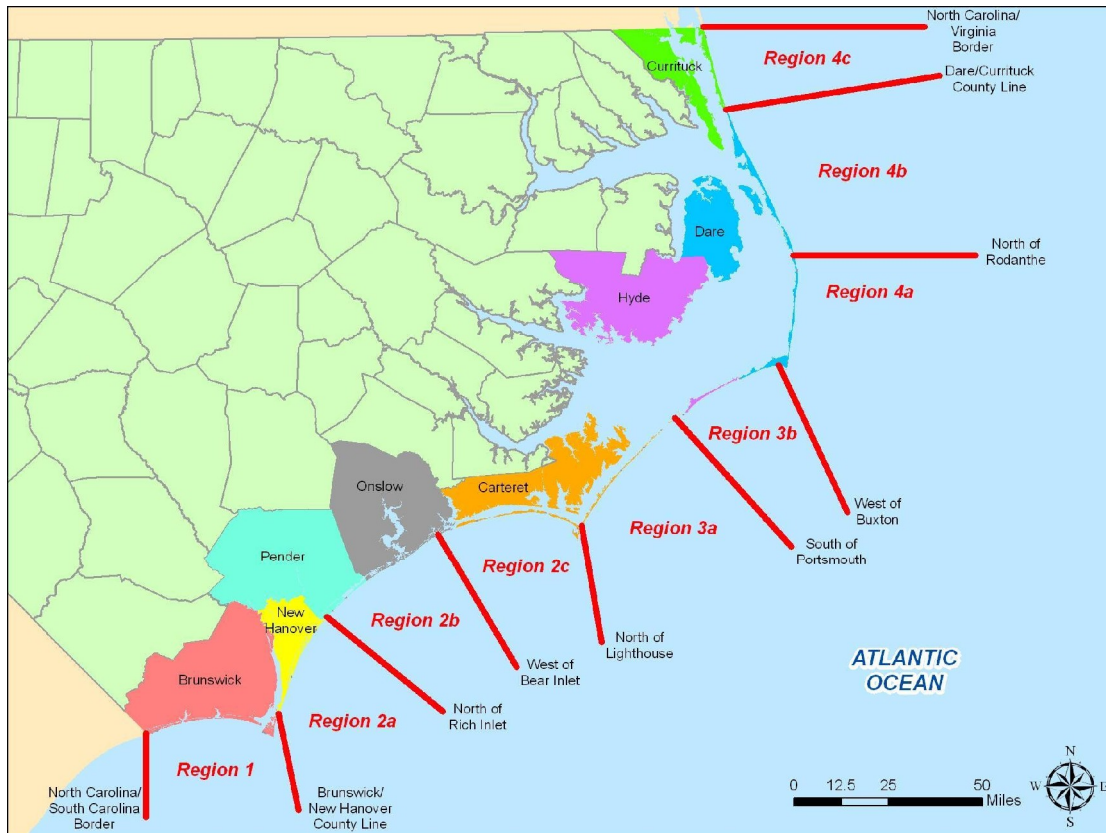
North Carolina's beaches and inlets are a vital part of the heritage, economy, environment, and daily life of the people of the State. The Beach and Inlet Management Plan (BIMP) is being developed to help preserve and enhance the value of these coastal resources for the citizens of North Carolina by helping develop a systematic management strategy for the 326 miles of oceanfront beaches and 19 active tidal inlets. The need for a plan was identified in House Bill 1840 and in the Coastal Habitat Protection Plan (CHPP). The plan is being developed by the Department of Environment and Natural Resources (DENR) Division of Water Resources (DWR) and Division of Coastal Management (DCM). In September 2007, DENR hired the engineering firm, Moffatt & Nichol, to help the State with data identification and acquisition of existing datasets, definition of beach and inlet management regions, scheduling and facilitation of stakeholder meetings, development of draft beach and inlet management strategies, and preparation of a final report, which is scheduled for completion in May 2009.

The next step will be developing management strategies for each region and sub-region. As management strategies are developed, the Divisions of Coastal Management and Water Resources will attempt to incorporate the ecological, economic and socio-political factors affecting beach and inlet management.

The first set of stakeholder meetings in early December outlined the pertinent data gathering and background required to develop the BIMP including physical, environmental, and socio-economic information. The management regions and sub-regions developed were introduced. The NC coast was divided into 4 main regions, which were further divided into sub-regions as needed. The regions and sub-regions were delineated using natural features as well as socio-political factors.

Presentations and public comments from this first set of meetings are available on the website established for the BIMP – www.ncbimp.net

During these meetings, beach and inlet management strategies, economic valuation, environmental considerations, financing options and the structure of the plan be discussed and expanded upon.



ECONOMIC VALUATION

An important aspect of gaining support to fund beach and inlet management is understanding the value of these resources to the State. The value of the beaches and inlets can be assessed based on tourism, commerce data and prior economic studies. Some key elements examined in developing economic valuation were:

- Beach Recreation
- For-Hire Fishery
- Marine Recreation Services
- Commercial Fishery
- Private Boating
- AIWW Commercial Barge Traffic
- Shore and Pier Fishing
- Marinas
- Boat Builders
- Sea Level Rise (data not statewide)

In addition to compiling and analyzing the economic data, modeling of several economic impact scenarios is being performed including the impact of lost beach width and inlet closure.

REGION 1 – Beach and Inlet Values

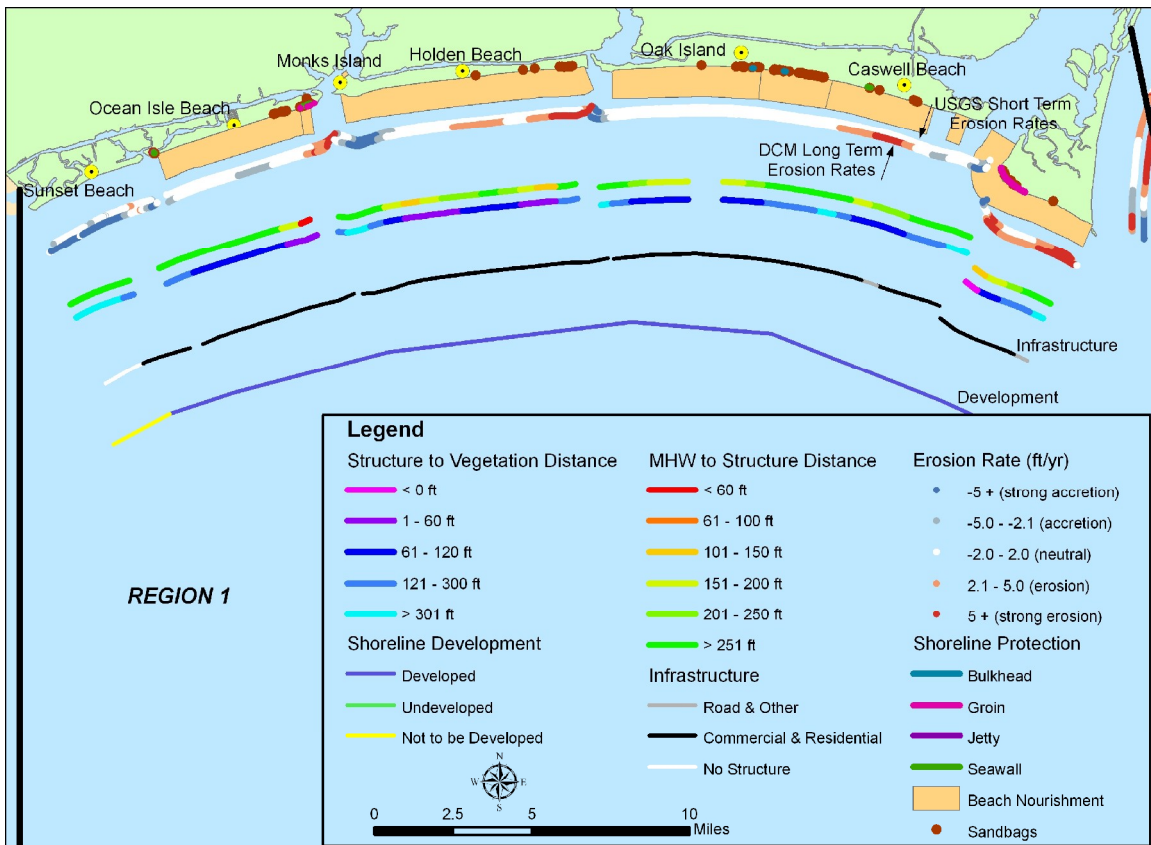
Below is an example of the data for beach recreation grouped by beach and a summary of some of the key regional economic data.

Location	Beach Recreation	
	Trips/yr	Expenditures/yr
Sunset Beach	248,723	\$ 94,745,507
Ocean Isle Beach	867,392	\$ 373,487,464
Holden Beach	430,099	\$ 332,602,863
Oak Island	304,827	\$ 204,148,436
Caswell Beach	246,293	\$ 71,223,416
Bald Head Island	No Data	No Data
Totals	2,097,334	\$ 1,076,207,686

REGION 1 - Economic Summary				
Marine Recreation Services (expenditures/yr)	Beach Recreation (expenditures/yr)	Beach Recreation (consumer surplus)	Pier/Jetty/Bridge Fishing (consumer surplus)	Shore Fishing (consumer surplus)
\$ 950,000	\$ 1,076,208,000	\$ 136,327,000	\$ 1,407,000	\$ 1,044,929

COASTAL VULNERABILITY ASSESSMENT

- Identify areas vulnerable to long term erosion



BEACH MANAGEMENT STRATEGIES

Beach and inlet management strategies are interrelated. For example, material dredged to maintain an inlet for navigation might be placed on the beach. Some overall strategies are given in the following table.

BEACH	INLET
<ul style="list-style-type: none"> ▪ Nourishment (size, frequency, location, method, ...) ▪ Coastal Zone Management Practices (setbacks, retreat, public access, ...) ▪ Storm Recovery (dune reconstruction, planting, beach dozing, breach fill, ...) 	<ul style="list-style-type: none"> ▪ Dredging (size, frequency, location, method, ...) ▪ Sand Bypassing (size, frequency, location, method, ...) ▪ Inlet Relocation

The following sections further detail the costs of beach nourishment and inlet dredging since these could be computed on a statewide basis providing a good overall assessment of a potential beach and inlet management budget. Other strategy potential costs will also be discussed in the BIMP such as inlet relocation, structure relocation, and conservation lands.

REGION 1 - Beach Management Strategies / Needs

- Further investigation of beach compatible sand sources is required
- Generally sand poor barriers with hard bottoms and offshore sand is in small pockets or layers
- Historical strategies have used beach nourishment and disposal in the nearshore

Location	Number of Times Nourished	Past 10 Years		
		Cost per cy (\$ / cy)	cy per year (cy / YR)	Cost per year (\$ / YR)
BALD HEAD ISLAND	4	7.56	469,882	3,554,072
CASWELL BEACH	1	-	13,320	-
HOLDEN BEACH	14	5.94	132,322	786,294
MONK ISLAND	0	-	0	-
OAK ISLAND	3	4.47	496,840	2,219,264
OCEAN ISLE BEACH	8	5.34	533,566	2,850,710
WILMINGTON HARBOR ODMDS	11	2.45	1,708,271	4,181,072
TOTAL REGION	41		3,354,201	13,591,413
TOTAL WITHOUT ODMDS	30		1,645,929	9,410,341

- Beach nourishment requirements and costs to maintain the beaches were computed using the DCM shoreline erosion rates and typical associated profile volume change based on available surveys
- Costs for beach maintenance through sand placement were based on typical dredging and pumping techniques for potential sand sources

Location	Most Likely Source		Likely Dredge Type	Annual Need (CY)	Developed
	Name	Distance			
Bird Island	Shallotte Inlet	9.5	Pipeline/Hopper	-	N
Sunset Beach	Shallotte Inlet	7.6	Pipeline/Hopper	8,381	Y
Ocean Isle	Shallotte Inlet	3.0	Pipeline/Hopper	45,972	Y
Holden Beach	Shallotte Inlet/Lockwoods Folly Inlet	4.2	Pipeline/Hopper	189,747	Y
Oak Island	Lockwoods Folly Inlet/Cape Fear Inlet	6.3	Pipeline/Hopper	74,573	Y
Caswell Beach	Cape Fear Inlet	2.5	Pipeline/Hopper	44,099	Y
Bald Head Island	Cape Fear Inlet	2.5	Pipeline/Hopper	202,339	Y
North of Cape Fear	Cape Fear Inlet	7.2	Pipeline/Hopper	137,838	N

Location	Shoreline Length	NCDQM Raw Rate Total Vol Need (Erosion With Nour)	NCDQM Raw Total Vol Cost (Erosion With Nour)
	MI	CY	\$
BIRD ISLAND	0.96	-	\$ -
SUNSET BEACH	2.86	8,381	\$ 119,506
OCEAN ISLE	5.62	45,972	\$ 444,547
HOLDEN BEACH	8.23	189,747	\$ 1,863,312
OAK ISLAND	9.29	74,573	\$ 1,082,052
CASWELL BEACH	3.60	44,099	\$ 361,615
BALD HEAD ISLAND	4.38	202,339	\$ 1,659,178
N OF CAPE FEAR	3.98	137,838	\$ 1,951,785
ZEKE'S ISLAND	1.18	-	\$ -
TOTAL	40.11	702,948	\$ 7,481,995
TOTAL DEVELOPED	33.99	565,110	\$ 5,530,210

REGION 1 – Inlet Management Strategies / Needs

- Past and current dredging has been conducted in the inlets and for the Wilmington Harbor Channel
- Some of the sand is useable on the beach, some is too fine

Region 1: LAST 10 YEARS (1997 - 2007)

Location	Pipeline (cy / project)	Hopper (cy / project)	Sidecast (cy / project)	Currituck (cy / project)	Total Volume (CY / YR)
TUBBS INLET	-	-	-	-	-
SHALLOTE INLET	-	-	-	-	-
LOCKWOODS FOLLY INLET	-	-	72,930	25,645	202,842
CAPE FEAR INLET	-	819,934	-	-	409,967
OVERALL TOTAL (Potential Nourishment)	-	819,934	72,930	25,645	612,809
LOCKWOODS FOLLY RIVER	69,570	-	72,530	16,303	80,385
CAPE FEAR RIVER	-	-	22,485	-	4,497
SHALLOTTE RIVER	-	-	-	13,375	1,338
WILMINGTON HARBOR	733,443	-	-	-	1,100,164
OVERALL TOTAL	691,951	819,934	70,028	21,432	1,799,193

Region 1: LAST 10 YEARS (1997 - 2007)

Location	Pipeline (\$)	Hopper (\$)	Sidecast (\$)	Currituck (\$)	Total Cost (\$ / YR)
TUBBS INLET	-	-	-	-	-
SHALLOTE INLET	-	-	-	-	-
LOCKWOODS FOLLY INLET	-	-	\$4,017,625	\$781,684	\$479,931
CAPE FEAR INLET	-	\$8,672,120	-	-	\$867,212
OVERALL TOTAL (Potential Nourishment)	-	\$8,672,120	\$4,017,625	\$781,684	\$1,347,143
LOCKWOODS FOLLY RIVER	\$598,762	-	\$1,411,662	\$192,375	\$220,280
CAPE FEAR RIVER	-	-	\$284,369	-	\$28,437
SHALLOTTE RIVER	-	-	-	\$73,161	\$7,316
WILMINGTON HARBOR	\$32,718,006	-	-	-	\$3,271,801
OVERALL TOTAL	\$33,316,768	\$8,672,120	\$5,713,656	\$1,047,220	\$4,874,977

ENVIRONMENTAL CONSIDERATIONS

- Key environmental constraints will be outlined and mapped for each region
- For each beach and inlet the six critical habitats outlined in the NC Coastal Habitat Protection Plan (CHPP) – water column, shell bottom, SAV, wetlands, soft bottom, and hard bottom will be discussed
- Also protected species, and environmental windows due to turtle and bird nesting in each region will be noted

For example:

<p><u>Holden Beach</u></p> <ul style="list-style-type: none">• CHPP Elements<ul style="list-style-type: none">➤ Class SA waters➤ Open shellfish waters surrounding island except for canals➤ Salt marsh along AIWW; some interior wetlands on island➤ Hard bottom locations < 1 mile from beach• Protected Species & Wildlife Elements<ul style="list-style-type: none">➤ Seabeach amaranth occurrences; 281 plants observed by USACE in 2007 (will require surveys). West end of Holden Beach has highest concentration of plants➤ Piping plover nest sites (April 1-July 15 moratoria if nests are present)➤ Colonial Waterbird nest site (April 1-August 31 moratoria if nesting present)➤ Loggerhead and green sea turtle nest sites (May 1-Nov. 15 moratoria)➤ West Indian manatee occurrence (observers possibly required)• Other<ul style="list-style-type: none">➤ EFH present for 70 species (Atlantic Ocean)

POTENTIAL RANKING CRITERIA FOR PROJECT FUNDING

- Vulnerability of shoreline
- Economic justification – benefits
- Environmental impacts
- Dedicated funding
- Likelihood of success/effectiveness

POTENTIAL FUNDING STRATEGIES

Ideally, funding of projects associated with beach and inlet management will come from federal, state, and local sources. Identifying potential funding and financing strategies will be addressed in the BIMP.

- Selected local elected officials and town/county representatives currently dealing with funding beach and inlet projects are being consulted and an overview of what currently works and what does not in NC and elsewhere will be discussed
- It is currently envisioned that funding from State partnership should be predictable and structured in nature but still allow flexibility for unique approaches at the regional/local level
- Possible concepts include a State Beach and Inlet Trust Fund, use of sales tax revenue from coastal rentals, occupancy taxes, property taxes, and various combinations

FURTHER INFORMATION AND COMMENTS

Further information – www.ncbimp.net

Comments – DENR.NCBIMP@lists.ncmail.net