

# NC COASTAL RESOURCES COMMISSION

June 24, 2009

NOAA/NCNERR Administration Building

Beaufort, NC

The State Government Ethics Act (Chapter 138A of the General Statutes) mandates that the Chair (1) remind members of their duty to avoid conflicts of interest or appearances of conflict, and (2) inquire as to whether any member knows of any known conflict of interest or appearance of conflict with respect to matters before the Commission. If any member knows of a conflict of interest or appearance of conflict, please so state when requested by the Chairman.

## Wednesday, June 24<sup>th</sup>

### 10:00 COMMISSION CALL TO ORDER (Auditorium)

Bob Emory, Chair

- Roll Call
- Approval of April 29<sup>th</sup>, 2009 Meeting Minutes
- Executive Secretary's Report
- Chairman's Comments

Jim Gregson

Bob Emory

### DECLARATORY RULING

- Bald Head Island West Beach - 15A NCAC 7H .0310(1) Use Standards For Inlet Hazard Areas

Jeff Warren

Christine Goebel

### PRESENTATIONS

- Legislative Update & EMC Alternative Energy Recommendations
- Ocean Policy Steering Committee Recommendations (*CRC-09-10*)
- Update on UNC Wind Energy Study
- Update on Inlet Hazard Area Boundaries & Draft Report (*CRC-09-09*)

Robin Smith, Asst. Sec DENR

Lisa Schiavinato, NC Sea Grant

Joe Kalo, UNC School of Law

Jeff Warren

Dr. Margery Overton, Chair

CRC Science Panel

### 12:00 PUBLIC INPUT AND COMMENT

### 12:15 LUNCH

### 1:00 PRESENTATIONS

- Oregon Inlet Jetty Monitoring
- Wind Facility Transmission Lines - Amendments to 15 NCAC 7H 0.309 Use Standards for Ocean Hazard Areas: Exceptions (*CRC-09-15*)
- Streamlining of Existing Bridge Replacement GP 15A NCAC 7H .2300 (*CRC-09-16*)
- Amendments to 15A NCAC 7H .1704-5(a) Temporary Erosion Control Structures – Sandbag GP (*CRC-09-14*)

Dr. Margery Overton, NCSU

Doug Huggett

Doug Huggett

Mike Lopazanski

### ACTION ITEMS

- Holden Beach Land Use Plan Certification (*CRC-09-17*)
- Ocean Isle Beach Land Use Plan Certification (*CRC-09-18*)
- Carteret County Land Use Plan Certification (*CRC-09-19*)
- Currituck County Land Use Plan Amendment (*CRC-09-20*)
- Brunswick County/Belville Land Use Plan Amendment (*CRC-09-21*)
- Land Use Plan Implementation Status Reports (Info Item) Camden Co., Currituck Co., Duck, Manteo, Kitty Hawk

Mike Christenbury

Mike Christenbury

Maureen Will

Charlan Own

Mike Christenbury

John Thayer

### PRESENTATIONS

- NC Sea Level Rise Initiatives (*CRC-09-22*)
- NCCF Beach Summit Report

Tancred Miller

Todd Miller,

NC Coastal Federation

**OLD/NEW BUSINESS**

- Future Meetings

Bob Emory

**4:15 ADJOURNMENT**



N.C. Division of Coastal Management  
[www.nccoastalmanagement.net](http://www.nccoastalmanagement.net)

**NC COASTAL RESOURCES COMMISSION (CRC)**  
**April 29, 2009**  
**NOAA/NCNERR Administration Building**  
**Beaufort, NC**

**Present CRC Members**

Bob Emory, Chairman

Chuck Bissette	Wayland Sermons
Renee Cahoon	Melvin Shepard
Charles Elam	Ed Mitchell
David Webster (present at 1:45 p.m.)	Lee Wynns
Bill Peele	Veronica Carter

**Present Attorney General's Office Members**

Jennie Hauser  
Christine Goebel

**CALL TO ORDER/ROLL CALL**

Chairman Emory called the meeting to order and reminded Commissioners of the need to state any conflicts due to Executive Order Number One and also the State Government Ethics Act.

Angela Willis called the roll and each Commissioner in attendance reported no conflicts. Joan Weld, James Leutze, Jerry Old, and Bob Wilson were absent. Based upon this roll call, Chairman Emory declared a quorum.

**MINUTES**

**Melvin Shepard made a motion to approve the minutes of the February 11-12, 2009 Coastal Resources Commission meeting. Veronica Carter seconded the motion. The motion passed unanimously (Bissette, Cahoon, Elam, Peele, Sermons, Shepard, Mitchell, Wynns, Carter) (Webster absent for vote).**

**EXECUTIVE SECRETARY'S REPORT**

Jim Gregson, DCM Director, gave the following report.

**Budget Issues**

I'm sure everyone is aware of the strict budget climate we are in right now. State agencies have been directed to avoid any unnecessary spending for the remainder of the fiscal year. In response to the budget issues, we have cancelled our contracts for CRC meetings for the rest of 2009. Until further notice each meeting must have prior approval from the State Budget Office.

Gov. Purdue signed Executive Order No. 11 yesterday and then late yesterday an Amended and Reissued Executive Order 11 that would establish and implement a flexible furlough plan for the remainder of the current fiscal year. The plan would reduce all teachers' and state employee compensation by an annualized amount equivalent to 0.5 percent for the remainder of the fiscal year. In return, each employee will receive 10 hours of flexible time off that can be taken between June 1 and December 31.

In addition, the NOAA review of our National Estuarine Reserve Program originally scheduled for last week has been put on hold until staff and other partners are able to travel to meet with reviewers and attend public meetings.

### **Sandbag Update**

As I reported during the last Commission meeting, Notices of Violation (NOVs) requiring sandbag structures to be removed were mailed to 19 property owners in the Town of Nags Head in Dare County. If you recall, these were the highest ranked sandbag structures on our sandbag removal list. Of the 19, seven were accepted by the property owners while twelve were returned to DCM marked either "unclaimed" or "unable to forward." As is DCM protocol, the Division is currently preparing documents to have those NOVs not received by the property owner "served" by local law enforcement officials. This situation is complicated by the fact that five of the property owners are residents of other states (mostly Virginia). Also at this time, the Attorney General's office is communicating with the Petitioners' counsel to address the status of the multiple sandbag variance requests and is discussing which petitioners are electing to proceed with their variance. As these situations progress, I will update the Commission.

### **Legislative Update**

There are a number of bills in this legislative session that directly or indirectly affect the CRC. Each of these must pass either the Senate or House by the crossover deadline of May 14 in order to remain active. You were sent a summary of these bills so I will not go into the detail of each bill.

#### **SB 524: Disapprove Coastal Setback Rule (Sen. Boseman)**

Disapproves amendments to NCAC 07H .0306 (increased setbacks for large oceanfront structures) as amended by the CRC in November 2008.

#### **SB 778: Eliminate Overlap Between CAMA and SEPA (Sen. Soles)**

Exempts the requirement for a SEPA document for projects that are subject to CAMA major development permits.

#### **SB 832: CRC May Permit Terminal Groin (Sen. Boseman)**

Allows the CRC to permit, via variance or through rulemaking, a terminal groin in any suitable area of the N.C. coast. Permit applications must include an environmental impact statement; CRC may require financial assurance to cover the cost of removal should the CRC determine the terminal groin has an adverse impact on other properties. This bill is similar to one introduced during the last session that was approved by the Senate, but not taken up by the House. The bill was referred to the Committee of Agriculture/Environment and Natural Resources on March 25. The Committee met yesterday but did not vote. They are reconvening today.

#### **SB 866 (=HB 1230): APA Rules: Increasing Costs Prohibition (Sen. Hoyle)**

Prohibits an agency from adopting a rule that results in additional costs to persons subject to the rule, unless the rule is adopted in response to a serious and unforeseen threat, an act of the General Assembly or Congress, a change in state or federal budgetary policy, a federal regulation, or a court order.

**SB 876: Study Consolidated Environmental Commission (Sen. Clodfelter)**

Proposes to consolidate the State's environmental commissions into one comprehensive full-time commission modeled after the N.C. Utilities Commission. Versions of this bill have been introduced in previous sessions.

**SB 998: Beach Management Study Commission (Sen. Jenkins)**

As introduced, this bill imposes a moratorium on sandbag enforcement, prohibiting the CRC from ordering the removal of sandbag structures in communities actively pursuing beach nourishment or inlet relocation projects. The moratorium would end Sept. 1, 2010. The bill also would establish a Legislative Study Commission on Beach Management Issues to study existing laws and policies related to beach management and determine how the State can best develop and implement a comprehensive, long-term beach management strategy. The commission's stated purpose is virtually identical to the CRC's mandate.

**SB 1068: Permitting of Wind Energy Facilities (Sen. Albertson)**

Establishes a system of permits to be issued by DENR for siting wind energy facilities. Outlines requirements for CAMA permit application for such facilities.

**HB 605: Coastal Hazards Disclosure (Reps Harrison and Justice)**

Provides for disclosure of coastal hazards to prospective buyers of coastal properties. Directs CRC to make available a form for sellers to make disclosures of coastal hazards, including annual erosion rates, setback requirements, 100-year storm recession estimates, high hazards flood areas, inlet hazard areas, variances and other relevant data, along with a notice of remedies. This bill has been introduced in previous sessions, but has not made it out of committee.

**HB 736: Grant Funds/Relocate Condemn Water Structure (Rep. Spear)**

Allows Water Resources to award grants to local governments to relocate imminently threatened oceanfront structures.

**HB 897: Study Offshore Wind Farming (Reps. Alexander, Stewart, Sutton, Folwell)**

Creates a joint legislative study committee on offshore wind farming. The committee would examine the feasibility of offshore wind farms, considering environmental impacts, economic impacts, the impact of hurricanes, and other technical issues.

The federal government last week announced regulations for wind farming in federal waters, more than three miles offshore.

**HB 393: Modify Rule-Making Process (Reps. Allred and Owens)**

This act would make all permanent rules subject to review by the Legislature. It removes the requirement that the Rules Review Commission receive 10 written objections to a rule before elevating it for legislative review. A rule could be made effective by executive order from the Governor.

### **SJR 879: Study Offshore Drilling Revenues (Sen. Atwater)**

Authorizes the Revenue Laws Study Committee and Environmental Review Commission to study possible sources of revenue, if any, to the State in the event that offshore oil and gas drilling takes place in waters off the N.C. coast.

### **HB 1378: Clean Marinas/Pumpout Stations (Rep. McComas)**

Requires full service marinas (with 10 or more slips) in communities seeking a “no discharge zone” designation to install a pumpout facility by July 1, 2010. Prohibits discharge into coastal waters and requires vessel operators to keep pumpout logs. Directs DENR to establish criteria for pumpout facilities and services.

### **LPO training**

DCM recently conducted two training workshops for local permit officers in the 20 coastal counties. This was the best-attended training session we’ve ever had, with 75 LPOs attending the workshops in Wilmington and Nags Head. The agenda for the two-day workshops included updates on recent changes to Coastal Resources Commission rules and training in the permit process, as well as monitoring and enforcement. DCM staff also conducted interactive field training in staking Normal High Water and Normal Water Levels and identifying coastal wetlands.

### **CICEET grant**

The Cooperative Institute for Coastal and Estuarine Environmental Technology has awarded a \$717,000 grant to the N.C. National Estuarine Research Reserve and the NOAA Center for Coastal Fisheries and Habitat Research to examine different methods of erosion prevention in sheltered coastlines.

The project is focused on understanding the environmental and economic tradeoffs of alternative erosion control measures in three regions along North Carolina’s coast, where researchers from NOAA, NC NERR, UNC -Wilmington, and UNC-Chapel Hill will assess the ecosystem impacts of shoreline stabilization. Also included in the project is the design and construction of a demonstration project based on alternative shoreline stabilization techniques at the Rachel Carson component of the NC NERR. During the two-year project, they will develop an approach to evaluate ecological and socioeconomic costs and benefits of shoreline erosion and protection alternatives. The researchers will work closely with an advisory panel composed of local, state and federal resource managers, contractors, property owners and other stakeholders. The NC NERR will develop outreach and educational products to disseminate the knowledge and tools developed by the research team.

### **Clean Marina**

Cape Fear Marina/Bennett Bros Yachts in Wilmington received their Clean Marina certification from DCM in March.

### **CWMTF grants**

The Division's Clean Water Management Trust Fund Grant - as well as the other 2008 project awards, have been deferred by the Trust Fund because of the budget situation. DCM had been awarded a \$496,000 grant for implementation of the stormwater plan on Pivers Island. We will receive priority consideration during the 2009 funding cycle.

### **Offshore drilling committee**

Commissioners Leutze and Sermons, and DCM's coastal hazards specialist Dr. Jeff Warren, were named to a 24-member legislative task force that is examining the effects of offshore oil and natural gas exploration. The committee has met twice this month, receiving information from Mike Lopazanski about the history of offshore drilling in N.C., and presentations from several other agencies, including the Minerals Management Service, USGS and American Petroleum Institute, among others. It is my understanding that the Committee will likely continue until the first day of the next legislative session (late April) and will also likely submit an interim report this session.

### **Staff News**

Claudia Jones is the newest Field Representative in our Elizabeth City office. A Dare County native, Claudia comes to us with many years of experience in the environmental field working for the State of Maryland Department of Natural Resources' Critical Areas Commission. Claudia filled a position previously held by Holly Snider, who is now working out of the Wilmington Regional Office as a Field Representative.

### **CHAIRMAN'S COMMENTS**

Chairman Emory stated the CRC is reacting to the State Budget office's restraints on meeting expenses. We cannot take a vacation from our work and we will discuss options for future meetings later in the afternoon. There are a number of legislative bills that either specifically or indirectly effect the Commission and/or the Division.

### **VARIANCES**

#### **Riggings – (CRC-VR 06-33) Kure Beach (remand from Superior Court)**

Christine Goebel of the Attorney General's Office represented Division of Coastal Management Staff. Mrs. Goebel stated the Petitioner is a homeowners association for The Riggings condominium development in Kure Beach, New Hanover County. Petitioners have sought and been granted four prior variances from the CRC to keep sandbags in front of their property. In January 2008, the CRC denied this current variance request. In January of 2009 at a judicial review hearing in New Hanover Superior Court, Judge Jay Hockenbury remanded the variance request back to the CRC for a rehearing. The Petitioner is seeking a variance to keep the sandbags in place. Ms. Goebel stated Gary Shipman is present and represents the Petitioner. Ms. Goebel reviewed Judge Hockenbury's remand order, the stipulated facts of this variance request, reviewed the history of the previous requests, and the staff positions on the four statutory criteria. Staff and Petitioners do not agree on any of the four statutory criteria.

Gary Shipman of Shipman & Wright, LLP represented Petitioner Riggings Home Owners Association. Mr. Shipman discussed Judge Hockenbury's order and reviewed the stipulated facts which he contends supports the granting of this variance. Mr. Shipman further stated this property is different than any other property in the state of North Carolina and the CRC should look at the property and not the actions of the property owners.

**Wayland Sermons made a motion that after considering the stipulated facts and evidence in the record that strict application of the development rules, standards, or orders issued by the Commission do not cause the Petitioner unnecessary hardships. Renee Cahoon seconded the motion. The motion passed with eight votes (Carter, Sermons, Webster, Cahoon, Peele, Shepard, Wynns, Elam) and two opposed (Bissette, Mitchell).**

**Wayland Sermons made a motion that after reviewing the stipulated facts the hardships are a result of conditions peculiar to the petitioner's property. Melvin Shepard seconded the motion. The motion passed with eight votes (Carter, Sermons, Cahoon, Peele, Shepard, Elam, Bissette, Mitchell) and two opposed (Webster, Wynns).**

**Wayland Sermons made a motion that based on the stipulated facts, the hardships do not result from actions taken by the Petitioner. Melvin Shepard seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Cahoon, Peele, Shepard, Wynns, Elam, Bissette, Mitchell).**

**Wayland Sermons made a motion that based on the stipulated facts this variance request would be inconsistent with the spirit, purpose, and intent of the rules, standards, or orders issued by the Commission; would not secure the public safety and welfare; and would not preserve substantial justice. Lee Wynns seconded the motion. The motion passed with eight votes (Carter, Sermons, Webster, Cahoon, Peele, Shepard, Wynns, Elam) and two opposed (Bissette, Mitchell).**

This variance request was denied.

Bald Head Island Ltd. (CRC-VR 09-01) Bald Head Island, 30' Buffer

Christine Goebel of the Attorney General's Office represented Division of Coastal Management Staff. Ms. Goebel stated George Fletcher, Attorney for the Petitioner, is present and will represent the Petitioner. Ms. Goebel stated the Petitioners propose a paved marina access road in Southport, Brunswick County. The proposed project includes the construction of an eight-foot wide paved access road at Deep Point Marina in addition to five wooden landings at the dock entrances off the Cape Fear River. Petitioner's application was denied based on the proposed development's inconsistency with the CRC's thirty foot buffer rule in 15A NCAC 07H .0208(a)(1) and (a)(2)(B). Ms. Goebel reviewed the stipulated facts of this variance request and addressed the four statutory criteria. Staff and Petitioner agree on all four criteria.

Mr. George Fletcher of Fletcher, Ray & Satterfield, LLC represented Petitioner. Mr. Fletcher discussed the stipulated facts of this case which he contends supports the granting of this variance. The two items requested are a roadway and five dock platforms which are staging areas for the docks within the marina. The road will be restricted to the harbormaster and fire/rescue personnel. The road will be slanted to capture stormwater and will address safety concerns for fire and rescue personnel. The five platforms will address handicap issues. Mr. Bruce Marek, Chief Engineer, is present and available to answer questions.

**Melvin Shepard made a motion that based on the stipulated facts the strict application of the applicable development rules, standards, or orders issued by the Commission cause the Petitioner unnecessary hardships. Commissioner Shepard added a condition on the permit that the road and turnaround not be used as a parking area and is limited to use by the**

**harbormaster for daily marina operations and emergency vehicles. Renee Cahoon seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Peele, Shepard, Wynns, Elam, Bisette, Mitchell, Cahoon).**

**Melvin Shepard made a motion that based on stipulated facts the hardships result from conditions peculiar to the petitioner's property. David Webster seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Peele, Shepard, Wynns, Elam, Bisette, Mitchell, Cahoon).**

**Chuck Bisette made a motion that based on stipulated facts the hardships do not result from actions taken by the Petitioner. Wayland Sermons seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Peele, Shepard, Wynns, Elam, Bisette, Mitchell, Cahoon).**

**Veronica Carter made a motion that based on stipulated facts the variance will be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; will secure the public safety and welfare; and preserve substantial justice. Bill Peele seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Peele, Shepard, Wynns, Elam, Bisette, Mitchell, Cahoon).**

This variance was granted.

### **CONTESTED CASES**

#### **Stirewalt/Overton v. DCM (08 EHR 1090) Figure Eight Island, Pool in Setback**

Christine Goebel of the Attorney General's Office represented Division of Coastal Management Staff. Ms. Goebel stated the Petitioners in this case did not file exceptions to the ALJ's decision and chose not to appear before the Commission to present oral arguments. Ms. Goebel stated this case was heard in August 2008 in the Office of Administrative Hearings. Mr. Stirewalt is the architect for Mr. Overton who owns oceanfront property on Figure Eight Island. They were challenging the denial of a CAMA Minor Permit for a swimming pool that was to be located between the house and the first line of natural vegetation. The rules in this case are in 15A NCAC 07H .0309 which provides exceptions to the oceanfront setback rules. One of the exceptions is for swimming pools. Swimming pools do not have to meet the setback but have to be behind the first line of vegetation. However, 7H .0309 goes on to say that such development is only allowed if all other provisions of the ocean hazard areas and state and local rules are met, and in all cases development shall only be permitted if it involves no alteration or removal of the frontal dune. Ms. Goebel reviewed the findings of fact.

The ALJ agreed with the Division of Coastal Management and the local permit officer's denial of the permit application and found it was proper. Petitioners did not file any exceptions and did not request oral argument. Staff is asking that the CRC uphold the ALJ's decision with three minor changes. The first is Finding of Fact #1 which reads "coastal high hazard area" and change to "ocean hazard areas of environmental concern". Finding of Fact # 3 should be changed to reflect that the LPO denied the Petitioner's application and not the "New Hanover County Inspection Office". Lastly, Conclusion of Law #8 should be eliminated.

*Jennie Hauser reminded the Commission that the time for issuing a decision ran out last week, but good cause can be shown since Petitioners requested an extension of time to file exceptions.*

*An extension of time to issue a final agency decision for the allowable sixty days should be requested.*

**Wayland Sermons made a motion for an extension of time to issue a final agency decision based upon the good cause which has been stipulated to by the Petitioner. Bill Peele seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Cahoon, Peele, Shepard, Wynns, Elam, Bissette, Mitchell).**

**Wayland Sermons made a motion to uphold the ALJ's decision including the exceptions filed by the Respondent and adopt this as the final agency decision. Renee Cahoon seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Cahoon, Peele, Shepard, Wynns, Elam, Bissette, Mitchell).**

### **ACTION ITEMS**

#### 15A NCAC 07H .0308(a)(2) Temporary Erosion Control Structures

**Renee Cahoon made a motion to adopt 15A NCAC 07H .0308. Charles Elam seconded the motion. The motion passed unanimously (Carter, Sermons, Cahoon, Peele, Shepard, Wynns, Elam, Bissette, Mitchell) (Webster absent for vote).**

#### 15A NCAC 07H .1100 General permit for Construction of Bulkheads and Placement of Riprap for Shoreline Protection in Estuarine and Public Trust Waters and Ocean Hazard Areas

**Bill Peele made a motion to adopt 15A NCAC 07H .1100. Charles Elam seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Cahoon, Peele, Shepard, Wynns, Elam, Bissette, Mitchell).**

#### 15A NCAC 07H .1200 General Permit for the Construction of Piers, Docks, and Boat Houses in Estuarine and Public Trust Waters and Ocean Hazard Areas

**Charles Elam made a motion to adopt 15A NCAC 07H .1200. Bill Peele seconded the motion. The motion passed unanimously (Carter, Sermons, Webster, Cahoon, Peele, Shepard, Wynns, Elam, Bissette, Mitchell).**

### **OLD/NEW BUSINESS**

Chairman Emory stated that he spoke with the Chair of the EMC. They are under the same restrictions as the CRC and are making similar adjustments. Like the CRC, the EMC can only meet if there is a contested case. All of the EMC meetings are in Raleigh as most of their members live in Raleigh. The average cost for an EMC meeting is \$3,000, which is significantly less than the cost of a CRC meeting which typically costs between \$15,000 and \$18,000. Jim Gregson stated he spoke with Louis Daniel about MFC. The MFC is requesting an exception from State Budget to hold a one day meeting (similar to the one the CRC is holding today). Their meeting will not include time for public comment and the agenda will be limited to immediate business only. Chairman Emory requested that each Commissioner save the dates previously set aside for Commission meetings in 2009. We will utilize these dates for conference calls or half-day meetings. June's meeting will be similar to this one if there is a contested case scheduled to be heard by the CRC. If there is no contested case, we will meet by conference call. The contracts have been cancelled for all meeting space and accommodations for the rest of 2009.

Chairman Emory stated options for the future would be conference calls involving both the CRC and CRAC. We need to look at priorities. After we have identified specific issues we could have issue specific subcommittees that will meet by conference call. The subcommittee could then report back to the full Commission.

### **CRC/CRAC Needs Assessment Survey Results**

#### **Whitney Jenkins**

Whitney Jenkins stated she is the coastal training program coordinator and had done the needs assessment survey to find out if there were needs the CRC or CRAC had to help them perform their duties. Nine of the 15 CRC members (60%) and 28 of the 45 CRAC (62%) responded. It is surprising that the response rates were not higher, but the results are statistically significant. Most of you wanted to see training during scheduled meetings, but most also said that they were willing to travel up to two hours for training. 78% of the CRC respondents and 82% of the CRAC respondents said they were interested in distance learning to conduct training. Some general observations based on the data indicated that there is an interest in bigger issues including alternative energy, sea level rise, communicating with other Commissions, and encouraging sustainable development within the land use plan. Training on fish habitat, SAV, PNA and wetlands ranked very low amongst member respondents. A follow up discussion with CRC and CRAC members would clarify these responses and create priorities for the next steps.

Chairman Emory asked the CRC to hang on to the survey response results handout provided to address at a future meeting for a more thorough discussion.

### **CRC Priorities**

Mike Lopazanski stated there is a lot of legislation floating around. Some of these items may necessitate the CRC's immediate attention. One of these issues is the EMC's recommendation on wind energy as well as the proposed amendments to CAMA to give the CRC permitting authority on the siting of wind facilities in all of the coastal counties and not just the AEC's. The Ocean Policy Study Committee has completed their report. Draft rule language on the inlet hazard areas will be ready soon. The Executive Committee can look at all of these issues and look at the next steps.

Renee Cahoon stated she attended the recent BIMP meeting and it was wonderful and productive. The Ocean Policy Steering Committee Meeting was just the opposite.

Wayland Sermons reminded Commissioners to be aware of the legislation that could prompt several terminal groin applications and the CRC needs to be prepared to act on these.

Chairman Emory appointed Chuck Bissette as hearing officer for public hearings scheduled for June 16, 2009 at 4:00 p.m. at the Morehead City DCM office for 7H .0205, 7H .0309, and 7B .0901.

With no further business, the CRC adjourned.

Respectfully submitted,

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James H. Gregson, Executive Secretary

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Angela Willis, Recording Secretary

**STATE OF NORTH CAROLINA**  
**COUNTY OF BRUNSWICK**

**BEFORE THE NORTH CAROLINA**  
**COASTAL RESOURCES COMMISSION**

**In the matter of )**  
**REQUEST FOR DECLARATORY )**  
**RULING ON EROSION RATE ALONG )**  
**WEST BEACH OF BALD HEAD ISLAND )**  
**AND APPLICATION OF RELEVANT )**  
**INLET HAZARD AREA REGULATIONS )**

**REQUEST FOR A**  
**DECLARATORY RULING**

The Village of Bald Head Island (the “Village”) and J. Andrew Sayre (“Sayre”) (collectively the “Requestors”), through undersigned counsel, respectfully request a Declaratory Ruling by the Coastal Resources Commission (the “Commission”) setting the annual erosion rate along West Beach of Bald Head Island (“West Beach”). Authority for this petition lies in N.C.G.S. § 113A-124(c)(7), 15A NCAC 07H .0304 and 15A NCAC 07J .0602. In support of the requested ruling, Requestors show the Commission:

**A. PROCEDURAL REQUIREMENTS**

1. Requestors’ names and addresses: The Village of Bald Head Island, Post Office Box 3009, Bald Head Island, North Carolina 28461; J. Andrew Sayre, Post Office Box 3259, 131 West Bald Head Wynd, Bald Head Island, North Carolina 28461.
2. The Village and Sayre are each a “person aggrieved” under the meaning set forth in N.C. Gen. Stat. § 150B-2(6).
3. Requestors seek a declaration setting an erosion rate along West Beach pursuant to N.C.G.S. § 113A-124(c)(7), 15A NCAC 07H .0304 and 15A NCAC 07J .0602.
4. This Request is being filed with the Director of the Division of Coastal Management, James H. Gregson, at 400 Commerce Avenue, Morehead City, North Carolina 28577, and also the Attorney General’s Office at 9001 Mail Service Center, Raleigh, North Carolina 27699-9001.
5. As evidenced by certified mail receipts, copies of the present Request have been sent to the owners of property in and adjacent to West Beach (**Exhibit A** (list)).

**B. FACTUAL BACKGROUND AND PERTINENT RULES**

1. West Beach lies directly along the Cape Fear River inlet and falls within both the current and proposed inlet hazard area zones. *See Exhibit B* (map of Bald Head Island).
2. For the purposes of this Request, West Beach is defined as the area within the existing inlet hazard area between transects one (1) through forty (40), inclusive, on *Exhibit C* (map of West Beach).
3. Pursuant to 15A NCAC 07H .0310(a)(1), “[a]ll development in the inlet hazard area shall be set back from the first line of stable natural vegetation a distance *equal to the setback required in the adjacent ocean hazard area.*” (Emphasis added).
4. Pursuant to 15A NCAC 07H.0306(a)(1), the setback distance for single-family development or multi-family development of three units or less in the ocean erodible area is defined by a distance equal to the erosion rate multiplied by a factor of thirty (30). The setback distance for small-scale (less than 5,000 square feet) multi-family development greater than three units and commercial development is also a distance equal to the erosion rate multiplied by a factor of thirty (30). For large-scale (5,000 square feet and greater) multi-family development greater than three units and commercial development, the setback distance is equal to the erosion rate multiplied by a factor of sixty (60) or, for areas with an erosion rate greater than 3.5 feet per year, a distance equal to the erosion rate multiplied by a factor of thirty (30) plus 105 feet. 15A NCAC 07H .0304(1)(a) defines that “erosion rates shall be the long-term average based on available historical data” as depicted on a map updated through 1998 (the “1998 Map”).
5. Unlike the State’s other inlet shorelines, no erosion rates along West Beach or the coastline north of West Beach are depicted on the Division of Coastal Management’s 1998-era erosion rate maps.
6. An eight (8) feet annual erosion rate applies to the homes and lots along South Beach immediately adjacent to the Bald Head Island inlet hazard area. Therefore, pursuant to 15A NCAC 07H.0304(a)(1), this rate is extrapolated to all areas inside the inlet hazard area, including West Beach where the Division of Coastal Management has recently calculated site-specific erosion rates to be approximately two feet per year or less. The eight (8) feet annual erosion rate currently applied to West Beach is derived from erosion rates calculated by the Division of Coastal Management for the portion of South Beach immediately adjacent to the South Beach portion of the inlet hazard area (i.e., on the other side of the “point” from West Beach). *See Exhibit B* (map of Bald Head Island).

7. In consequence, numerous homes and lots along West Beach are being subjected to a two hundred forty (240) feet building setback (8 foot erosion rate x 30) rather than a setback of sixty (60) feet (2 foot erosion rate x 30).
8. Approximately thirty million dollars (\$30,000,000.00) worth of properties are potentially effected along West Beach by the application of a South Beach erosion rate of eight (8) feet per year. *See Exhibit D* (list of properties effected and tax valuations).
9. This effect on West Beach properties results in decreased values to the Village and Brunswick County tax bases. Approximately eight (8) property owners have obtained, and others reportedly are obtaining, tax valuation reductions based on the non-conforming or unbuildable nature of the properties based on a setback distance of 240 feet (erosion rate of 8 feet per year x 30).
10. Sayre and other individual property owners allege they are being harmed by the non-conforming and “unbuildable” nature of their properties. *See Exhibits E1 and E2* (statements by Sayre and Jack Nichols, West Beach property owners, made to Commission at February 2009 meeting).
11. Currently, the Commission is in the lengthy process of amending the inlet hazard area regulations. An intended result of such process is to amend both the inlet hazard area affecting Bald Head Island, and to amend the applicable rules therein. In their current state, the proposed rules contemplate a two (2) feet annual erosion rate along West Beach. *See Jeffrey Warren, Ph.D., CRC Memorandum 09-05: Proposed Development Policies for Expanded Inlet Hazard Area Boundaries* (January 28, 2009) (attached as **Exhibit F** and proposing two feet annual erosion rate to few areas in North Carolina, including West Beach, without assigned erosion rates on current map, Table 1, Page 3).
12. Even assuming all possible efficiency, these inlet hazard area amendments cannot reasonably be expected within the coming year. Causes of delay include: (i) budget cuts forcing the Commission to either abbreviate or altogether cancel scheduled meetings; and (ii) Senate Bill 866, which, if enacted, would prohibit the Commission from effectuating any rule change that has an economic impact (most likely encompassing the proposed amendments to the inlet hazard area regulations).
13. The Commission has the immediate authority to vary the 1998 erosion rate map through “individual contested cases, *declaratory* or interpretive rulings.” 15A NCAC 07H .0304(1)(a) (emphasis added).
14. The relief sought herein is interim and would not affect pending Commission rulemaking related to the inlet hazard area boundaries and development conditions within said boundaries.

**C. PROPOSED STIPULATED FACTS**

1. West Beach is defined for the purposes of this Request as the area within the existing inlet hazard area between transects one (1) through forty (40), inclusive, shown on **Exhibit C**.
2. For purposes of oceanfront setback delineation, an annual erosion rate of eight (8) feet applies by rule to the area of West Beach within the inlet hazard area.
3. The eight (8) feet annual erosion rate results in an oceanfront setback distance of 240 feet landward of the first line of stable and natural vegetation for small or non-commercial structures
4. The 240 feet building setback applies to thirteen (13) homes with a total tax value of \$25,270,985.00 and four (4) lots with a total tax value of \$4,950,000.00 (*See Exhibit D*).
5. Division of Coastal Management (“DCM”) Staff prepared, on June 8, 2009, a map of West Beach showing transects and erosion rate calculations as shown on **Exhibit C**. The erosion rates calculated from the transects depicted on this map used the same transect orientation and shoreline analysis methods as those for the 1998 maps currently applied to the rest of the State’s oceanfront shoreline. The general method is an end-point calculation that determines the shoreline distance between an early shoreline from the 1930s and 40s defined from National Ocean Service Topographic Sheet (NOS T-sheet) maps and a late shoreline generated from 1998 aerial photography. This distance is divided by the time period represented by the shorelines to develop a long-term rate (e.g., 240 feet of shoreline movement over a period of 60 years is a rate of four feet per year). Specifically, the West Beach calculation conducted by DCM for this declaratory ruling used an early shoreline from 1942 (NOS T-sheet) and a late shoreline from 2000 (aerial photography). Aerial imagery for 1998 does not exist for West Beach.
6. The Commission has the authority to declare an annual erosion rate for West Beach. 15A NCAC 07H .0304(1)(a).
7. The circumstance of West Beach and its property owners is unique among North Carolina coastal communities because transects and erosion rates have not been defined previously by the Division of Coastal Management. To better understand the shoreline history along West Beach, and in response to this petition, the Division has since defined erosion rates for this portion of the Village shoreline. The maximum erosion rate for West Beach (as defined herein) by the Division using the method described above in Section 5 is 2.4 feet per year, and the maximum accretion rate is 4.3 feet per year. Spatial smoothing of the data, similar to what was done for the current erosion rate numbers for the State’s

oceanfront erosion rate data, further reduces the maximum erosion rate to 2.2 feet per year. The Division notes that rounding of the data through a process called “blocking” would place a minimum erosion setback factor of two (2) feet per year for the entirety of West Beach (transects 1 through 40). See **Exhibit G** for the complete methods used by the Division in the most recent shoreline erosion update.

8. The Declaratory Relief granted would not affect subsequent Commission rulemaking, but would merely establish an erosion rate, subject to adjustment by lawful Commission rules and processes. The erosion rates specific to this declaratory ruling may be superseded upon the effective date of any subsequent inlet hazard area development rules promulgated by the Commission.

#### **D. ARGUMENT**

Gaps in the current erosion rate map maintained by the Coastal Resources Commission (“CRC”), in conjunction with certain regulations applicable to the Inlet Hazard Area (“IHA”), are creating unintended results and causing an incorrect eight (8) feet annual erosion rate to apply to many homes along West Beach on Bald Head Island—where the actual erosion rate is approximately two (2) feet per year. See **Exhibits B** and **C** (maps of West Beach). In consequence, numerous homes are being subjected to an incorrect and unreasonable two hundred forty (240) feet building setback (8 x 30) rather than the correct sixty (60) feet setback (2 x 30). The result is that, arbitrarily, homes are rendered non-conforming and lots are deemed unbuildable. Such unreasonable and oppressive regulation has generated tremendous uncertainty, affected tax valuations and held up property transactions. The situation requires immediate correction.

West Beach lies within both the current and proposed IHA zones. (See **Exhibit B**; see also **Exhibit F** (discussing current status of IHA amendment process)). Pursuant to 15A NCAC 07H .0310(a)(1), “[a]ll development in the inlet hazard area shall be set back from the first line of stable natural vegetation a distance equal to the setback required in the adjacent ocean hazard

area.” Further, 15A NCAC 07H .0306(a)(1) provides that the appropriate setback distance in an ocean hazard area—and therefore in the “adjacent” IHA—is the erosion rate multiplied by a factor of thirty (30). Finally, “erosion rates shall be the long-term average based on available historical data” as depicted on a map updated through 1998. 15A NCAC 07H .0304(1)(a).

To date, no erosion rate has been identified along West Beach. As a result, the staggering eight (8) feet per year erosion rate affecting the coastline on the *opposite* side of the IHA zone applies throughout the entire IHA zone. **More than thirty (30) million dollars worth of properties are harmed.** See Exhibit D (property and valuation list).

Such an unreasonable and arbitrary regulatory scheme, as applied to West Beach, contravenes CAMA’s goal to “insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations.” N.C. Gen. Stat. § 113A-102(b)(2).

A declaratory or interpretive ruling by the CRC is a speedy and available fix to the problems described above. Specifically, 15A NCAC 07H .0304(1)(a)—which addresses erosion rates in ocean hazard areas—provides that such rates may be varied by the CRC through “**declaratory or interpretive rulings.**” (Emphasis added).<sup>1</sup> Through either of these procedures, the Coastal Resources Commission may vary the erosion rates depicted on the 1998 map (or lack thereof). Accordingly, the CRC should declare or interpret that the erosion rate at West Beach is two (2) feet per year.

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<sup>1</sup> A “declaratory” ruling is largely governed by statute and regulation. See N.C. GEN. STAT. § 150B-4; 15A NCAC 07J .0601 *et seq.* The procedures and scope of “interpretive” rulings, however, are not addressed by the statutes and regulations. Nonetheless, the above-cited regulation explicitly refers to the CRC’s power to make “interpretive” rulings. As such, an interpretive ruling may be an easy and efficient means of applying a reasonable setback requirement along West Beach.

Applying an annual erosion rate of two (2) feet to West Beach will facilitate coastal administration and application of building setbacks and zoning regulations, will provide certainty to property owners, will increase or maintain existing property values, and will permit real estate transactions to go forward, consistent with CAMA's stated goal to "insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations." N.C. Gen. Stat. § 113A-102(b)(2).

**E. PROPOSED RULING**

For the foregoing reasons, the Requestors respectfully move the Commission for a Declaratory Ruling awarding the following relief:

The Commission, having considered the due and lawful petition of the Requestors for a Declaratory Ruling, finds and declares:

1. No annual erosion rate or transects were previously adopted for West Beach on Bald Head Island, North Carolina, nor shown on the 1998 erosion rate map adopted in 2004.
2. DCM Staff prepared as of June 8, 2009, transects and calculated annual erosion rates for West Beach, consisting of the area within the existing inlet hazard area between transects (1) through forty (40), inclusive, as shown on **Exhibit C**.
3. Based upon the information provided by Requestors and DCM Staff, the Commission declares, pursuant to 15A NCAC 07H .0304(1)(a) and 07J .0602, that the annual erosion rate for West Beach is two (2) feet and same shall be shown henceforth on the erosion rate map maintained by the Commission.
4. This Ruling shall not prevent the Commission from modifying in the future the West Beach annual erosion rate by lawful rulemaking procedure and processes.

**F. CONCLUSION**

The Request for Declaratory Ruling by the Village of Bald Head Island and J. Andrew Sayre is in the best interest of coastal administration, addresses a unique regulatory circumstance

and is for the public benefit. See G.S. 113A-102(b)(2). The relief sought is authorized by law, including, but not limited to, N.C.G.S. 113A-124(c)(7), 15A NCAC 07H .0304 and 15A NCAC 07J .0602. Requestors urge the Coastal Resources Commission to consider and act upon this request in an expedited manner.

**RESPECTFULLY SUBMITTED**, this 9<sup>th</sup> day of June, 2009 by:

**ROUNTREE, LOSEE & BALDWIN, LLP**

Street: 2419 Market Street  
Wilmington, North Carolina 28403

Mailing: Post Office Box 1409  
Wilmington, North Carolina 28402

Phone: 910.763.3404

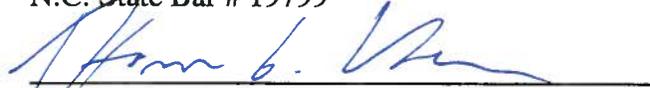
Fax: 910.763.0320



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**Charles S. Baldwin, IV**

N.C. State Bar # 19799



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**Thomas G. Varnum**

N.C. State Bar # 38567

*Attorneys for Requestors*

## West Beach and Adjacent Property Owners

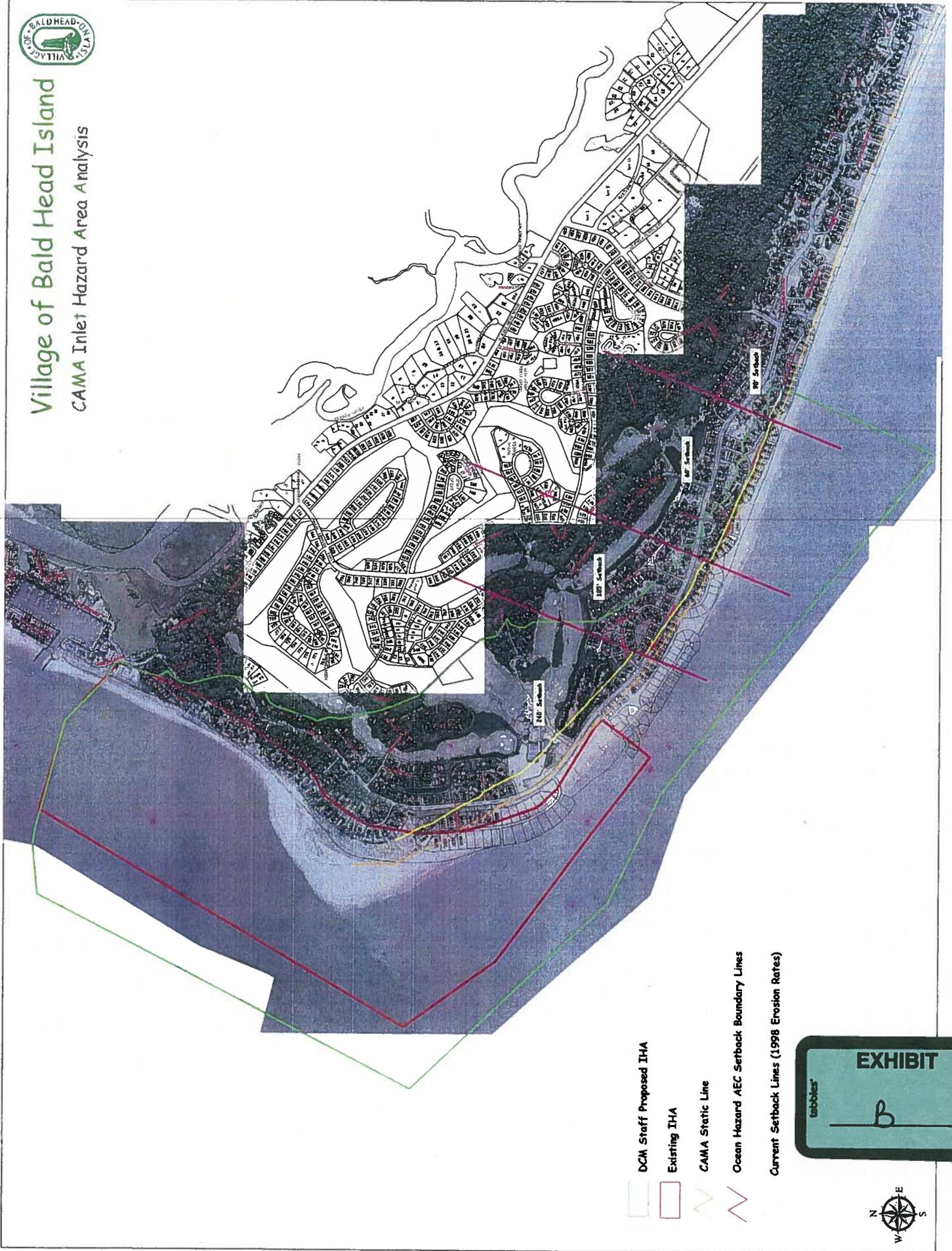
Parcel Number	Lot Number	Name	Mailing Address
2604G008	1023	Marvin & Sara Neuwirth	PO Box 3178 Bald Head Island, NC 28461
2604G009	1022	James E. Harrington	PO Box 3336 Bald Head Island, NC 28461
2604G010	1021	Cheryl Murphy	1508 East 86th Street # 163 Indianapolis, IN 46240
2604G011	1020	Fernand & Evelyn Parent	68 Hillcrest Ave. Charleror, PA 15022
2604G012	1019	Elizabeth Beam	1718 Canterbury Rd. Raleigh, NC 27608
2604G013	1018	Joseph & Leah Devlin	7016 Harps Mill Rd. Raleigh, NC 27615
2604G014	1017	John & Carol Mazuy	9 Russell Pond Rd. Kingston, MA 02364
2604G015	1016	Thomas & Eliza Lewis	1927 S. Churchill Dr. Wilmington, NC 28403
2604G017	1014 and 1015	James & Helyn Wisner	6417 Quail Run Rd. Wilmington, NC 28409
2604G018	1013	James & Catherine Berges	4 Brentmoor Park Clayton, MO 63105
2604G019	1012	John & Susan Nichols	1104 High Country Rd. Towson, MD 21204
264100103	Common Areas	Bald Head Association	PO Box 3030 Bald Head Island, NC 28461
2604G033	1234	Leslie Wheeler	32 Longcourse Lane Paoli PA 19301
2604G032	1233	Robert & Giancarla Helgesen	PO Box 3314 Bald Head Island, NC 28461
2604G031	1232	Timothy & Joan McCormick	71 Misty Pine Rd. Fairport, NY 14450
2604G030	1229	Peter & Eileen Quinn	508 Avonwood Rd. Haverford, PA 19041
2604G029	1230	Peter & Eileen Quinn	508 Avonwood Rd. Haverford, PA 19041
2604G027	1228	Michael Hartshorn	960 Checkrein Ave. Columbus OH 43229
2604G026	1227	The Berne Company, Inc.	33 Brays Island Drive Sheldon, SC 29941
2604G025	1226	Darin & Laura Hill	10045 Old Warden Rd. Raleigh, NC 27615
2604G02301	1225	Edward & Pat Johnston	PO Box 3148 Bald Head Island, NC 28461
2604G023	1224	Edward & Pat Johnston	PO Box 3148 Bald Head Island, NC 28461
2604G022	1223	Edward Harper	PO Box 10548 Southport, NC 28461
2604G021	1222	Christine Wright	232 Hempstead Pl. Charlotte, NC 28287
2604G020	1221	Thomas Watjen	PO Box 281 Lookout Mountain, TN 37350
2604F001	1216	Ronald & Margaret Cresswell	1968 Boulder Dr. Ann Arbor MI 48104
2604F002	1217	Haughton Pareddee Living Trust c/o Dr. Angela Pareddee	7124 Quail Hill Rd. Charlotte, NC 28210
2604F003	1009	15 Sea Gull Trail LLC	3020 N Fairway Dr. Burlington, NC 27215
2604F004	1008	David & Mary Lewis	9315 Peshurst Trace Charlotte, NC 28210
2604F005	1007	David & Mary Lewis	9315 Peshurst Trace Charlotte, NC 28210
2604F006	1006	George & Alice Horton	4900 W. Cornwallis Rd Durham, NC 27705





# Village of Bald Head Island

## CAMA Inlet Hazard Area Analysis



- DCM Staff Proposed IHA
- Existing IHA
- CAMA Static Line
- Ocean Hazard AEC Setback Boundary Lines

Current Setback Lines (1998 Erosion Rates)



EXHIBIT

B

tabbles

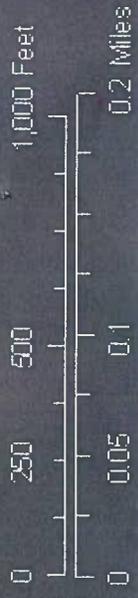
# Bald Head Island

## West - Beach



### Legend

- Transects
- 1942 Shoreline (NOS T-Sheet)
- 2000 Shoreline (Wet / Dry)
- Proposed IHA Boundary
- Parcels



**NOTE:**  
 This map illustrates 25-meter transects and 1942 & 2000 shorelines used to calculate long-term erosion rates on Bald Head Island's "west-beach." These erosion data DO NOT reflect short-term erosion potentially caused by inlet dredging or storm events.

NCDCM_ID	End-Point (Meters)	End-Point (Feet)	5-pt average
1	0	0.0	
2	0	0.0	
3	0	0.0	0.1
4	0.12	0.4	0.1
5	0.03	0.1	0.0
6	-0.05	-0.2	-0.1
7	-0.12	-0.4	-0.2
8	-0.1	-0.3	-0.3
9	-0.03	-0.1	-0.4
10	-0.1	-0.3	-0.5
11	-0.24	-0.8	-0.7
12	-0.33	-1.1	-1.0
13	-0.43	-1.4	-1.3
14	-0.48	-1.6	-1.6
15	-0.54	-1.8	-1.8
16	-0.6	-2.0	-1.9
17	-0.64	-2.1	-2.1
18	-0.69	-2.3	-2.2
19	-0.73	-2.4	-2.2
20	-0.69	-2.3	-2.2
21	-0.64	-2.1	-2.1
22	-0.59	-1.9	-2.0
23	-0.56	-1.8	-1.8
24	-0.52	-1.7	-1.7
25	-0.49	-1.6	-1.5
26	-0.42	-1.4	-1.1
27	-0.28	-0.9	-0.6
28	-0.03	-0.1	0.0
29	0.25	0.8	0.6
30	0.44	1.4	1.2
31	0.53	1.7	1.5
32	0.57	1.9	1.7
33	0.54	1.8	1.8
34	0.54	1.8	1.9
35	0.57	1.9	2.1
36	0.68	2.2	2.4
37	0.86	2.8	2.8
38	1.01	3.3	3.3
39	1.16	3.8	3.8
40	1.31	4.3	4.2
41	1.43	4.7	4.7
42	1.56	5.1	5.1
43	1.68	5.5	5.5
44	1.82	6.0	6.1
45	1.96	6.4	6.7
46	2.23	7.3	
47	2.48	8.1	

Negative values=erosion  
Positive values=Accretion

## IHA Information

Structures That Can't Meet The Current Setback of 240' In Existing IHA

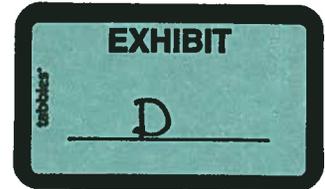
Name	Lot #	Address	B.C Tax Value	Tax Parcel #
Coupland	1001	15 Green Teal	\$1,357,030	2604F031
Gutman	1002	13 Green Teal	\$1,397,280	2604F032
Anderson	1003	11 Green Teal	\$1,503,530	2604F033
Faber	1004	9 Green Teal	\$1,526,820	2604F034
Horton	1006	21 Sea Gull	\$2,718,480	2604F006
Lewis	1008	17 Sea Gull	\$2,631,290	2604F004
Seagull LLC	1009	15 Sea Gull	\$1,391,830	2604F003
Nichols	1012	41 Cape Fear Trail	\$1,635,580	2604G019
Berges	1013	39 Cape Fear Trail	\$2,240,200	2604G018
Wisner	1014&15	35 Cape Fear Trail	\$3,675,740	2604G017
Lewis	1016	33 Cape Fear Trail	\$1,358,560	2604G015
Mazuy	1017	31 Cape Fear Trail	\$1,774,120	2604G014
Devlin	1018	29 Cape Fear Trail	\$2,060,520	2604G013

Unimproved Lots That Can't Meet The Current Setback of 240' In Existing IHA

Sayre	Estate Lot 1	5 Green Teal	\$2,200,000	2604F023
Lewis	1007	19 Sea Gull	\$1,000,000	2604F005
Parent	1020	25 Cape Fear Trail	\$1,000,000	2604G011
Washburn	1029	36 Sandpiper	\$750,000	2641D017

**TOTAL**

**\$30,220,980**





①

I APPEAR BEFORE YOU TODAY WEARING

FOUR HATS:

FIRST I HAVE BEEN ON THE BALO  
HEAD ISLAND VILLAGE COUNCIL FOR ALMOST

12 YEARS. I WOULD LIKE TO THINK

THAT I AM WELL INFORMED. HOWEVER

OVER THE PAST SIX MONTHS OR SO I

HAVE BEEN SURPRISED AND INCREASINGLY  
ALARMED BY THE <sup>potentially broad and uncertain</sup> ~~DANGER THAT THE~~

implications of the

PRESENT AND PROPOSED IHA RULES ~~ARE~~

~~THE~~ THE WELL BEING OF INDIVIDUAL PROPERTY

OWNERS AND THE VILLAGE'S TAX BASE <sub>is</sub>  
depend on clear rules

IT APPEARS THAT THE REGULATIONS HAVE

NOT BEEN LOGICAL, WELL COMMUNICATED

②

NOR UNIFORMLY ADMINISTERED. THE VILLAGE OF BALD HEAD ISLAND IS A RELATIVELY NEW ~~AND~~ ~~FRAGILE~~ ENTITY, VERY MUCH IN A FORMATIVE STATE. PLEASE ENSURE THAT ANY IHA REGULATIONS DON'T THREATEN THE DESIRABILITY OF BALD HEAD NOR ITS FINANCIAL STABILITY.

SECONDLY, I AM THE OWNER OF A PROPERTY WITHIN THE IHA. IT IS A LARGE LOT OF ABOUT 1.5 ACRES WITH GOOD ELEVATION, BEING THE TERMINUS OF THE PRIMARY DUNE AT THE EDGE OF THE CAPE FEAR RIVER. WE BOUGHT IT AS ~~AN~~ A RETIREMENT INVESTMENT IN 1996 AND IT SEEMINGLY APPRECIATED WELL OVER THE

③

YEARS. AT LEAST THE BRUNSWICK COUNTY TAX DEPT. THOUGHT SO. AS RECENTLY AS JUNE 2008 I HAD AN MAI APPRAISAL DONE IN ORDER TO REFINANCE. THIS APPRAISAL AGREED WITH BRUNSWICK COUNTY'S VALUATION

I RECENTLY REQUESTED FROM THE LOCAL CAMA OFFICER INFORMATION ON WHAT BUILDING RESTRICTIONS MIGHT APPLY. HE INFORMED ME THAT THE SETBACK FROM THE RIVER IS 240 FEET WHICH MAKES THE LOT UNBUILDABLE.

EXCEPT FOR POSSIBLY A COUPLE OF FEET OF EROSION THAT OCCURRED AFTER THE COE REALIGNED AND DEEPENED THE NAVIGATION CHANNEL, THE LOT LOOKS EXACTLY AS IT

④

DID WHEN WE BOUGHT IT.

I CANNOT AFFORD TO LOSE THE VALUE OF THIS LOT. I AM APPEALING BOTH THE 2008 AND 2009 PROPERTY TAXES, AND I AM ALSO CONCERNED THAT I MAY BE IN DEFAULT FOR BREACH OF A ~~technical~~ COVENANT OF MY LOAN. THIS IS AN UNACCEPTABLE SITUATION. I CONTINUE TO PAY THE BANK ~~AND~~ <sup>BUT</sup> DOUBT THE BANK WOULD BE SYMPATHETIC IF THE LOT WERE WORTHLESS.

THIRDS I AM IN THE BUILDING BUSINESS AND MY WIFE OWNS A REAL ESTATE COMPANY CONCENTRATING SOLELY ON BALD HORN PROPERTY, INCLUDING SEVERAL LOCATED IN THE IHA.

IN AN ALREADY DIFFICULT MARKET, OTHERWISE VIABLE TRANSACTIONS IN THE IHA HAVE COME TO A COMPLETE HALT. IN OUR

⑤

NEW COMMUNITY THE HEALTH OF THE REAL ESTATE MARKET IN LARGE PART TRANSLATES TO THE OVERALL HEALTH OF THE COMMUNITY.

FINALLY I AM A PAST BOARD MEMBER OF THE BHI CLUB. I WAS INTEGRALLY INVOLVED IN THE RECENT MULTI-MILLION DOLLAR RENOVATION OF THE CLUBHOUSE.

BEFORE COMMITTING THESE SUBSTANTIAL DOLLARS, WE EVALUATED ALTERNATE LOCATIONS FOR A TOTALLY NEW BUILDING.

WE WERE UNABLE TO IDENTIFY ANY VIABLE ALTERNATE SITES. WHEN THE TIME COMES TO REPLACE THIS BUILDING, IT SIMPLY HAS TO REMAIN ON ITS PRESENT SITE.

⑥

THANK YOU ALL FOR YOUR CONSIDERATION.

Subject: The Inlet Hazard Area Changes

My name is Jack Nichols. I have a home in Baltimore, Maryland and on BHI, N.C. I appreciate the opportunity you have given me to speak briefly about my concerns on the present practices and policies relating to erosion rates and setbacks in the Inlet Hazard Area on BHI; and an even greater concern over the future regulations for property owners in the Inlet Hazard Area.

My wife and I have owned two homes on BHI since May of 1987, first owning a Villa on South Beach next to the BHI Club; and then moving to 41 Cape Fear Trail in 1991, which is on West Beach, on the Cape Fear River. One reason for our move was to get away from the problems created by the high rate of erosion and the frequent storm surges from the ocean. When we moved into our Villa in 1987 there were numerous homes and a large Inn and restaurant on the beach. In four years the Inn, and all the homes were gone. The Villas had now become ocean front property.

The home on Cape Fear Trail which was built in 1989 was issued a permit using 60 feet as the minimum setback from the First Line of Stable Vegetation. Our home was actually built over 120 feet from the FLSV. Our lot is just over 200 feet deep; over 200 feet across the waterfront and it narrows at the entrance to about 50 feet, the home is 2000\_sq.feet.

We sold our Cape Fear Trail home two years ago to a BHI neighbor, subject to the sale of his home. About six months ago this purchaser checked with the CAMA Officials locally and was told that our home was in the Inlet Hazard Area and was in violation of the 240 feet setback restriction and therefore was not rebuildable if it was destroyed. The prospective purchaser then put this transaction on hold until this issue could be resolved. We are still in this position.

In October of last year we had a meeting with the local CAMA Official. He told us that the original minimum setback for our home was 60 feet but should have been 180 feet based on a six foot erosion rate for the Inlet Hazard Area. He said the erosion rate for the entire Inlet Hazard Area was based on the 1988 erosion rate from South Beach. He went on to say that the erosion rates for West Beach did not exist. He then added that the 1998 erosion rate for the Inlet Hazard Area was 8 feet and our setback requirement had increased to 240 feet. Our lot is 200 feet deep; which means our lot was not buildable in ~~1989~~1998.

In further conversations and e-mails I was told that our property was in violation of the setback requirements of the IHA at the time of construction; therefore any previous variance or grandfathering would not be reinstated.

I asked ~~asked~~ when it was decided by CAMA to use erosion rates from South Beach to establish setback rates for West Beach. He said that to his knowledge that was first discussed in



2003 when issues arose concerning other properties. He agreed that up to then, the setbacks on the River property were inconsistent and the 60 foot rate was probably used because there wasn't any erosion rates established on West Beach. He then said that the Ocean Erosion Rates were applied to the entire Inlet Hazard Area. I pointed out to him that this decision was made more than 15 years after our house was permitted in 1989 with a 60 foot setback. I added that in 2002 a CAMA permit was issued confirming our 60 foot setback when we added a screened porch to our home.

In my 18 years living on the West Beach there has been minor erosion balanced by frequent accretion resulting in little if any change in the vegetation line; until ~~two to three~~ five or six years ago, when major changes were made to the Shipping Channel in the river. The Channel was widened to 500 feet; deepened to 42 feet and moved closer to the Island. We are now experiencing greater erosion and the Village Government has taken the combined action of re-nourishment and vegetation planting to stabilize the West Beach. The Village also has an agreement with the Corps of Engineers to monitor the South and West Beaches and furnish sand for re-nourishment.

The Village also has additional plans to use other sources of sand if needed to protect the beaches on BHI.

The following major issues concerning the Inlet Hazard Area on Bald Head Island should be taken into consideration before these areas and rules are established.

1. Evaluate the ongoing damages caused by "other than natural reasons" like the shipping channel changes ; the proposed new port in Southport; and ways of protecting the BHI Beaches
2. Evaluate the effect of the extension of the jetty at the entrance to the Marina and other types of groins along the River.
3. Evaluate the effect of regular replacement of sand along South and West Beach.
4. Adopt clear, sensible rules so that property owners are not left to wonder if lots are buildable or marketable.

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In summary: I feel that on BHI it is unreasonable and arbitrary to use erosion rates for South Beach (Ocean) to establish setback requirements on West Beach (River). This issue should be resolved now and not wait until the new regulations are established; and these new policies should take into consideration the history and facts concerning the situation on BHI.



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue, Governor

James H. Gregson, Director

Dee Freeman, Secretary

January 28, 2009

**MEMORANDUM**

**CRC 09-05**

**TO:** Coastal Resources Commission

**FROM:** Jeffrey Warren, PhD, CPG  
Coastal Hazards Specialist

**SUBJECT:** Proposed Development Policies for Expanded Inlet Hazard Area  
Boundaries

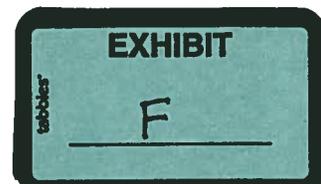
At the May 2008 Coastal Resources Commission (CRC) meeting, Division of Coastal Management (DCM) staff presented draft rule language for development within the updated Inlet Hazard Area (IHA) boundaries as well as a boundary for the Bald Head Island (BHI) IHA that was a revision of the CRC Science Panel on Coastal Hazards initial recommendation. Spencer Rogers, a member of the CRC Science Panel, addressed issues that the Panel had with some of the concepts of the draft rule language, specifically those relating to how the oceanfront setback was determined adjacent to an inlet and, in particular, the calculation of erosion rates and the use of the vegetation line as a reference point for measuring setbacks. The CRC requested that the issues addressed by Rogers, as well as the revised IHA boundary developed by DCM staff, be taken back to the Science Panel.

Since the May 2008 CRC meeting, the Science Panel has met three times to discuss the issue. At the November CRC meeting, DCM staff presented an IHA boundary for BHI based on Science Panel input and additional DCM consideration. Although the Science Panel continues to support their initial IHA boundary recommendation presented in September 2007, staff presented the rationale that DCM staff used to justify the November 2008 IHA boundary revision. Spencer Rogers offered additional comments on the issue. In response, the CRC voted to adopt the boundary as presented by staff. All of the proposed IHAs (including the November revisions to BHI) can be reviewed online:

[http://www.nccoastalmanagement.net/Hazards/proposed\\_IHA.htm](http://www.nccoastalmanagement.net/Hazards/proposed_IHA.htm)

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Phone: 919-733-2293 \ FAX: 919-733-1495 \ Internet: [www.nccoastalmanagement.net](http://www.nccoastalmanagement.net)

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At the November 2008 meeting, DCM staff noted that draft development policies and data germane to how these policies might affect development in both the existing and proposed IHA boundaries would be provided for the Commission's consideration in February 2009. Attached is a comparison (Table 1) of the proposed development policies for the revised IHA boundaries to the existing IHA policies (for development currently in the IHA) and the existing Ocean Erodible Area or OEA policies (for development currently not in the IHA but slated to be included in the proposed boundary revisions).

Dr. Margery Overton, CRC Science Panel chair, is scheduled to speak to the CRC at the February meeting and outline the Panel's concerns with managing development adjacent to the State's 12 developed inlets. Based on comments from the most recent Science Panel meeting (January 14<sup>th</sup>), the issues appear to be fourfold: 1) application of newly calculated oceanfront shoreline erosion rate data adjacent to inlets (versus existing data based on 1998 shoreline), 2) consideration of short-term variability of shoreline (and vegetation line) when determining setbacks, 3) consideration of multiple setback criteria at each inlet (and potentially using the most restrictive), and 4) consideration of inlet-specific (i.e., unique to each inlet) policies for placement of development. DCM continues to consider the Panel's input as inlet-related development policies are developed. Although the application of a new erosion rate will be accomplished as a separate project through a phased approach, DCM feels it has developed a policy framework for addressing most, if not all, of the Panel's concerns.

At the upcoming meeting recommendations for revised IHA development criteria as outlined in Table 1 will be presented along with relevant support data (e.g., size and number of affected structures, erosion rates, etc.). Simply stated, the general concept of these IHA development criteria is twofold: 1) keep it small (<5,000 square feet) and 2) keep it from moving oceanward of existing development. CRC approval of this policy, including any amendments they feel are appropriate, can be distributed to the appropriate stakeholder groups following the meeting (including the Science Panel, which is scheduled to meet again in Raleigh on February 25<sup>th</sup>). Comments and concerns identified by stakeholders will be considered by DCM and incorporated into draft rules that can be presented to the CRC at their April meeting. Note that the two relevant rules are 15A NCAC 07H.0304 (which defines the IHA boundaries) and 07H.0310 (which defines the development requirements within the IHA boundaries). Although the Coastal Area Management Act requires any changes to an Area of Environmental Concern (AEC) to be subject to hearings in each affected county (in this case, there are five – Brunswick, New Hanover, Pender, Onslow, and Carteret), DCM staff recommends that both rules (07H.0304 and 07H.0310) be subject to the same level of public input. If the CRC chooses to send the proposed rules to public hearing in April, it is likely that regional public hearings can occur during early to mid August with a final hearing in front of the full CRC in Raleigh (August 27<sup>th</sup>).

**Table 1.** Applicable development policies established by the Coastal Resources Commission in both the Inlet Hazard Area (IHA) and Ocean Erodible Area (OEA) compared to the proposed development standards proposed by the Division of Coastal Management staff. The OEA data are tabulated here because they are the current rules applicable for oceanfront development in areas that are included in the proposed IHA expansion (but not currently in an IHA).

<b>POLICY</b>	<b>Existing IHA</b>	<b>Existing OEA</b>	<b>Proposed IHA</b>
<b>Size limits</b>	No commercial or multi-family (4 units or greater) greater than 5,000 sq ft	No size limits as long as setback can be met	No structures greater than 5,000 sq ft (excluding development related to public access such as parking lots)
<b>Grandfathering for existing structures &gt;5,000 sq ft</b>	No	No	Yes (can be replaced to pre-rule change size as long as current setbacks are met)
<b>Parking</b>	Not greater than 5,000 sq ft	Setback based on size	All parking >5,000 sq ft shall be gravel or packed clay
<b>Density Limits</b>	No more than 1 unit per 15,000 sq ft	None	None
<b>Setback exception for lots platted prior to 1979</b>	No	Yes	Yes
<b>Static Line Exception*</b>	Yes (although not addressed in current IHA rules, nothing in current rules would exclude its application)	Yes	Yes
<b>Erosion Rates Applied to Setback Determinations</b>	Adjacent OEA	As defined in 07H.0304	As defined in 07H.0304 (plus a 2 ft-per-yr rate assigned to a few areas on current maps without assigned erosion rates; DCM plans a coast-wide update to current erosion rates)
<b>Vintage of Erosion Rates Applied</b>	Primarily current rates with some exceptions dependant on lot plat date	Primarily current rates with some exceptions dependant on lot plat date	Rates in place at time of permit decision
<b>Setback Reference Point</b>	Vegetation line	Vegetation line	Vegetation line AND landward most adjacent structure AND as far back on lot as feasible (with provision for unique lot and shoreline geometries on a case-by-case basis)
<b>Setback Factor</b>	30	30 or 60 (plus potential graduated setback factor between 60 and 90 based on pending setback rules)*	30 (no greater setback needed since total floor area limited to 5,000 sq ft; size exception for public access facilities which will need to meet relevant setback*)
<b>Sandbag Frequency**</b>	Once	Once	Multiple times**
<b>Sandbag Time Limits**</b>	Max of 5 years	Max of 5 years	Max of 8 years** (with planned inlet relocation project)

\* Static line exception and setback rules (15A NCAC 07H.0306) approved by CRC in September and RRC in November 2008 being sent to General Assembly for review.

\*\* Although proposed sandbag rules are provided here for comparison, they are not part of the proposed IHA development policy and rules. The public hearing for proposed amendments to the sandbag rules (15A NCAC 07H.0308(a)(2)) that would allow the conditions described in the above table is scheduled to occur at the February CRC meeting.

NC CRC - Information Item  
04/28/04

**North Carolina  
1998 Long-Term Average Annual Erosion Rate Update:  
Methods Report**

March 18, 2004

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## ACRONYMS

CSC	Coastal Services Center
CRC	Coastal Resources Commission
DCM	Division of Coastal Management
DEM	Department of Emergency Management
DOT	Department of Transportation
DTM	Digital Terrain Model
GIS	Geographic Information System
GPS	Global Positioning System
NCSU	North Carolina State University
NGS	National Geodetic Survey
NOAA	National Oceanic and Atmospheric Administration
OGMS	Orthogonal Grid Mapping System
T-sheet	Topographic-sheet
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey

## HISTORY OF NC EROSION STUDY AND UPDATES

In late 1978 and early 1979, the NC Coastal Resources Commission (CRC) undertook a comprehensive review and revision of the oceanfront regulations adopted in September 1977. One major new management strategy that came out of this revision was the use of an oceanfront development setback based in part on the average annual long-term rate of shoreline change. These setbacks create an undeveloped buffer zone along the oceanfront shoreline to protect houses and other buildings from storm scour and long-term erosion.

### 1979 Study

Since a setback program based on long-term shoreline erosion rates requires accurate, up-to-date shoreline erosion rate information, a study contract was made with Dr. Aziz Tayfun, Spencer Rogers, and Dr. Jay Langfelder of NCSU in February 1979. This study accomplished the following tasks:

- Analysis of the short-term erosion associated with a 100-year storm event; and
- Analysis of the long-term oceanfront shoreline changes.

The procedure used in this study to determine average annual long-term erosion rates was based on a series of earlier studies that used methods developed by Stafford (1968). Using several sets of aerial photographs, Stafford manually measured the perpendicular distance from fixed reference features to the high water line at a series of points. The low spatial resolution and variable accuracy of this work limited its usefulness. However, it provided the conceptual framework for subsequent studies. Averaging the shoreline change distance over the time interval between an early shoreline date and a recent shoreline date has come to be called the “end point method.”

In April 1979, DCM staff saw a presentation by Dr. Robert Dolan of the University of Virginia on his recently developed shoreline erosion study methodology, Orthogonal Grid Mapping System (OGMS). Using a projecting light enlarger in combination with a zoom transfer scope, Dolan’s technique corrected some of the scale variations and other distortions of aerial photographs. This methodology increased the number of shoreline transects and improved spatial resolution. Dolan provided the NC Office of Coastal Management with a copy of his data, which was only available for the northern portion of NC, and it was used where available in the study contract with NCSU.

The study report was completed (Tayfun, *et al.*, 1979) and shoreline change rates were approved for use in establishing setbacks by the CRC in July 1979. DCM staff determined that erosion factor segments provided in the report were relatively long. Staff felt that shortening them would provide a more realistic picture of shoreline changes. Based on an evaluation of the accuracy of the Dolan data, it was determined that the erosion factor segments could be shortened along the northern half of the state. Here, the original erosion factor segments were longest, and shoreline change data most dense (1 measurement every 100 m for the Dolan data set in the northern half of the state versus 1

measurement every  $\pm$  300 m for the southern half). The revision was done in house and the new erosion factor segment maps became effective June 1, 1980.

### 1980 Update

In June 1981, the first erosion rate update, which utilized Dolan's data for the entire state and current through late 1980, was completed through a contract with Dolan. A detailed description of the Dolan OGMS methodology is found in Dolan, *et al.*, 1978 and Dolan, *et al.*, 1980.

Since the shoreline erosion study was strictly a historical snapshot of the shoreline changes that took place over the time interval studied, and physical conditions along the coast change over time leading to potential changes in erosion conditions, staff proposed that the study be updated approximately every five years. A five-year time interval is about the minimum necessary, considering the sensitivity of the study methods, to accurately portray erosion rate changes and insure that erosion rates used by DCM reflect current erosion conditions. Also, in order to keep the erosion rates used for management consistent with current erosion conditions, DCM proposed that the time interval used for the study be limited to the most recent approximately 50 year time interval. A detailed description of methods and update results are found in Benton, 1983.

### 1986 Update

The shoreline change study was updated through 1986 through another contract with Dolan. Though other methods were considered, DCM staff ranked Dolan's OGMS method as the most accurate and practical for NC's coastal management needs. Major enhancements to the method included the reduction of transect spacing from 100 m to 50 m, and the provision of a personal computer version of the shoreline change analysis program, COASTS for DCM staff use. This allowed access to the data for in-house research, education, contested cases, and other purposes. A detailed description of methods used and update results are found in McCullough, and Benton, 1988.

### 1992 Update

For the 1992 shoreline change update, a contract was developed with Dr. Margery Overton and Dr. John Fisher of the Civil Engineering Department of NCSU. The original Dolan data set was used again for the early date except for an approximately 10-mile section of coast in southern Currituck County between Duck and Corolla. This segment of shoreline was rectified and digitized by Overton and Fisher due to comments received during the public hearings on the proposed 1992 erosion rate update study results.

Though the study continued to use the end point method, a number of enhancements were incorporated into the update. For the first time, a geographic information system (GIS) was utilized in the process for 1992 and portions of the early date aerial photo rectification process. A set of large-scale (1:4,800) stable mylar prints were produced from a set of vertical aerial photographs taken by the Photogrammetry Unit of the NC

DOT for the project. These were rectified using 1:24,000 scale US Geological Survey (USGS) topoquad maps utilizing a mathematical algorithm called “rubber-sheeting” to correct scale differences and distortions inherent to aerial photography. Shorelines were digitized by Dolan on the 1:4,800 scale mylar prints to insure consistency with earlier studies. Discontinuities between line segments from photo to photo were corrected by “snapping” the segments together.

Since the early date for most of the shoreline was not in GIS format, the newly mapped shoreline was transformed into a numerical format to perform shoreline change rate calculations. The calculations were performed by a computer program called ECOAST developed by Dolan. ECOAST is an enhancement of Dolan’s earlier COAST program. A detailed description of methods used and update results are found in Overton, and Fisher, 1996a, and Benton, *et al.*, 1997.

### **1998 UPDATE**

The 1998 shoreline erosion study update was developed through contracts with the following:

- NC DOT for establishing ground control, providing vertical aerial photographs of the oceanfront shoreline, and providing quality control for digital orthophoto products;
- SURDEX Corporation for scanning and rectifying the vertical aerial photographs and providing DTM data for the coast; and
- Overton and Fisher for calculating the shoreline erosion rates used for the 1998 update.

The 1998 update data provided is consistent with earlier studies used by DCM for the long-term average annual erosion rate setback program. First, the wet/dry line was used to delineate the shoreline position from aerial photography. This same shoreline indicator was used for all the earlier updates. Second, the end point method was used to calculate rates. The original transect locations and nomenclature established using the OGMS was also used. These consistencies allow DCM to evaluate shoreline change at the same locations as those used in earlier studies.

Several modifications were adopted in the 1998 study to utilize current aerial photogrammetric technology, improve the accuracy of the results, and provide a GIS-compatible product. Many of these improvements were recommended by the Coastal Hazards Science Panel of the CRC and were enabled by the coordinated efforts of DCM, DEM, DOT, and the Kenan Natural Hazards Mapping Program at NCSU.

The modifications are listed below.

- The 1998 photo base is a set of digital orthophotos, which improved the accuracy of the shoreline position and provided GIS-compatible data.
- The shoreline was delineated digitally in GIS format with geographic coordinates.
- Digital T-sheets were used for the early date required by the end point method. T-sheets provided a cost effective early date, and are used by other researchers including the USGS for their recent shoreline erosion studies. T-sheets eliminated the problems introduced by the variable error in the early date established during the first erosion rate study (Benton, 1983). This error is discussed in the supplementary report to the 1992 Methods Report (Benton, *et al.*, 1997).
- T-sheets do not exist for approximately 30 miles of shoreline north of Oregon Inlet. For approximately 20 miles of this shoreline, the early date was established by rectification of October 21, 1940 photographs using ERDAS IMAGINE with the OrthoBASE module. The rectification process produced a digital mosaic with continuous coverage over the project area.
- Coordinates are archived for the 1998 shoreline and the early date shoreline so that rate data associated with specific transects can be geo-referenced directly to shoreline position in a GIS.

This study provided DCM with a statewide database of shoreline position and erosion rate data in GIS format that represents up to date technology with respect to the use of aerial photography for shoreline change analysis. As an example, the worst case displacement error associated with identifying the wet/dry line from the 1998 orthophotos is estimated to be +/- 10 ft (Overton, and Fisher, 2003), an improvement over the +/- 50 ft displacement error estimated for the shoreline position used in the previous erosion rate studies (Dolan et al. 1980).

## **DATA SOURCES**

### 1998 Vertical Aerial Photograph

The contract with DOT provided approximately 1,100 black and white prints from the NC/VA boundary to the NC/SC boundary flown between June and August 1998. The aerial photographs were taken at a scale of 1:7,200 and incorporated an extensive (approximately 675) array of surveyed ground control panels. These ground control panels consisted of 10' x 10' sheets of black plastic with a 1' x 8' white chevron (V). The control point is at the exterior point of the chevron. Control points were surveyed using fast static global positioning system (GPS) procedures tied to the HARN. Elevation values are accurate to 0.2 ft. The photos covered the entire ocean shoreline of

NC, approximately 320 miles. Work products from this contract included film diapositives, 9" x 9" contact prints, index sheets, and ground control data (as ASCII text).

### 1998 Digital Orthophotographs

Approximately 1,010 of the 1998 vertical aerial photographs were selected for conversion to digital orthophotos and production of DTMs. The photos were selected to optimize coverage of the oceanfront shoreline, but eliminated unnecessary overlap and duplication. Under a contract with SURDEX Corporation, the photos were scanned, differentially rectified using control point data and a digital elevation model, and registered to known ground coordinates. The orthophotos were tiled into 2,500' x 2,500' ground distance tiles, butt-matched and staggered North-South and East-West to maximize the coverage and efficiency of each tile. Ground pixel resolution was 6" and all image pixels were squared North-South and East-West in orientation to the NC State Plane Coordinate System Zone 4901 referenced to the North American Datum of 1983. The accuracy standards required under this contract exceed the American Society of Photogrammetry and Remote Sensing Accuracy Standards for Large-Scale Maps for Class 1 Maps and well-defined points at the 1:1,200 scale or 1.0 ft limiting root mean square (RMS) error. The RMS error is the cumulative result of all mapping errors and well-defined points pertain to features that can be sharply identified as discrete points. The orthophotos were delivered in geoTiff format.

While the orthophotos are of excellent quality in general, the contrast on the beach face was, in some areas, not sufficient to identify the wet/dry line. For these orthophotos, NCSU increased the contrast of the images to identify the wet/dry line on the beach. This processing was done using ERDAS IMAGINE and Adobe Photoshop to produce the best possible results.

### T-sheets

Digital T-sheets as ArcInfo coverages were obtained from the CSC. Table 1 provides information about the original files. T-sheets were grouped together by the CSC into the same file as indicated by the folder name and spatial coverage (Table 1). The various T-sheets within a folder were potentially representative of different dates, thus the range of dates presented in Table 1. ArcInfo coverages were converted to ArcView shapefiles and evaluated for use in the erosion rate project with the assistance of metadata provided by the CSC. This metadata details accuracy estimates relative to the digitization procedures used by NOAA for their project as well as basic information about the T-sheets themselves. In addition, descriptive reports for various T-sheets needed to verify photo dates for certain shoreline segments were obtained from the staff of the National Geodetic Survey (NGS).

The 1940s shorelines were chosen to keep the desired approximate 50-year time frame for the long-term erosion rate calculation. Table 2 provides information on the T-sheet shapefiles used in this study. The name of the shapefile was taken from the original folder name provided by the CSC in order to associate the file with its source file.

Table 1. T-sheets obtained from the CSC as ArcInfo coverages.

<b>File Name</b>	<b>Shoreline Dates</b>	<b>Approximate Spatial Coverage</b>	<b>Scale</b>
idx126f	Jan 1933	South Carolina line through Bald Head Island	1:20K
idx134k	Jan 1933-Jan 1944	Bald Head Island to Emerald Isle	1:20K
idx134l	Unknown	South of Ocracoke through Cape Lookout	1:20K
cs275	Jan 1942-Jan 1944	South Carolina line through Bald Head Island	1:20K
ph5	Jan 1946-Jul 1947	2 miles south of Oregon Inlet to Emerald Isle	1:10K
ph20	Jan 1948-Mar 1949	Pamlico Sound (no ocean front coverage)	NA
ph45	Jan 1949-Mar 1951	Nags Head to 2 miles south of Oregon Inlet	1:20K
ph58	Nov 1949-Jul 1952	Emerald Isle to mid-Topsail	1:10K
cm7219	Jan 1973-Nov 1973	3 small areas around Bald Head Island, Carolina Beach, and Atlantic Beach	1:20K
cm7305	Apr 1974	Most of Cape Hatteras to Cape Lookout (2 disjoint areas)	1:20K

Table 2. T-sheet shapefiles used in the erosion rate study.

<b>File Name</b>	<b>Approximate Location</b>
cs275	South Carolina line through Kure Beach
idx134k	Carolina Beach through mid-Topsail Island
ph58	Mid-Topsail Island through mid-Bogue Banks
ph5	Mid-Bogue Banks through Oregon Inlet
ph45	Oregon Inlet to Kitty Hawk

### Historical Photography

The 1949 T-sheets used north of Oregon Inlet terminated about eight miles north of the inlet in South Nags Head. North of this area to the Virginia border, T-sheets of this time period are not available. Suitable photography, defined as originating in the 1940s, having a shore parallel flight line, having a minimum of 30 percent overlap, having less than 1:24,000 scale, providing coverage of the appropriate area and not being associated with a storm, was provided by the USACE, Wilmington District on a loan basis. The photo coverage did not extend along the entire section of coast not covered by the T-sheets, however. The northern most approximately 10 miles, just south of the Virginia border, was not covered.

### COAST Database

A set of aerial photographs taken after the Ash Wednesday Storm in March 1962 and covering the northernmost 10 miles of shoreline was evaluated for possible use in this area. However, an examination of the rectified images confirmed that the post-storm shoreline was not suitable for the long-term shoreline erosion rate update. Since no other suitable photographic coverage was readily available, the “early date” established for this area in previous erosion rate studies (Benton, 1983) and archived in the COAST database was utilized for this northernmost 10-mile stretch of oceanfront shoreline. These data were extracted and geometrically converted to NC State Plane 83 coordinates. The date of the historical aerial photographs used to establish the “early date” in this area was March 29, 1955.

## **PROCEDURES**

### Photo Rectification

#### ***1998 Recent Shoreline Photography***

The 1998 aerial photographs were rectified through a contract with SURDEX Corporation, a commercial photogrammetry company, as previously described.

#### ***Historical Shoreline Photography***

The historical photography (1940 and 1962) used for the early shoreline for the study area north of Oregon Inlet where no T-sheet shoreline data is available was done through a contract with the Kenan Natural Hazards Mapping Program at NCSU. Rectification was done using ERDAS IMAGINE with the OrthoBASE module, photogrammetric software capable of fully orthorectifying vertical aerial photographs. The photographs were corrected for scale variation, airplane tilt, and radial lens distortion. Since the study area is relatively flat, relief displacement was determined to be minimal and was not corrected. Because of a lack of readily identifiable features suitable for use as control points on the 1940 photos, an intermediate set of photographs was rectified. A set of 1962 photos was used for this “step-back” procedure. Table 3 lists the photograph date, photo scale, and the equivalent ground coverage size of each of the photograph sets used

in processing the mosaics in this study. The commercially processed 1998 orthophotography, which was used as ground control for the 1962 photographs, is included for comparison.

Table 3: Photos used to create the 1940 mosaic.

<b>Photo Date</b>	<b>Photo Scale</b>	<b>Ground Pixel Coverage</b>
June-August 1998	1:7,200	0.5 ft
March 14, 1962	1:9,600	0.667 ft
October 21, 1940	1:24,000	1.667 ft

Each 9" x 9" aerial photograph was scanned at 1,200 dots per inch (dpi). Ground control points were determined by establishing photo-identifiable features common to both the 1998 and 1962 photography and the 1962 and 1940 photography. Suitable points for ground control included road intersections, piers, and corners of structures at ground elevation. When no other points were available, stable points on the estuarine shoreline were chosen. The digital images were then mosaiced into one continuous image and rectified. This image was then broken into smaller files for working and archival purposes.

### Shoreline Identification

#### ***Historical T-sheet Shorelines***

The T-sheet shorelines used for this study were all based on aerial photographs augmented by field surveys (Crowell, *et al.*, 1993). Historically, the shoreline datum used on T-sheets is the high water line. Early T-sheets were produced by plane table field surveys where the high water line could be interpreted based on visual observation of the features. Though the reported datum on T-sheets is mean high water, it is an interpolation of that datum from a measured high water line (Shalowitz, 1964; Crowell, *et al.*, 1993). McBeth (1956) reported that for mapping purposes, the differences in positions of the two shoreline datums are insignificant.

#### ***Vertical Aerial Photograph Shorelines***

The 1998 shoreline was digitized in ArcView using the 1998 orthophotos. The shoreline feature mapped is the wet/dry line, a photo identifiable feature produced by the contrasting color of wet and dry sand on the beach. Use of the wet/dry line as a shoreline feature is described in Dolan, *et al.*, 1978, and Dolan, *et al.*, 1980, and is the same feature that has been used for all our erosion study updates to delineate the shoreline since the first erosion study data from Dolan was provided in 1979. Basically, the wet/dry line is a readily identifiable feature located, in the worst case, between high and low tide and thus

has less variability over a tidal cycle than the swash or water line. It is not necessarily equivalent to the “high water line” defined as, and identified by, markings left on the beach by the last high tide. While the high water line is generally the shoreline datum measurable in the field with the least variability over a tidal cycle, it is not consistently measurable on aerial photographs for a variety of reasons. The high water line may be too faint to be visible on the photos, or it may be visible but represent an earlier high storm tide or spring tide that overtopped a low berm and ponded. It is sometimes difficult to distinguish the high water line from storm wrack lines on aerial photos. In addition, erosion scarps and distinctive grain size changes can produce false high water lines on aerial photographs (Crowell, *et al.*, 1991; Pajak, and Leatherman, 2002)

### Transect Locations

The OGMS was established by Dolan in his early shoreline change studies (Dolan, *et al.*, 1978) using USGS topographic quadrangles and enlarged to 1:5,000 scale to provide a series of base maps along this shoreline. A set of basemaps and transects were developed for NC under contract with Dolan in the 1980 long-term erosion rate study. The locations of the basemaps were recorded by digitizing the corners of the basemaps, however, transect location and shoreline position was not recorded in a coordinate-based database. In order to provide data consistent with these earlier studies, transect locations have been established using information provided from earlier erosion rate update studies and coordinate geometry. Because these transects did not exist in a coordinate database prior to this study, absolute verification of location is not possible. However, the transect locations used in this study are consistent with those used in 1992 study contracted with NCSU because similar methodologies were used to compute locations.

The OGMS has served NC well through the last four erosion rate updates. The OGMS system was developed with shore parallel basemaps and shore perpendicular transects. Each basemap is 3,600 m in length with 72 transects spaced 50 m apart. Each basemap overlaps its adjacent basemaps so that there are no gaps in the representation of shoreline position. At the time of the 1980 study, Dolan established “good” and “bad” transects to delineate which transects should be used in the overlap area of each basemap. Further, data from transects near inlets or capes where the shoreline orientation deviates significantly from parallel to the baseline was rejected and not used for shoreline erosion rate calculations.

### Shoreline Change Rate Calculations

Shoreline change rate calculations include three steps. Step one is the calculation of the end point rate at each transect. The second step is to spatially smooth the data using a running average algorithm. The third step “blocks” these data into spatially uniform values where appropriate.

### ***End Point Method***

The end point method was used to compute the long-term erosion rate. The distance along a given transect between the “early date” and the 1998 shoreline is computed from

the coordinates of the intersections of the respective shorelines with that transect. This distance is divided by the time interval between the date associated with the “early date” shoreline and the date of the photograph associated with the 1998 shoreline. Details of the procedures used to compute the erosion rate are documented in Appendix A.

### ***Smoothing***

The procedure for spatially smoothing the shoreline change rate data is a simple moving average or running mean technique described by Davis, 1973. For shoreline segments consisting of at least 17 transects (approximately 0.5 miles), an average is calculated for the 17 transects and centered on the ninth transect. This spatially averaged value is the “smoothed” rate. In the vicinity of inlets, the number of transects used in the average is decreased by two (dropping one from each side of the centered calculation) until the end transect is reached. The last value is calculated by taking the weighted average using the last two transects  $(2 \cdot T1 + T2) / 3$  where T1 is the last transect before the inlet and the T2 is its neighbor.

Smoothing effectively filters short-term dynamic shoreline phenomena such as beach cusps, smaller sand waves, and the attachment of landward migrating portions of offshore bar systems. Cusps and similar features range in size from 1.5 meters to 1,500 meters and have a life span ranging from days (smaller features) to seasons or years (larger sand waves) (Dolan, and Ferm, 1968; Davis, 1978). Bars generally range around 100 meters in length with migration and attachment rates ranging from seasons to years (Davis, 1978). Variation associated with larger, longer-lived features such as secondary capes and capes are not filtered by the smoothing process.

Figure 1 below illustrates the impact of the smoothing procedure on the raw rates. The largest differences between the smoothed and raw rates are in the regions of rapidly changing rates, e.g., near Ocracoke Inlet. For the more gradually varying rates, the difference between raw and smooth is about +/- 1 ft/yr.

The need for spatial blocking was established in the first erosion rate study (Benton, 1983). Blocking creates spatially uniform rate segments from the smoothed data. This allows for management of like sections of shoreline with the same shoreline change rate. In addition, it minimizes the number of neighboring shoreline segments that have different shoreline change rates.

### ***Blocking***

Blocking procedures, itemized below represent refinements and clarifications of procedures established and used in all the previous studies. These refinements and clarifications are the result of improved accuracy of the data brought about by improvements in the shoreline delineation methodology and quantitative requirements that allow for increased repeatability of results.

1. Erosion rate segments must be at least eight transects long (approximately one-quarter mile). Blocking is always done along the shoreline from low rates to higher rates.

2. One-foot intervals are preferred for rate block boundaries. Fractional rates are rounded to the nearest foot.  $\frac{1}{2}$  foot intervals are appropriate for segments dominated by a  $\frac{1}{2}$  foot value and do not have values greater than the next highest 1 foot interval.
3. Erosion factor rates for segments or groups of segments transitional between adjacent segments with larger than 1 foot differences in erosion factor rates are determined by finding the mean value of the transects within the segment rounded to the nearest  $\frac{1}{2}$  foot.
4. The actual rate boundaries fall at an unknown location between transects spaced every 50 meters along the oceanfront shoreline. In determining the transect to use for a rate boundary, always slide the lower blocked rate toward the transect with the higher erosion rate value
5. When delineating a rate boundary on large-scale photo base maps, always slide the boundary toward an apparent property boundary in a direction that the lower rate is expanded toward the higher rate (give the property owner the benefit of the doubt).
6. Segments that have accreted or have erosion rates less than 2 ft/yr are assigned a value of 2 ft/yr for the erosion factor.

Figure 2 below illustrates the use of these blocking procedures on the Ocracoke data. The blocking procedure captures the variation in rate while meeting the management goal of having common rates among property owners within specified distances. In addition, this figure illustrates the portion of the island that has a less than 2 ft/yr erosion rate, but that is blocked at 2 ft/yr. Finally, the application of the blocked rate into the Inlet Hazard Area is also illustrated.

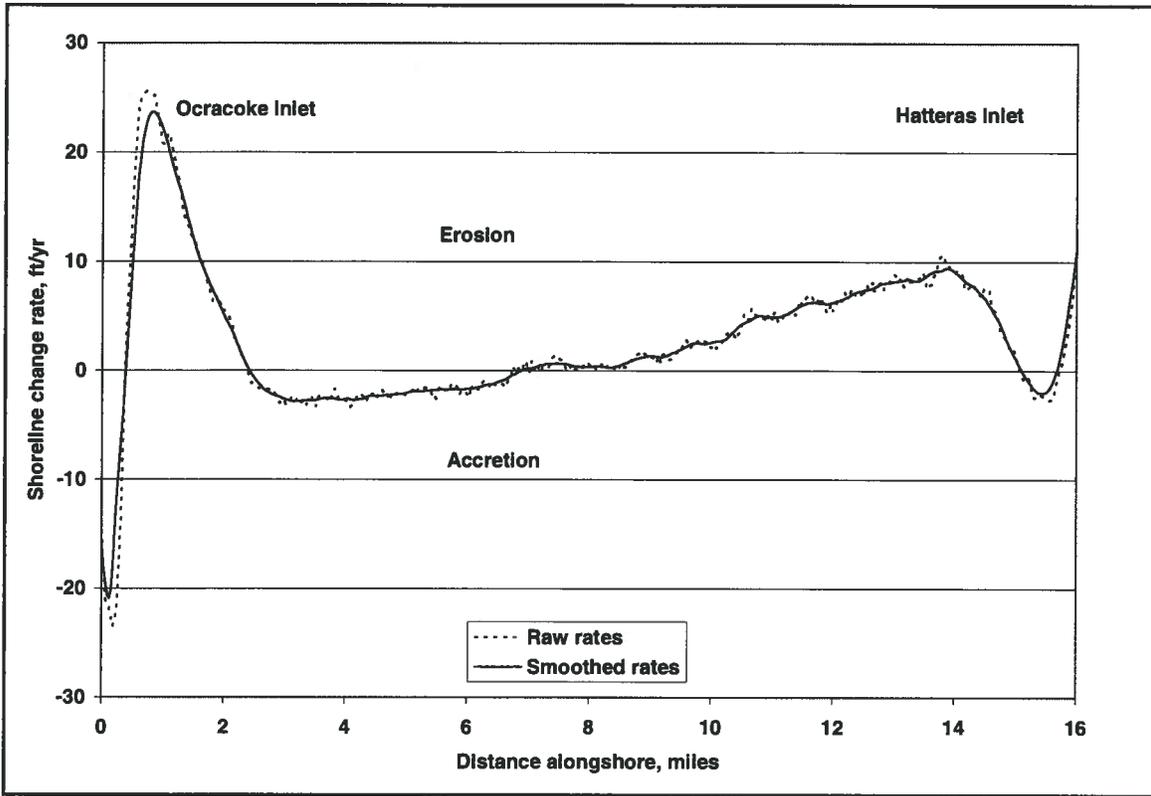


Figure 1. Raw and smoothed shoreline change rates on Ocracoke Island.

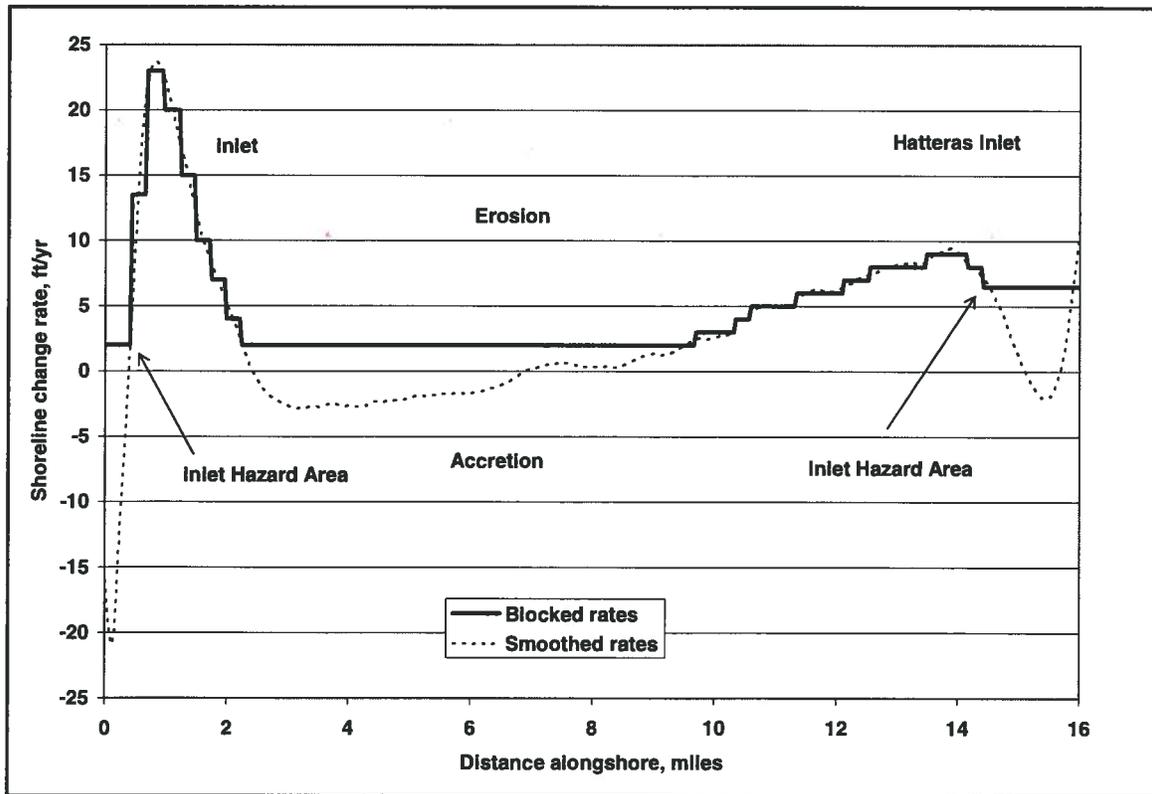


Figure 2. Blocked and smoothed shoreline change rates on Ocracoke Island.

## RESULTS

The statistics of the blocked rates as computed in the earlier studies were computed for the 1998 study. These data are presented in Table 4 below. The percentages provided in the parenthesis are computed by dividing the number of miles of shoreline in a given category (e.g., accretion) by the total number of miles of shoreline in a category (e.g., South facing) and multiplying by 100.

These data can be compared to the data presented in the 1992 Methods Report (Benton, *et al.*, 1997) (Table 5). However, these should be used for rough qualitative comparison only. They cannot be compared directly because (1) there is a difference in the miles of shoreline in each study (probably due to approximations made near inlets and capes), (2) the early date is not the same in the two studies and (3) refinements have been made in the blocking methodologies that may impact the statistics below. Better comparison can be made if these factors are taken into account.

A preliminary analysis of the data showed remarkable consistency with earlier updates. The miles of shoreline eroding 2 feet/year or less increased by 1 to 6% over earlier updates. The miles of shoreline eroding at more than 8 feet/year decreased from 11% to 9% of the shoreline. A survey of erosion hot spots (defined as segments eroding more than 4.5 feet/year) was compared to the 1992 erosion hot spots. Of the 34 hot spots found in the 1998 update, nearly all were in the same location and had similar erosion rates to hotspots surveyed in the 1992 update. Three were new to the 1998 study, four were reduced to non-hot spot status. Thirteen hot spots increased in length, 16 got smaller, and six stayed the same. Eleven of the hot spots had increases in the maximum erosion rates, 12 had decreases, and 11 stayed the same.

Table 4. Summary of 1998 blocked shoreline change rates.

	South Facing	East Facing	Total
<b>Total Shoreline (miles)</b>	96	216	312
<b>Accreting Shoreline (miles)</b>	37 39%	62 29%	99 32%
<b>Shoreline (including accretion) with Rate &lt; 2 ft/yr (miles)</b>	69 72%	124 58%	193 62%
<b>Shoreline with Rate = 2-5 ft/yr (miles)</b>	14 14%	50 23%	64 20%
<b>Shoreline with Rate = 5-8 ft/yr (miles)</b>	9 9%	19 9%	28 9%
<b>Shoreline with Rate &gt;8 ft/yr (miles)</b>	5 5%	22 10%	27 9%
<b>Maximum Rate (ft/yr)</b>	23.0	30.0	30.0
<b>Mean Rate (ft/yr)</b>	3.9	4.4	4.3

Table 5. Comparison of the 1992 and 1998 blocked shoreline change rates.

	1992 Total	1998 Total
<b>Total Shoreline (miles)</b>	281	312
<b>Accreting Shoreline (miles)</b>	79 26%	99 32%
<b>Shoreline (including accreting) with Rate &lt;2 ft/yr (miles)</b>	165 59%	193 62%
<b>Shoreline with Rate = 2-5 ft/yr (miles)</b>	54 19%	64 20%
<b>Shoreline with Rate = 5-8 ft/yr (miles)</b>	30 11%	28 9%
<b>Shoreline with Rate &gt;8 ft/yr (miles)</b>	32 11%	27 9%
<b>Maximum Rate (ft/yr)</b>	16.0	30.0
<b>Mean Rate (ft/yr)</b>	3.8	4.3

## COMMENTS AND RECOMMENDATIONS

The 1998 long-term average annual erosion rate update is once again surprisingly consistent with earlier updates. These, in turn, have been consistent in terms of regional trends with a review of other erosion studies (Benton, 1983) utilizing several other methodologies and involving time scales ranging up to thousands of years. However, there is a need to continue to evaluate alternative methodologies and incorporate enhancements to the study data at every opportunity. As recommended in the first Methods Report (Benton, 1983) and echoed by the CRC's Science Panel on Coastal Hazards, a probabilistic model approach should be considered when the funding and data are available. There are a number of these that have been developed over the past several years, including linear regression models, average of rates (Foster, and Savage, 1989), and jackknifing (Dolan, *et al.*, 1991). Other techniques are described in Douglas, *et al.*, 1998, Douglas, and Crowell, 2000, Fenster, *et al.* 2001, and Honeycutt, *et al.*, 2001. As part of this effort, the possibility of publication of shorter-time period erosion data should be evaluated to supplement the long-term shoreline data and storm erosion data already developed and utilized in management of the NC oceanfront.

The first steps in developing a GIS based shoreline management program have been taken with this 1998 long-term erosion update. These steps need to be followed up with broadly ranging data types and studies. As recommended by the NC Science Panel, additional digital GIS shoreline dates from historical aerial photographs and other sources, and studies of the underlying geology that so dramatically affect shoreline patterns both long-term and short-term need to be incorporated into the GIS shoreline management program database when the GIS data from these studies is completed. Similarly, as recommended in the first Methods Report, detailed wave energy analysis and wave orthogonal studies, weather data, sediment budget studies, and detailed nearshore bathymetric information should be developed for comparison with the long-term erosion data. These data should be put into a GIS format data layer and incorporated into the GIS shoreline management program database.

The wet/dry line as a delineation of the shoreline represents a best estimate of shoreline position when the data source for shoreline interpretation are limited to aerial photographs. Photo-identifiable features are often argued to represent the high water line (HWL) or the mean high water (MHW) (Pajak, and Leatherman, 2002). However, these interpretations are highly dependent on variations in photo scale, quality of image contrast, mineralogy, sedimentology, geomorphology, tide and wind/wave conditions at the time of the photograph (Fisher, and Overton, 1994). In addition, coastal engineers and scientists are escalating the debate of "what is the shoreline?" as remote sensing technologies and three dimensional visualization techniques have greatly improved our ability to map the coastal environment (Overton, and Fisher, 1996b; Stockdon, *et al.*, 2002). We should monitor these discussions and consider the possibility of using these alternative technologies in future updates. Datum-based shorelines are rapidly becoming the standard in defining shoreline position (though which datum to use is still being debated). While issues of merging two-dimensional (wet/dry line) and three-dimensional (MHW) data sets exist, the problems posed are not insurmountable (Judge, *et al.*, 2001).

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## APPENDIX A: Rate Calculations

The procedure for determining the raw shoreline change rates is listed below.

1. Open the 1998 shoreline shapefile and the transect shapefile.
2. Use the script named *polyint2pnt*, (see Table A1), to determine the coordinates of the intersection of the transect with the shoreline.
3. Use the extension named *addxy*, (see Table A1), to add coordinates to the attribute table of the intersection point shapefile.
4. Save the intersection coordinates to a \*.dbf file.
5. Bring the \*.dbf coordinate file into Excel.
6. Repeat steps 1 through 5 using the early date shapefile.
7. Calculate the distance between the two intersection points using the following formula:

$$\text{dist} = \sqrt{(x_{98} - x_{\text{early}})^2 + (y_{98} - y_{\text{early}})^2}$$

where x and y are the coordinates of the intersection points.

8. For each transect, determine the correct date for the 1998 orthophotos and enter data into a column in Excel.
9. For each transect, determine the correct date for the early date used and enter data into a column in Excel.
10. Calculate the change in date by subtracting the two dates in excel (the number of days will be computed) and dividing by 365.25 (to convert from days to years and to account for leap years.)
11. Compute the shoreline change rate by dividing the dist computed in step 7 by the change in time computed in step 10.
12. Compute the orientation of the shoreline and determine if the shoreline change rate is positive (erosion) or negative (accretion).
13. Multiply rate by +1 for erosion and -1 for accretion.
14. Set the format to 1 decimal place to display rate.

Table A1. ArcView scripts used to determine intersection coordinates.

Name	Type	Creator	Source
polyint2pnt	Avenue Script	Dirk Vandervoort May 12, 1999	Environmental Systems Research Institute (ESRI) ArcScripts website < <a href="http://arcscripts.esri.com/">http://arcscripts.esri.com/</a> >
AddXY	Avenue User Extension	Zachary L. Stauber May 4, 2000	Collection of ArcView Extensions < <a href="http://horta.ulb.ac.be/cours/sis/SeqTraitement/ExtensionsAV/extensionsAV.htm">http://horta.ulb.ac.be/cours/sis/SeqTraitement/ExtensionsAV/extensionsAV.htm</a> >



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue  
Governor

James H. Gregson  
Director

Dee Freeman  
Secretary

**MEMORANDUM**

**TO:** North Carolina Coastal Resources Commission

**FROM:** Dr. Jeffrey Warren, DCM Coastal Hazards Specialist  
Christine A. Goebel, Assistant Attorney General

**DATE:** June 17, 2009 (for the June 24, 2009 CRC Meeting)

**RE: Declaratory Ruling Petition by The Village of Bald Head Island and J. Andrew Sayre.**

Petitioners, The Village of Bald Head Island ("Village") and J. Andrew Sayre ("Sayre"), request a declaratory ruling from the Commission pursuant to N.C.G.S. 113A-124, and 15A NCAC 7J.0600 et seq. Specifically, they request a ruling of the applicability of 15A NCAC 7H.0304, 7H.0306 and 7H.0310 to the property located on Bald Head Island, Brunswick County, North Carolina, known as "West Beach." Currently, Commission rules require an inlet hazard area (IHA) to use the erosion rate from the adjacent ocean erodible area (OEA) for oceanfront setback determinations. In this case, West Beach is using an erosion rate of 8 feet per year from the adjacent South Beach area. However, recent erosion rates along West Beach calculated by DCM Staff range from 2.4 feet per year of erosion to 4.3 feet per year of accretion. Petitioners seek a ruling from the Commission that would determine what erosion rate should be used for West Beach where, prior to this request, no erosion rates had been calculated.

The following additional information is attached to this memorandum:

Attachment A: A copy of the Petition  
Attachment B: Relevant Rules  
Attachment C: Undisputed Facts agreed to by Petitioners and DCM Staff  
Attachment D: Staff's Memorandum of their position  
Attachment E: Petitioner's Memorandum of their position  
Attachment F: Copies of comments received as of 6/17/09  
Attachment G: Copies of notices

**ATTACHMENT A**  
Copy of Petition

**STATE OF NORTH CAROLINA**  
**COUNTY OF BRUNSWICK**

**BEFORE THE NORTH CAROLINA**  
**COASTAL RESOURCES COMMISSION**

**In the matter of** )  
**REQUEST FOR DECLARATORY** )  
**RULING ON EROSION RATE ALONG** )  
**WEST BEACH OF BALD HEAD ISLAND** )  
**AND APPLICATION OF RELEVANT** )  
**INLET HAZARD AREA REGULATIONS** )

**REQUEST FOR A**  
**DECLARATORY RULING**

The Village of Bald Head Island (the "Village") and J. Andrew Sayre ("Sayre") (collectively the "Requestors"), through undersigned counsel, respectfully request a Declaratory Ruling by the Coastal Resources Commission (the "Commission") setting the annual erosion rate along West Beach of Bald Head Island ("West Beach"). Authority for this petition lies in N.C.G.S. § 113A-124(c)(7), 15A NCAC 07H .0304 and 15A NCAC 07J .0602. In support of the requested ruling, Requestors show the Commission:

**A. PROCEDURAL REQUIREMENTS**

1. Requestors' names and addresses: The Village of Bald Head Island, Post Office Box 3009, Bald Head Island, North Carolina 28461; J. Andrew Sayre, Post Office Box 3259, 131 West Bald Head Wynd, Bald Head Island, North Carolina 28461.
2. The Village and Sayre are each a "person aggrieved" under the meaning set forth in N.C. Gen. Stat. § 150B-2(6).
3. Requestors seek a declaration setting an erosion rate along West Beach pursuant to N.C.G.S. § 113A-124(c)(7), 15A NCAC 07H .0304 and 15A NCAC 07J .0602.
4. This Request is being filed with the Director of the Division of Coastal Management, James H. Gregson, at 400 Commerce Avenue, Morehead City, North Carolina 28577, and also the Attorney General's Office at 9001 Mail Service Center, Raleigh, North Carolina 27699-9001.
5. As evidenced by certified mail receipts, copies of the present Request have been sent to the owners of property in and adjacent to West Beach (**Exhibit A** (list)).

**B. FACTUAL BACKGROUND AND PERTINENT RULES**

1. West Beach lies directly along the Cape Fear River inlet and falls within both the current and proposed inlet hazard area zones. *See Exhibit B* (map of Bald Head Island).
2. For the purposes of this Request, West Beach is defined as the area within the existing inlet hazard area between transects one (1) through forty (40), inclusive, on *Exhibit C* (map of West Beach).
3. Pursuant to 15A NCAC 07H .0310(a)(1), “[a]ll development in the inlet hazard area shall be set back from the first line of stable natural vegetation a distance *equal to the setback required in the adjacent ocean hazard area.*” (Emphasis added).
4. Pursuant to 15A NCAC 07H.0306(a)(1), the setback distance for single-family development or multi-family development of three units or less in the ocean erodible area is defined by a distance equal to the erosion rate multiplied by a factor of thirty (30). The setback distance for small-scale (less than 5,000 square feet) multi-family development greater than three units and commercial development is also a distance equal to the erosion rate multiplied by a factor of thirty (30). For large-scale (5,000 square feet and greater) multi-family development greater than three units and commercial development, the setback distance is equal to the erosion rate multiplied by a factor of sixty (60) or, for areas with an erosion rate greater than 3.5 feet per year, a distance equal to the erosion rate multiplied by a factor of thirty (30) plus 105 feet. 15A NCAC 07H .0304(1)(a) defines that “erosion rates shall be the long-term average based on available historical data” as depicted on a map updated through 1998 (the “1998 Map”).
5. Unlike the State’s other inlet shorelines, no erosion rates along West Beach or the coastline north of West Beach are depicted on the Division of Coastal Management’s 1998-era erosion rate maps.
6. An eight (8) feet annual erosion rate applies to the homes and lots along South Beach immediately adjacent to the Bald Head Island inlet hazard area. Therefore, pursuant to 15A NCAC 07H.0304(a)(1), this rate is extrapolated to all areas inside the inlet hazard area, including West Beach where the Division of Coastal Management has recently calculated site-specific erosion rates to be approximately two feet per year or less. The eight (8) feet annual erosion rate currently applied to West Beach is derived from erosion rates calculated by the Division of Coastal Management for the portion of South Beach immediately adjacent to the South Beach portion of the inlet hazard area (i.e., on the other side of the “point” from West Beach). *See Exhibit B* (map of Bald Head Island).

7. In consequence, numerous homes and lots along West Beach are being subjected to a two hundred forty (240) feet building setback (8 foot erosion rate x 30) rather than a setback of sixty (60) feet (2 foot erosion rate x 30).
8. Approximately thirty million dollars (\$30,000,000.00) worth of properties are potentially effected along West Beach by the application of a South Beach erosion rate of eight (8) feet per year. *See Exhibit D* (list of properties effected and tax valuations).
9. This effect on West Beach properties results in decreased values to the Village and Brunswick County tax bases. Approximately eight (8) property owners have obtained, and others reportedly are obtaining, tax valuation reductions based on the non-conforming or unbuildable nature of the properties based on a setback distance of 240 feet (erosion rate of 8 feet per year x 30).
10. Sayre and other individual property owners allege they are being harmed by the non-conforming and "unbuildable" nature of their properties. *See Exhibits E1 and E2* (statements by Sayre and Jack Nichols, West Beach property owners, made to Commission at February 2009 meeting).
11. Currently, the Commission is in the lengthy process of amending the inlet hazard area regulations. An intended result of such process is to amend both the inlet hazard area affecting Bald Head Island, and to amend the applicable rules therein. In their current state, the proposed rules contemplate a two (2) feet annual erosion rate along West Beach. *See Jeffrey Warren, Ph.D., CRC Memorandum 09-05: Proposed Development Policies for Expanded Inlet Hazard Area Boundaries* (January 28, 2009) (attached as **Exhibit F** and proposing two feet annual erosion rate to few areas in North Carolina, including West Beach, without assigned erosion rates on current map, Table 1, Page 3).
12. Even assuming all possible efficiency, these inlet hazard area amendments cannot reasonably be expected within the coming year. Causes of delay include: (i) budget cuts forcing the Commission to either abbreviate or altogether cancel scheduled meetings; and (ii) Senate Bill 866, which, if enacted, would prohibit the Commission from effectuating any rule change that has an economic impact (most likely encompassing the proposed amendments to the inlet hazard area regulations).
13. The Commission has the immediate authority to vary the 1998 erosion rate map through "individual contested cases, *declaratory* or interpretive rulings." 15A NCAC 07H .0304(1)(a) (emphasis added).
14. The relief sought herein is interim and would not affect pending Commission rulemaking related to the inlet hazard area boundaries and development conditions within said boundaries.

**C. PROPOSED STIPULATED FACTS**

1. West Beach is defined for the purposes of this Request as the area within the existing inlet hazard area between transects one (1) through forty (40), inclusive, shown on **Exhibit C**.
2. For purposes of oceanfront setback delineation, an annual erosion rate of eight (8) feet applies by rule to the area of West Beach within the inlet hazard area.
3. The eight (8) feet annual erosion rate results in an oceanfront setback distance of 240 feet landward of the first line of stable and natural vegetation for small or non-commercial structures
4. The 240 feet building setback applies to thirteen (13) homes with a total tax value of \$25,270,985.00 and four (4) lots with a total tax value of \$4,950,000.00 (See **Exhibit D**).
5. Division of Coastal Management ("DCM") Staff prepared, on June 8, 2009, a map of West Beach showing transects and erosion rate calculations as shown on **Exhibit C**. The erosion rates calculated from the transects depicted on this map used the same transect orientation and shoreline analysis methods as those for the 1998 maps currently applied to the rest of the State's oceanfront shoreline. The general method is an end-point calculation that determines the shoreline distance between an early shoreline from the 1930s and 40s defined from National Ocean Service Topographic Sheet (NOS T-sheet) maps and a late shoreline generated from 1998 aerial photography. This distance is divided by the time period represented by the shorelines to develop a long-term rate (e.g., 240 feet of shoreline movement over a period of 60 years is a rate of four feet per year). Specifically, the West Beach calculation conducted by DCM for this declaratory ruling used an early shoreline from 1942 (NOS T-sheet) and a late shoreline from 2000 (aerial photography). Aerial imagery for 1998 does not exist for West Beach.
6. The Commission has the authority to declare an annual erosion rate for West Beach. 15A NCAC 07H .0304(1)(a).
7. The circumstance of West Beach and its property owners is unique among North Carolina coastal communities because transects and erosion rates have not been defined previously by the Division of Coastal Management. To better understand the shoreline history along West Beach, and in response to this petition, the Division has since defined erosion rates for this portion of the Village shoreline. The maximum erosion rate for West Beach (as defined herein) by the Division using the method described above in Section 5 is 2.4 feet per year, and the maximum accretion rate is 4.3 feet per year. Spatial smoothing of the data, similar to what was done for the current erosion rate numbers for the State's

oceanfront erosion rate data, further reduces the maximum erosion rate to 2.2 feet per year. The Division notes that rounding of the data through a process called “blocking” would place a minimum erosion setback factor of two (2) feet per year for the entirety of West Beach (transects 1 through 40). See **Exhibit G** for the complete methods used by the Division in the most recent shoreline erosion update.

8. The Declaratory Relief granted would not affect subsequent Commission rulemaking, but would merely establish an erosion rate, subject to adjustment by lawful Commission rules and processes. The erosion rates specific to this declaratory ruling may be superseded upon the effective date of any subsequent inlet hazard area development rules promulgated by the Commission.

#### **D. ARGUMENT**

Gaps in the current erosion rate map maintained by the Coastal Resources Commission (“CRC”), in conjunction with certain regulations applicable to the Inlet Hazard Area (“IHA”), are creating unintended results and causing an incorrect eight (8) feet annual erosion rate to apply to many homes along West Beach on Bald Head Island—where the actual erosion rate is approximately two (2) feet per year. See **Exhibits B and C** (maps of West Beach). In consequence, numerous homes are being subjected to an incorrect and unreasonable two hundred forty (240) feet building setback (8 x 30) rather than the correct sixty (60) feet setback (2 x 30). The result is that, arbitrarily, homes are rendered non-conforming and lots are deemed unbuildable. Such unreasonable and oppressive regulation has generated tremendous uncertainty, affected tax valuations and held up property transactions. The situation requires immediate correction.

West Beach lies within both the current and proposed IHA zones. (See **Exhibit B**; see also **Exhibit F** (discussing current status of IHA amendment process)). Pursuant to 15A NCAC 07H .0310(a)(1), “[a]ll development in the inlet hazard area shall be set back from the first line of stable natural vegetation a distance equal to the setback required in the adjacent ocean hazard

area.” Further, 15A NCAC 07H .0306(a)(1) provides that the appropriate setback distance in an ocean hazard area—and therefore in the “adjacent” IHA—is the erosion rate multiplied by a factor of thirty (30). Finally, “erosion rates shall be the long-term average based on available historical data” as depicted on a map updated through 1998. 15A NCAC 07H .0304(1)(a).

To date, no erosion rate has been identified along West Beach. As a result, the staggering eight (8) feet per year erosion rate affecting the coastline on the *opposite* side of the IHA zone applies throughout the entire IHA zone. **More than thirty (30) million dollars worth of properties are harmed.** See Exhibit D (property and valuation list).

Such an unreasonable and arbitrary regulatory scheme, as applied to West Beach, contravenes CAMA’s goal to “insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations.” N.C. Gen. Stat. § 113A-102(b)(2).

A declaratory or interpretive ruling by the CRC is a speedy and available fix to the problems described above. Specifically, 15A NCAC 07H .0304(1)(a)—which addresses erosion rates in ocean hazard areas—provides that such rates may be varied by the CRC through “**declaratory or interpretive rulings.**” (Emphasis added).<sup>1</sup> Through either of these procedures, the Coastal Resources Commission may vary the erosion rates depicted on the 1998 map (or lack thereof). Accordingly, the CRC should declare or interpret that the erosion rate at West Beach is two (2) feet per year.

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<sup>1</sup> A “declaratory” ruling is largely governed by statute and regulation. See N.C. GEN. STAT. § 150B-4; 15A NCAC 07J .0601 *et seq.* The procedures and scope of “interpretive” rulings, however, are not addressed by the statutes and regulations. Nonetheless, the above-cited regulation explicitly refers to the CRC’s power to make “interpretive” rulings. As such, an interpretive ruling may be an easy and efficient means of applying a reasonable setback requirement along West Beach.

Applying an annual erosion rate of two (2) feet to West Beach will facilitate coastal administration and application of building setbacks and zoning regulations, will provide certainty to property owners, will increase or maintain existing property values, and will permit real estate transactions to go forward, consistent with CAMA's stated goal to "insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations." N.C. Gen. Stat. § 113A-102(b)(2).

**E. PROPOSED RULING**

For the foregoing reasons, the Requestors respectfully move the Commission for a Declaratory Ruling awarding the following relief:

The Commission, having considered the due and lawful petition of the Requestors for a Declaratory Ruling, finds and declares:

1. No annual erosion rate or transects were previously adopted for West Beach on Bald Head Island, North Carolina, nor shown on the 1998 erosion rate map adopted in 2004.
2. DCM Staff prepared as of June 8, 2009, transects and calculated annual erosion rates for West Beach, consisting of the area within the existing inlet hazard area between transects (1) through forty (40), inclusive, as shown on **Exhibit C**.
3. Based upon the information provided by Requestors and DCM Staff, the Commission declares, pursuant to 15A NCAC 07H .0304(1)(a) and 07J .0602, that the annual erosion rate for West Beach is two (2) feet and same shall be shown henceforth on the erosion rate map maintained by the Commission.
4. This Ruling shall not prevent the Commission from modifying in the future the West Beach annual erosion rate by lawful rulemaking procedure and processes.

**F. CONCLUSION**

The Request for Declaratory Ruling by the Village of Bald Head Island and J. Andrew Sayre is in the best interest of coastal administration, addresses a unique regulatory circumstance

and is for the public benefit. *See* G.S. 113A-102(b)(2). The relief sought is authorized by law, including, but not limited to, N.C.G.S. 113A-124(c)(7), 15A NCAC 07H .0304 and 15A NCAC 07J .0602. Requestors urge the Coastal Resources Commission to consider and act upon this request in an expedited manner.

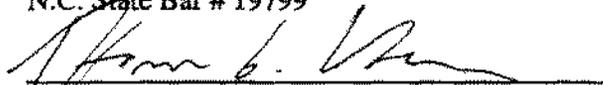
**RESPECTFULLY SUBMITTED**, this 9<sup>th</sup> day of June, 2009 by:

**ROUNTREE, LOSEE & BALDWIN, LLP**  
Street: 2419 Market Street  
Wilmington, North Carolina 28403  
Mailing: Post Office Box 1409  
Wilmington, North Carolina 28402  
Phone: 910.763.3404  
Fax: 910.763.0320



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**Charles S. Baldwin, IV**  
N.C. State Bar # 19799



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**Thomas G. Varnum**  
N.C. State Bar # 38567

*Attorneys for Requestors*

**West Beach and Adjacent Property Owners**

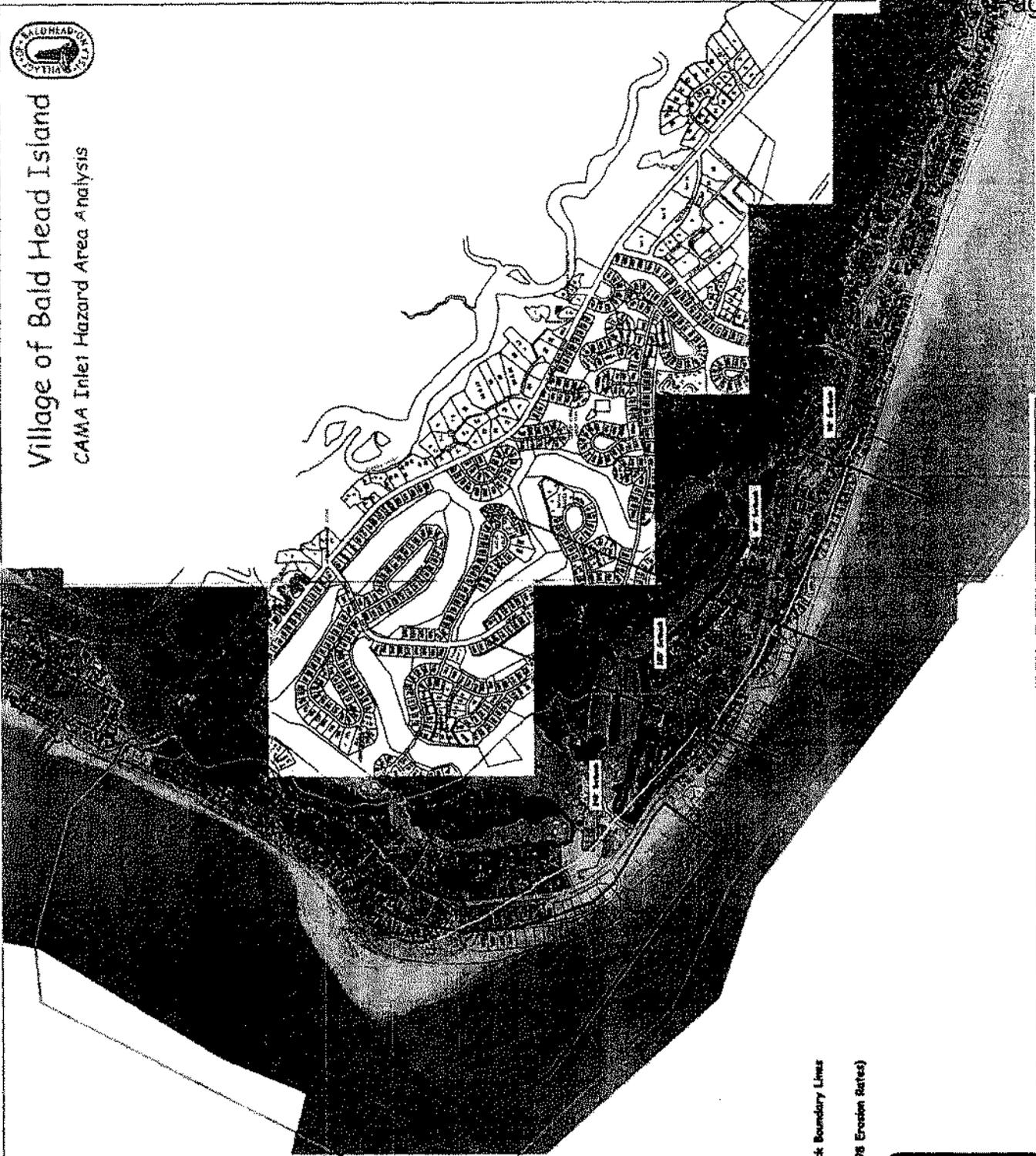
Parcel Number	Lot Number	Name	Mailing Address
2604G008	1023	Marvin & Sara Neuwirth	PO Box 3178 Bald Head Island, NC 28461
2604G009	1022	James E. Harrington	PO Box 3336 Bald Head Island, NC 28461
2604G010	1021	Cheryl Murphy	1508 East 86th Street # 163 Indianapolis, IN 46240
2604G011	1020	Fernand & Evelyn Parent	68 Hillcrest Ave. Charleror, PA 15022
2604G012	1019	Elizabeth Beam	1718 Canterbury Rd. Raleigh, NC 27608
2604G013	1018	Joseph & Leah Devlin	7016 Harps Mill Rd. Raleigh, NC 27615
2604G014	1017	John & Carol Mazuy	9 Russell Pond Rd. Kingston, MA 02364
2604G015	1016	Thomas & Eliza Lewis	1927 S. Churchill Dr. Wilmington, NC 28403
2604G017	1014 and 1015	James & Helyn Wisner	6417 Quail Run Rd. Wilmington, NC 28409
2604G018	1013	James & Catherine Berges	4 Brentmoor Park Clayton, MO 63105
2604G019	1012	John & Susan Nichols	1104 High Country Rd. Towson, MD 21204
264100103	Common Areas	Bald Head Association	PO Box 3030 Bald Head Island, NC 28461
2604G033	1234	Leslie Wheeler	32 Longcourse Lane Paoli PA 19301
2604G032	1233	Robert & Giancaria Helgesen	PO Box 3314 Bald Head Island, NC 28461
2604G031	1232	Timothy & Joan McCormick	71 Misty Pine Rd. Fairport, NY 14450
2604G030	1229	Peter & Eileen Quinn	508 Avonwood Rd. Haverford, PA 19041
2604G029	1230	Peter & Eileen Quinn	508 Avonwood Rd. Haverford, PA 19041
2604G027	1228	Michael Hartshorn	960 Checkrein Ave. Columbus OH 43229
2604G026	1227	The Berne Company, Inc.	33 Brays Island Drive Sheldon, SC 29941
2604G025	1226	Darin & Laura Hill	10045 Old Warden Rd. Raleigh, NC 27615
2604G02301	1225	Edward & Pat Johnston	PO Box 3148 Bald Head Island, NC 28461
2604G023	1224	Edward & Pat Johnston	PO Box 3148 Bald Head Island, NC 28461
2604G022	1223	Edward Harper	PO Box 10548 Southport, NC 28461
2604G021	1222	Christine Wright	232 Hempstead Pl. Charlotte, NC 28287
2604G020	1221	Thomas Watjen	PO Box 281 Lookout Mountain, TN 37350
2604F001	1216	Ronald & Margaret Cresswell	1968 Boulder Dr. Ann Arbor MI 48104
2604F002	1217	Haughton Pardee Living Trust c/o Dr. Angela Pardee	7124 Quail Hill Rd. Charlotte, NC 28210
2604F003	1009	15 Sea Gull Trail LLC	3020 N Fairway Dr. Burlington, NC 27215
2604F004	1008	David & Mary Lewis	9315 Penshurst Trace Charlotte, NC 28210
2604F005	1007	David & Mary Lewis	9315 Penshurst Trace Charlotte, NC 28210
2604F006	1006	George & Alice Horton	4900 W. Cornwallis Rd Durham, NC 27705



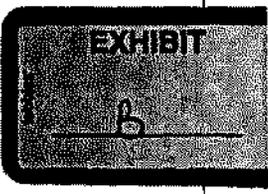


# Village of Bald Head Island

CAMA Inlet Hazard Area Analysis



- DCM Staff Proposed IMA
- Existing IMA
- CAMA Static Line
- Ocean Hazard AEC Setback Boundary Lines
- Current Setback Lines (1998 Erosion Rates)



# Bald Head Island

## West Beach



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

1942-Shoreline

2000-Shoreline

### Legend

- Transects
- 1942 Shoreline (NOS T-Sheet)
- 2000 Shoreline (Wet / Dry)
- Proposed IHA Boundary
- Parcels



**NOTE:**  
This map illustrates 25-meter transects and 1942 & 2000 shorelines used to calculate long-term erosion rates on Bald Head Island's "wet-beach." These erosion data DO NOT reflect short-term erosion potentially caused by inlet dredging or storm events.

NC Division of Coastal Management - 05/08/2009  
Questions call: 1-800-4PCOAST

NCDCM_ID	End-Point (Meters)	End-Point (Feet)	5-pt average	
1	0	0	0.0	
2	0	0	0.0	
3	0	0	0.0	0.1
4	0.12	0.4	0.1	0.1
5	0.03	0.1	0.1	0.0
6	-0.05	-0.2	-0.1	-0.1 Negative values - erosion
7	-0.12	-0.4	-0.2	-0.2 Positive values - Accretion
8	-0.1	-0.3	-0.3	-0.3
9	-0.03	-0.1	-0.1	-0.4
10	-0.1	-0.3	-0.3	-0.5
11	-0.24	-0.8	-0.7	-0.7
12	-0.33	-1.1	-1.0	-1.0
13	-0.43	-1.4	-1.3	-1.3
14	-0.48	-1.6	-1.6	-1.6
15	-0.54	-1.8	-1.8	-1.8
16	-0.6	-2.0	-1.9	-1.9
17	-0.64	-2.1	-2.1	-2.1
18	-0.69	-2.3	-2.2	-2.2
19	-0.73	-2.4	-2.2	-2.2
20	-0.69	-2.3	-2.2	-2.2
21	-0.64	-2.1	-2.1	-2.1
22	-0.59	-1.9	-2.0	-2.0
23	-0.56	-1.8	-1.8	-1.8
24	-0.52	-1.7	-1.7	-1.7
25	-0.49	-1.6	-1.5	-1.5
26	-0.42	-1.4	-1.1	-1.1
27	-0.28	-0.9	-0.6	-0.6
28	-0.03	-0.1	0.0	0.0
29	0.25	0.8	0.6	0.6
30	0.44	1.4	1.2	1.2
31	0.53	1.7	1.5	1.5
32	0.57	1.9	1.7	1.7
33	0.54	1.8	1.8	1.8
34	0.54	1.8	1.9	1.9
35	0.57	1.9	2.1	2.1
36	0.68	2.2	2.4	2.4
37	0.86	2.8	2.8	2.8
38	1.01	3.3	3.3	3.3
39	1.16	3.8	3.8	3.8
40	1.31	4.3	4.2	4.2
41	1.43	4.7	4.7	4.7
42	1.56	5.1	5.1	5.1
43	1.68	5.5	5.5	5.5
44	1.82	6.0	6.1	6.1
45	1.96	6.4	6.7	6.7
46	2.23	7.3		
47	2.48	8.1		

**IHA Information**

Structures That Can't Meet The Current Setback of 240' In Existing IHA

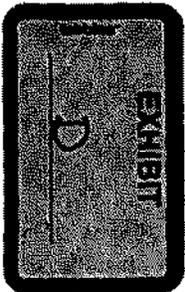
Name	Lot #	Address	B.C Tax Value	Tax Parcel #
Coupland	1001	15 Green Teal	\$1,357,030	2604F031
Gutman	1002	13 Green Teal	\$1,397,280	2604F032
Anderson	1003	11 Green Teal	\$1,503,530	2604F033
Faber	1004	9 Green Teal	\$1,526,820	2604F034
Horton	1006	21 Sea Gull	\$2,718,480	2604F006
Lewis	1008	17 Sea Gull	\$2,631,290	2604F004
Seagull LLC	1009	15 Sea Gull	\$1,391,830	2604F003
Nichols	1012	41 Cape Fear Trail	\$1,635,580	2604G019
Berges	1013	39 Cape Fear Trail	\$2,240,200	2604G018
Wisner	1014&15	35 Cape Fear Trail	\$3,675,740	2604G017
Lewis	1016	33 Cape Fear Trail	\$1,358,560	2604G015
Mazuy	1017	31 Cape Fear Trail	\$1,774,120	2604G014
Devlin	1018	29 Cape Fear Trail	\$2,060,520	2604G013

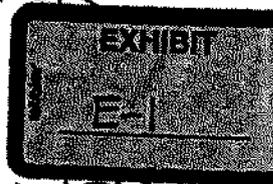
Unimproved Lots That Can't Meet The Current Setback of 240' In Existing IHA

Sayre	Estate Lot 1	5 Green Teal	\$2,200,000	2604F023
Lewis	1007	19 Sea Gull	\$1,000,000	2604F005
Parent	1020	25 Cape Fear Trail	\$1,000,000	2604G011
Washburn	1029	36 Sandpiper	\$750,000	2641D017

**TOTAL**

**\$30,220,980**





①

I APPEAR BEFORE YOU TODAY WEARING

FOUR HATS:

FIRST I HAVE BEEN ON THE BALO  
 HEAD ISLAND VILLAGE COUNCIL FOR ALMOST  
 12 YEARS. I WOULD LIKE TO THINK  
 THAT I AM WELL INFORMED. HOWEVER  
 OVER THE PAST SIX MONTHS OR SO I  
 HAVE BEEN SURPRISED AND INCREASINGLY  
 ALARMED BY THE <sup>potentially broad and uncertain</sup> ~~implications of the~~

implications of the

PRESENT AND PROPOSED IHA RULES ~~AND~~

~~THE~~ THE WELL BEING OF INDIVIDUAL PROPERTY  
 OWNERS AND THE VILLAGE'S TAX BASE  
 depend on clear rules

IT APPEARS THAT THE REGULATIONS HAVE  
 NOT BEEN LOGICAL, WELL COMMUNICATED

②

NOR UNIFORMLY ADMINISTERED. THE VILLAGE OF BALD HEAD ISLAND IS A RELATIVELY NEW ~~AND~~ ~~FORMER~~ ENTITY. VERY MUCH IN A FORMATIVE STATE. PLEASE ENSURE THAT ANY IHA REGULATIONS DON'T THREATEN THE DESIRABILITY OF BALD HEAD NOR ITS FINANCIAL STABILITY.

SECONDLY, I AM THE OWNER OF A PROPERTY WITHIN THE IHA. IT IS A LARGE LOT OF ABOUT 1.5 ACRES WITH GOOD ELEVATION, BEING THE TERMINUS OF THE PRIMARY DUNE AT THE EDGE OF THE CAPE FEAR RIVER. WE BOUGHT IT AS ~~AN~~ A RETIREMENT INVESTMENT IN 1996 AND IT SEEMINGLY APPRECIATED WELL OVER THE

③

YEARS. AT LEAST THE BRUNSWICK COUNTY TAX DEPT. THOUGHT SO. AS RECENTLY AS JUNE 2008 I HAD AN MAI APPRAISAL DONE IN ORDER TO REFINANCE. THIS APPRAISAL AGREED WITH BRUNSWICK COUNTY'S VALUATION

I RECENTLY REQUESTED FROM THE LOCAL CAMA OFFICER INFORMATION ON WHAT BUILDING RESTRICTIONS MIGHT APPLY. HE INFORMED ME THAT THE SETBACK FROM THE RIVER IS 240 FEET WHICH MAKES THE LOT UNBUILDABLE.

EXCEPT FOR POSSIBLY A COUPLE OF FEET OF EROSION THAT OCCURRED AFTER THE COE REALIGNED AND DEEPENED THE NAVIGATION CHANNEL, THE LOT LOOKS EXACTLY AS IT

④

DID WHEN WE BOUGHT IT.

I CANNOT AFFORD TO LOSE THE VALUE OF THIS LOT. I AM APPEALING BOTH THE 2008 AND 2009 PROPERTY TAXES, AND I AM ALSO CONCERNED THAT I MAY BE IN DEFAULT OF MY LOAN <sup>for breach of a technical loan</sup> COVENANT. I ~~continue to pay the bank~~ <sup>but</sup> ~~do not~~ <sup>doubt</sup> THIS IS AN UNACCEPTABLE SITUATION. <sup>the bank would be sympathetic if the lot were worth less.</sup>

THROUGH I AM IN THE BUILDING BUSINESS AND MY WIFE OWNS A REAL ESTATE COMPANY CONCENTRATING SOLELY ON BALD HORN PROPERTY, INCLUDING SEVERAL LOCATED IN THE IHA.

IN AN ALREADY DIFFICULT MARKET, OTHERWISE VIABLE TRANSACTIONS IN THE IHA HAVE COME TO A COMPLETE HALT. IN OUR

⑤

NEW COMMUNITY THE HEALTH OF THE REAL ESTATE MARKET IN LARGE PART TRANSLATES TO THE OVERALL HEALTH OF THE COMMUNITY.

FINALLY I AM A PAST BOARD MEMBER OF THE BHI CLUB. I WAS INTEGRALLY INVOLVED IN THE RECENT MULTI-MILLION DOLLAR RENOVATION OF THE CLUBHOUSE.

BEFORE COMMITTING THESE SUBSTANTIAL DOLLARS, WE EVALUATED ALTERNATE LOCATIONS FOR A TOTALLY NEW BUILDING.

WE WERE UNABLE TO IDENTIFY ANY VIABLE ALTERNATE SITES. WHEN THE TIME COMES TO REPLACE THIS BUILDING, IT SIMPLY HAS TO REMAIN ON ITS PRESENT SITE.

⑥

THANK YOU ALL FOR YOUR CONSIDERATION.

Subject: The Inlet Hazard Area Changes

My name is Jack Nichols. I have a home in Baltimore, Maryland and on BHI, N.C. I appreciate the opportunity you have given me to speak briefly about my concerns on the present practices and policies relating to erosion rates and setbacks in the Inlet Hazard Area on BHI; and, an even greater concern over the future regulations for property owners in the Inlet Hazard Area.

My wife and I have owned two homes on BHI since May of 1987, first owning a Villa on South Beach next to the BHI Club; and then moving to 41 Cape Fear Trail in 1991, which is on West Beach, on the Cape Fear River. One reason for our move was to get away from the problems created by the high rate of erosion and the frequent storm surges from the ocean. When we moved into our Villa in 1987 there were numerous homes and a large inn and restaurant on the beach. In four years the inn, and all the homes were gone. The Villas had now become ocean front property.

The home on Cape Fear Trail which was built in 1989 was issued a permit using 60 feet as the minimum setback from the First Line of Stable Vegetation. Our home was actually built over 120 feet from the FLSV. Our lot is just over 200 feet deep; over 200 feet across the waterfront and it narrows at the entrance to about 50 feet, the home is 2000 sq. feet.

We sold our Cape Fear Trail home two years ago to a BHI neighbor, subject to the sale of his home. About six months ago this purchaser checked with the CAMA Officials locally and was told that our home was in the Inlet Hazard Area and was in violation of the 240 feet setback restriction and therefore was not rebuildable if it was destroyed. The prospective purchaser then put this transaction on hold until this issue could be resolved. We are still in this position.

In October of last year we had a meeting with the local CAMA Official. He told us that the original minimum setback for our home was 60 feet but should have been 180 feet based on a six foot erosion rate for the Inlet Hazard Area. He said the erosion rate for the entire Inlet Hazard Area was based on the 1988 erosion rate from South Beach. He went on to say that the erosion rates for West Beach did not exist. He then added that the 1998 erosion rate for the Inlet Hazard Area was 8 feet and our setback requirement had increased to 240 feet. Our lot is 200 feet deep; which means our lot was not buildable in ~~1989~~ 1998.

In further conversations and e-mails I was told that our property was in violation of the setback requirements of the IHA at the time of construction; therefore any previous variance or grandfathering would not be reinstated.

I asked ~~asked~~ when it was decided by CAMA to use erosion rates from South Beach to establish setback rates for West Beach. He said that to his knowledge that was first discussed in



2003 when issues arose concerning other properties. He agreed that up to then, the setbacks on the River property were inconsistent and the 60 foot rate was probably used because there wasn't any erosion rates established on West Beach. He then said that the Ocean Erosion Rates were applied to the entire Inlet Hazard Area. I pointed out to him that this decision was made more than 15 years after our house was permitted in 1989 with a 60 foot setback. I added that in 2002 a CAMA permit was issued confirming our 60 foot setback when we added a screened porch to our home.

In my 18 years living on the West Beach there has been minor erosion balanced by frequent accretion resulting in little if any change in the vegetation line; until ~~two to three~~ five or six years ago, when major changes were made to the Shipping Channel in the river. The Channel was widened to 500 feet; deepened to 42 feet and moved closer to the Island. We are now experiencing greater erosion and the Village Government has taken the combined action of re-nourishment and vegetation planting to stabilize the West Beach. The Village also has an agreement with the Corps of Engineers to monitor the South and West Beaches and furnish sand for re-nourishment.

The Village also has additional plans to use other sources of sand if needed to protect the beaches on BHI.

The following major issues concerning the Inlet Hazard Area on Bald Head Island should be taken into consideration before these areas and rules are established.

1. Evaluate the ongoing damages caused by "other than natural reasons" like the shipping channel changes ; the proposed new port in Southport; and ways of protecting the BHI Beaches
2. Evaluate the effect of the extension of the Jetty at the entrance to the Marina and other types of groins along the River.
3. Evaluate the effect of regular replacement of sand along South and West Beach.
4. Adopt clear, sensible rules so that property owners are not left to wonder if lots are buildable or marketable.

Formatted: Bullets and Numbering

In summary: I feel that on BHI it is unreasonable and arbitrary to use erosion rates for South Beach (Ocean) to establish setback requirements on West Beach (River). This issue should be resolved now and not wait until the new regulations are established; and these new policies should take into consideration the history and facts concerning the situation on BHI.



North Carolina Department of Environment and Natural Resources  
 Division of Coastal Management

Beverly Eaves Perdue, Governor

James H. Gregson, Director

Dee Freeman, Secretary

January 28, 2009

**MEMORANDUM**

**CRC 09-05**

**TO:** Coastal Resources Commission

**FROM:** Jeffrey Warren, PhD, CPG  
 Coastal Hazards Specialist

**SUBJECT:** Proposed Development Policies for Expanded Inlet Hazard Area  
 Boundaries

At the May 2008 Coastal Resources Commission (CRC) meeting, Division of Coastal Management (DCM) staff presented draft rule language for development within the updated Inlet Hazard Area (IHA) boundaries as well as a boundary for the Bald Head Island (BHI) IHA that was a revision of the CRC Science Panel on Coastal Hazards initial recommendation. Spencer Rogers, a member of the CRC Science Panel, addressed issues that the Panel had with some of the concepts of the draft rule language, specifically those relating to how the oceanfront setback was determined adjacent to an inlet and, in particular, the calculation of erosion rates and the use of the vegetation line as a reference point for measuring setbacks. The CRC requested that the issues addressed by Rogers, as well as the revised IHA boundary developed by DCM staff, be taken back to the Science Panel.

Since the May 2008 CRC meeting, the Science Panel has met three times to discuss the issue. At the November CRC meeting, DCM staff presented an IHA boundary for BHI based on Science Panel input and additional DCM consideration. Although the Science Panel continues to support their initial IHA boundary recommendation presented in September 2007, staff presented the rationale that DCM staff used to justify the November 2008 IHA boundary revision. Spencer Rogers offered additional comments on the issue. In response, the CRC voted to adopt the boundary as presented by staff. All of the proposed IHAs (including the November revisions to BHI) can be reviewed online:

[http://www.nccoastalmanagement.net/Hazards/proposed\\_IHA.htm](http://www.nccoastalmanagement.net/Hazards/proposed_IHA.htm)

1638 Mail Service Center, Raleigh, North Carolina 27699-1638  
 Phone: 919-733-2293 \ FAX: 919-733-1495 \ Internet: [www.nccoastalmanagement.net](http://www.nccoastalmanagement.net)

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At the November 2008 meeting, DCM staff noted that draft development policies and data germane to how these policies might affect development in both the existing and proposed IHA boundaries would be provided for the Commission's consideration in February 2009. Attached is a comparison (Table 1) of the proposed development policies for the revised IHA boundaries to the existing IHA policies (for development currently in the IHA) and the existing Ocean Erodible Area or OEA policies (for development currently not in the IHA but slated to be included in the proposed boundary revisions).

Dr. Margery Overton, CRC Science Panel chair, is scheduled to speak to the CRC at the February meeting and outline the Panel's concerns with managing development adjacent to the State's 12 developed inlets. Based on comments from the most recent Science Panel meeting (January 14<sup>th</sup>), the issues appear to be fourfold: 1) application of newly calculated oceanfront shoreline erosion rate data adjacent to inlets (versus existing data based on 1998 shoreline), 2) consideration of short-term variability of shoreline (and vegetation line) when determining setbacks, 3) consideration of multiple setback criteria at each inlet (and potentially using the most restrictive), and 4) consideration of inlet-specific (i.e., unique to each inlet) policies for placement of development. DCM continues to consider the Panel's input as inlet-related development policies are developed. Although the application of a new erosion rate will be accomplished as a separate project through a phased approach, DCM feels it has developed a policy framework for addressing most, if not all, of the Panel's concerns.

At the upcoming meeting recommendations for revised IHA development criteria as outlined in Table 1 will be presented along with relevant support data (e.g., size and number of affected structures, erosion rates, etc.). Simply stated, the general concept of these IHA development criteria is twofold: 1) keep it small (<5,000 square feet) and 2) keep it from moving oceanward of existing development. CRC approval of this policy, including any amendments they feel are appropriate, can be distributed to the appropriate stakeholder groups following the meeting (including the Science Panel, which is scheduled to meet again in Raleigh on February 25<sup>th</sup>). Comments and concerns identified by stakeholders will be considered by DCM and incorporated into draft rules that can be presented to the CRC at their April meeting. Note that the two relevant rules are 15A NCAC 07H.0304 (which defines the IHA boundaries) and 07H.0310 (which defines the development requirements within the IHA boundaries). Although the Coastal Area Management Act requires any changes to an Area of Environmental Concern (AEC) to be subject to hearings in each affected county (in this case, there are five – Brunswick, New Hanover, Pender, Onslow, and Carteret), DCM staff recommends that both rules (07H.0304 and 07H.0310) be subject to the same level of public input. If the CRC chooses to send the proposed rules to public hearing in April, it is likely that regional public hearings can occur during early to mid August with a final hearing in front of the full CRC in Raleigh (August 27<sup>th</sup>).

**Table 1.** Applicable development policies established by the Coastal Resources Commission in both the Inlet Hazard Area (IHA) and Ocean Eroding Area (OEA) compared to the proposed development standards proposed by the Division of Coastal Management staff. The OEA data are tabulated here because they are the current rules applicable for oceanfront development in areas that are included in the proposed IHA expansion (but not currently in an IHA).

POLICY	Existing IHA	Existing OEA	Proposed IHA
<b>Size limits</b>	No commercial or multi-family (4 units or greater) greater than 5,000 sq ft	No size limits as long as setback can be met	No structures greater than 5,000 sq ft (excluding development related to public access such as parking lots)
<b>Grandfathering for existing structures &gt;5,000 sq ft</b>	No	No	Yes (can be replaced to pre-rule change size as long as current setbacks are met)
<b>Parking</b>	Not greater than 5,000 sq ft	Setback based on size	All parking >5,000 sq ft shall be gravel or packed clay
<b>Density Limits</b>	No more than 1 unit per 15,000 sq ft	None	None
<b>Setback exception for lots platted prior to 1979</b>	No	Yes	Yes
<b>Static Line Exception*</b>	Yes (although not addressed in current IHA rules, nothing in current rules would exclude its application)	Yes	Yes
<b>Erosion Rates Applied to Setback Determinations</b>	Adjacent OEA	As defined in 07H.0304	As defined in 07H.0304 (plus a 2 ft-per-yr rate assigned to a few areas on current maps without assigned erosion rates; DCM plans a coast-wide update to current erosion rates)
<b>Vintage of Erosion Rates Applied</b>	Primarily current rates with some exceptions dependant on lot plat date	Primarily current rates with some exceptions dependant on lot plat date	Rates in place at time of permit decision
<b>Setback Reference Point</b>	Vegetation line	Vegetation line	Vegetation line AND landward most adjacent structure AND as far back on lot as feasible (with provision for unique lot and shoreline geometries on a case-by-case basis)
<b>Setback Factor</b>	30	30 or 60 (plus potential graduated setback factor between 60 and 90 based on pending setback rules)*	30 (no greater setback needed since total floor area limited to 5,000 sq ft; size exception for public access facilities which will need to meet relevant setback**)
<b>Sandbag Frequency**</b>	Once	Once	Multiple times**
<b>Sandbag Time Limits**</b>	Max of 5 years	Max of 5 years	Max of 8 years** (with planned inlet relocation project)

\* Static line exception and setback rules (15A NCAC 07H.0306) approved by CRC in September and RRC in November 2008 being sent to General Assembly for review.

\*\* Although proposed sandbag rules are provided here for comparison, they are not part of the proposed IHA development policy and rules. The public hearing for proposed amendments to the sandbag rules (15A NCAC 07H.0308(a)(2)) that would allow the conditions described in the above table is scheduled to occur at the February CRC meeting.

NC CRC - Information Item  
04/28/04

**North Carolina  
1998 Long-Term Average Annual Erosion Rate Update:  
Methods Report**

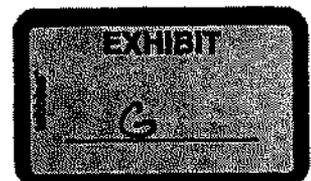
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**ACRONYMS**

CSC	Coastal Services Center
CRC	Coastal Resources Commission
DCM	Division of Coastal Management
DEM	Department of Emergency Management
DOT	Department of Transportation
DTM	Digital Terrain Model
GIS	Geographic Information System
GPS	Global Positioning System
NCSU	North Carolina State University
NGS	National Geodetic Survey
NOAA	National Oceanic and Atmospheric Administration
OGMS	Orthogonal Grid Mapping System
T-sheet	Topographic-sheet
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey

## HISTORY OF NC EROSION STUDY AND UPDATES

In late 1978 and early 1979, the NC Coastal Resources Commission (CRC) undertook a comprehensive review and revision of the oceanfront regulations adopted in September 1977. One major new management strategy that came out of this revision was the use of an oceanfront development setback based in part on the average annual long-term rate of shoreline change. These setbacks create an undeveloped buffer zone along the oceanfront shoreline to protect houses and other buildings from storm scour and long-term erosion.

### 1979 Study

Since a setback program based on long-term shoreline erosion rates requires accurate, up-to-date shoreline erosion rate information, a study contract was made with Dr. Aziz Tayfun, Spencer Rogers, and Dr. Jay Langfelder of NCSU in February 1979. This study accomplished the following tasks:

- Analysis of the short-term erosion associated with a 100-year storm event; and
- Analysis of the long-term oceanfront shoreline changes.

The procedure used in this study to determine average annual long-term erosion rates was based on a series of earlier studies that used methods developed by Stafford (1968). Using several sets of aerial photographs, Stafford manually measured the perpendicular distance from fixed reference features to the high water line at a series of points. The low spatial resolution and variable accuracy of this work limited its usefulness. However, it provided the conceptual framework for subsequent studies. Averaging the shoreline change distance over the time interval between an early shoreline date and a recent shoreline date has come to be called the "end point method."

In April 1979, DCM staff saw a presentation by Dr. Robert Dolan of the University of Virginia on his recently developed shoreline erosion study methodology, Orthogonal Grid Mapping System (OGMS). Using a projecting light enlarger in combination with a zoom transfer scope, Dolan's technique corrected some of the scale variations and other distortions of aerial photographs. This methodology increased the number of shoreline transects and improved spatial resolution. Dolan provided the NC Office of Coastal Management with a copy of his data, which was only available for the northern portion of NC, and it was used where available in the study contract with NCSU.

The study report was completed (Tayfun, *et al.*, 1979) and shoreline change rates were approved for use in establishing setbacks by the CRC in July 1979. DCM staff determined that erosion factor segments provided in the report were relatively long. Staff felt that shortening them would provide a more realistic picture of shoreline changes. Based on an evaluation of the accuracy of the Dolan data, it was determined that the erosion factor segments could be shortened along the northern half of the state. Here, the original erosion factor segments were longest, and shoreline change data most dense (1 measurement every 100 m for the Dolan data set in the northern half of the state versus 1

measurement every  $\pm 300$  m for the southern half). The revision was done in house and the new erosion factor segment maps became effective June 1, 1980.

#### 1980 Update

In June 1981, the first erosion rate update, which utilized Dolan's data for the entire state and current through late 1980, was completed through a contract with Dolan. A detailed description of the Dolan OGMS methodology is found in Dolan, *et al.*, 1978 and Dolan, *et al.*, 1980.

Since the shoreline erosion study was strictly a historical snapshot of the shoreline changes that took place over the time interval studied, and physical conditions along the coast change over time leading to potential changes in erosion conditions, staff proposed that the study be updated approximately every five years. A five-year time interval is about the minimum necessary, considering the sensitivity of the study methods, to accurately portray erosion rate changes and insure that erosion rates used by DCM reflect current erosion conditions. Also, in order to keep the erosion rates used for management consistent with current erosion conditions, DCM proposed that the time interval used for the study be limited to the most recent approximately 50 year time interval. A detailed description of methods and update results are found in Benton, 1983.

#### 1986 Update

The shoreline change study was updated through 1986 through another contract with Dolan. Though other methods were considered, DCM staff ranked Dolan's OGMS method as the most accurate and practical for NC's coastal management needs. Major enhancements to the method included the reduction of transect spacing from 100 m to 50 m, and the provision of a personal computer version of the shoreline change analysis program, COASTS for DCM staff use. This allowed access to the data for in-house research, education, contested cases, and other purposes. A detailed description of methods used and update results are found in McCullough, and Benton, 1988.

#### 1992 Update

For the 1992 shoreline change update, a contract was developed with Dr. Margery Overton and Dr. John Fisher of the Civil Engineering Department of NCSU. The original Dolan data set was used again for the early date except for an approximately 10-mile section of coast in southern Currituck County between Duck and Corolla. This segment of shoreline was rectified and digitized by Overton and Fisher due to comments received during the public hearings on the proposed 1992 erosion rate update study results.

Though the study continued to use the end point method, a number of enhancements were incorporated into the update. For the first time, a geographic information system (GIS) was utilized in the process for 1992 and portions of the early date aerial photo rectification process. A set of large-scale (1:4,800) stable mylar prints were produced from a set of vertical aerial photographs taken by the Photogrammetry Unit of the NC

DOT for the project. These were rectified using 1:24,000 scale US Geological Survey (USGS) topoquad maps utilizing a mathematical algorithm called "rubber-sheeting" to correct scale differences and distortions inherent to aerial photography. Shorelines were digitized by Dolan on the 1:4,800 scale mylar prints to insure consistency with earlier studies. Discontinuities between line segments from photo to photo were corrected by "snapping" the segments together.

Since the early date for most of the shoreline was not in GIS format, the newly mapped shoreline was transformed into a numerical format to perform shoreline change rate calculations. The calculations were performed by a computer program called ECOAST developed by Dolan. ECOAST is an enhancement of Dolan's earlier COAST program. A detailed description of methods used and update results are found in Overton, and Fisher, 1996a, and Benton, *et al.*, 1997.

### 1998 UPDATE

The 1998 shoreline erosion study update was developed through contracts with the following:

- NC DOT for establishing ground control, providing vertical aerial photographs of the oceanfront shoreline, and providing quality control for digital orthophoto products;
- SURDEX Corporation for scanning and rectifying the vertical aerial photographs and providing DTM data for the coast; and
- Overton and Fisher for calculating the shoreline erosion rates used for the 1998 update.

The 1998 update data provided is consistent with earlier studies used by DCM for the long-term average annual erosion rate setback program. First, the wet/dry line was used to delineate the shoreline position from aerial photography. This same shoreline indicator was used for all the earlier updates. Second, the end point method was used to calculate rates. The original transect locations and nomenclature established using the OGMS was also used. These consistencies allow DCM to evaluate shoreline change at the same locations as those used in earlier studies.

Several modifications were adopted in the 1998 study to utilize current aerial photogrammetric technology, improve the accuracy of the results, and provide a GIS-compatible product. Many of these improvements were recommended by the Coastal Hazards Science Panel of the CRC and were enabled by the coordinated efforts of DCM, DEM, DOT, and the Kenan Natural Hazards Mapping Program at NCSU.

The modifications are listed below.

- The 1998 photo base is a set of digital orthophotos, which improved the accuracy of the shoreline position and provided GIS-compatible data.
- The shoreline was delineated digitally in GIS format with geographic coordinates.
- Digital T-sheets were used for the early date required by the end point method. T-sheets provided a cost effective early date, and are used by other researchers including the USGS for their recent shoreline erosion studies. T-sheets eliminated the problems introduced by the variable error in the early date established during the first erosion rate study (Benton, 1983). This error is discussed in the supplementary report to the 1992 Methods Report (Benton, *et al.*, 1997).
- T-sheets do not exist for approximately 30 miles of shoreline north of Oregon Inlet. For approximately 20 miles of this shoreline, the early date was established by rectification of October 21, 1940 photographs using ERDAS IMAGINE with the OrthoBASE module. The rectification process produced a digital mosaic with continuous coverage over the project area.
- Coordinates are archived for the 1998 shoreline and the early date shoreline so that rate data associated with specific transects can be geo-referenced directly to shoreline position in a GIS.

This study provided DCM with a statewide database of shoreline position and erosion rate data in GIS format that represents up to date technology with respect to the use of aerial photography for shoreline change analysis. As an example, the worst case displacement error associated with identifying the wet/dry line from the 1998 orthophotos is estimated to be +/- 10 ft (Overton, and Fisher, 2003), an improvement over the +/- 50 ft displacement error estimated for the shoreline position used in the previous erosion rate studies (Dolan et al. 1980).

## DATA SOURCES

### 1998 Vertical Aerial Photograph

The contract with DOT provided approximately 1,100 black and white prints from the NC/VA boundary to the NC/SC boundary flown between June and August 1998. The aerial photographs were taken at a scale of 1:7,200 and incorporated an extensive (approximately 675) array of surveyed ground control panels. These ground control panels consisted of 10' x 10' sheets of black plastic with a 1' x 8' white chevron (V). The control point is at the exterior point of the chevron. Control points were surveyed using fast static global positioning system (GPS) procedures tied to the HARN. Elevation values are accurate to 0.2 ft. The photos covered the entire ocean shoreline of

NC, approximately 320 miles. Work products from this contract included film diapositives, 9" x 9" contact prints, index sheets, and ground control data (as ASCII text).

### 1998 Digital Orthophotographs

Approximately 1,010 of the 1998 vertical aerial photographs were selected for conversion to digital orthophotos and production of DTMs. The photos were selected to optimize coverage of the oceanfront shoreline, but eliminated unnecessary overlap and duplication. Under a contract with SURDEX Corporation, the photos were scanned, differentially rectified using control point data and a digital elevation model, and registered to known ground coordinates. The orthophotos were tiled into 2,500' x 2,500' ground distance tiles, butt-matched and staggered North-South and East-West to maximize the coverage and efficiency of each tile. Ground pixel resolution was 6" and all image pixels were squared North-South and East-West in orientation to the NC State Plane Coordinate System Zone 4901 referenced to the North American Datum of 1983. The accuracy standards required under this contract exceed the American Society of Photogrammetry and Remote Sensing Accuracy Standards for Large-Scale Maps for Class 1 Maps and well-defined points at the 1:1,200 scale or 1.0 ft limiting root mean square (RMS) error. The RMS error is the cumulative result of all mapping errors and well-defined points pertain to features that can be sharply identified as discrete points. The orthophotos were delivered in geoTiff format.

While the orthophotos are of excellent quality in general, the contrast on the beach face was, in some areas, not sufficient to identify the wet/dry line. For these orthophotos, NCSU increased the contrast of the images to identify the wet/dry line on the beach. This processing was done using ERDAS IMAGINE and Adobe Photoshop to produce the best possible results.

### T-sheets

Digital T-sheets as ArcInfo coverages were obtained from the CSC. Table 1 provides information about the original files. T-sheets were grouped together by the CSC into the same file as indicated by the folder name and spatial coverage (Table 1). The various T-sheets within a folder were potentially representative of different dates, thus the range of dates presented in Table 1. ArcInfo coverages were converted to ArcView shapefiles and evaluated for use in the erosion rate project with the assistance of metadata provided by the CSC. This metadata details accuracy estimates relative to the digitization procedures used by NOAA for their project as well as basic information about the T-sheets themselves. In addition, descriptive reports for various T-sheets needed to verify photo dates for certain shoreline segments were obtained from the staff of the National Geodetic Survey (NGS).

The 1940s shorelines were chosen to keep the desired approximate 50-year time frame for the long-term erosion rate calculation. Table 2 provides information on the T-sheet shapefiles used in this study. The name of the shapefile was taken from the original folder name provided by the CSC in order to associate the file with its source file.

Table 1. T-sheets obtained from the CSC as ArcInfo coverages.

File Name	Shoreline Dates	Approximate Spatial Coverage	Scale
idx126f	Jan 1933	South Carolina line through Bald Head Island	1:20K
idx134k	Jan 1933-Jan 1944	Bald Head Island to Emerald Isle	1:20K
idx134l	Unknown	South of Ocracoke through Cape Lookout	1:20K
cs275	Jan 1942-Jan 1944	South Carolina line through Bald Head Island	1:20K
ph5	Jan 1946-Jul 1947	2 miles south of Oregon Inlet to Emerald Isle	1:10K
ph20	Jan 1948-Mar 1949	Pamlico Sound (no ocean front coverage)	NA
ph45	Jan 1949-Mar 1951	Nags Head to 2 miles south of Oregon Inlet	1:20K
ph58	Nov 1949-Jul 1952	Emerald Isle to mid-Topsail	1:10K
cm7219	Jan 1973-Nov 1973	3 small areas around Bald Head Island, Carolina Beach, and Atlantic Beach	1:20K
cm7305	Apr 1974	Most of Cape Hatteras to Cape Lookout (2 disjoint areas)	1:20K

Table 2. T-sheet shapefiles used in the erosion rate study.

File Name	Approximate Location
cs275	South Carolina line through Kure Beach
idx134k	Carolina Beach through mid-Topsail Island
ph58	Mid-Topsail Island through mid-Bogue Banks
ph5	Mid-Bogue Banks through Oregon Inlet
ph45	Oregon Inlet to Kitty Hawk

### Historical Photography

The 1949 T-sheets used north of Oregon Inlet terminated about eight miles north of the inlet in South Nags Head. North of this area to the Virginia border, T-sheets of this time period are not available. Suitable photography, defined as originating in the 1940s, having a shore parallel flight line, having a minimum of 30 percent overlap, having less than 1:24,000 scale, providing coverage of the appropriate area and not being associated with a storm, was provided by the USACE, Wilmington District on a loan basis. The photo coverage did not extend along the entire section of coast not covered by the T-sheets, however. The northern most approximately 10 miles, just south of the Virginia border, was not covered.

### COAST Database

A set of aerial photographs taken after the Ash Wednesday Storm in March 1962 and covering the northernmost 10 miles of shoreline was evaluated for possible use in this area. However, an examination of the rectified images confirmed that the post-storm shoreline was not suitable for the long-term shoreline erosion rate update. Since no other suitable photographic coverage was readily available, the "early date" established for this area in previous erosion rate studies (Benton, 1983) and archived in the COAST database was utilized for this northernmost 10-mile stretch of oceanfront shoreline. These data were extracted and geometrically converted to NC State Plane 83 coordinates. The date of the historical aerial photographs used to establish the "early date" in this area was March 29, 1955.

## PROCEDURES

### Photo Rectification

#### ***1998 Recent Shoreline Photography***

The 1998 aerial photographs were rectified through a contract with SURDEX Corporation, a commercial photogrammetry company, as previously described.

#### ***Historical Shoreline Photography***

The historical photography (1940 and 1962) used for the early shoreline for the study area north of Oregon Inlet where no T-sheet shoreline data is available was done through a contract with the Kenan Natural Hazards Mapping Program at NCSU. Rectification was done using ERDAS IMAGINE with the OrthoBASE module, photogrammetric software capable of fully orthorectifying vertical aerial photographs. The photographs were corrected for scale variation, airplane tilt, and radial lens distortion. Since the study area is relatively flat, relief displacement was determined to be minimal and was not corrected. Because of a lack of readily identifiable features suitable for use as control points on the 1940 photos, an intermediate set of photographs was rectified. A set of 1962 photos was used for this "step-back" procedure. Table 3 lists the photograph date, photo scale, and the equivalent ground coverage size of each of the photograph sets used

in processing the mosaics in this study. The commercially processed 1998 orthophotography, which was used as ground control for the 1962 photographs, is included for comparison.

Table 3: Photos used to create the 1940 mosaic.

Photo Date	Photo Scale	Ground Pixel Coverage
June-August 1998	1:7,200	0.5 ft
March 14, 1962	1:9,600	0.667 ft
October 21, 1940	1:24,000	1.667 ft

Each 9" x 9" aerial photograph was scanned at 1,200 dots per inch (dpi). Ground control points were determined by establishing photo-identifiable features common to both the 1998 and 1962 photography and the 1962 and 1940 photography. Suitable points for ground control included road intersections, piers, and corners of structures at ground elevation. When no other points were available, stable points on the estuarine shoreline were chosen. The digital images were then mosaiced into one continuous image and rectified. This image was then broken into smaller files for working and archival purposes.

#### Shoreline Identification

##### ***Historical T-sheet Shorelines***

The T-sheet shorelines used for this study were all based on aerial photographs augmented by field surveys (Crowell, *et al.*, 1993). Historically, the shoreline datum used on T-sheets is the high water line. Early T-sheets were produced by plane table field surveys where the high water line could be interpreted based on visual observation of the features. Though the reported datum on T-sheets is mean high water, it is an interpolation of that datum from a measured high water line (Shalowitz, 1964; Crowell, *et al.*, 1993). McBeth (1956) reported that for mapping purposes, the differences in positions of the two shoreline datums are insignificant.

##### ***Vertical Aerial Photograph Shorelines***

The 1998 shoreline was digitized in ArcView using the 1998 orthophotos. The shoreline feature mapped is the wet/dry line, a photo identifiable feature produced by the contrasting color of wet and dry sand on the beach. Use of the wet/dry line as a shoreline feature is described in Dolan, *et al.*, 1978, and Dolan, *et al.*, 1980, and is the same feature that has been used for all our erosion study updates to delineate the shoreline since the first erosion study data from Dolan was provided in 1979. Basically, the wet/dry line is a readily identifiable feature located, in the worst case, between high and low tide and thus

has less variability over a tidal cycle than the swash or water line. It is not necessarily equivalent to the "high water line" defined as, and identified by, markings left on the beach by the last high tide. While the high water line is generally the shoreline datum measurable in the field with the least variability over a tidal cycle, it is not consistently measurable on aerial photographs for a variety of reasons. The high water line may be too faint to be visible on the photos, or it may be visible but represent an earlier high storm tide or spring tide that overtopped a low berm and ponded. It is sometimes difficult to distinguish the high water line from storm wrack lines on aerial photos. In addition, erosion scarps and distinctive grain size changes can produce false high water lines on aerial photographs (Crowell, *et al.*, 1991; Pajak, and Leatherman, 2002)

### Transect Locations

The OGMS was established by Dolan in his early shoreline change studies (Dolan, *et al.*, 1978) using USGS topographic quadrangles and enlarged to 1:5,000 scale to provide a series of base maps along this shoreline. A set of basemaps and transects were developed for NC under contract with Dolan in the 1980 long-term erosion rate study. The locations of the basemaps were recorded by digitizing the corners of the basemaps, however, transect location and shoreline position was not recorded in a coordinate-based database. In order to provide data consistent with these earlier studies, transect locations have been established using information provided from earlier erosion rate update studies and coordinate geometry. Because these transects did not exist in a coordinate database prior to this study, absolute verification of location is not possible. However, the transect locations used in this study are consistent with those used in 1992 study contracted with NCSU because similar methodologies were used to compute locations.

The OGMS has served NC well through the last four erosion rate updates. The OGMS system was developed with shore parallel basemaps and shore perpendicular transects. Each basemap is 3,600 m in length with 72 transects spaced 50 m apart. Each basemap overlaps its adjacent basemaps so that there are no gaps in the representation of shoreline position. At the time of the 1980 study, Dolan established "good" and "bad" transects to delineate which transects should be used in the overlap area of each basemap. Further, data from transects near inlets or capes where the shoreline orientation deviates significantly from parallel to the baseline was rejected and not used for shoreline erosion rate calculations.

### Shoreline Change Rate Calculations

Shoreline change rate calculations include three steps. Step one is the calculation of the end point rate at each transect. The second step is to spatially smooth the data using a running average algorithm. The third step "blocks" these data into spatially uniform values where appropriate.

#### ***End Point Method***

The end point method was used to compute the long-term erosion rate. The distance along a given transect between the "early date" and the 1998 shoreline is computed from

the coordinates of the intersections of the respective shorelines with that transect. This distance is divided by the time interval between the date associated with the "early date" shoreline and the date of the photograph associated with the 1998 shoreline. Details of the procedures used to compute the erosion rate are documented in Appendix A.

### ***Smoothing***

The procedure for spatially smoothing the shoreline change rate data is a simple moving average or running mean technique described by Davis, 1973. For shoreline segments consisting of at least 17 transects (approximately 0.5 miles), an average is calculated for the 17 transects and centered on the ninth transect. This spatially averaged value is the "smoothed" rate. In the vicinity of inlets, the number of transects used in the average is decreased by two (dropping one from each side of the centered calculation) until the end transect is reached. The last value is calculated by taking the weighted average using the last two transects  $(2 \cdot T1 + T2) / 3$  where T1 is the last transect before the inlet and the T2 is its neighbor.

Smoothing effectively filters short-term dynamic shoreline phenomena such as beach cusps, smaller sand waves, and the attachment of landward migrating portions of offshore bar systems. Cusps and similar features range in size from 1.5 meters to 1,500 meters and have a life span ranging from days (smaller features) to seasons or years (larger sand waves) (Dolan, and Ferm, 1968; Davis, 1978). Bars generally range around 100 meters in length with migration and attachment rates ranging from seasons to years (Davis, 1978). Variation associated with larger, longer-lived features such as secondary capes and capes are not filtered by the smoothing process.

Figure 1 below illustrates the impact of the smoothing procedure on the raw rates. The largest differences between the smoothed and raw rates are in the regions of rapidly changing rates, e.g., near Ocracoke Inlet. For the more gradually varying rates, the difference between raw and smooth is about +/- 1 ft/yr.

The need for spatial blocking was established in the first erosion rate study (Benton, 1983). Blocking creates spatially uniform rate segments from the smoothed data. This allows for management of like sections of shoreline with the same shoreline change rate. In addition, it minimizes the number of neighboring shoreline segments that have different shoreline change rates.

### ***Blocking***

Blocking procedures, itemized below represent refinements and clarifications of procedures established and used in all the previous studies. These refinements and clarifications are the result of improved accuracy of the data brought about by improvements in the shoreline delineation methodology and quantitative requirements that allow for increased repeatability of results.

1. Erosion rate segments must be at least eight transects long (approximately one-quarter mile). Blocking is always done along the shoreline from low rates to higher rates.

2. One-foot intervals are preferred for rate block boundaries. Fractional rates are rounded to the nearest foot. ½ feet intervals are appropriate for segments dominated by a ½ foot value and do not have values greater than the next highest 1 foot interval.
3. Erosion factor rates for segments or groups of segments transitional between adjacent segments with larger than 1 foot differences in erosion factor rates are determined by finding the mean value of the transects within the segment rounded to the nearest ½ foot.
4. The actual rate boundaries fall at an unknown location between transects spaced every 50 meters along the oceanfront shoreline. In determining the transect to use for a rate boundary, always slide the lower blocked rate toward the transect with the higher erosion rate value
5. When delineating a rate boundary on large-scale photo base maps, always slide the boundary toward an apparent property boundary in a direction that the lower rate is expanded toward the higher rate (give the property owner the benefit of the doubt).
6. Segments that have accreted or have erosion rates less than 2 ft/yr are assigned a value of 2 ft/yr for the erosion factor.

Figure 2 below illustrates the use of these blocking procedures on the Ocracoke data. The blocking procedure captures the variation in rate while meeting the management goal of having common rates among property owners within specified distances. In addition, this figure illustrates the portion of the island that has a less than 2 ft/yr erosion rate, but that is blocked at 2 ft/yr. Finally, the application of the blocked rate into the Inlet Hazard Area is also illustrated.

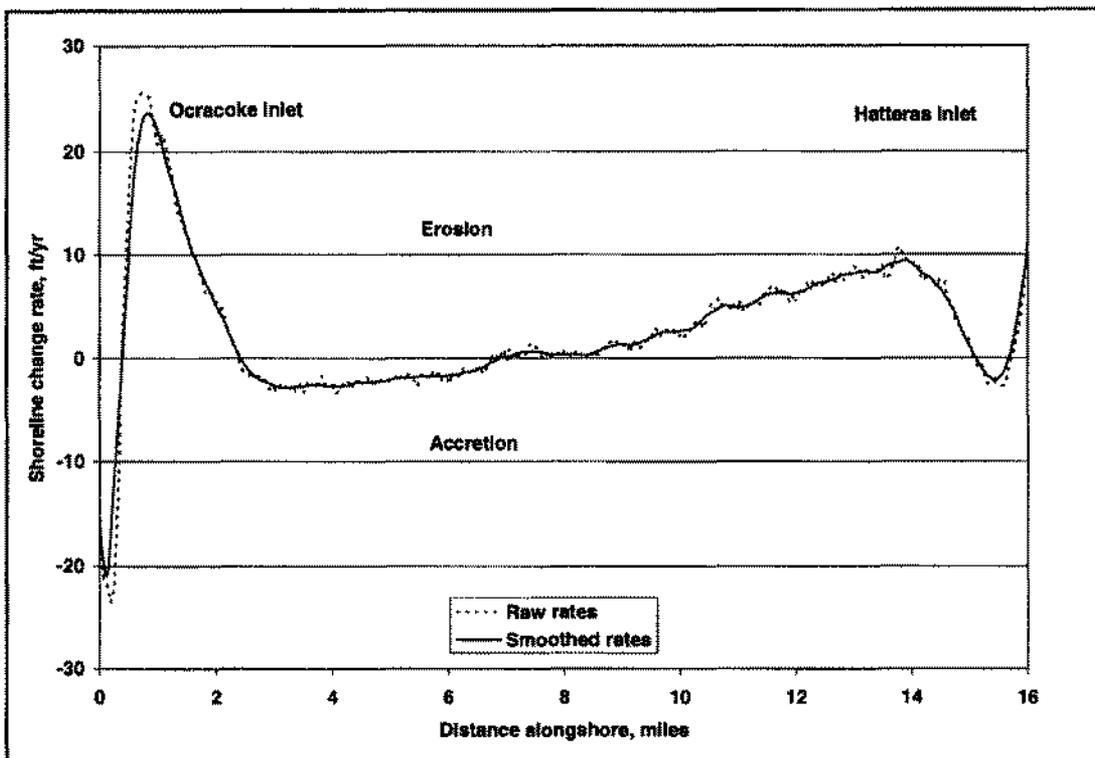


Figure 1. Raw and smoothed shoreline change rates on Ocracoke Island.

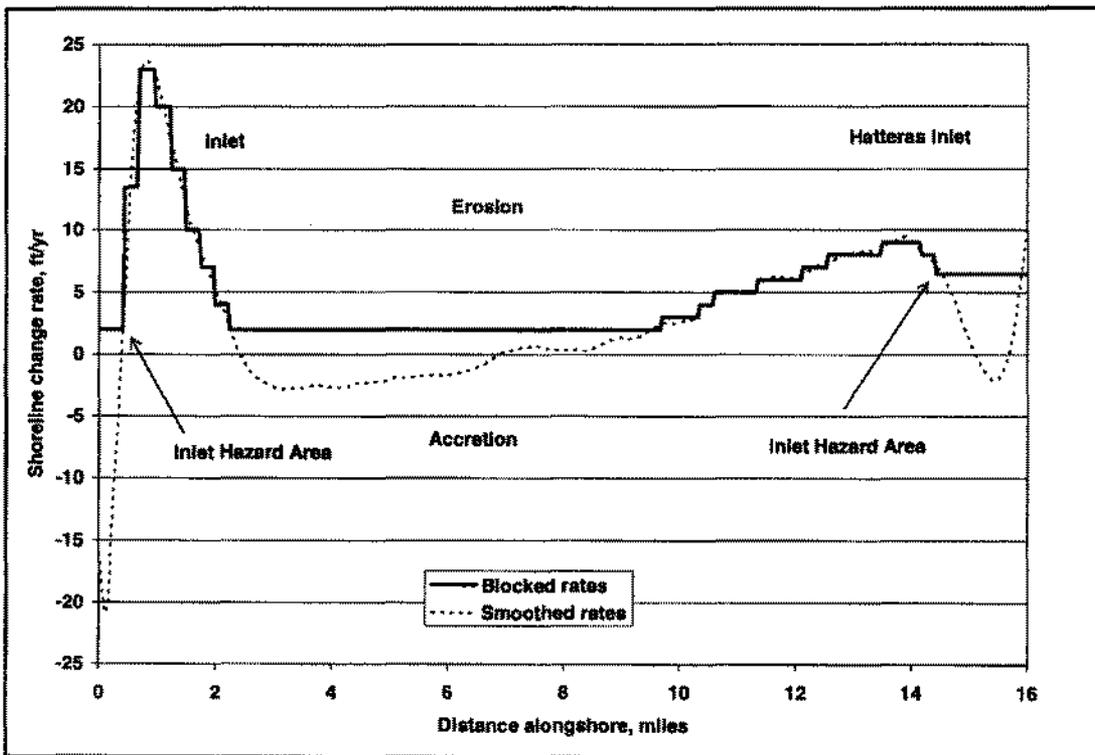


Figure 2. Blocked and smoothed shoreline change rates on Ocracoke Island.

## RESULTS

The statistics of the blocked rates as computed in the earlier studies were computed for the 1998 study. These data are presented in Table 4 below. The percentages provided in the parenthesis are computed by dividing the number of miles of shoreline in a given category (e.g., accretion) by the total number of miles of shoreline in a category (e.g., South facing) and multiplying by 100.

These data can be compared to the data presented in the 1992 Methods Report (Benton, *et al.*, 1997) (Table 5). However, these should be used for rough qualitative comparison only. They cannot be compared directly because (1) there is a difference in the miles of shoreline in each study (probably due to approximations made near inlets and capes), (2) the early date is not the same in the two studies and (3) refinements have been made in the blocking methodologies that may impact the statistics below. Better comparison can be made if these factors are taken into account.

A preliminary analysis of the data showed remarkable consistency with earlier updates. The miles of shoreline eroding 2 feet/year or less increased by 1 to 6% over earlier updates. The miles of shoreline eroding at more than 8 feet/year decreased from 11% to 9% of the shoreline. A survey of erosion hot spots (defined as segments eroding more than 4.5 feet/year) was compared to the 1992 erosion hot spots. Of the 34 hot spots found in the 1998 update, nearly all were in the same location and had similar erosion rates to hotspots surveyed in the 1992 update. Three were new to the 1998 study, four were reduced to non-hot spot status. Thirteen hot spots increased in length, 16 got smaller, and six stayed the same. Eleven of the hot spots had increases in the maximum erosion rates, 12 had decreases, and 11 stayed the same.

Table 4. Summary of 1998 blocked shoreline change rates.

	South Facing	East Facing	Total
<b>Total Shoreline (miles)</b>	96	216	312
<b>Accreting Shoreline (miles)</b>	37	62	99
	39%	29%	32%
<b>Shoreline (including accretion) with Rate &lt; 2 ft/yr (miles)</b>	69	124	193
	72%	58%	62%
<b>Shoreline with Rate = 2-5 ft/yr (miles)</b>	14	50	64
	14%	23%	20%
<b>Shoreline with Rate = 5-8 ft/yr (miles)</b>	9	19	28
	9%	9%	9%
<b>Shoreline with Rate &gt;8 ft/yr (miles)</b>	5	22	27
	5%	10%	9%
<b>Maximum Rate (ft/yr)</b>	23.0	30.0	30.0
<b>Mean Rate (ft/yr)</b>	3.9	4.4	4.3

Table 5. Comparison of the 1992 and 1998 blocked shoreline change rates.

	1992 Total	1998 Total
<b>Total Shoreline (miles)</b>	281	312
<b>Accreting Shoreline (miles)</b>	79	99
	26%	32%
<b>Shoreline (including accreting) with Rate &lt;2 ft/yr (miles)</b>	165	193
	59%	62%
<b>Shoreline with Rate = 2-5 ft/yr (miles)</b>	54	64
	19%	20%
<b>Shoreline with Rate = 5-8 ft/yr (miles)</b>	30	28
	11%	9%
<b>Shoreline with Rate &gt;8 ft/yr (miles)</b>	32	27
	11%	9%
<b>Maximum Rate (ft/yr)</b>	16.0	30.0
<b>Mean Rate (ft/yr)</b>	3.8	4.3

## COMMENTS AND RECOMMENDATIONS

The 1998 long-term average annual erosion rate update is once again surprisingly consistent with earlier updates. These, in turn, have been consistent in terms of regional trends with a review of other erosion studies (Benton, 1983) utilizing several other methodologies and involving time scales ranging up to thousands of years. However, there is a need to continue to evaluate alternative methodologies and incorporate enhancements to the study data at every opportunity. As recommended in the first Methods Report (Benton, 1983) and echoed by the CRC's Science Panel on Coastal Hazards, a probabilistic model approach should be considered when the funding and data are available. There are a number of these that have been developed over the past several years, including linear regression models, average of rates (Foster, and Savage, 1989), and jackknifing (Dolan, *et al.*, 1991). Other techniques are described in Douglas, *et al.*, 1998, Douglas, and Crowell, 2000, Fenster, *et al.* 2001, and Honeycutt, *et al.*, 2001. As part of this effort, the possibility of publication of shorter-time period erosion data should be evaluated to supplement the long-term shoreline data and storm erosion data already developed and utilized in management of the NC oceanfront.

The first steps in developing a GIS based shoreline management program have been taken with this 1998 long-term erosion update. These steps need to be followed up with broadly ranging data types and studies. As recommended by the NC Science Panel, additional digital GIS shoreline dates from historical aerial photographs and other sources, and studies of the underlying geology that so dramatically affect shoreline patterns both long-term and short-term need to be incorporated into the GIS shoreline management program database when the GIS data from these studies is completed. Similarly, as recommended in the first Methods Report, detailed wave energy analysis and wave orthogonal studies, weather data, sediment budget studies, and detailed nearshore bathymetric information should be developed for comparison with the long-term erosion data. These data should be put into a GIS format data layer and incorporated into the GIS shoreline management program database.

The wet/dry line as a delineation of the shoreline represents a best estimate of shoreline position when the data source for shoreline interpretation are limited to aerial photographs. Photo-identifiable features are often argued to represent the high water line (HWL) or the mean high water (MHW) (Pajak, and Leatherman, 2002). However, these interpretations are highly dependent on variations in photo scale, quality of image contrast, mineralogy, sedimentology, geomorphology, tide and wind/wave conditions at the time of the photograph (Fisher, and Overton, 1994). In addition, coastal engineers and scientists are escalating the debate of "what is the shoreline?" as remote sensing technologies and three dimensional visualization techniques have greatly improved our ability to map the coastal environment (Overton, and Fisher, 1996b; Stockdon, *et al.*, 2002). We should monitor these discussions and consider the possibility of using these alternative technologies in future updates. Datum-based shorelines are rapidly becoming the standard in defining shoreline position (though which datum to use is still being debated). While issues of merging two-dimensional (wet/dry line) and three-dimensional (MHW) data sets exist, the problems posed are not insurmountable (Judge, *et al.*, 2001).

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## APPENDIX A: Rate Calculations

The procedure for determining the raw shoreline change rates is listed below.

1. Open the 1998 shoreline shapefile and the transect shapefile.
2. Use the script named *polyint2pnt*, (see Table A1), to determine the coordinates of the intersection of the transect with the shoreline.
3. Use the extension named *addxy*, (see Table A1), to add coordinates to the attribute table of the intersection point shapefile.
4. Save the intersection coordinates to a \*.dbf file.
5. Bring the \*.dbf coordinate file into Excel.
6. Repeat steps 1 through 5 using the early date shapefile.
7. Calculate the distance between the two intersection points using the following formula:

$$\text{dist} = \sqrt{(x_{98} - x_{\text{early}})^2 + (y_{98} - y_{\text{early}})^2}$$

where x and y are the coordinates of the intersection points.

8. For each transect, determine the correct date for the 1998 orthophotos and enter data into a column in Excel.
9. For each transect, determine the correct date for the early date used and enter data into a column in Excel.
10. Calculate the change in date by subtracting the two dates in excel (the number of days will be computed) and dividing by 365.25 (to convert from days to years and to account for leap years.)
11. Compute the shoreline change rate by dividing the dist computed in step 7 by the change in time computed in step 10.
12. Compute the orientation of the shoreline and determine if the shoreline change rate is positive (erosion) or negative (accretion).
13. Multiply rate by +1 for erosion and -1 for accretion.
14. Set the format to 1 decimal place to display rate.

Table A1. ArcView scripts used to determine intersection coordinates.

Name	Type	Creator	Source
polyint2pnt	Avenue Script	Dirk Vandervoort May 12, 1999	Environmental Systems Research Institute (ESRI) ArcScripts website < <a href="http://arcscripts.esri.com/">http://arcscripts.esri.com/</a> >
AddXY	Avenue User Extension	Zachary L. Stauber May 4, 2000	Collection of ArcView Extensions < <a href="http://horta.ulb.ac.be/cours/sis/SeqTraitement/ExtensionsAV/extensionsAV.htm">http://horta.ulb.ac.be/cours/sis/SeqTraitement/ExtensionsAV/extensionsAV.htm</a> >

**ATTACHMENT B**  
**Relevant Rules**

**Procedural Rules for Declaratory Rulings:**

**15A NCAC 07J .0601 DECLARATORY RULINGS: GENERALLY**

At the request of any person aggrieved, as defined in G.S. 150B-2(6), the Coastal Resources Commission may issue a declaratory ruling as provided in G.S. 150B-4.

**15A NCAC 07J .0602 PROCEDURE FOR REQUESTING DECLARATORY RULINGS**

(a) All requests for a declaratory ruling shall be filed with the Director, Division of Coastal Management, Department of Environment and Natural Resources (DENR), 400 Commerce Avenue, Morehead City NC 28557, and also the Attorney General's Office, 9001 Mail Service Center, Raleigh NC 27699-9001. All requests shall include the following: the aggrieved person's name and address; the rule, statute or order for which a ruling is desired; and a statement as to whether the request is for a ruling on the validity of a rule or on the applicability of a rule, order or statute; and certified mail receipts showing the request was sent to the owners of property adjacent to the property that is the subject of the declaratory ruling.

(b) A request for a ruling on the applicability of a rule, order, or statute shall include a description of the factual situation on which the ruling is to be based. A request for a ruling on the validity of a commission rule shall state the aggrieved person's reasons for questioning the validity of the rule. A person may ask for both types of rulings in a single request. A request for a ruling shall include or be accompanied by:

- (1) a statement of facts proposed for adoption by the Commission; and
- (2) a draft of the proposed ruling.

**15A NCAC 07J .0603 PROCEDURES: CONSIDERING REQUESTS FOR DECLARATORY RULINGS**

(a) The Commission hereby delegates to the Chairman the authority to grant or deny requests for declaratory rulings and to determine whether notice of the declaratory ruling request should be provided to anyone other than the adjacent property owners. The Division of Coastal Management shall review each request for a declaratory ruling and shall prepare a recommendation for the Chairman as to whether the Commission should consent to issue a ruling or whether for good cause the request for a declaratory ruling should be denied. The Chairman shall deny a request for declaratory ruling on finding that:

- (1) the requesting party, any other directly affected persons, and the Division of Coastal Management cannot agree on a set of undisputed facts sufficient to support a meaningful ruling;
- (2) the matter is the subject of a pending contested case hearing; or
- (3) no genuine controversy exists as to the application of a statute or rule to a proposed project or activity.

(b) After consenting to issue a ruling, the Commission shall place the declaratory ruling on the agenda for its next regularly scheduled meeting. The Commission shall provide notice of the declaratory ruling proceeding to the requesting party, the adjacent property owners and other persons to whom the Commission decides to give notice no less than 10 days before the date for which the declaratory ruling is set. The requesting party and other persons to whom the Commission decides to give notice shall be allowed to submit written comments concerning the proposed declaratory ruling.

(c) If a ruling is to be issued, the Chairman shall decide whether notice should be given to persons other than the party requesting the ruling and the adjacent property owners. In making such a decision, the Commission shall consider such factors as: whether additional public participation would aid the Commission in reaching a decision; whether any persons have requested in writing to be notified of proposed declaratory rulings; whether the property or personal rights of other persons might be directly affected by the requested ruling; and whether the proposed ruling would affect the application and interpretation of a rule in which other persons might be interested. All persons receiving notice of the declaratory ruling, including all members of the public who respond to a published notice of the proposed ruling, may submit written comments to the Commission concerning the proposed declaratory ruling pursuant to Paragraph (b) of this Rule at least five days prior to the date of the proposed ruling; all such comments shall be provided to the Commission and shall be included in the record of the declaratory ruling.

(d) Unless the Department waives the opportunity to be heard, it shall be a party to any request for declaratory ruling. The requesting party and the Department shall each be allowed 30 minutes to present oral arguments to the Commission. Neither party may offer testimony or conduct cross-examination before the Commission. The declaratory ruling shall be determined on the basis of the statement of undisputed facts submitted by the parties.

(e) The Commission will keep a record of each declaratory ruling, which will include at a minimum the following items:

- (1) the request for a ruling;
- (2) any written comments by interested parties;
- (3) the statement of undisputed facts on which the ruling was based;
- (4) any transcripts of oral proceedings, or, in the absence of a transcript, a summary of all arguments;
- (5) any other matter considered by the Commission in making the decision; and
- (6) the declaratory ruling together with the reasons therefore.

(f) A declaratory ruling is binding on the Commission and the person requesting it unless it is altered or set aside by the court. The Commission may not retroactively change a declaratory ruling, but nothing in this Section prevents the Commission from prospectively changing a ruling.

(g) A declaratory ruling is subject to judicial review in the same manner as an agency final decision or order in a contested case. Unless the requesting party consents to the delay, failure of the Commission to issue a ruling on the merits within 60 days of the request for such ruling shall constitute a denial of the request as well as a denial of the merits of the request and shall be subject to judicial review.

### **Substantive Rules for Oceanfront Setbacks:**

#### **15A NCAC 07H .0304 AECS WITHIN OCEAN HAZARD AREAS**

The ocean hazard system of AECs contains all of the following areas:

(1) Ocean Erodible Area. This is the area in which there exists a substantial possibility of excessive erosion and significant shoreline fluctuation. The seaward boundary of this area is the mean low water line. The landward extent of this area is determined as follows:

- (a) a distance landward from the first line of stable natural vegetation to the recession line that would be established by multiplying the long-term annual erosion rate times 60, provided that, where there has been no long-term erosion or the rate is less than two feet per year, this distance shall be set at 120 feet landward from the first line of stable natural vegetation. For the purposes of this Rule, the erosion rates shall be the long-term average based on available historical data. The current long-term average erosion rate data for each segment of the North Carolina coast is depicted on maps entitled "Long Term Annual Shoreline Change Rates updated through 1998" and approved by the Coastal Resources Commission on January 29, 2004 (**except as such rates may be varied in individual contested cases, declaratory or interpretive rulings**). The maps are available without cost from any local permit officer or the Division of Coastal Management; and
- (b) a distance landward from the recession line established in Sub-Item (1)(a) of this Rule to the recession line that would be generated by a storm having a one percent chance of being equaled or exceeded in any given year.

(2) The High Hazard Flood Area. This is the area subject to high velocity waters including hurricane wave wash) in a storm having a one percent chance of being equaled or exceeded in any given year, as identified as zone VI-30 on the flood insurance rate maps of the Federal Insurance Administration, U.S. Department of Housing and Urban Development.

(3) Inlet Hazard Area. The inlet hazard areas are natural-hazard areas that are especially vulnerable to erosion, flooding and other adverse effects of sand, wind, and water because of their proximity to dynamic ocean inlets. This area shall extend landward from the normal low water line a distance sufficient to encompass that area within which the inlet shall, based on statistical analysis, migrate, and shall consider such factors as previous inlet territory, structurally weak areas near the inlet and external influences such as jetties and channelization. The areas identified as suggested Inlet Hazard Areas included in the report entitled INLET HAZARD AREAS, The Final Report and Recommendations to the Coastal Resources Commission, 1978, as amended in 1981, by Loie J. Priddy and Rick Carraway are incorporated by reference without future changes are hereby designated as Inlet Hazard Areas **except that the Cape Fear Inlet Hazard Area as shown on said map shall not extend northeast of the Baldhead Island marina entrance channel. In all cases, this area shall be an extension of the adjacent ocean erodible area and in no case shall the width of the inlet hazard area be less than the width of the adjacent ocean erodible area.** This report is available for inspection at the Department of Environment and Natural Resources, Division of Coastal Management, 400 Commerce Avenue, Morehead City, North Carolina. Small scaled photo copies are available at no charge.

(4) Unvegetated Beach Area. Beach areas within the Ocean Hazard Area where no stable natural vegetation is present may be designated as an unvegetated beach area on either a permanent or temporary basis:

- (a) An area appropriate for permanent designation as an unvegetated beach area is a dynamic area that is subject to rapid unpredictable landform change from wind and wave action. The areas in this category shall be designated following detailed studies by the Coastal Resources Commission. These areas shall be designated on maps approved by the Commission and available without cost from any local permit officer or the Division of Coastal Management.
- (b) An area that is suddenly unvegetated as a result of a hurricane or other major storm event may be designated as an unvegetated beach area for a specific period of time. At the expiration of the time specified by the Commission, the area shall return to its pre-storm designation. Areas appropriate for such designation are those in which vegetation has been lost over such a large land area that extrapolation of the vegetation line under the procedure set out in Rule .0305(e) of this Section is inappropriate.

The Commission designates as temporary unvegetated beach areas those oceanfront areas on Hatteras Island west of the new

inlet breach in Dare County in which the vegetation line as shown on Dare County orthophotographs dated 4 February 2002 through 10 February 2002 was destroyed as a result of Hurricane Isabel on September 18, 2003 and the remnants of which were subsequently buried by the construction of an emergency berm. This designation shall continue until such time as stable, natural vegetation has reestablished or until the area is permanently designated as an unvegetated beach area pursuant to Sub-Item 4(a) of this Rule.

#### **15A NCAC 07H .0306 GENERAL USE STANDARDS FOR OCEAN HAZARD AREAS**

(a) In order to protect life and property, all development not otherwise specifically exempted or allowed by law or elsewhere in the CRC's Rules shall be located according to whichever of the following is applicable:

- (1) If neither a primary nor frontal dune exists in the AEC on or landward of the lot on which the development is proposed, the development shall be landward of the erosion setback line. The erosion setback line shall be set at a distance of 30 times the long-term annual erosion rate from the first line of stable natural vegetation or measurement line, where applicable. In areas where the rate is less than two feet per year, the setback line shall be 60 feet from the vegetation line or measurement line, where applicable.
- (2) If a primary dune exists in the AEC on or landward of the lot on which the development is proposed, the development shall be landward of the crest of the primary dune or the long-term erosion setback line, whichever is farthest from the first line of stable natural vegetation or measurement line, where applicable. For existing lots, however, where setting the development landward of the crest of the primary dune would preclude any practical use of the lot, development may be located seaward of the primary dune. In such cases, the development shall be located landward of the long-term erosion setback line and shall not be located on or in front of a frontal dune. The words "existing lots" in this Rule shall mean a lot or tract of land which, as of June 1, 1979, is specifically described in a recorded plat and which cannot be enlarged by combining the lot or tract of land with a contiguous lot(s) or tract(s) of land under the same ownership.

(3) If no primary dune exists, but a frontal dune does exist in the AEC on or landward of the lot on which the development is proposed, the development shall be set landward of the frontal dune or landward of the long-term erosion setback line, whichever is farthest from the first line of stable natural vegetation or measurement line, where applicable.

(4) Because large structures located immediately along the Atlantic Ocean present increased risk of loss of life and property, increased potential for eventual loss or damage to the public beach area and other important natural features along the oceanfront, increased potential for higher public costs for federal flood insurance, erosion control, storm protection, disaster relief and provision of public services such as water and sewer, and increased difficulty and expense of relocation in the event of future shoreline loss, a greater oceanfront setback is required for these structures than is the case with smaller structures. Therefore, in addition to meeting the criteria in this Rule for setback landward of the primary or frontal dune or both the primary and frontal dunes, for all multi-family residential structures (including motels, hotels, condominiums and moteliminiams) of more than 5,000 square feet total floor area, and for any non-residential structure with a total area of more than 5,000 square feet, the erosion setback line shall be twice the erosion setback as established in Subparagraph (a)(1) of this Rule, provided that in no case shall this distance be less than 120 feet. In areas where the rate is more than 3.5 feet per year, this setback line shall be set at a distance of 30 times the long-term annual erosion rate plus 105 feet.

(5) Structural additions or increases in the footprint or total floor area of a building or structure represent expansions to the principal structure and both shall meet the setback requirements established in Paragraph (a) of this Rule and Rule .0309(a) of this Section. The enclosure of existing roof covered porches shall be exempt from this requirement if the footprint is not expanded, modifications to existing foundations are not required and the existing porch is located landward of the vegetation line or measurement line which ever is applicable. New development landward of the applicable setback may be cosmetically, but shall not be structurally, attached to an existing structure that does not conform with current setback requirements.

(6) Established common-law and statutory public rights of access to and use of public trust lands and waters in ocean hazard areas shall not be eliminated or restricted. Development shall not encroach upon public accessways nor shall it limit the intended use of the accessways.

(b) In order to avoid weakening the protective nature of ocean beaches and primary and frontal dunes, no development shall be permitted that involves the removal or relocation of primary or frontal dune sand or vegetation thereon which would adversely affect the integrity of the dune. Other dunes within the ocean hazard area shall not be disturbed unless the development of the property is otherwise impracticable, and any disturbance of any other dunes shall be allowed only to the extent allowed by Rule .0308(b) of this Section.

(c) Development shall not cause irreversible damage to documented historic architectural or archaeological resources documented by the Division of Archives and History, the National Historical Registry, the local land-use plan, or other sources.

(d) Development shall comply with minimum lot size and set back requirements established by local regulations.

(e) Mobile homes shall not be placed within the high hazard flood area unless they are within mobile home parks existing as of June 1, 1979.

(f) Development shall comply with general management objective for ocean hazard areas set forth in Rule .0303 of this Section.

(g) Development shall not interfere with legal access to, or use of, public resources nor shall such development increase the risk of damage to public trust areas.

(h) Development proposals shall incorporate measures to avoid or minimize adverse impacts of the project. These measures shall be implemented at the applicant's expense and may include actions that:

(1) minimize or avoid adverse impacts by limiting the magnitude or degree of the action,

(2) restore the affected environment, or

(3) compensate for the adverse impacts by replacing or providing substitute resources.

(i) Prior to the issuance of any permit for development in the ocean hazard AECs, there shall be a written acknowledgment from the applicant to DCM that the applicant is aware of the risks associated with development in this hazardous area and the limited suitability of this area for permanent structures. By granting permits, the Coastal Resources Commission does not guarantee the safety of the development and assumes no liability for future damage to the development.

(j) All relocation of structures require permit approval. Structures relocated with public funds shall comply with the applicable setback line as well as other applicable AEC rules. Structures including septic tanks and other essential accessories relocated entirely with non-public funds shall be relocated the maximum feasible distance landward of the present location; septic tanks may not be located seaward of the primary structure. In these cases, all other applicable local and state rules shall be met.

(k) Permits shall include the condition that any structure shall be relocated or dismantled when it becomes imminently threatened by changes in shoreline configuration as defined in 07H .0308(a)(2)(B). The structure(s) shall be relocated or dismantled within two years of the time when it becomes imminently threatened, and in any case upon its collapse or subsidence. However, if natural shoreline recovery or beach renourishment takes place within two years of the time the structure becomes imminently threatened, so that the structure is no longer imminently threatened, then it need not be relocated or dismantled at that time. This condition shall not affect the permit holder's right to seek authorization of temporary protective measures allowed under Rule .0308(a)(2) of this Section.

#### **15A NCAC 07H .0310 USE STANDARDS FOR INLET HAZARD AREAS**

(a) Inlet areas as defined by Rule .0304 of this Section are subject to inlet migration, rapid and severe changes in watercourses, flooding and strong tides. Due to this extremely hazardous nature of the Inlet Hazard Areas, all development within these areas shall be permitted in accordance with the following standards:

- (1) All development in the inlet hazard area shall be set back from the first line of stable natural vegetation a distance equal to the setback required in the adjacent ocean hazard area;
- (2) Permanent structures shall be permitted at a density of no more than one commercial or residential unit per 15,000 square feet of land area on lots subdivided or created after July 23, 1981;
- (3) Only residential structures of four units or less or non-residential structures of less than 5,000 square feet total floor area shall be allowed within the inlet hazard area, except that access roads to those areas and maintenance and replacement of existing bridges shall be allowed;
- (4) Established common-law and statutory public rights of access to the public trust lands and waters in Inlet Hazard Areas shall not be eliminated or restricted. Development shall not encroach upon public accessways nor shall it limit the intended use of the accessways;
- (5) All other rules in this Subchapter pertaining to development in the ocean hazard areas shall be applied to development within the Inlet Hazard Areas.

(b) The inlet hazard area setback requirements shall not apply to the types of development exempted from the ocean setback rules in 15A NCAC 7H .0309(a), nor, to the types of development listed in 15A NCAC 7H .0309(c).

(c) In addition to the types of development excepted under Rule .0309 of this Section, small scale, non-essential development that does not induce further growth in the Inlet Hazard Area, such as the construction of single-family piers and small scale erosion control measures that do not interfere with natural inlet movement, may be permitted on those portions of shoreline within a designated Inlet Hazard Area that exhibit features characteristic of Estuarine Shoreline. Such features include the presence of wetland vegetation, lower wave energy, and lower erosion rates than in the adjoining Ocean Erodible Area. Such development shall be permitted under the standards set out in Rule .0208 of this Subchapter. For the purpose of this Rule, small scale is defined as those projects which are eligible for authorization under 15A NCAC 7H .1100, .1200 and 7K .0203.

**ATTACHMENT C**

## Undisputed Facts agreed to by Petitioners and DCM Staff

1. West Beach lies directly along the Cape Fear River inlet and falls within both the current and proposed inlet hazard area zones. *See Exhibit B of the Request* (map of Bald Head Island).
2. For the purposes of this Request, West Beach is defined as the area within the existing inlet hazard area between transects one (1) through forty (40), inclusive, on **Exhibit C of the Request** (map of West Beach).
3. Pursuant to 15A NCAC 07H .0310(a)(1), “[a]ll development in the inlet hazard area shall be set back from the first line of stable natural vegetation a distance *equal to the setback required in the adjacent ocean hazard area.*” (Emphasis added).
4. Pursuant to 15A NCAC 07H.0306(a)(1), the setback distance for single-family development or multi-family development of three units or less in the ocean erodible area is defined by a distance equal to the erosion rate multiplied by a factor of thirty (30). The setback distance for small-scale (less than 5,000 square feet) multi-family development greater than three units and commercial development is also a distance equal to the erosion rate multiplied by a factor of thirty (30). For large-scale (5,000 square feet and greater) multi-family development greater than three units and commercial development, the setback distance is equal to the erosion rate multiplied by a factor of sixty (60) or, for areas with an erosion rate greater than 3.5 feet per year, a distance equal to the erosion rate multiplied by a factor of thirty (30) plus 105 feet. 15A NCAC 07H .0304(1)(a) defines that “erosion rates shall be the long-term average based on available historical data” as depicted on a map updated through 1998 (the “1998 Map”).
5. Unlike the State’s other inlet shorelines, no erosion rates along West Beach or the coastline north of West Beach are depicted on the Division of Coastal Management’s 1998-era erosion rate maps.
6. An eight (8) feet annual erosion rate applies to the homes and lots along South Beach immediately adjacent to the Bald Head Island inlet hazard area. Therefore, pursuant to 15A NCAC 07H.0304(a)(1), this rate is extrapolated to all areas inside the inlet hazard area, including West Beach where the Division of Coastal Management has recently calculated site-specific erosion rates to be approximately two feet per year or less. The eight (8) feet annual erosion rate currently applied to West Beach is derived from erosion rates calculated by the Division of Coastal Management for the portion of South Beach immediately adjacent to the South Beach portion of the inlet hazard area (i.e., on the other side

of the “point” from West Beach). *See Exhibit B of the Request* (map of Bald Head Island).

7. In consequence, numerous homes and lots along West Beach are being subjected to a two hundred forty (240) feet building setback (8 foot erosion rate x 30) rather than a setback of sixty (60) feet (2 foot erosion rate x 30).
8. Approximately thirty million dollars (\$30,000,000.00) worth of properties are potentially effected along West Beach by the application of a South Beach erosion rate of eight (8) feet per year. *See Exhibit D of the Request* (list of properties effected and tax valuations).
9. This effect on West Beach properties results in decreased values to the Village and Brunswick County tax bases. Approximately eight (8) property owners have obtained, and others reportedly are obtaining, tax valuation reductions based on the non-conforming or unbuildable nature of the properties based on a setback distance of 240 feet (erosion rate of 8 feet per year x 30).
10. Sayre and other individual property owners allege they are being harmed by the non-conforming and “unbuildable” nature of their properties. *See Exhibits E1 and E2 of the Request* (statements by Sayre and Jack Nichols, West Beach property owners, made to Commission at February 2009 meeting).
11. Currently, the Commission is in the lengthy process of amending the inlet hazard area regulations. An intended result of such process is to amend both the inlet hazard area affecting Bald Head Island, and to amend the applicable rules therein. In their current state, the proposed rules contemplate a two (2) feet annual erosion rate along West Beach. *See Jeffrey Warren, Ph.D., CRC Memorandum 09-05: Proposed Development Policies for Expanded Inlet Hazard Area Boundaries* (January 28, 2009) (attached as **Exhibit F of the Request** and proposing two feet annual erosion rate to few areas in North Carolina, including West Beach, without assigned erosion rates on current map, Table 1, Page 3).
12. Even assuming all possible efficiency, these inlet hazard area amendments cannot reasonably be expected within the coming year. Causes of delay include: (i) budget cuts forcing the Commission to either abbreviate or altogether cancel scheduled meetings; and (ii) Senate Bill 866, which, if enacted, would prohibit the Commission from effectuating any rule change that has an economic impact (most likely encompassing the proposed amendments to the inlet hazard area regulations).
13. The Commission has the immediate authority to vary the 1998 erosion rate map through “individual contested cases, *declaratory* or interpretive rulings.” 15A NCAC 07H .0304(1)(a) (emphasis added).

14. The relief sought herein is interim and would not affect pending Commission rulemaking related to the inlet hazard area boundaries and development conditions within said boundaries.
15. West Beach is defined for the purposes of this Request as the area within the existing inlet hazard area between transects one (1) through forty (40), inclusive, shown on **Exhibit C of the Request**.
16. For purposes of oceanfront setback delineation, an annual erosion rate of eight (8) feet applies by rule to the area of West Beach within the inlet hazard area.
17. The eight (8) feet annual erosion rate results in an oceanfront setback distance of 240 feet landward of the first line of stable and natural vegetation for small or non-commercial structures
18. The 240 feet building setback applies to thirteen (13) homes with a total tax value of \$25,270,985.00 and four (4) lots with a total tax value of \$4,950,000.00 (*See Exhibit D of the Request*).
19. Division of Coastal Management (“DCM”) Staff prepared, on June 8, 2009, a map of West Beach showing transects and erosion rate calculations as shown on **Exhibit C of the Request**. The erosion rates calculated from the transects depicted on this map used the same transect orientation and shoreline analysis methods as those for the 1998 maps currently applied to the rest of the State’s oceanfront shoreline. The general method is an end-point calculation that determines the shoreline distance between an early shoreline from the 1930s and 40s defined from National Ocean Service Topographic Sheet (NOS T-sheet) maps and a late shoreline generated from 1998 aerial photography. This distance is divided by the time period represented by the shorelines to develop a long-term rate (e.g., 240 feet of shoreline movement over a period of 60 years is a rate of four feet per year). Specifically, the West Beach calculation conducted by DCM for this declaratory ruling used an early shoreline from 1942 (NOS T-sheet) and a late shoreline from 2000 (aerial photography). Aerial imagery for 1998 does not exist for West Beach.
20. The Commission has the authority to declare an annual erosion rate for West Beach. 15A NCAC 07H .0304(1)(a).
21. The circumstance of West Beach and its property owners is unique among North Carolina coastal communities because transects and erosion rates have not been defined previously by the Division of Coastal Management. To better understand the shoreline history along West Beach, and in response to this petition, the Division has since defined erosion rates for this portion of the Village shoreline. The maximum erosion rate for West Beach (as defined herein) by the Division using the method described above in Section 5 is 2.4 feet per year, and the maximum accretion rate is 4.3 feet per year. Spatial smoothing of the data,

similar to what was done for the current erosion rate numbers for the State's oceanfront erosion rate data, further reduces the maximum erosion rate to 2.2 feet per year. The Division notes that rounding of the data through a process call "blocking" would place a minimum erosion setback factor of two (2) feet per year for the entirety of West Beach (transects 1 through 40). See **Exhibit G of the Request** for the complete methods used by the Division in the most recent shoreline erosion update.

22. The Declaratory Relief granted would not affect subsequent Commission rulemaking, but would merely establish an erosion rate, subject to adjustment by lawful Commission rules and processes. The erosion rates specific to this declaratory ruling may be superseded upon the effective date of any subsequent inlet hazard area development rules promulgated by the Commission.

**ATTACHMENT D**  
**Staff's Memorandum**

The Coastal Resources Commission's ("Commission") rule 15A NCAC 7J.0603(d) provides that unless it waives the opportunity to be heard, the Department of Environment and Natural Resources, through DCM Staff, shall be a party to any request for a declaratory ruling. As a party, Staff may submit written materials and present arguments to the Commission. In this particular case, Staff has determined that the subject matter of the declaratory ruling is clearly a policy decision appropriately decided by the Commission. Accordingly, Staff does not recommend approval or disapproval of Petitioner's proposed rulings. Instead, Staff offers the following guidance designed to aid the Commission in its decision-making:

Petitioner has raised a genuine issue that should be resolved. The issue is the application of the current long term annual erosion rate (erosion rate) along the western shoreline of the Village of Bald Head Island along the mouth of the Cape Fear River, commonly referred to as West Beach. This area lies within the current Inlet Hazard Area (IHA) based on the Commission's rule 15A NCAC 07H.0304. Use standards in 15A NCAC 07H.0310(a)(1) require that this area within the IHA use the erosion rate from the adjacent Ocean Erodible Area (OEA) for oceanfront setback determinations. Currently, the applicable IHA erosion rate is that from the adjacent OEA along the Village's southern shoreline, known as South Beach. The rate at South Beach is eight feet per year as shown on the 1998 erosion rate maps adopted by the CRC in 2004 and currently in use by Staff for regulatory purposes.

As part of the development the new IHA boundaries and in response to ongoing concerns raised by the Village, Staff quantified the rate of erosion along West Beach. In the document attached to this Request provided by Staff to Petitioners, Staff analyzed shorelines using methods

similar to those used for the current OEA erosion rates discussed in 15A NCAC 07H.0304(1)(a). The current OEA rates were calculated using an early shoreline from the 1930s/40s vintage National Ocean Service Topographic Sheets (NOS T-sheets) and a late shoreline from 1998. For West Beach, the early shoreline was defined using a 1942 NOS T-sheet. For the “late” shoreline, 2000 aerial photography was used because no 1998 photography exists for this portion of the coast. The position of these two shorelines was compared along a set of 40, shore-perpendicular transects. The results of this erosion rate calculation indicated that maximum erosion rate along West Beach during the 58-year period was 2.4 feet per year. Spatial smoothing similar to that used in the current OEA erosion rate calculation would decrease this maximum rate (e.g., a 5-point moving average provides a maximum erosion rate of 2.2 feet per year). During this 58-year study period, erosion occurred along 23 of the 40 transects, while accretion occurred along the rest (maximum accretion rate of unsmoothed data was 4.3 feet per year at transect 40). Applying the “blocking” technique used on current erosion rate maps to round rates up and down as well as provide a minimum erosion rate setback factor of two feet per year in areas with less than two feet of erosion (including accretion) would create a setback factor of two feet per year for the entirety of West Beach. Unlike all other inlets in the State, prior to this recent investigation by Staff, transects had not been established and erosion rates had not been calculated along West Beach and, therefore, no erosion rates currently exist on the Division’s erosion rate maps.

The Commission has the authority in 15A NCAC 7H.0304(1)(a) to vary erosion rates through individual contested cases, declaratory or interpretive rulings. The Commission should consider the fairness of the rule at issue and its application in this specific setting. Therefore, the Commission must decide whether the rules specific to IHA use standards, specifically the

application of the adjacent OEA erosion rates are appropriate for West Beach.

**ATTACHMENT E**  
Petitioner's Memorandum

Gaps in the current erosion rate map maintained by the Coastal Resources Commission (“CRC”), in conjunction with certain regulations applicable to the Inlet Hazard Area (“IHA”), are creating unintended results and causing an incorrect eight (8) feet annual erosion rate to apply to many homes along West Beach on Bald Head Island—where the actual erosion rate is approximately two (2) feet per year. *See Exhibits B and C of the Request* (maps of West Beach). In consequence, numerous homes are being subjected to an incorrect and unreasonable two hundred forty (240) feet building setback (8 x 30) rather than the correct sixty (60) feet setback (2 x 30). The result is that, arbitrarily, homes are rendered non-conforming and lots are deemed unbuildable. Such unreasonable and oppressive regulation has generated tremendous uncertainty, affected tax valuations and held up property transactions. The situation requires immediate correction.

West Beach lies within both the current and proposed IHA zones. (*See Exhibit B of the Request; see also Exhibit F of the Request* (discussing current status of IHA amendment process)). Pursuant to 15A NCAC 07H .0310(a)(1), “[a]ll development in the inlet hazard area shall be set back from the first line of stable natural vegetation a distance equal to the setback required in the adjacent ocean hazard area.” Further, 15A NCAC 07H .0306(a)(1) provides that the appropriate setback distance in an ocean hazard area—and therefore in the “adjacent” IHA—is the erosion rate multiplied by a factor of thirty (30). Finally, “erosion rates shall be the long-term average based on available historical data” as depicted on a map updated through 1998. 15A NCAC 07H .0304(1)(a).

To date, no erosion rate has been identified along West Beach. As a result, the staggering eight (8) feet per year erosion rate affecting the coastline on the *opposite* side of the IHA zone applies throughout the entire IHA zone. **More than thirty (30) million dollars worth of properties are harmed.** *See Exhibit D of the Request* (property and valuation list).

Such an unreasonable and arbitrary regulatory scheme, as applied to West Beach, contravenes CAMA's goal to "insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations." N.C. Gen. Stat. § 113A-102(b)(2).

A declaratory or interpretive ruling by the CRC is a speedy and available fix to the problems described above. Specifically, 15A NCAC 07H .0304(1)(a)—which addresses erosion rates in ocean hazard areas—provides that such rates may be varied by the CRC through "**declaratory or interpretive rulings.**" (Emphasis added).<sup>1</sup> Through either of these procedures, the Coastal Resources Commission may vary the erosion rates depicted on the 1998 map (or lack thereof). Accordingly, the CRC should declare or interpret that the erosion rate at West Beach is two (2) feet per year.

Applying an annual erosion rate of two (2) feet to West Beach will facilitate coastal administration and application of building setbacks and zoning regulations, will provide certainty to property owners, will increase or maintain existing property values, and will permit real estate transactions to go forward, consistent with CAMA's stated goal to "insure that the development

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<sup>1</sup> A "declaratory" ruling is largely governed by statute and regulation. *See* N.C. GEN. STAT. § 150B-4; 15A NCAC 07J .0601 *et seq.* The procedures and scope of "interpretive" rulings, however, are not addressed by the statutes and regulations. Nonetheless, the above-cited regulation explicitly refers to the CRC's power to make "interpretive" rulings. As such, an interpretive ruling may be an easy and efficient means of applying a reasonable setback requirement along West Beach.

or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations.” N.C. Gen. Stat. § 113A-102(b)(2).

### PROPOSED RULING

For the foregoing reasons, the Requestors respectfully move the Commission for a Declaratory Ruling awarding the following relief:

The Commission, having considered the due and lawful petition of the Requestors for a Declaratory Ruling, finds and declares:

1. No annual erosion rate or transects were previously adopted for West Beach on Bald Head Island, North Carolina, nor shown on the 1998 erosion rate map adopted in 2004.
2. DCM Staff prepared as of June 8, 2009, transects and calculated annual erosion rates for West Beach, consisting of the area within the existing inlet hazard area between transects (1) through forty (40), inclusive, as shown on **Exhibit C of the Request**.
3. Based upon the information provided by Requestors and DCM Staff, the Commission declares, pursuant to 15A NCAC 07H .0304(1)(a) and 07J .0602, that the annual erosion rate for West Beach is two (2) feet and same shall be shown henceforth on the erosion rate map maintained by the Commission.
4. This Ruling shall not prevent the Commission from modifying in the future the West Beach annual erosion rate by lawful rulemaking procedure and processes.

### CONCLUSION

The Request for Declaratory Ruling by the Village of Bald Head Island and J. Andrew Sayre is in the best interest of coastal administration, addresses a unique regulatory circumstance and is for the public benefit. *See* G.S. 113A-102(b)(2). The relief sought is authorized by law, including, but not limited to, N.C.G.S. 113A-124(c)(7), 15A NCAC 07H .0304 and 15A NCAC 07J .0602. Requestors urge the Coastal Resources Commission to consider and act upon this request in an expedited manner.

**ATTACHMENT F**  
Copies of Comments Received

Attached are the comments which were received by DCM by the mail-out deadline on Tuesday, June 16, 2009. All other comments received by the June 19, 2009 deadline will be provided to the Commission at the June 24, 2009 meeting.

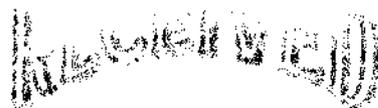
1. Comments from James E. Harrington, dated June 15, 2009

**JAMES E. HARRINGTON**

Post Office Box 3336  
Bald Head Island, N.C., 28461

June 15, 2009

North Carolina Coastal Resources Commission  
400 Commerce Avenue  
Morehead City, NC, 28557



JUN 16 2009

Attention: Angela Willis

Ladies and Gentlemen:

**Morehead City DCM**

This letter is in support of the request by the Village of Bald Head Island and Mr. J. Andrew Sayre for a Declaratory Ruling with respect to appropriate erosion rate factors for the area described as "West Beach" on Bald Head Island, Brunswick County. The request to establish an annual erosion rate of two (2) feet is reasonable, under the circumstances outlined in the petition.

By the nature of the rule-making process used by DCM, establishment of erosion rates is necessarily somewhat arbitrary. Not all of North Carolina's beaches and inlet areas are the same, and a standard calculation cannot take into consideration the local variations. Further, there are different non-natural impacts on various beaches and inlets which are not amenable of consideration in a standard calculation.

The natural erosion rate on Bald Head Island's South Beach, as opposed to that induced by channel dredging and offshore disposal of sand from the local system, is probably not eight (8) feet per year, but much less than that. The standard calculation does not, and probably cannot, take into consideration the impact of these localized non-natural activities.

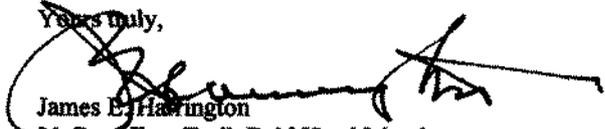
The West Beach segment cited in the petition probably has an annual accretion rate. My home (and those properties adjacent to mine) has experienced a significant accretion and advance of the vegetation line over the past 30 years during which I have owned the property. The vegetation line in our vicinity has advanced perhaps 600 feet over the time I have observed it.

This accretion (and some minimal erosion) along West Beach is occasioned by a moving large accretion node that fluctuates along a north-south axis over time. This node is created by movement of sand from the south beach -- sand which would under normal natural conditions return to the south beach system except for the removal offshore by the Corps of Engineers dredging regime which disposes of some 80% of the dredged sand well offshore, where it cannot return to the system. The other 20% of the sand flow from south beach is naturally deposited along west beach, where the littoral flow is south to north, and creates the slowly moving accretion node.

Under the immediate circumstances, a two (2) foot annual erosion rate established by rule, while being somewhat arbitrary, will ameliorate the inappropriate attribution of the eight (8) foot rate stemming from the adjacent south beach calculation.

I urge you to favorably consider the petition.

Yours truly,



James E. Harrington  
21 Cape Fear Trail, Bald Head Island  
Former Secretary, NC Department of Natural and Economic Resources,  
Former Chairman, NC Coastal Resources Commission.

**ATTACHMENT G**  
Copies of Notice

The following copies of notice are attached:

-8 pages of certified mail receipts from Petitioners mailing copy of Request to adjacent owners.

-Copy of DCM website notice printed on 6/12/09

-Copy of Notice published in Wilmington Star-News on 6/12/09

-Copy of Notice letters sent by Staff to Petitioners' counsel , NC Coastal Federation, and the adjacent owners on 6/10/09

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 City, State, ZIP+4: Wilmington NC 28403

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 Street, Apt. No., or PO Box No.: 6417 Oval Road  
 City, State, ZIP+4: Wilmington NC 28409

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Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.40

Sent to: James; Catherine Garcia  
 Street, Apt. No., or PO Box No.: 4 Brentmor Park  
 City, State, ZIP+4: Clanton MO 63105

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7007 0710 0004 4869 9851

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Postage	\$ 8.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 13.60

Sent to: John; Susan Nichols  
 Street, Apt. No., or PO Box No.: 1104 High Country Rd  
 City, State, ZIP+4: Towson MD 21204

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7007 0710 0004 4869 9868

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Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 13.60

Sent to: Bald Head Association  
 Street, Apt. No., or PO Box No.: P.O. Box 3030  
 City, State, ZIP+4: Bald Head Island NC 28416

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7007 0710 0004 4869 9875

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Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.66

Sent to: Leslie Wheeler  
 Street, Apt. No., or PO Box No.: 32 Longcourse Lane  
 City, State, ZIP+4: Poole PA 19301

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7007 0710 0004 4869 9882

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Postage	\$ 1.56
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.66

Sent to: Robert & Giuncarla Heglesen  
 Street, Apt. No., or PO Box No.: P.O. Box 3314  
 City, State, ZIP+4: Bald Head Island NC 28461

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OFFICIAL USE

Postage	\$ 1.56
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.66

Sent to: Timothy & Joan McCormick  
 Street, Apt. No., or PO Box No.: 71 Misty Pine Rd  
 City, State, ZIP+4: Fairport NY 14850

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7007 0710 0004 4869 9891

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OFFICIAL USE

Postage	\$ 1.56
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.66

Sent to: Peter & Eileen Quian  
 Street, Apt. No., or PO Box No.: 508 Avonwood Rd  
 City, State, ZIP+4: Haverford Pa 19111

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7007 0710 0004 4869 9905

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Postage	\$ 1.56
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.66

Sent to: Michael Reith  
 Street, Apt. No., or PO Box No.: 960 Checkersin Ave  
 City, State, ZIP+4: Columbus Oh 43229

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7007 0710 0004 4869 9912

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Postage	\$ 1.56
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.66

Sent to: The Beene Company Inc. c/o Dr. Beene  
 Street, Apt. No., or PO Box No.: 33 Brays Island Dr  
 City, State, ZIP+4: Sheldon S.C. 29941

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Darin & Laura Hill  
 Street, Apt. No., or PO Box No.: 10045 Old Warden Rd  
 City, State, ZIP+4: Raleigh NC 27615

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7007 0710 0004 4869 9929

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Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Edward & Pat Johnston  
 Street, Apt. No., or PO Box No.: P.O. Box 3148  
 City, State, ZIP+4: Bald Head Island NC 28411

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7007 0710 0004 4869 9936

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Edward Harper  
 Street, Apt. No., or PO Box No.: P.O. Box 10548  
 City, State, ZIP+4: Smithport NC 28161

PS Form 3800, August 2006 See Reverse for Instructions

7007 0710 0004 4869 9943

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**OFFICIAL USE**

Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Christine Wright  
 Street, Apt. No., or PO Box No.: 232 Hempstead Pl  
 City, State, ZIP+4: Charlotte NC 28287

PS Form 3800, August 2006 See Reverse for Instructions

7007 0710 0004 4869 9950

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Postage	\$ 1.50
Certified Fee	2.40
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Thomas WATKIN  
 Street, Apt. No., or PO Box No.: P.O. Box 281  
 City, State, ZIP+4: LOOKOUT Mountain TN 37350

PS Form 3800, August 2006 See Reverse for Instructions

7009 1410 0001 1255 5521 1000

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Ronald & Margaret Crosswell  
 Street, Apt. No., or PO Box No.: 1918 Boulder Dr.  
 City, State, ZIP+4: Ann Arbor MI 48104

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7007 0710 0004 4869 9967

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Postage	\$ 1.86
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.96

Sent to: Houghton Pardee Living Trust  
 Street, Apt. No. or PO Box No.: 7124 Quail Hill Rd.  
 City, State, ZIP+4: Charlotte NC 28210

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7007 0710 0004 4869 9981

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Postage	\$ 1.86
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.96

Sent to: 15 Sea Gull Trail LLC  
 Street, Apt. No. or PO Box No.: 3020 N. Fairway Dr.  
 City, State, ZIP+4: Burkhead NC 27215

PS Form 3800, August 2006 See Reverse for Instructions

7007 0710 0004 4869 9996

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent to: David & Mary Lewis  
 Street, Apt. No. or PO Box No.: 9315 Penuhurst Trace  
 City, State, ZIP+4: Charlotte NC 28210

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7009 1410 0001 1255 3142

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent to: George & Alice Horton  
 Street, Apt. No. or PO Box No.: 4900 Cornwallis Rd  
 City, State, ZIP+4: Durham NC 27705

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7009 1410 0001 1255 3159

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent to: Ralph & De Vismes Lcc  
 Street, Apt. No. or PO Box No.: 3505 Chevy Chase Lake Drive  
 City, State, ZIP+4: Chevy Chase, MD 20815

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7009 1410 0001 1255 3166

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent to: The Wilson Family Trust  
 Street, Apt. No. or PO Box No.: 330 Carole Dr.  
 City, State, ZIP+4: Fayetteville NC 28305

PS Form 3800, August 2006 See Reverse for Instructions

7009 1410 0001 1255 3173

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: George & Nancy Cecil  
 Street, Apt. No., or PO Box No.: P.O. Box 5316  
 City, State, ZIP+4: Baltimore NC 28813

PS Form 3800, August 2008 See Reverse for Instructions

7009 1410 0001 1255 3180

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**OFFICIAL USE**

Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Andrew & Wendy Sayre  
 Street, Apt. No., or PO Box No.: P.O. Box 3259  
 City, State, ZIP+4: Bald Head Island, NC 28461

PS Form 3800, August 2008 See Reverse for Instructions

7009 1410 0001 1255 3197

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Evelyn Parris Trustee  
 Street, Apt. No., or PO Box No.: 1315 Greenbrier Road  
 City, State, ZIP+4: Waynesboro, VA 22980

PS Form 3800, August 2008 See Reverse for Instructions

7009 1410 0001 1255 3202

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Joseph & Mary Snee  
 Street, Apt. No., or PO Box No.: 213 Youngs Lane  
 City, State, ZIP+4: West Chester, PA 19380

PS Form 3800, August 2008 See Reverse for Instructions

7009 1410 0001 1255 3210

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: Donald & Kathy Thompson  
 Street, Apt. No., or PO Box No.: 45 Western Blvd.  
 City, State, ZIP+4: Jacksonville, NC 28546

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7009 1410 0001 1255 3227

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: William & Patricia Farber  
 Street, Apt. No., or PO Box No.: 484 Mountain Circle Drive  
 City, State, ZIP+4: Lenoir, NC 28645

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7009 1410 0001 1255 3234

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: **Doug & Melinda Anderson**  
 1847 Cassamia Pl.  
 Charlotte, NC 28211

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7009 1410 0001 1255 3234

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: **Ethel Trask Coupland Trustee**  
 1201 Great Oaks Drive  
 Wilmington, NC 28403

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7009 1410 0001 1255 3272

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: **Smith Island Land Trust**  
 P.O. Box 3109  
 Bald Head Island, NC 28461

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7009 1410 0001 1255 3265

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: **Vincent & Karen Hoelrich**  
 1038 John Roboteau Wynd  
 Raleigh, NC 27612

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7009 1410 0001 1255 3241

U.S. Postal Service  
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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: **Laura Gutman**  
 10 Watts Street  
 Durham, NC 27701

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Postage	\$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.60

Sent To: **Buliss Jordan LLC**  
 524 A West Elm Street  
 Graham, NC 27253

PS Form 3800, August 2005

962E 552T 1000 014T 6002

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Postage	\$ 1.56	
Certified Fee	2.80	
Return Receipt Fee (Endorsement Required)	2.00	
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$ 6.66	

Sent to: **James Hoolhan**  
 6865 Haymors Avenue  
 Columbus, OH 43085

PS Form 3800, August 2005

200E 552T 1000 014T 6002

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Postage	\$ 1.56	
Certified Fee	2.80	
Return Receipt Fee (Endorsement Required)	2.00	
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$ 6.66	

Sent to: **Thomas & Nancy Calloway**  
 2633 Club Park Road  
 Winston-Salem, NC 27104

PS Form 3800, August 2005

310E 552T 1000 014T 6002

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Postage	\$ 1.50	
Certified Fee	2.80	
Return Receipt Fee (Endorsement Required)	2.50	
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$ 6.80	

Sent to: **Bald Head Island Limited**  
 P.O. Box 3069  
 Bald Head Island, NC 28461

PS Form 3800, August 2005

# AFFIDAVIT OF PUBLICATION

STATE OF NORTH CAROLINA  
COUNTY OF NEW HANOVER

**NORTH CAROLINA COASTAL RESOURCES COMMISSION**  
Request for Declaratory Ruling

The North Carolina Coastal Resources Commission will hear a request by The Village of Bald Head Island and Mr. J. Andrew Sayre to issue a declaratory ruling on the appropriate erosion rate factor for the application of the Commission's oceanfront setbacks for the area known as West Beach on Bald Head Island in Brunswick County. The rules at issue include 45A NCAC 7H 0304, 7H 0306 and 7H 0310. A copy of the rules can be found at DCM's website: [www.dcm.nc.gov](http://www.dcm.nc.gov)

The case will be heard during the Commission's plenary meeting on Wednesday, June 24, 2009, at the NCAR/NCNERR Building, 101 Pines Island Road, Beaufort, NC. Written comments concerning the proposed declaratory ruling may be submitted to the Commission by Friday, June 19, 2009, at the following addresses: Angela Willis, DCM, 400 Commerce Ave., Morehead City, 28557; email: [awillis@nc.gov](mailto:awillis@nc.gov)

Comments received by that date will be sent to the Commission prior to their meeting.

Before the undersigned, a Notary Public of Said County and State,

**Robert Gruber**

Who, being duly sworn or affirmed, according to the law, says that he/she is

**Publisher**

of THE STAR-NEWS, a corporation organized and doing business under the Laws of the State of North Carolina, and publishing a newspaper known as STAR-NEWS in the City of Wilmington

***NORTH CAROLINA COASTAL RESOURCES COMMISSION Request for Declaratory Ruling The North Carolina Coastal Resources Commission will hear a request by The Village of Bald Head Island and Mr. J. Andrew Sayre to issue a declaratory ruling on the appropriate***  
***ero***

was inserted in the aforesaid newspaper in space, and on dates as follows:

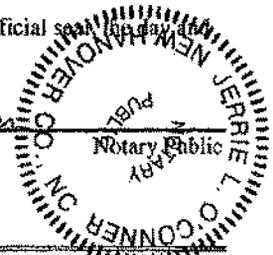
*6/12 1x*

And at the time of such publication Star-News was a newspaper meeting all the requirements and qualifications prescribed by Sec. No. 1-597 G.S. of N.C.

*Robert Gruber* Title: **Publisher**  
Sworn or affirmed to, and subscribed before me this 15th day of June, A.D., 2009

In Testimony Whereof, I have hereunto set my hand and affixed my official seal this day of \_\_\_\_\_ year aforesaid.

*Jerris L. O'Conner*



My commission expires 17th day of Sep, 2012

Upon reading the foregoing affidavit with the advertisement thereto annexed it is adjudged by the Court that the said publication was duly and properly made and that the summons has been duly and legally served on the defendant(s).

This \_\_\_\_\_ day of \_\_\_\_\_

\_\_\_\_\_  
Clerk of Superior Court

MAIL TO:

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StarNewsOnline.com**

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Ad published: Jun 12, 2009

**NORTH CAROLINA COASTAL  
RESOURCES COMMISSION**

**Request for Declaratory Ruling**

**The North Carolina Coastal Resources**

Commission will hear a request by The Village of Bald Head Island and Mr. J. Andrew Sayre to issue a declaratory ruling on the appropriate erosion rate factor for the application of the Commission's oceanfront setbacks for the area known as West Beach on Bald Head Island in Brunswick County. The rules at issue include 15A NCAC 7H.0304, 7H.0306 and 7H.0310. A copy of the request can be found at DCM's website:

[www.nccoastalmanagement.net](http://www.nccoastalmanagement.net)

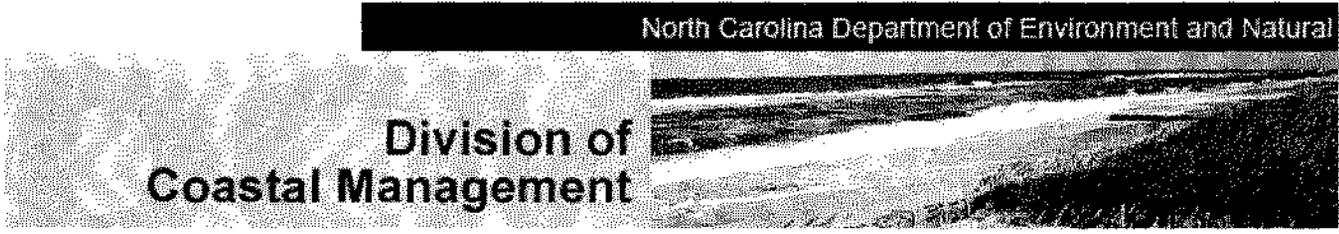
The case will be heard during the Commission's planned meeting on Wednesday, June 24, 2009 at the NOAA/NCNEER Building, 101 Pivers Island Road, Beaufort, NC. Written comments concerning the proposed declaratory ruling may be submitted to the Commission by Friday, June 19, 2009, at the following addresses: Angela Willis, DCM, 400 Commerce Ave, Morehead City, 28557; email: [angela.willis@ncdenr.gov](mailto:angela.willis@ncdenr.gov) Comments received by that date will be sent to the Commission prior to their meeting.

---

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North Carolina Department of Environment and Natural



## Division of Coastal Management

### Coastal Resources Commission :: Request for Declaratory Ruling, Bald Head

The North Carolina Coastal Resources Commission will hear a request by The Village of Bald Head Island and Andrew Sayre to issue a declaratory ruling on the appropriate erosion rate factor for the application of the Commission's oceanfront setbacks for the area known as West Beach on Bald Head Island in Brunswick County. Rules at issue include 15A NCAC 7H.0304, 7H.0306 and 7H.0310. A copy of the request is available on DCM's site.

The case will be heard during the Commission's planned meeting on Wednesday, June 24, 2009 at the NOAA/NCNEER Building, 101 Pivers Island Road, Beaufort, N.C. Written comments concerning the proposed declaratory ruling may be submitted to the Commission by Friday, June 19, 2009, at the following addresses: Willis, DCM, 400 Commerce Ave, Morehead City, 28557; email: [angela.willis@ncdenr.gov](mailto:angela.willis@ncdenr.gov). Comments received after that date will be sent to the Commission prior to their meeting.

**Please Note: The CRC meeting request is still awaiting approval. A notice will be posted on this web site once the meeting plans are confirmed. If the meeting is not approved, this request will be heard at the next meeting.**

Last Modified: June 11, 2009

N.C. Division of Coastal Management • 400 Commerce Ave • Morehead City, NC 28557  
1-888-4RCOAST • [Email Us](#)

**Willis, Angela**

---

**From:** Willis, Angela  
**Sent:** Wednesday, June 10, 2009 3:45 PM  
**To:** Charles Baldwin  
**Subject:** Notification of Adjacent Owners - Request for Declaratory Ruling  
**Attachments:** Declaratory Ruling C Baldwin.doc

Please find the notice attached which was sent to each adjacent owner today. Angela

--

Angela Willis, Admin Asst.  
NC Division of Coastal Management  
NC Department of Environment and Natural Resources  
400 Commerce Avenue  
Morehead City, NC 28557  
Phone: 252.808.2808 FAX 252.247.3330  
Toll Free: 888.912.CAMA  
[Angela.Willis@ncdenr.gov](mailto:Angela.Willis@ncdenr.gov)

**E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.**



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue  
Governor

James H. Gregson  
Director

Dee Freeman  
Secretary

TO: Charles S. Baldwin  
Rountree, Losee & Baldwin, LLP  
2419 Market Street  
Wilmington, NC 28403

FROM: N.C. Division of Coastal Management

DATE: June 10, 2009

RE: Notice of Declaratory Ruling

The purpose of this memorandum is to inform you that The Village of Bald Head Island and J. Andrew Sayre have requested a declaratory ruling from the North Carolina Coastal Resources Commission (CRC) regarding a matter that may affect you. Accordingly, please be advised of the following:

The North Carolina Coastal Resources Commission will hear a request by The Village of Bald Head Island and Mr. J. Andrew Sayre to issue a declaratory ruling on the appropriate erosion rate factor for the application of the Commission's oceanfront setbacks for the area known as "West Beach" on Bald Head Island in Brunswick County. The rules at issue include 15A NCAC 7H.0304, 7H.0306 and 7H.0310. A copy of the request can be found at DCM's website: [www.nccoastalmanagement.net](http://www.nccoastalmanagement.net).

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Thank you for your attention to this matter.

Sincerely,

*COPY*

James H. Gregson



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue  
Governor

James H. Gregson  
Director

Dee Freeman  
Secretary

TO: Todd Miller  
North Carolina Coastal Federation  
3609 Highway 24  
Newport, NC 28570

FROM: N.C. Division of Coastal Management

DATE: June 10, 2009

RE: Notice of Declaratory Ruling

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Thank you for your attention to this matter.

Sincerely,

COPY

James H. Gregson

**West Beach and Adjacent Property Owners**

Marvin & Sara Neuwirth  
PO Box 3178  
Bald Head Island, NC 28461

James E. Harrington  
PO Box 3336  
Bald Head Island, NC 28461

Cheryl Murphy  
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Indianapolis, IN 46240

Fernand & Evelyn Parent  
68 Hillcrest Ave.  
Charleror, PA 15022

Elizabeth Beam  
1718 Canterbury Rd.  
Raleigh, NC 27608

Joseph & Leah Devlin  
7016 Harps Mill Rd.  
Raleigh, NC 27615

John & Carol Mazuy  
9 Russell Pond Rd.  
Kingston, MA 02364

Thomas & Eliza Lewis  
1927 S. Churchill Dr.  
Wilmington, NC 28403

James & Helyn Wisner  
6417 Quail Run Rd.  
Wilmington, NC 28409

James & Catherine Berges  
4 Brentmoor Park  
Clayton, MO 63105

John & Susan Nichols  
1104 High Country Rd.  
Towson, MD 21204

Bald Head Association  
PO Box 3030  
Bald Head Island, NC 28461

Leslie Wheeler  
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Paoli, PA 19301

Robert & Giancarla Helgesen  
PO Box 3314  
Bald Head Island, NC 28461

Timothy & Joan McCormick  
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Fairport, NY 14450

Peter & Eileen Quinn  
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Haverford, PA 19041

Peter & Eileen Quinn  
508 Avonwood Rd.  
Haverford, PA 19041

Michael Hartshorn  
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Columbus, OH 43229

The Berne Company, Inc.  
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Sheldon, SC 29941

Darin & Laura Hill  
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Raleigh, NC 27615

Edward & Pat Johnston  
PO Box 3148  
Bald Head Island, NC 28461

Edward & Pat Johnston  
PO Box 3148  
Bald Head Island, NC 28461

Edward Harper  
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Southport, NC 28461

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Thomas Watjen  
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Lookout Mountain, TN 37350

Ronald & Margaret Cresswell  
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Ann Arbor, MI 48104

Haughton Pardee Living Trust  
c/o Dr. Angela Pardee  
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Charlotte, NC 28210

15 Sea Gull Trail LLC  
3020 N Fairway Dr.  
Burlington, NC 27215

David & Mary Lewis  
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Charlotte, NC 28210

David & Mary Lewis  
9315 Penshurst Trace  
Charlotte, NC 28210

George & Alice Horton  
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Durham, NC 27705

Ralph & De Vismes Lee  
3505 Chevy Chase Lake Dr.  
Chevy Chase, MD 20815

The Wilson Family Trust  
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Fayetteville, NC 28305

George & Nancy Cecil  
PO Box 5316  
Biltmore, NC 28813

Andrew & Wendy Sayre  
PO Box 3259  
Bald Head Island, NC 28461

Evelyn Farris Trustee  
1315 Greenbrier Rd  
Waynesboro, VA 22980

Joseph & Mary Snee  
1213 Youngs Lane  
West Chester, PA 19380

Donald & Kathy Thompson  
445 Western Blvd.  
Jacksonville, NC 28546

William & Patricia Faber  
1484 Mountain Circle Dr.  
Lenoir, NC 28645

Doug & Melinda Anderson  
1847 Cassamia Pl.  
Charlotte, NC 28211

Laura Gutman  
310 Watts St.  
Durham, NC 27701

Ethel Trask Coupland Trustee  
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Wilmington, NC 28403

Vincent & Karen Hoelerich  
4038 John Roboteau Wynd  
Raleigh, NC 27612

Smith Island Land Trust  
PO Box 3109  
Bald Head Island, NC 28461

Vincent & Karen Hoelerich  
4038 John Roboteau Wynd  
Raleigh, NC 27612

Laura Gutman  
310 Watts St.  
Durham, NC 27701

Euliss Jordan LLC  
524 A West Elm Street  
Graham, NC 27253

James Hoolihan  
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Columbus, OH 43085

Thomas & Nancy Calloway  
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Winston-Salem, NC 27104

Bald Head Island Ltd.  
PO Box 3069  
Bald Head Island, NC 28461



North Carolina Department of Environment and Natural Resources  
**Division of Coastal Management**

Beverly Purdue, Governor

**James H. Gregson, Director**

Dee Freeman, Secretary

June 11, 2009

*CRC-09-10*

**MEMORANDUM**

**TO:** Coastal Resources Commission

**FROM:** Scott Geis  
Ocean and Coastal Policy Analyst

**SUBJECT:** Ocean Policy Steering Committee Recommendations

---

In February 2008, DCM established the Ocean Policy Steering Committee and gave the Committee the charge of addressing emerging environmental, legal and policy issues relative to the management of North Carolina's coastal ocean resources.<sup>1</sup> Since that time the OPSC has been meeting to assess current CAMA rules and policies for their effectiveness in protecting and managing North Carolina's coastal resources in the face of future change. Evidence of this change has already presented itself as issues related to climate change, alternative energy facility siting and even sand availability have come before the Commission over the past year. As additional issues are identified, and as the CRC continues to examine the management of the State's ocean resources into the future, we see that we are in a crucial time for North Carolina to review its ocean policy structure and to devise policy options that ensure the State is prepared to meet the challenges of tomorrow.

As a result of this review, the OPSC has developed an Ocean Policy Report including policy recommendations concerning five emerging policy areas. This report and associated recommendations represent the steps the OPSC feels the State should take to ensure:

1. North Carolina will be better prepared to address policy changes that will be necessary as the State's ocean waters experience technological, social and economic changes; and
2. North Carolina policies assure consistency of federal actions when new technologies are employed in federal waters that are beyond North Carolina's jurisdictional limit.

Draft recommendations were presented at the February 2009 CRC meeting, and the finalized Ocean Policy Report is been provided in advance of the June meeting, to allow adequate time for your review of this document. In addition, draft recommendations were presented at four public meetings, which took place in late February and early March 2009. The OPSC intended for these meetings to generate community support of the initiative as well as to

---

<sup>1</sup> The OPSC's effort focused on the barrier-islands outward and did not include the sounds.

identify additional issues local communities may be experiencing as the coastal climate has been continuously reshaped by natural processes and policy decisions. A memo summarizing the comments received at public meetings is provided along with this memo, and all of the public comments DCM received are included as an appendix to the Ocean Policy Report.

Recommendations from the OPSC focus on Sand Resource Management; Ocean-Based Alternative Energy; Ocean Outfalls and Alternative Wastewater Management; Marine Aquaculture; and Comprehensive Ocean Management. A summary of these recommendations is provided.

## **Emerging Issue Recommendations**

### *Sand Resource Management*

Climate change and sea level rise along North Carolina's beaches may require the State and coastal communities to confront serious and difficult policy issues concerning the protection of coastal resources. At the forefront of these issues is the fact that despite current policies dedicated to shoreline protection through beach nourishment, available data shows that beach-quality sand sources may in fact be limited and considered insufficient to meet all the demands of the future. Furthermore, the location of sand deposits may render their extraction economically unfeasible to some municipalities, and these limitations may create conflicts over the right to use State resources. Under current State and federal regulatory systems, beach-quality sand is available on a "first come, first served" basis. The legal means for acquiring a continuing priority to, and legal rights to, sand sources located in State waters does not exist; and, neither the State nor federal system prioritizes access to sand resources based on an assessment of whether the proposed sand use is the wisest use of this public resource. As a result of the anticipated conflict underlined by sand availability and sand source location, the OPSC recommends:

1. Development of state comprehensive plan to protect beaches and inlets
2. Identification of available sand sources
3. Establishing a set of priorities for allocation of limited sand resources
4. Establishment of a system of legal rights to state-owned sand resources
5. Development of a coastal vulnerability index
6. Management of ebb tide delta sand sources
7. Preventing loss to barrier sand system of sand in inlet channels
8. Sea level rise component to CAMA Land Use Plans
9. Disclosure of natural hazards when purchasing coastal real estate
10. Amend rules regarding dredging around high-bottom areas
11. "Worst-Case Scenario" State level planning document
12. Make the donation of unbuildable or threatened lots more appealing through the conservation tax credit program

### *Ocean-Based Alternative Energy*

In September 2008, the CRC heard that alternative energy technologies are no longer emerging, they are "here and now." While the September meeting focused on the installation and use of wind turbines in North Carolina's sound and ocean waters, there is a myriad of additional

renewable and non-renewable energy technologies that could be employed of the State's coast in the future. Wave, wind, current, and tidal energies are just a few of these technologies which are being studied, and in some cases used, around the world and even in the United States. As a result of the advancements in the field of ocean-based alternative energy facilities, the OPSC recommends:

1. Enactment of a comprehensive statute and promulgation of rules to address the granting of easements and leases of State-owned submerged lands and the associated water column and air space for alternative energy projects
2. Review of existing Coastal Resources Commission rules affecting alternative energy facilities sited in State and federal waters
3. Clarification of Coastal Resources Commission, Environmental Management Commission and Utilities Commission roles in the development of rules for ocean-based alternative energy projects
4. Examination of Coastal Resources Commission policies on non-water dependent structures and their pertinence to alternative energy facilities

### *Ocean Outfalls and Alternative Wastewater Management*

Stormwater and wastewater management are a significant concern to coastal communities especially when these communities are experiencing increased development. A separate component of water management along barrier island communities is the availability of potable water. As a result of the extensive management that will be needed in the future concerning both wastewater and stormwater, the OPSC recommends:

1. No new or expanded ocean outfalls for stormwater or wastewater in North Carolina
2. Decommission existing stormwater ocean outfalls by using a phase-out process, including source reduction to existing outfalls, use of best management practices to clean discharge as needed and retrofitting existing outfalls in the interim
3. Examine the potential for alternative water treatment methods, such as water reclamation and reuse facilities

### *Marine Aquaculture*

Aquaculture, "the farming of aquatic organisms, including finfish, shellfish, and aquatic plants," is a method of food production that is becoming of increasing global significance. Current estimates by the United Nations' Food and Agriculture Organization (FAO) estimates that one-half of all fish consumed globally are harvested from aquaculture facilities. The question the State needs to answer is how strong is the potential for ocean-based marine aquaculture in North Carolina or in federal waters off North Carolina's coast. The OPSC recommends:

1. The State should conduct a technical assessment of the feasibility of marine aquaculture in North Carolina's coastal-ocean waters
2. The NC Division of Coastal Management should monitor the progress of the National Offshore Aquaculture Act of 2007 or similar bills

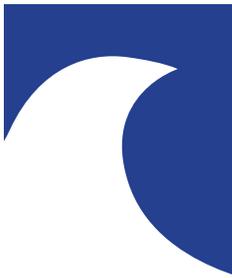
## *Comprehensive Ocean Management*

As North Carolina considers addressing such issues as sand resources management, a beach and inlet management plan, and renewable energy development in its sounds and coastal ocean, a comprehensive plan for managing uses in states waters could be beneficial to the State and its communities. Exploring the idea of having a comprehensive plan in place to address various use issues, providing mapping of ocean resources and providing an atmosphere of regulatory certainty will afford the State an opportunity to develop sound development practices that will promote wise use of its resources and that will benefit coastal communities and various user groups. Coastal states such as Massachusetts, Oregon, California and Rhode Island can serve as models from which North Carolina can learn. In terms of ocean management, the OPSC recommends:

1. North Carolina update its coastal-ocean resources maps

### **CRC Actions Requested**

At this time, the OPSC's Ocean Policy Report is being presented to the Commission for review and approval. The CRC's acceptance of this report will further illustrate the importance of the emerging issues identified by the OPSC, and the need for State review of CAMA rules and policies for their effectiveness in protecting and managing North Carolina's ocean resources in response to emerging issues. Furthermore, DCM is looking to the CRC for guidance on the implementation or further study of recommendations the Commission views as priorities.



# Developing a Management Strategy for North Carolina's Coastal Ocean

REPORT OF THE OCEAN POLICY STEERING COMMITTEE



Cape Lookout photo courtesy of Carteret County Shore Protection Office.

*Submitted to the North Carolina Coastal Resources Commission  
by Joseph J. Kalo and Lisa C. Schiavinato, Co-Directors  
North Carolina Coastal Resources Law, Planning and Policy Center  
and  
Scott Geis, Policy Analyst  
North Carolina Division of Coastal Management*

*April 2009*



NORTH CAROLINA  
COASTAL RESOURCES  
LAW, PLANNING  
AND POLICY CENTER







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*This report was prepared by the North Carolina Coastal Resources Law, Planning and Policy Center through contracts with the North Carolina Division of Coastal Management and the North Carolina Sea Grant College Program. Funding for this project was provided in part by the coastal management program of the North Carolina Department of Environment and Natural Resources; US Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) Office of Ocean and Coastal Resource Management (OCRM), under award NA07NOS4190078; and the North Carolina Sea Grant College Program. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of NOAA or any of its sub-agencies or those of the North Carolina Department of Environment and Natural Resources.*



## Acknowledgements

Joseph J. Kalo and Lisa C. Schiavinato, co-directors of the North Carolina Coastal Resources Law, Planning and Policy Center (Center), and Scott Geis, policy analyst with the North Carolina Division of Coastal Management, acknowledge and thank the numerous people who provided assistance in the preparation of this report. Kalo and Schiavinato thank the Center's past and present research law fellows, who assisted the co-directors in conducting legal research needed over the course of this study: Amy Dessel, Brandon Dhande, Will Hendrick, Jamie Hovda, Meredith Ritchie and Jarryd Ritter. We thank the following at North Carolina Sea Grant: Michael Voiland, Executive Director; Jack Thigpen, Extension Director; Marc Turano, Mariculture and Blue Crab Specialist; Spencer Rogers, Coastal Construction Specialist; Katie Mosher, Director of Communications; and Kathleen Angione, Communicator.

The Center thanks the North Carolina Division of Coastal Management for providing administrative support for this study, the meetings of the Ocean Policy Steering Committee and the public meetings: Jim Gregson, Director; Steve Underwood, Assistant Director, Policy and Planning; Michael Lopazanski, Policy Manager; Guy Stefanski, Strategic Planning Manager; Tancred Miller, Coastal Policy Analyst; and Jeff Warren, Coastal Hazards Specialist.

The Center and Mr. Geis thank the members of the Ocean Policy Steering Committee (the next page contains a list of steering committee members), who dedicated their time and energy to attend meetings and provide their valuable expertise to this report. The steering committee provided technical expertise and tirelessly worked with the Center to develop recommendations included in this report to address North Carolina's emerging ocean policy issues.

*In May 2009, Ocean Policy Steering Committee member Jim Stephenson passed away.*

*Throughout his career, Jim worked to protect the rich natural and cultural resources of coastal North Carolina.*

*With great sadness in our hearts, the committee acknowledges and thanks Jim for his contributions*

*as a member of the committee and to also express our appreciation for his many contributions*

*to the broader understanding of coastal issues in North Carolina throughout his long and varied career.*



## Ocean Policy Steering Committee

### Committee Co-Chairs

**Joseph Kalo**

*University of North Carolina School of Law and  
North Carolina Coastal Resources Law, Planning and Policy Center*

**Lisa Schiavinato**

*North Carolina Sea Grant and  
North Carolina Coastal Resources Law, Planning and Policy Center*

---

### Committee Members

**James Bennett**

*US Minerals Management Service*

**Dr. Larry Cahoon**

*University of North Carolina-Wilmington*

**Dr. Michelle Duval**

*North Carolina Division of Marine Fisheries*

**Dr. John Fear**

*North Carolina National Estuarine Research Reserve*

**Donna Girardot**

*Wilmington-Cape Fear Home Builders Association*

**Tom Reeder**

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**Gregory "Rudi" Rudolph**

*Carteret County Shore Protection Office*

**Dr. Raphael Sagarin**

*Duke University Nicholas Institute for Environmental Policy Solutions*

**Jim Stephenson**

*North Carolina Coastal Federation*

**Dr. Laura Taylor**

*North Carolina State University*



## Glossary of Acronyms

<b>AEC</b> ..... Area of Environmental Concern	<b>FAO</b> ..... UN Food and Agriculture Organization
<b>AMAC</b> ..... NH Atlantic Marine Aquaculture Center	<b>FERC</b> ..... Federal Energy Regulatory Commission
<b>BIMP</b> ..... Beach and Inlet Management Plan	<b>FONSI</b> ..... Finding of No Significant Impact
<b>CAA</b> ..... Clean Air Act	<b>FPA</b> ..... Federal Power Act
<b>CAMA</b> ..... Coastal Area Management Act	<b>IPCC</b> ..... Intergovernmental Panel on Climate Change
<b>Center</b> .... North Carolina Coastal Resources Law, Planning and Policy Center	<b>MMPA</b> ..... Marine Mammal Protection Act
<b>CHPP</b> ..... Coastal Habitat Protection Plan	<b>MMS</b> ..... US Minerals Management Service
<b>CMP</b> ..... Coastal Management Plan	<b>NCAC</b> ..... North Carolina Administrative Code
<b>Corps</b> ..... Army Corps of Engineers	<b>NCGS</b> ..... North Carolina Geological Survey
<b>CRC</b> ..... NC Coastal Resources Commission	<b>NEPA</b> ..... National Environmental Policy Act
<b>CRMC</b> ..... RI Coastal Resources Management Council	<b>NHPA</b> ..... National Historic Preservation Act
<b>CWA</b> ..... Clean Water Act	<b>NOAA</b> ..... National Oceanographic and Atmospheric Association
<b>CZMA</b> ..... Coastal Zone Management Act	<b>NPDES</b> .... National Pollution Discharge Elimination System
<b>DCM</b> ..... NC Division of Coastal Management	<b>OCRM</b> ..... NOAA Office of Coastal Resource Management
<b>DENR</b> ..... NC Department of the Environment and Natural Resources	<b>OCS</b> ..... Outer Continental Shelf
<b>DOA</b> ..... NC Department of Administration	<b>OCSLA</b> .... Outer Continental Shelf Lands Act
<b>DOI</b> ..... US Department of the Interior	<b>OPSC</b> ..... Ocean Policy Steering Committee
<b>DWQ</b> ..... NC Division of Water Quality	<b>POTW</b> ..... Publicly Owned Treatment Works
<b>DWR</b> ..... NC Division of Water Resources	<b>POWER</b> ... People of Oregon for Wave Energy Research
<b>EEZ</b> ..... Exclusive Economic Zone	<b>RHA</b> ..... Rivers and Harbors Act
<b>EIS</b> ..... Environmental Impact Statement	<b>RITE</b> ..... Roosevelt Island Tidal Energy
<b>EMC</b> ..... Environmental Management Commission	<b>RSM</b> ..... Regional Sediment Management
<b>EMEC</b> ..... European Marine Energy Centre	<b>SAMP</b> ..... Special Area Management Plan
<b>EPA</b> ..... Environmental Protection Agency	<b>SEPA</b> ..... State Environmental Policy Act
<b>EPRI</b> ..... Electric Power Research Institute	<b>SEFLOE</b> ... Southeast Florida Outfall Experiment
<b>ESA</b> ..... Endangered Species Act	<b>TISEC</b> ..... Tidal In-Stream Energy Conversion Device
	<b>USGS</b> ..... US Geological Survey



## Executive Summary

In 2004, reports from the US Commission on Ocean Policy and the Pew Oceans Commission were released, encouraging all levels of government to take a fresh look at ocean resource issues. In response to this challenge, North Carolina saw the opportunity and a need to update its existing policies on ocean uses. In 1994, the North Carolina Sea Grant College Program and the North Carolina Division of Coastal Management (DCM) released a study on ocean policy and management entitled “North Carolina’s Ocean Stewardship Area: A Management Study.” The 1994 study, which was a follow-up to a 1984 study entitled “North Carolina and the Sea: An Ocean Policy Analysis,” focused on issues such as ocean jurisdiction, extraction of solid minerals, oil and gas activities and marine pollution. This 2009 report is an update to the 1994 study and focuses on North Carolina’s emerging policy issues related to ocean and coastal resources. In furtherance of this effort, DCM partnered with North Carolina Sea Grant and the North Carolina Coastal Resources Law, Planning and Policy Center (Center) to complete a comprehensive study on the State’s emerging ocean policy issues. The goal of this study was to identify emerging challenges to the use of and access to ocean and coastal resources and to recommend appropriate policies and strategies to address these challenges. The Center’s co-directors, Joseph Kalo and Lisa Schiavinato, led this research effort.

To assist the Center, a steering committee was convened to provide technical expertise and to work with the Center to formulate policy recommendations. The Ocean Policy Steering Committee was comprised of fourteen members from federal and state agencies, local government, academia and the private sector. Together, the Center and steering committee identified five emerging ocean resources issues for North Carolina:

- Sand resource management
- Ocean-based alternative energy development
- Ocean outfalls
- Marine aquaculture
- Comprehensive ocean management

The Center and steering committee worked throughout 2008 and early 2009 to fully research these emerging issues and develop recommendations on how the State could address them. Below is a summary of the steering committee’s recommendations on how North Carolina may address its emerging ocean policy issues. It should be noted that not all of the recommendations presented in this report were fully endorsed by all steering committee members. One recommendation, the recommendation for the State to re-consider requiring disclosure of coastal hazards for real estate purchases, was instead agreed upon by a majority of steering committee members.

### Sand Resource Management

- Identification of available sand sources
- Establishment of a system of legal rights to State-owned sand resources
- Comprehensive management of inlet tidal delta sand sources
- Preventing loss to the barrier-island system of sand in inlet channels
- Amendment to rules regarding dredging around hard-bottom areas
- Development of a State-level comprehensive plan to protect beaches and inlets
- Development of a coastal vulnerability index



- Development of a “worst-case scenario” State-level planning document
- Incorporation of a sea level rise component to CAMA land-use plans
- Make the donation of unbuildable or threatened lots more appealing through the conservation tax credit program
- Disclosure of natural hazards for coastal real estate purchases<sup>1</sup>

### **Ocean-Based Alternative Energy**

- Enactment of a comprehensive statute and promulgation of rules to address the granting of easements and leases of State-owned submerged lands and the associated water column and air space for alternative energy projects
- Review of existing Coastal Resources Commission rules affecting alternative energy facilities sited in State and Federal waters
- Clarification of Coastal Resources Commission, Environmental Management Commission and Utilities Commission roles in the development of rules for ocean-based alternative energy projects
- Examination of Coastal Resources Commission policies on non-water dependent structures and their pertinence to alternative energy facilities

### **Ocean Outfalls**

- No new or expanded ocean outfalls for stormwater or wastewater in NC
- Decommission existing stormwater ocean outfalls by using a phase-out process, including source reduction to existing outfalls, use of best management practices to clean discharge as needed and retrofitting existing outfalls in the interim
- Examine the potential for alternative water treatment methods, such as water reclamation and reuse facilities

### **Marine Aquaculture**

- Technical assessment of the feasibility of marine aquaculture in North Carolina’s coastal-ocean waters
- The NC Division of Coastal Management should monitor the progress of the National Offshore Aquaculture Act of 2007 or similar future bill

### **Comprehensive Ocean Management**

- Update North Carolina’s coastal-ocean resources maps



## Introduction

Beginning in the 1980s, coastal states around the US began to see a reduction in the role of federal financing in the management of state ocean and coastal resources, and as a result embarked on an effort to analyze “their individual and collective policy relationships to ocean and coastal issues.”<sup>22</sup> North Carolina joined this effort and published “North Carolina and the Sea: An Ocean Policy Analysis” in 1984. In 1994, North Carolina published an update to the 1984 report, “North Carolina’s Ocean Stewardship Area: A Management Study.” These reports represent the State’s earliest forays into examining a comprehensive ocean management plan, with the 1994 report building off recommendations and policy shifts that had been proposed, but not necessarily carried out under the 1984 report. Each of the reports were based on a study of the State’s ocean management regime at the time and had an end goal of identifying deficiencies prevalent with ocean and coastal management policy.

Within the last ten years, many of the issues facing North Carolina’s coastal ocean have changed, and new issues have come to the forefront of policy development. For example, there is greater interest in offshore sand resources, as beach nourishment has become more critical to addressing shoreline erosion. There also is greater interest in marine protected areas, or as they might be referred to in State waters, Critical Habitat Protection areas. In addition, there is a new and evolving interest in wind energy development in North Carolina’s coastal waters and in federal waters and in large-scale marine aquaculture production. Ocean observing systems are rapidly developing and becoming an increasingly important tool for North Carolina. The moratorium on oil and gas exploration in the ocean waters off North Carolina’s coast has been lifted. These changing needs, along with heightened awareness and new challenges given to ocean issues by the US Commission on Ocean Policy report, signal a crucial time for North Carolina to review its ocean policy structure and to devise policy options that ensure the US is prepared to meet the challenges of tomorrow.

On June 24, 2004, Governor Mike Easley, in his comments on the report from the US Commission on Ocean Policy, recognized the importance of properly managing ocean resources. Governor Easley stated that protecting coastal and ocean resources means protecting an integral part of North Carolina’s economy and culture.

In December 2005, DCM identified protecting ocean resources as a high priority in its current five-year strategy, to be supported by Coastal Zone Management Act Section 309 Enhancement Grant funds from the US Department of Commerce. DCM expressed interest in using part of this funding to work with North Carolina Sea Grant and the Center to review and update the State’s policies regarding ocean resources and ocean use. The Center is an inter-institutional partnership between the North Carolina Sea Grant College Program, the University of North Carolina School of Law and the University of North Carolina Department of City and Regional Planning. Joseph Kalo, University of North Carolina School of Law, and Lisa Schiavinato, North Carolina Sea Grant College Program, co-direct the Center. The Center serves as a research, advisory and educational entity that provides informational support to state agencies, state advisory groups, local governments, the legal community and community organizations in their efforts to address ocean, coastal and development issues.

Preliminary work on the ocean policy study began in the summer of 2007, during which the Center identified potential emerging issues and produced memoranda on the state of the law regarding these issues. During this phase, it became clear that a steering committee was needed to assist in identifying emerging issues and



to guide the Center's research. In the fall of 2007, DCM appointed members to the Ocean Policy Steering Committee. The steering committee, chaired by Kalo and Schiavinato, identified North Carolina's emerging ocean policy issues<sup>3</sup> and provided relevant historical, scientific and policy background, while also working with the Center to develop the policy recommendations included in this report. The focus of the steering committee's effort is on the area from the barrier-islands seaward and does not include the sound areas. The steering committee held six meetings throughout 2008 and the spring of 2009, during which technical issues were refined and recommendations for management strategies to address North Carolina's emerging issues were developed. This report identifies North Carolina's most pressing emerging ocean resource issues, provides background on these issues and puts forth policy recommendations to address them. This final report is hereby presented to the Coastal Resources Commission (CRC), which will decide on any action to take.

This report is divided into five chapters, each devoted to an emerging ocean policy issue regarding the use of ocean resources. Each chapter provides background and technical information, along with an explanation as to why the issue was identified. At the end of each chapter are policy recommendations, along with a rationale behind each recommendation. At the end of the report are appendices that provide additional information.



## Endnotes – Executive Summary and Introduction

<sup>1</sup>This recommendation received majority, but not unanimous, support of the steering committee.

<sup>2</sup>Walter F. Clark, North Carolina's Ocean Stewardship Area: A Management Study, pg. 1 (North Carolina Sea Grant College Program and North Carolina Division of Coastal Management) (1994).

<sup>3</sup>The report does not include oil and gas development as an emerging issue. The reason it is not included is that the steering committee identified the emerging issues in the early spring of 2008, before the sharp rise in gas prices in 2008 and before President Bush and Congress lifted the moratoria. Due to time and funding constraints, the steering committee was unable to add oil and gas as an emerging issue for this study. However, in November 2008 the General Assembly called for a panel to specifically study the feasibility of drilling for oil and gas off North Carolina's coast. Members of the study panel were named in January 2009 and include university researchers, industry and environmental representatives and citizens. The panel will review research on offshore oil and gas drilling and examine its economic benefits and costs, as well as hold public hearings on the issue. See "Task Force To Look At Offshore Drilling," at [http://projects.newsobserver.com/under\\_the\\_dome/task\\_force\\_to\\_look\\_at\\_offshore\\_drilling](http://projects.newsobserver.com/under_the_dome/task_force_to_look_at_offshore_drilling) (accessed February 13, 2009).



## Chapter 1: Sand Resource Management

Climate change, sea level rise and coastal storms all have the potential to cause erosion or increase erosion that already has occurred along North Carolina's shorelines. As a consequence, structures may be damaged or destroyed during storms, creating the potential for structures to be abandoned in the surf zone or surrounded by sand bags. This potential hazard inevitably will require the State and coastal communities to confront serious and difficult policy issues about what coastal areas and coastal resources to protect and how to adapt to the changes resulting from sea level rise and receding shorelines. According to Dr. Stanley Riggs and colleagues at East Carolina University, coastal communities are currently seeking beach nourishment projects totaling approximately 122 miles of the 325-mile long North Carolina ocean shoreline. This ten-fold increase is in contrast to the 12 to 15 miles of public ocean shorelines in North Carolina that were routinely nourished prior to the increased storm frequency that began in 1996.<sup>4</sup> Their evidence suggests that this rate is presently increasing and will continue to increase in response to ongoing processes of global change. The US Geological Survey funds Dr. Riggs' ongoing coastal research program.

A study being conducted by Dr. Len Pietrafesa and colleagues at North Carolina State University will provide additional information on shoreline erosion by predicting future sea level rise along the coasts of North Carolina and Virginia for the next 50 years. In this study, maps of future scenarios for inundation and erosion will be based on running past coastal storms on future scenarios of sea level rise. The study is being funded by the National Oceanic and Atmospheric Administration's National Environmental Satellite, Data and Information Service.

According to 15A NCAC 07M.0202(b) and (c), North Carolina allows developed shorelines to be protected through beach nourishment projects or through retreat (i.e., the movement of erosion threatened structures out of harm's way). The preferred response to shoreline erosion utilizes the administrative rules of the CRC, land-use planning, setback lines, relocation of structures and vegetation management. In addition, the State has found that beach nourishment can provide a viable alternative to allowing the landward migration of the ocean shoreline, resulting in the loss or massive relocation of oceanfront development. Figure 1 shows the different strategies used to address receding shorelines.

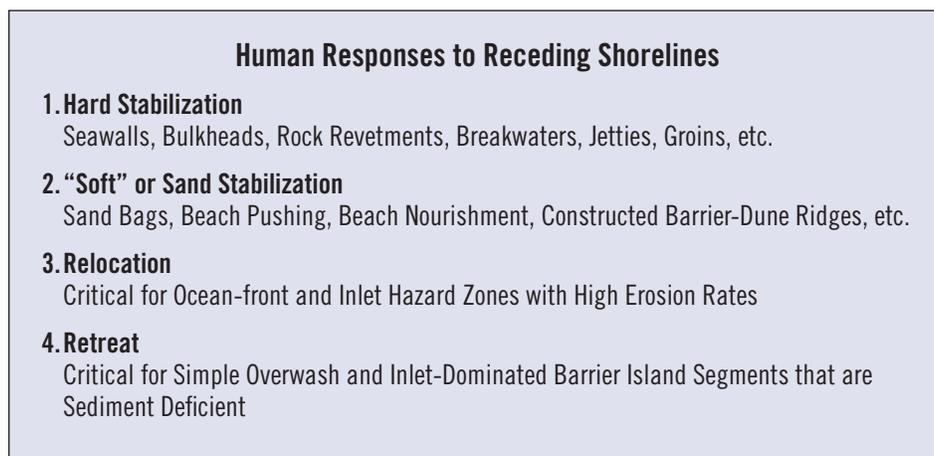


Figure 1: Human Responses to Receding Shorelines



Since beach-quality sand sources are limited and likely will be insufficient to meet all the demands for beach nourishment projects in the future, there is the potential for conflicts between beach communities over the right to the same limited beach-quality sand sources. This potential conflict is further underscored by the current State and federal regulatory systems, in which beach-quality sand is available on a “first come, first served” basis. The legal means for acquiring a continuing priority, and legal right, to sand sources located in State waters does not exist; and, neither the State nor federal system prioritizes access to sand resources based on an assessment of whether the proposed sand use is the wisest use of this public resource.

Furthermore, a fundamental question North Carolina will need to address is whether it will be economically and practically feasible to provide adequate protection to all shoreline areas, or whether some portions of the North Carolina shoreline must be left to the effects of climate change and coastal storms. In order to plan for the future, the State needs to define the geomorphic and physical components of all island segments and determine which coastal areas are most vulnerable. To reduce unsafe development in vulnerable areas, existing and future owners of coastal property should be fully informed of the risks. Finally, the State must take steps to assure that other activities, such as inlet management (including navigation channel maintenance), do not result in the loss of beach-quality sand to the barrier-island system or result in other adverse impacts to barrier-island resources.

## Planning for Shoreline Maintenance Through Beach Nourishment

### Sand Sources

Barrier-islands are essentially large sand bars that are formed by storms at the land-sea-air interface. In general, the best beach-quality sand is already on the barrier-islands. Some islands are sand-rich (complex islands), while others are sand-poor (simple inlet and overwash dominated islands), as illustrated in Figure 2. In the northern part of North Carolina’s coast, much of the seafloor sand on the inner shelf tends to be deep and fairly fine-grained. In the southern part of North Carolina’s coast, the seafloor is generally a hard rocky bottom with limited amounts of surficial and ephemeral sand deposits on the nearshore continental shelf. These thin sand veneers generally have insufficient volumes to provide the sand for beach nourishment projects.<sup>5</sup>

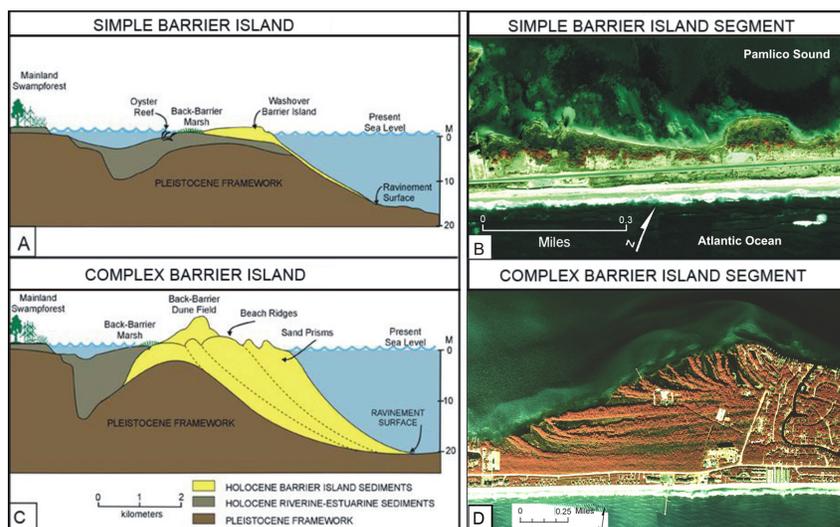


Figure 2. Panel A shows a schematic cross-sectional diagram of a sand-poor, simple inlet and overwash-dominated barrier-island.

Panel B is a 1998 infrared aerial photograph example of a sand-poor, simple barrier-island segment just north of Buxton, NC.

Panel C shows a schematic cross-sectional diagram of a sand-rich, complex barrier-island.

Panel D is a 1982 infrared aerial photograph example of a sand-rich, complex barrier-island segment on Bogue Banks, NC that is composed of multiple beach ridges. Figure 2 was modified from Riggs, et al. (2008).



According to Dr. Riggs and his colleagues, other than the barrier-islands themselves and their associated inlet deposits, there are generally four types of deposits that lie within State coastal-ocean waters and potentially contain beach-quality sand deposits. The four sources and their potential for supplying adequate volumes and qualities of nourishment sand are as follows:

- Paleo-river channels and delta deposits: very local, poor to high quality and moderate to large volume;
- Shore-oblique sand shoals: very local, moderate to high quality and small to moderate volume;
- Inner shelf stratigraphic units: very local, low to moderate quality and small to moderate volume; and
- Cape shoal structures: distant, very high quality and very large volume. They include Diamond Shoals off Cape Hatteras, Cape Lookout Shoals off Cape Lookout and Frying Pan Shoals off Cape Fear.<sup>6</sup>

Based on Dr. Riggs' characterization of these sources, the cape shoal structures appear to have vast volumes of high-quality sand, but they are substantially removed from beaches that need the sand for nourishment. Mining the shoal areas for beach-quality sand and transporting it to those beaches in need of nourishment will be costly and present substantial environmental, physical and economic challenges. In addition, these shoals do play an important, but not fully understood, role in the function and maintenance of the barrier-island system. This role should be studied in greater detail before large quantities of sand are removed from the system. Recent research on North Carolina's shoal systems indicates that there may be 4 billion m<sup>3</sup> of sand that has been lost from the transgressing barrier-islands to the cape-associated shoals (Cape Fear, Cape Hatteras and Cape Lookout) over the last 4,000 years.<sup>7</sup> The other three potential sources of beach-quality sand are much more limited in their location and size and will require substantial exploration costs. In addition, the first three potential sources may present user conflict issues, depending on the location of the sand mining. For instance, many of these potential sand mining areas occur adjacent to hard-bottom habitats; are designated as Essential Fish Habitat; or there is the potential that wind turbines may be placed in or near these areas in the future.

Today, the most commonly utilized sources of beach nourishment sand in North Carolina are ebb-tide deltas and channel sand in adjacent inlets. Simple barrier-islands need inlets to build island width, and inlets need to breath (migrate and expand-contract) in response to water flow during storm events.<sup>8</sup> In order to do this, an inlet needs space on the adjacent barrier-islands (areas defined as an Inlet Hazard Zone) and well-developed ebb-tide (ocean side of inlet) and flood-tide (estuarine side of inlet) deltas. Mining the ebb-tide delta for beach nourishment sand takes sand that allows inlets to: 1) feed sediment into the various complex components of the barrier-island system and 2) breath in response to the changing wave, current and tide conditions during each storm event.<sup>9</sup> Thus, for a healthy barrier-island system, substantial portions of the inlet's ebb-tide delta should not be mined, and the inlet channel should not be overly widened. Both of the latter situations could ultimately destabilize the inlet, causing increased inlet migration and associated shoreline recession. This may lead to the desire to lock the inlet in place with hardened structures.

If a situation were to arise in which multiple beach communities would be vying for the same sand sources, there is no established procedure for the acquisition of the exclusive right to mine a fixed amount of sand from any particular sand source, nor is there any process for allocating available sand based on a determination of which communities have a greater need, and where the placement of sand would provide the greatest benefit to the State. Consensus among coastal managers and scholars in North Carolina is that a coherent, comprehensive strategy is needed to facilitate prioritization.



## The Current Regulatory System

The primary federal laws concerning beach nourishment projects are Section 404 of the Clean Water Act<sup>10</sup> (CWA), the Rivers and Harbors Act (RHA)<sup>11</sup> and the National Environmental Policy Act (NEPA).<sup>12</sup> The designated federal agency to administer these projects is the US Army Corps of Engineers (Corps). Prior to beginning a shore protection project that involves the placement of dredged or fill material in coastal waters, a Corps permit must be acquired by the entity proposing the project.<sup>13</sup> When deciding whether to issue a permit, the Corps reviews the proposed project to evaluate multiple factors, including shore erosion, effects on conservation and water quality to determine the project's impacts on the environment, navigation and adjacent property. To assure that the necessary federal regulations are followed, the Corps has developed a six-step planning process. This six-step process was developed under the Water Resources Planning Act in order to integrate NEPA with the Corps permit process for beach nourishment projects.<sup>14</sup>

The Corps also considers the potential use of material dredged from navigation works for State beach sand replacement projects. Before a dredging project can proceed, the Corps and DCM require testing the quality of the dredged material for eligibility for such projects, unless the sand is from an existing navigation channel, and the channel will be dredged only to its original depth. A Corps permit is required for the dredging, transport and disposal operations of these materials. Moreover, under Section 111 of the RHA, the Corps can participate in shoreline erosion mitigation projects for damage resulting from federal navigation works.<sup>15</sup>

The location of suitable sand sources also requires compliance with federal regulations, if the sand source is located in federal waters. Under the Outer Continental Shelf Lands Act (OCSLA), the Minerals Management Service (MMS) administers the removal of minerals and materials from lands lying underneath federal waters on the Outer Continental Shelf (OCS). When federal agencies, state agencies and municipalities acquire sand from the OCS, they negotiate directly with MMS by formally requesting mineral rights and then negotiating either a non-competitive agreement or a negotiated agreement.<sup>16</sup>

Under North Carolina's Coastal Area Management Act (CAMA), ocean and inlet beaches and ocean waters are designated as Areas of Environmental Concern (AECs).<sup>17</sup> Because beach nourishment projects impact these AECs, a CAMA major development permit is required.<sup>18</sup> Before the necessary permit is issued, the proposed project is thoroughly reviewed by DCM and other state and federal agencies through the State Environmental Policy Act (SEPA) to assure the proposed project will comply with all existing applicable CAMA regulations, as well as any other applicable state laws and regulations. The primary purpose of the CAMA and SEPA review is to assure that all environmental impacts associated with a project have been identified and either minimized, avoided or mitigated. Neither DCM nor the Coastal Resources Commission (CRC) has authority under North Carolina Law to grant leases or licenses to remove sand from ocean from ocean or sound waters.



## Acquiring the Legal Right to Remove Sand from State Waters

Sands lying underneath coastal and sound waters are State property. N.C. Gen. Stat. Section 146-64(6) states that:

“State lands” mean all land and interests therein, title to which is vested in the State of North Carolina... and specifically includes all...submerged lands...<sup>20</sup>

“Submerged lands” mean State lands, which lie beneath... the Atlantic Ocean to a distance of three geographical miles seaward from the coastline of this State.<sup>21</sup>

Therefore, sand lying in coastal waters, within inlets or the sounds, is a State-owned resource.

Under N.C. Gen. Stat. Section 146-8, the State, acting at the request of the Department of Environment and Natural Resources (DENR), is authorized “to sell, lease or otherwise dispose of any and all mineral deposits belonging to the State which may be found in the bottoms of [the] waters of the State.” Because sand is classified as a mineral<sup>22</sup> and “waters of the State” include the waters of the Atlantic Ocean within three miles of the North Carolina coastline, obtaining an enforceable legal right to remove sand from State-owned submerged lands requires an easement from DENR. In addition, any DENR grant of rights to remove sand must be approved by the NC Department of Administration (DOA) and by the Governor and Council of State.<sup>23</sup>

At the present time, DOA has not developed a system to grant legal rights to remove sand for beach nourishment projects. Under existing CRC rules, when a beach nourishment project is proposed, the applicant must identify a “beach-compatible” sand source<sup>24</sup> sufficient to meet the needs of the proposed project. The project is then evaluated with that source as the borrow site. Assuming all other regulatory requirements are met, a CAMA permit can be issued. While DOA comments on all proposed beach nourishment activities through the CAMA major permitting process, no easement or license for the removal of the sand has been deemed necessary, as the issuance of the necessary CAMA permit has been regarded as sufficient authorization. Additionally, the CAMA permit sets a maximum quantity of sand the applicant may remove from the source identified for the applicant’s project. According to DCM, another applicant for another project may remove sand from the same source, so long as that sand source is sufficient to meet the needs of both projects.

At the present time, sand sources in both North Carolina waters and adjacent federal waters have been sufficient to meet local demands for sand for beach nourishment projects. However, in the future, sand sources may become insufficient to meet the needs of communities because of the likely increase in the number of beach nourishment projects due to coastal storms, erosion and sea level rise. Under the existing system, DCM issues a permit to the first local government that identifies a sufficient source of sand and has submitted a completed CAMA major development permit application. Similarly, MMS grants a lease to the first local government to submit its request. If more than one municipality seeks to utilize a sand resource that is insufficient to meet the needs of both municipalities, MMS currently does not evaluate or weigh the relative benefits of awarding the lease to one municipality, as opposed to the other. The sequence of the lease applications would determine which local government would receive the lease.<sup>25</sup> This “first-come, first-served” policy presumes a limitless resource. Since beach-quality sand is not a limitless resource, the State should consider establishing a process for sand allocation that includes the needs of the natural dynamics of the barrier-island system, as well as the needs of beach communities.



## Acquiring the Legal Right to Remove Sand from Federal Waters

Sand resources located beyond the three-mile limit off North Carolina's coast are in federal waters, including material located in offshore ocean dredged material disposal sites. OCSLA established a system for granting to public and private entities the legal right to remove sand from federal waters. Under OCSLA, the Secretary of the Department of the Interior has the authority to manage minerals on the OCS located in submerged lands lying underneath federal waters.<sup>26</sup> The administration of these resources has been delegated to MMS, which is a bureau in the department. MMS issues leases for sand, gravel and other non-energy minerals on a case-by-case basis.

The process for leasing sand from the OCS begins with a written request to MMS. Negotiated non-competitive agreements are reserved for federal, state or local government agencies, or their representatives, whereas any person or company with commercial interests may request access to sand on the OCS on a competitive basis. Public Law 103-426<sup>27</sup> allows MMS to negotiate, on a non-competitive basis, rights to OCS sand, gravel or shell resources for shore protection, beach or wetlands restoration projects or for construction projects that are funded in whole or in part by or authorized by the federal government. According to MMS, it has executed twenty-three non-competitive negotiated agreements to date for use of OCS sand in beach nourishment or coastal restoration projects, but none of these have been in North Carolina. MMS is currently working with the Corps on the feasibility and environmental review of the West Onslow Beach and New River Inlet (Topsail) and Surf City / North Topsail Shore Protection projects.

Lease agreements are subject to NEPA and other environmental requirements and are determined on a case-by-case basis. The main difference between the two types of lease agreements is that if all environmental requirements are satisfied, and the applicant is successful in obtaining exclusive leasing rights to specific areas of federally owned submerged lands, a 1999 amendment to OCSLA prohibits MMS from charging federal, state and local government agencies a fee for using OCS sand.<sup>28</sup> In the case of a competitive lease agreement, MMS will circulate the proposed mining operation to other parties who may be interested in bidding on the proposed lease area. Under the competitive lease agreement, affected state governments have the ability to comment on the size, timing or location of a proposed lease sale or with respect to a proposed development and production plan.<sup>29</sup>

Under either leasing format, and prior to conducting any mining activities, a prospecting permit is required by MMS for entities proposing to conduct any prospecting activities on the OCS for marine mineral resources, with the exception of other federal agencies that are encouraged to submit notice to MMS.<sup>30</sup> Environmental review is required to obtain a prospecting permit. Following any prospecting activities, all NEPA and environmental requirements, such as cultural resource surveys and biological consultations, must be satisfied prior to the lease agreement being negotiated between MMS and the applicant. Pursuant to the CZMA consistency provision, affected states review all proposed activities to ensure consistency with their enforceable program policies.

MMS does not issue long-term leases for the removal of OCS sand for beach nourishment or coastal restoration projects, as contract terms are generated specific to initial construction or subsequent maintenance projects. MMS has not had multiple interests competing for the same resources at the same time. However, the same borrow area has been used by various interests. In those instances, there were adequate quantities of OCS sand available, and requests for these resources are generally staggered, e.g., Sandbridge Shoal offshore



from Virginia and Cape Canaveral Shoals offshore from Florida. The current MMS policy is to negotiate on a “first-come, first-serve” basis, balancing need and availability to the maximum extent possible.

MMS encourages states to take the lead on prioritizing sand between various competing communities. MMS would prefer that states take the lead in establishing guidelines and rules for prioritizing and advise MMS, so it can develop leasing policies consistent with states’ goals and policies. If a state such as North Carolina develops such goals and policies (and they are approved by OCRM), then under the CZMA consistency provision, a federal agency such as MMS would need to be consistent to the maximum extent practicable in its own policies relating to the management of similar resources located in federal waters.

### **Potential Loss of Sand to the Barrier-Island System**

Another prevalent issue concerns sand that may be lost to the barrier-island system due to sand mining, whether it is for beach nourishment projects or to maintain North Carolina’s navigation channels. In performing its task of maintaining navigation channels within inlets, the Corps removes large quantities of sand each year from channels in North Carolina’s waters. Sometimes, this sand is disposed at locations either in federal waters or State waters, which ultimately results in its loss to the beach system in the area from where it is taken.

This practice by the Corps conflicts with current North Carolina law. According to N.C. Gen. Stat. Sections 113-229 (h1) and 113-229 (h2):

Section 113-229 (h1): Except as provided in subsection (h2) of this section, all construction and maintenance dredgings of beach-quality sand may be placed on the affected downdrift ocean beaches or, if placed elsewhere, an equivalent quality and quantity of sand from another location shall be placed on the downdrift ocean beaches.

Section 113-229 (h2): Clean, beach-quality material dredged from navigational channels within the active nearshore, beach or inlet shoal systems shall not be removed permanently from the active nearshore, beach or inlet shoal system. This dredged material shall be disposed of on the ocean beach or shallow active nearshore area where it is environmentally acceptable and compatible with other uses of the beach.

Despite this State mandate, the Corps is not required to be consistent with these policies. Under the CZMA, federal entities are only required to be consistent with the federally approved components of a State’s coastal zone management plan (CMP) to the maximum extent practicable. The NOAA Office of Coastal Resource Management (OCRM), has not approved N.C. Gen. Stat. Sections 113-229(h1) and (h2) for incorporation into North Carolina’s CMP as enforceable policies because they do not include the “maximum extent practicable” caveat.

Even if N.C. Gen. Stat. Section 113-229 was included as part of the State’s federally approved CMP, it is not clear that the Corps would have to act consistently with it. Under the CZMA consistency provision, the directive that federal entities act consistently with a coastal state’s enforceable policies to the maximum extent practicable does not require the federal entity to be consistent when Congress, in other federal legislation, has directed that the federal entity specifically perform a particular task in a manner that conflicts with a state’s requirements.<sup>31</sup> The Corps asserts that it must use the least-cost method of disposing of sand



and other materials dredged from navigation channels, and the least cost methods of disposal are the ones it is currently using.

Also known as the Federal Standard, this least-cost mandate is based on the Corps' interpretation of Section 204(d) of the Water Resources Development Act of 1992. That act states the Corps must "carry out the dredging for construction, operation, or maintenance of ...[an] authorized navigation project in the most cost effective way, consistent with economic, engineering and environmental criteria." According to the Corps regulations, this statutory provision requires "the discharge of dredged or fill material into waters of the US or ocean waters in the least costly manner, at the least costly and most practicable location, and consistent with engineering and environmental requirements."<sup>32</sup> This mandate often precludes the Corps from disposing dredged or fill material onto North Carolina beaches, since the practice usually is more expensive than the alternative of disposing of it at an offshore site.

The Corps' interpretation of its mandate was the subject of litigation between it and the Carteret County Beach Commission. However, in December 2008, the parties reached a settlement, in which the Corps agreed to re-examine how it disposes of dredged sand as part of its Morehead City Harbor Project. Included in this re-examination, the Corps will prepare a new dredged material management plan for the Morehead City Harbor Project and an associated NEPA analysis.<sup>33</sup> The deadline for completion of these documents is October 31, 2011, and the beach commission has the right to challenge the documents agreed upon in the settlement if the commission does not believe they conform to either North Carolina law or federal law.<sup>34</sup> In the event the Corps is unable to meet this deadline, the beach commission has the right to re-file its lawsuit against the Corps.<sup>35</sup>

The Corps has, when practicable, deposited dredged material on neighboring beaches under a Corps Section 933 project. Section 933 of Public Law 99-662, which was incorporated into the Water Resources Development Act, states that:

It is Corps policy to participate in the additional costs for placing clean sand or other suitable material, dredged by the Corps during construction or maintenance of federal navigation projects, onto adjacent beaches or near shore waters if the following requirements are met:

- (1) The added cost of such placement must be justified by the benefits associated with protection of such beach or beaches. Recreation benefits produced as a consequence of the basic project may exceed 50 percent of total project benefits, but economic justification must be demonstrated on the basis of recreation benefits limited to 50 percent of total benefits.
- (2) The beaches involved must be open to the public.

If the requirements are met, a Section 933 project is considered to be in the interest of the federal government, and a cost share for the complete recommended plan is required. The federal share is 50%, and the non-federal share is 50%. State and local governments can be non-federal sponsors for Section 933 projects.<sup>36</sup>



## **Concerns for the Future**

In the past, there has been no need to establish any defined legal right to beach-quality sand in State waters. Sand supplies have been adequate for existing projects, and the entities undertaking the projects are generally public. However, if the predictions are accurate regarding future sea level rise and beach erosion, then several potential policy issues are presented by the existing regulatory system—issues the steering committee believes should be addressed.

First, demand for beach-quality sand will increase, but the number of sand sources will remain limited. Under the present system, the decision to allow access to the limited supply of sand does not involve any evaluation or determination of whether the use of the sand for a particular beach project is in the best interest of the State and the long-term health of the barrier-island system, or is the most cost-effective use of a limited State-owned resource. The evidence presented to the steering committee strongly suggests that, in the future, there simply will be insufficient sand to meet the needs of all communities desiring a beach nourishment project, even if funding is otherwise available. Funds available for beach nourishment projects are not unlimited, and the State will need to prioritize the use of those limited funds. The State will be faced with the difficult choice of deciding what areas to protect and what areas will be left to the effects of natural forces. Mining the cape shoals for sand is a future possibility, but whether these shoals represent ecologically, geologically, hydrologically and economically viable sand sources remains to be determined. These large and complex shoal systems need to be studied extensively prior to any serious evaluation for their use as a sand source for beach nourishment.



## ***Recommendations***

### ***Identification of Available Sand Sources***

The steering committee recommends that the State conduct additional studies to determine where acceptable sand sources are located and the amount of sand available from each potential source. In particular, further evaluations (ecologic, geologic, hydrologic and economic) should be conducted of the sand sources of the cape shoal structures of North Carolina, which are potentially significant sources of sand available to meet the long-term needs of North Carolina's coastal communities. Since the NC Mining Commission does not require permits for the mining of beach sand and defers permitting authority to DCM, the steering committee recommends that the cape shoals system be managed under the CRC's submerged lands mining regulations at 15A NCAC 07H.0208(12).

### ***Establishment of a System of Legal Rights to State-Owned Sand Resources***

In light of the possibility of adjoining municipalities competing for sand resources, the steering committee recommends the development of a process for granting public entities easements to State-owned sand deposits. Establishing such a process would assure both the permitting authority and communities that the sand necessary for a long-term beach nourishment project would be available. This process should be developed in conjunction with priorities for sand resources.

Easements for offshore sand resources should be limited to public entities for use in connection with beach nourishment projects in which the entity is an identified sponsor.<sup>37</sup> The steering committee is concerned that private entities may attempt to acquire legal rights to sand sources in state waters for the purpose of selling the sand, at a profit, to communities engaged in beach nourishment projects. It is the steering committee's view that sand resources are held in public trust and should be utilized as a public resource for the protection and preservation of North Carolina's public beaches.

The terms of the easement should allow for modification of its terms and potential identification of alternative sand sources available to account for storms and other events creating emergency needs for a particular beach community; and to allow the State to determine that it is in the public's best interest to allow a community immediate access to the sand source.

### ***Comprehensive Management of Inlet Tidal Delta Sand Sources***

Inlet tidal deltas (ebb-tide and flood-tide; ocean and estuarine side, respectively) are an important component to the health of the barrier-island system. While large quantities of beach compatible sand located in inlet deltas are attractive and lower cost sand sources for beach nourishment projects, excessive mining of inlet tidal deltas destabilizes the associated inlet, diminishes the quantity of sand available to the backside of barrier-islands and interrupts the natural deposition-erosion dynamics on adjacent barrier-islands. Destabilization of inlet deltas can result in the increased erosion and narrowing of adjacent barrier-islands. It is the steering committee's recommendation that additional studies of inlet tidal deltas should be conducted to assist the CRC in developing policies and rule language concerning where excavation may occur within these areas, and what are the appropriate limits on the total volume of sand removed.



### ***Preventing Loss to the Barrier-Island System of Sand in Inlet Channels***

Due to the scarcity of beach-quality sand, the steering committee supports efforts of the State to assure that none of this valuable resource is lost from the barrier-island system. The steering committee also notes that dredged sand re-deposited in federal waters is no longer owned by the State. Rather, ownership and control of the sand passes to the federal government. The steering committee supports efforts of the State (e.g., Beach and Inlet Management Plan, discussed in more detail below) to address this issue and recommends that the State continue to work with NOAA's Office of Ocean and Coastal Resource Management and the Corps to incorporate N.C. Gen. Stat. Sections 113-229 (h1) and (h2) as a component of the State's federally approved CMP, which would prevent dredged materials from being removed from the near shore beach system.

### ***Amendment to Rules Regarding Dredging Around Hard-Bottom Areas***

Currently, rule language exists in the NC Administrative Code that prevents dredging activities within a 500-meter buffer of significant biological communities, such as high relief hard bottom areas, to minimize impacts to these productive marine areas. Under this rule language, "high relief" is defined as relief greater than or equal to one-half meter per five meters of horizontal distance.<sup>38</sup> This rule language was crafted as a result of the 1994 ocean management study coordinated by DCM and North Carolina Sea Grant.

The steering committee heard a presentation by Dr. Larry Cahoon of UNC-Wilmington on his research related to the foraging characteristics of reef-associated fish species and other marine life. Dr. Cahoon's research suggests that there is a "halo" for re-suspended materials around hard-bottom communities within which reef-associated fish species derive a significant portion of their nutritional requirements.<sup>39</sup> A sufficient buffer area around hard-bottom communities is therefore necessary to preserve the role of benthic microalgae as primary producers for reef-associated fish.<sup>40</sup> This halo is estimated to be a distance of 500-meters out from an exposed hard-bottom community.<sup>41</sup>

As a result of the research presented by Dr. Cahoon, the steering committee recommends that CRC rules concerning dredging around hard-bottoms areas (15A NCAC 07H.0208(b)(12)(A)(iv)) be amended to include not only high-relief hard-bottom areas, but rather all hard-bottom areas, including those that are periodically buried with thin, ephemeral sand layers. The 500-meter buffer falls in line with the CRC's existing buffer requirements for high-relief areas and the steering committee recommends that the Commission consider a similar distance.

## ***Recommendations for Adapting to Changing Ecologic Conditions***

Sand resource management must be part of a broader management policy of the State in order to adapt to climate change and potential sea level rise. To accomplish this, the steering committee also makes the following recommendations.

### ***Development of a State Comprehensive Plan to Protect Beaches and Inlets***

DCM and the NC Division of Water Resources (DWR) are partnering to develop a comprehensive Beach and Inlet Management Plan (BIMP). The BIMP is the State's first attempt at developing a systematic management strategy for its 325 miles of oceanfront barrier-islands and up to 22 to 24 active tidal inlet complexes. Creation of the BIMP was a recommendation of the Coastal Habitat Protection Plan (CHPP), which was adopted in 2004, as well as a directive of the General Assembly's 2000 Appropriations Bill.<sup>42</sup> In September 2007, DENR



hired an engineering firm to assist with the following tasks over an 18-month period: (1) data identification and acquisition of existing datasets; (2) delineation of beach and inlet management regions; (3) scheduling and facilitation of stakeholder meetings; (4) development of draft beach and inlet management strategies; and (5) preparation of a final report.<sup>43</sup>

Two groups have been established to guide BIMP development: a BIMP advisory committee and a DENR technical work group. The advisory committee includes representatives from federal and state agencies, local governments, academic institutions and non-profit organizations. The technical work group includes DENR agency and federal representatives. The two groups meet periodically to review progress and provide suggestions. Public meetings were held in each coastal region to share information on the data compiled by this effort and gather input on the delineation of the beach regions and draft management strategies for those regions.

Over the past few years, DCM has discussed the integration of the Corps' regional sediment management (RSM) philosophy into the BIMP. By definition, RSM is a "system-based approach" that seeks to solve sediment-related problems by designing solutions that fit within the context of a regional strategy. RSM is a Corps-wide approach that is being implemented through coordinated activities using several Corps authorities. The State and the Corps recognize the importance of a cooperative relationship for successful implementation of both the BIMP and RSM. The re-authorization of the Water Resources Development Act in 2007<sup>44</sup> gave the Corps authority to implement RSM within its programs and operating framework. Basing the BIMP on an RSM philosophy will adapt traditional, stand-alone project management techniques to a systems-wide, holistic approach dictated by coastal processes and sediment resource distribution. Ultimately, the placement of sediment management projects into a regional framework will allow for a more efficient and cost-effective method of resource conservation and management.

The steering committee supports the work of DCM and DWR in their goal to develop a BIMP and integrate the Corps' RSM philosophy. The RSM effort of the BIMP and the Corps will be key to inventorying the State's sand resources, particularly mapping sources on the cape shoals as these areas are not adequately mapped, and that the physical processes by which they were established and are maintained are not fully understood.

### *Development of a Coastal Vulnerability Index*

The natural course for many areas along the sediment-poor island segments of the North Carolina coast is that, without nourishment, some barrier-island segments will be inundated in the future if sea level continues to rise. This problem can be exacerbated by storm surge associated with hurricanes and nor'easters. The steering committee recommends that the State develop a coastal vulnerability index (CVI) to provide an understanding of the hazards associated with current and future coastal conditions. A CVI could support the State in establishing beach nourishment priority areas and would be a prudent tool to inform property owners of the potential dangers of oceanfront living. While the US Geological Survey (USGS), North Carolina Geological Survey (NCGS) and scientists within academic communities (e.g., Pilkey, et al., 1980; 1998; Riggs and Ames, 2003; in press) have all created CVIs that cover the North Carolina coast and are based on studies of barrier-island geomorphology,<sup>45</sup> the steering committee recommends developing a State-level index that is of high resolution and includes economic data for coastal area development in an effort to provide a clearer picture of the particular areas of vulnerability along the coast. A State-level index is needed because USGS and NCGS indices utilize a larger scale (one kilometer cells), thereby generating a coarser resolution of state resources and environments.



A CVI can be used as a tool to help differentiate areas according to their level of vulnerability and provide a suite of potential options, from beach nourishment to relocation. By utilizing a State-level CVI, coastal management policies and priorities can be developed to better assess the risks from coastal hazards, and to evaluate options and alternatives for community response to sea level rise. An important question is whether emphasis would be placed on investing money for beach nourishment in the most vulnerable areas, or whether sand allocation would be advocated for areas with the lowest vulnerability to create an incentive for development in those areas and perhaps a disincentive for development in highly vulnerable areas. The application of a CVI as a tool for coastal communities to use as they make decisions on options for managing shoreline erosion could be further developed as part of the BIMP. In addition, a CVI could be a tool to address other concerns, such as managing multiple uses in North Carolina's coastal waters, such as commercial and recreational fishing, dredging sand for beach nourishment and wind energy projects in coastal waters.

The steering committee recommends that the BIMP incorporate priorities for sand resource allocation, with input from stakeholders. A determination should be made on which barrier-islands, or portions of barrier-islands, are most vulnerable to damage from storm events; which are most likely to be adversely impacted by sea level rise; and which are most likely to need nourishment projects during the next 50-100 years. The priorities for allocating limited State-owned sand resources for beach nourishment projects should take into consideration economic costs and benefits, and the feasibility of long-term protection for affected areas. The plan also should take into consideration that, under the CZMA consistency provision, the priorities established also would apply to the leasing of sand located on the OCS by MMS.<sup>46</sup> Allocations should not be permanent, but should be long-term, and leases should be dependent on beach nourishment cycles to allow for flexibility in any sand allocation plan. Furthermore, leases should include flexibility in the event of an emergency situation, such as a hurricane or nor'easter.

### *Development of a "Worst-Case Scenario" State-Level Planning Document*

In the event sea level rise progresses at a rate that would make it unwise and uneconomical to continue to maintain certain areas and infrastructure on threatened barrier-island segments, or a major storm event were to cause catastrophic damage to the coast, the steering committee recommends development of a "worst-case scenario" State-level planning document that establishes general policies and guidelines for identifying which areas and infrastructure may no longer be supported through public funds. The steering committee recommends that the State prepare a set of coastal barrier-island maps that show specific barrier-island segments that may be endangered by major storm events and various predicted levels of sea level rise. The steering committee also recommends that policies be developed to determine which areas will be eligible for beach nourishment projects or other measures to protect the coastal infrastructure when sea level reaches a predetermined level. This planning document should be developed by academic institutions with scientific expertise and include the input of multiple agencies, such as DENR, DOA and the NC DOT. These maps would be similar to those used by the federal government for administration of the Coastal Barrier Resources Act.

The committee also supports the use of this document as a basis for a coastal hazards mitigation fund that could be established to provide grants to cover a portion of any buyouts, and recommends that this use be studied as a component of the larger planning document.



### *Incorporation of a Sea Level Rise Component to CAMA Land-Use Plans*

According to the Intergovernmental Panel on Climate Change (IPCC), the impacts of climate change will be felt across the entire globe and North Carolina's coast will experience some of these impacts. Although the numbers vary, relative sea level rise could have a dramatic impact on the North Carolina coast. Sea level has been rising at a rate between 16 and 18 inches per 100 years. This present rate has substantially increased from an average rate of three inches per 100 years for several thousand years prior to 1800 AD.<sup>47</sup> However, North Carolina's coast is not only vulnerable to sea level rise, but also to coastal storms that severely exacerbate shoreline erosion and put life and property in danger. North Carolina's sandy beaches play an important role when tropical systems impact the coast, as they absorb wave energy, even as strong waves erode the shoreline. Moreover, in North Carolina's highly dynamic coastal system, shoreline erosion is a natural process in response to rising sea level and is a basic component of "short- and long-term coastal evolution."<sup>48</sup>

Given the complexities regarding coastal erosion and the possible effects of rising sea levels, the steering committee recommends that the CRC add a sea level rise component to its CAMA land-use plan guidelines. Specifically, this component should include a characterization of how local governments will address the relocation of oceanfront structures should sea level rise continue at its present rate or at an increased rate. Such a component would allow for relocation buyout programs, and other adaptations to sea level rise to be discussed by local governments as part of their land-use plans.<sup>49</sup> (Even an understanding that there is nowhere within a municipality to relocate structures would highlight unavoidable tax base losses that would result from relocation).

### *Increase NC Conservation Tax Credit*

North Carolina, through the DENR, administers the NC Conservation Tax Credit Program. The purpose of this non-regulatory program is to use conservation tax credits "as a prominent tool to accomplish conservation purposes, including the maintenance of ecological systems."<sup>50</sup> The program provides incentives for private landowners to conserve their land on a voluntary basis. When landowners donate their land (conservation easement or fee simple deed) to a "qualified recipient,"<sup>51</sup> they may receive a tax credit to apply against their State income taxes. However, the donation of land must result in one or more of the public conservation benefits set forth via statute:

- Public beach access or use;
- Public access to public waters or trails;
- Fish and wildlife conservation;
- Forestland or farmland conservation;
- Watershed protection;
- Conservation of natural areas, as defined in N.C. Gen. Stat. Section 113A-164.3(3);
- Conservation of natural or scenic river areas, as defined in N.C. Gen. Stat. Section 113A-34;
- Conservation of predominantly natural parkland; or
- Historic landscape conservation.<sup>52</sup>

Currently, the tax credit is equal to 25 percent of the fair market value of interest in real property donated for conservation purposes.<sup>53</sup> The tax credit is up to \$250,000 for individuals<sup>54</sup> and up to \$500,000 for corporations.<sup>55</sup>

The steering committee realizes that, as ecological conditions continue to change, homeowners will need assistance. Therefore, the committee recommends amending the conservation tax credit program to make the donation of unbuildable or threatened lots a more appealing option to homeowners.



### *Disclosure of Natural Hazards for Coastal Real Estate Purchases*

A major concern for North Carolina's coastal communities is the threat from natural hazards. It is critical to ensure that potential property owners are fully knowledgeable and aware of the risks they assume when purchasing coastal real estate. Disclosure of natural hazards for real property is not required in North Carolina, despite several legislative attempts to make it one. There was an attempt in 2007 with H.B. 1628 that called for "reasonable notice" of coastal hazards to prospective purchasers of coastal property prior to acquisition, which did not become law. A similar bill, H.B. 605,<sup>56</sup> has been introduced for the 2009-2010 session. H.B. 605, if passed into law, would require the CRC to file with the clerk of court in each county a notice with a description of coastal hazards in that county, including areas designated as AECs and inlet hazard areas. The bill also would require sellers of coastal real estate<sup>57</sup> to prepare a coastal hazards disclosure statement (a form that would be provided by the CRC at no cost to the seller) to each prospective purchaser of the real property. A majority of the steering committee recommends that the General Assembly consider this bill. However, it is important to note that the steering committee did not unanimously agree to this recommendation.



## Endnotes – Chapter 1

<sup>4</sup>Riggs, S.R., S.J. Culver, D.V. Ames, D.J. Mallinson, D.R. Corbett and J.P. 2008. “North Carolina’s Coasts in Crisis: A Vision for the Future.” White Paper, North Carolina Coastal Geology Cooperative Research Program, US Geological Survey and East Carolina University, Greenville, NC, 26 p.

<sup>5</sup>Riggs, S.R., S.J. Culver, D.V. Ames, D.J. Mallinson, D.R. Corbett and J.P. Walsh. “Coasts in Crisis: A North Carolina Case Study” (in review), US Geological Survey, Scientific Investigations Report, 90 p.

<sup>6</sup>*See id.*

<sup>7</sup>McNinch, J.E., Wells, J.T., and Snyder, S.W., “The Long-Term Contribution of Pre-Holocene Sands to Transgressing Barrier-Islands,” Coastal Sediments Conference, 1999.

<sup>8</sup>Riggs et al., 2008.

<sup>9</sup>Riggs, S.R., S.J. Culver, D.V. Ames, D.J. Mallinson, D.R. Corbett and Walsh, J.P. “Coasts in Crisis: A North Carolina Case Study” (in review), US Geological Survey, Scientific Investigations Report, 90 p.

<sup>10</sup>33 U.S.C. §1344.

<sup>11</sup>33 U.S.C. §401 et seq.

<sup>12</sup>42 U.S.C. §4321 et seq.

<sup>13</sup>The Corps is authorized to issue permits for work done in navigable waterways under Section 10 of the RHA. *See* 33 U.S.C. §403. Section 10 provides the Corps with jurisdiction over obstructions to navigable waterways, as well as excavating from, or introducing fill material to, navigable waterways.

<sup>14</sup>*See* 42 U.S.C. §1962a-2. *See also* ER 1105-2-100, “Planning Guidance Notebook” (USACE 2000).

<sup>15</sup>33 U.S.C. §426i.

<sup>16</sup>However, a federal entity would not request a competitive lease sale, since it automatically would be considered a federally authorized project. A state agency or municipality would only request a competitive lease sale if no federal funds were involved, or the sand was not used for a shore protection or beach restoration project. *See* Email from Geoffrey Wikel, Environmental Division, Minerals Management Service to Lisa Schiavinato, NC Sea Grant (December 16, 2008, 11:30 am ET) (on file with authors).

<sup>17</sup>15A NCAC 07H .0201 and 07H .0300.

<sup>18</sup>N.C. Gen. Stat. §113A-118(a).

<sup>19</sup>ER 1105-2-100, “Planning Guidance Notebook” (USACE 2000).

<sup>20</sup>N.C. Gen. Stat. §146-64(6).

<sup>21</sup>N.C. Gen. Stat. §146-64(7).

<sup>22</sup>N.C. Gen. Stat. §74-49(6).

<sup>23</sup>N.C. Gen. Stat. §146-8.

<sup>24</sup>15A NCAC 07H.0312.

<sup>25</sup>Minerals Management Service, Marine Minerals Program, “Guidelines for Obtaining Sand, Gravel and Other Non-Energy Mineral Resources from the Continental Shelf,” at <http://www.mms.gov/sandandgravel/ObtainingMarineMinerals.htm>.

<sup>26</sup>43 U.S.C. §1334(a).

<sup>27</sup>Codified at 43 U.S.C. §1337(k)(2).

<sup>28</sup>43 U.S.C. §1337(k)(2)(B).

<sup>29</sup>43 U.S.C. §1345(a).

<sup>30</sup>*See* 43 U.S.C. §1340(d). *See also* 30 C.F.R. §280.10-280.12.

<sup>31</sup>16 U.S.C. §1456.

<sup>32</sup>33 C.F.R. §335.4.

<sup>33</sup>Shannon Kemp, “Corps, Beach Panel Resolve Dispute,” Carteret County News-Times at <http://www.carolinacoastonline.com/articles/2008/12/24/news-times/news/doc49511a7ce6320555176888.txt> (December 27, 2008).

<sup>34</sup>*Id.*



<sup>35</sup>*Id.*

<sup>36</sup>See National Oceanic and Atmospheric Administration, Beach Nourishment: A Guide for Local Government Officials, at <http://www.csc.noaa.gov/beachnourishment/html/human/law/history.htm>. See also, e.g., Carteret County Shore Protection Office, Section 933 Project, at <http://www.protectthebeach.com/933/Phase%20II/section933.htm>.

<sup>37</sup>One potential option, however, is to make an exception in the case of a private beach community. In this situation, a homeowners association (HOA) typically would be the applicant for a beach nourishment project. Although a private entity rather than a public or government entity, the HOA's application would be for the benefit of the entire beach community. It is in situations such as this when an easement could be granted to a non-public entity because the sand would benefit a community and not be used to make a profit.

<sup>38</sup>15A NCAC 07H .0208(b)(12)(iv).

<sup>39</sup>See Lindquist, D.G., L.B. Cahoon, I.E. Clavijo, M.H. Posey, S.A. Bolden, L.A. Pike, S.W. Burk, and P.A. Cardullo. 1994. Fish stomach contents and prey abundance on hard and soft substrata associated with adjacent artificial and natural reefs in Onslow Bay, North Carolina. Proceedings of the Fifth International Conference on Artificial Habitats for Fisheries, Bulletin of Marine Science 55:308-318. See also Thomas, C.J., and L.B. Cahoon. 1993. Stable isotope analyses differentiate between different trophic pathways supporting rocky-reef fishes. Marine Ecology Progress Series 95:19-24.

<sup>40</sup>See *id.*

<sup>41</sup>See *id.*

<sup>42</sup>See H.B. 1840 §13.9c (2000).

<sup>43</sup>NC Division of Coastal Management, NC Beach and Inlet Management Plan, at <http://dcm2.enr.state.nc.us/bimp.htm>.

<sup>44</sup>Water Resources Development Act, Pub. L. 110-114, 121 Stat. 1041 (2007).

<sup>45</sup>NC Geological Survey, "A Pilot Study to Assess Relative Risk to Oceanside Overwash Along the North Carolina Coastal Barrier-Island System," December 2006.

<sup>46</sup>Provided these standards are approved as enforceable policies by the NOAA Office of Ocean and Coastal Resource Management.

<sup>47</sup>Riggs, S.R., et al., 2008.

<sup>48</sup>Riggs, Stanley R. and Dorothea Ames, *Drowning the North Carolina Coast: Sea Level Rise and Estuarine Dynamics*, 2003, pg. 15.

<sup>49</sup>Similar issues are addressed peripherally in the hazards requirement for land-use plans (e.g., 15A NCAC 07B .0702), but the steering committee recommends that sea level rise should be a stand-alone section in CAMA land-use plans. Relevant issues that the land-use plans could address are where to go if there is a need to retreat, such as transition from barrier-island to the mainland.

<sup>50</sup>N.C. Gen. Stat. §113A-231.

<sup>51</sup>A "qualified recipient" includes state government, local government and non-profit organizations that are incorporated to receive and administer land for conservation purposes and receive charitable contributions. See N.C. Gen. Stat. §113A-232.

<sup>52</sup>N.C. Gen. Stat. §105-130.34.

<sup>53</sup>See N.C. Gen. Stat. §105-151.12 (for individuals) and N.C. Gen. Stat. §105-130-34 (for corporations).

<sup>54</sup>See N.C. Gen. Stat. §105-151.12.

<sup>55</sup>See N.C. Gen. Stat. §105-130.34.

<sup>56</sup>The text of H.B. 605 can be found at <http://www.ncga.state.nc.us/Sessions/2009/Bills/House/PDF/H605v0.pdf>.

<sup>57</sup>The bill would apply to all properties adjacent to an ocean shoreline, as defined in N.C. Gen. Stat. §113A-115.1(a)(1) and all properties located along shorelines in areas designated inlet hazard areas.



## Chapter 2: Ocean-Based Alternative Energy

As the US seeks to decrease its dependency on fossil fuels for energy production, interest has grown in developing alternative energy sources, such as solar and wind energy. A recent indication of this is in the Energy Policy Act of 2005, which encourages development of alternative sources of energy as part of a national strategy to make the US more energy-independent. Part of this strategy includes ocean-based alternative energy development, which includes harnessing the power of the ocean itself through currents and waves, as well as capturing the flow of ocean winds as potential alternatives to traditional fossil fuel-based energy sources.

“Ocean energy,” a term used to describe renewable energies, including wave, current and tidal energies, is a type of hydropower. In the US, hydropower projects onshore are currently regulated by the Federal Energy Regulatory Commission (FERC), pursuant to the Federal Power Act<sup>58</sup> (FPA). Additionally, such projects may be subject to regulation by the Corps and other federal agencies and various state-level agencies, depending on the scope of the project.

The major impediments to siting ocean-based alternative energy facilities include: regulatory uncertainties; finance issues; environmental concerns; technological constraints; ability of the national electrical grids to handle and distribute surplus energy generated by wind turbines; and user conflicts.<sup>59</sup> The various alternative energy technologies that may be utilized off North Carolina’s coast are addressed in this chapter.

### Wind Energy

One form of ocean-based alternative energy is wind. Ocean-based wind facilities have been proposed off the coasts of Massachusetts (Cape Wind)<sup>60</sup> and Delaware (Bluewater Wind).<sup>61</sup> Other states, such as New Jersey and Rhode Island, also have efforts regarding wind energy development off their coasts. New Jersey has adopted a renewable energy incentive program<sup>62</sup> and an offshore wind rebate program for the installation of meteorological towers,<sup>63</sup> as well as awarded a \$4 million grant to Garden State Offshore Energy for a 345.6 MW offshore wind facility to be tentatively located 16 miles southeast of Atlantic City.<sup>64</sup> In Rhode Island, interest in wind energy development in coastal and offshore waters will likely rise due to the state’s high renewable energy portfolio standard (16% by 2020).<sup>65</sup> To help meet this goal, Governor Donald Carcieri announced in September 2008 that the company Deepwater Wind was chosen to construct a wind energy project off Rhode Island’s coast.<sup>66</sup> The project will provide an estimated 1.3 million MWh per year, which would amount to approximately 15% of the electricity used in the state.<sup>67</sup>

The importance of the Cape Wind project cannot be understated, as the original project proposal came at a time when both state and federal regulatory frameworks did not exist that would allow such a facility to be permitted. As a result, the Cape Wind project has been subjected to years of state and federal environmental review. The project has gone through a comprehensive environmental permitting process by numerous federal and state agencies, under the National Environmental Policy Act and the Massachusetts Environmental Policy Act. As a result of this intensive review, the project has gained the support of national and regional environmental, health, labor and citizens advocacy groups, and furthermore, the project may serve as a regulatory foundation/example for how future ocean-based wind turbine facilities will be sited.

A major distinction between the Cape Wind and Bluewater Wind projects is that while the Massachusetts project was the first marine-based wind facility proposed in the US, the Delaware project represents the



first wind energy project proposed for open Atlantic Ocean waters. While both projects represent an important stepping-stone in the lineage of US policy decisions surrounding the permitting and siting of ocean-based wind facilities, the harsh environmental conditions of the open ocean present a unique set of considerations for states looking to site facilities in similar locations. Previous attempts to site wind turbines in the open ocean, such as the one proposed by the Long Island Power Authority (LIPA),<sup>68</sup> failed due to high construction costs and hazardous environmental conditions.<sup>69</sup> The projected cost of the LIPA project was \$150 million when the project first got underway in 2003, but eventually ballooned to \$700 million by the time the LIPA decided to cancel the project.<sup>70</sup> Additionally, the LIPA project met design limitations due to the fact that localized sea conditions in the proposed project area were “three times that of associated state-of-the art offshore wind projects.”<sup>71</sup> Also noteworthy is the uncertain future of Bluewater Wind as a company. In February 2009, Babcock & Brown, the Australia-based company that owns virtually all of Bluewater Wind, announced plans to liquidate its assets in order to satisfy creditor claims. This means that Bluewater Wind will need to find new financial backing for the Delaware project.<sup>72</sup>

Despite the limitations and in-depth review surrounding past projects, some coastal states are attracted to wind not only as a potential alternative energy source, but also as a potential generator of royalty revenues earned from the leasing of State-owned submerged lands. For example, Texas has issued leases to its submerged lands to several different companies, each of which has plans to construct wind energy facilities in State waters.<sup>73</sup> Despite projections for having some of these proposed facilities online by 2009, no wind turbines have been placed in Texas waters. Texas has also indicated interest in entering into more leases, but is having trouble doing so due to recent hurricane activity in the Gulf of Mexico.<sup>74</sup>

Technical issues also surround the installation of ocean-based wind turbines. Specifically, turbine placement in ocean waters is limited by depth. Evidence for this claim is apparent in the projects off Massachusetts and Delaware discussed above, which are proposed for marine locations that are relatively near to the shore. The reason for this is that current technologies only allow wind facilities to be sited in waters 20 meters deep or less. Current technologies conceivably would allow wind turbines to be sited in waters up to 30 meters or more in depth.<sup>75</sup> However it is prohibitively expensive to construct the foundations for, and to locate facilities in, water deeper than 20 meters.<sup>76</sup> Of the approximately 1,470 MW of wind energy produced from projects offshore in Europe, most of these turbines have been constructed in waters that are less than 20 meters deep.<sup>77</sup> This technological dependency on depth provides an interesting requirement for facilities to be located off the North Carolina coast. At times, the 20-meter depth cutoff limits potential wind turbine locations to State waters. For example, in the offshore area of Nags Head, the 20-meter line is at times within three miles of the shore. In other areas along the coast, the 20-meter depth boundary is approximately 10-15 miles offshore.<sup>78</sup>

There are other substantial practical, technological and economic factors that make significant development of wind turbine facilities difficult. First, there is currently a limited supply of the construction equipment required to build a large number of wind turbines.<sup>79</sup> As a result, large-scale production efforts and an immediate dividend from marine-based wind energy would be a challenge. Secondly, construction, operation and maintenance costs of water-based wind facilities are double that of facilities located on land.<sup>80</sup> Third, the cost of wind energy development in coastal or ocean waters is still not competitive with their land-based counterparts. For example, the projected cost of one MW of electricity generated by the Cape Wind project is approximately \$122, as opposed to approximately \$66 for existing traditional land-based facilities.<sup>81</sup> Unless oil prices rise as they did in the summer of 2008, the difference in cost may be greater.



One final hindrance to large-scale wind energy facility production is that it is unclear how continued market uncertainty and falling oil prices will inhibit investment in expensive offshore wind development<sup>82</sup> or how they may make it more difficult to find financial backers for wind energy projects. Additional government subsidies and tax credits could provide some incentives to direct capital into offshore projects, but the lower costs of land-based wind energy may prove more attractive. In fact, the US already has begun to see a shift in preference to terrestrial applications, as exemplified by one company in Texas that abandoned its submerged lands leases in the Gulf of Mexico and moved its efforts to developing a land-based wind facility.<sup>83</sup>

Based on the information available for existing and proposed ocean-based wind projects, there should be an examination of a number of characteristics that, when employed in North Carolina's coastal and ocean environments, would generate difficulties or barriers to the instillation of a marine application. First and foremost, turbines are expensive to construct—in the range of \$1 billion to \$2 billion.<sup>84</sup> Also, turbines occupy a large water area, in the range of 30 square miles,<sup>85</sup> which means that other uses will no longer be able to occupy the substrate, water column or air space in areas where turbines are installed. This segregation of space generates a higher potential for user conflicts, and significant consideration will have to be given to impacts turbines may have on competing biological, commercial and recreational uses. It is highly possible that these competing uses will restrict the permitting of wind facilities, as they will have higher priority for enhancement or protection that has been previously awarded by the State. For example, critical habitats, artificial reefs and areas with significant archaeological resources will have to be avoided. Furthermore, applications or uses characterized by a more mobile or transient characteristic, such as shipping lanes and military air space, also must be avoided.

Thirdly, as current technologies and economics relegate turbines to waters no deeper than 20 meters, the facilities will, in most cases, be visible from shore. Another consideration, and perhaps the most significant for North Carolina's coastal climate, is that current technology requires facilities to be sheltered from extreme ocean wave action and storms.<sup>86</sup> Consequently, the risk of tropical storms, hurricanes and nor'easters makes coastal and offshore North Carolina a less than optimal location.

In an effort to encourage development of alternative energy resources a number of states have implemented a variety of ocean-based energy initiatives within their borders. For example, with the passage of its Energy Act in 2006, Florida created a host of incentives to promote alternative energy technologies. These include the Renewable Energy Technologies Grants Program, Solar Energy System Incentives Program and a tax-free event for energy-efficient items.<sup>87</sup> The grants program provides matching funds for projects that relate to renewable energy from a fund of \$12.5 million. In its first year, the program funded eight projects, including two wind energy projects.<sup>88</sup> All of these programs provide incentives to private parties, as well as to government agencies to develop and utilize these energy resources. Similarly, California has an incentive-based program.<sup>89</sup> However, neither state currently has an incentive program for prospective projects to utilize ocean energy. Instead, California has exclusive grant programs only for wind energy and solar energy. The state has an array of other grant / incentive programs that could potentially include ocean energy projects, but there is no funding exclusively dedicated to ocean-based energy. Florida also has dedicated funding to support solar energy and bio-fuels, but not to ocean-based energy.

Despite the challenges water-based wind energy projects face, North Carolina does have significant wind resources. According to the wind resources mapping project conducted by the company AWS TrueWind



for the North Carolina State Energy Office, North Carolina has significant wind resources along the Outer Banks.<sup>90</sup> Wind facilities potentially could be constructed in sounds, state coastal waters, or in federal ocean waters. Since these wind projects would include placing permanent structures in public trust waters, federal permits, State permits, or perhaps both will be required for construction, operation and maintenance of the facility. Wind facilities, however, do not include only the wind turbines and platforms, but also transmission cables to route energy from offshore to land. Therefore, land-based substations, dredging and construction activities, among others, will be required to connect produced energy to the national grid.<sup>91</sup> Therefore, even if a wind energy facility is sited in federal waters off the coast of North Carolina, it is likely that State easement requirements and other regulations will apply during the transmission of energy.

## Wave Energy

Wave energy is a term used to describe the electrical energy that can be harvested from ocean waves. Waves possess a great amount of energy that can be extracted from either the motion of the wave's surface or the pressure beneath the surface. There are several devices that can be used to transform the potential energy of the wave into electrical energy.

- **Terminator Devices** are placed vertically in the water. These devices use the changes in pressure beneath the surface of a wave to power a turbine to generate electricity. These devices are suitable for use in shallows, where they are attached to the sea floor, or in deeper waters, where they are attached to a floating grid.

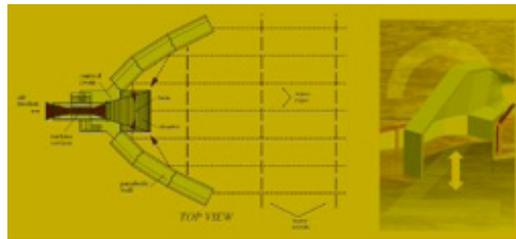


Figure 3: Terminator Device<sup>92</sup>

- **Overtopping Devices** operate similarly to dams. They are large reservoirs, constructed to trap in coming waves. The water level within the reservoir eventually rises above the level of the surrounding water. It is then released and as it falls down to the level of the surrounding water, it powers hydroelectric turbines.

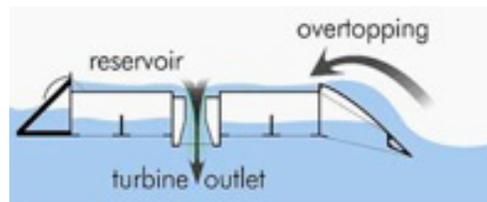


Figure 4: Overtopping Device<sup>93</sup>



- **Attenuators** are long, segmented cylinders which rest atop the water's surface, perpendicular to the shoreline. As waves pass beneath the cylinders, the differing wave heights cause the segments to flex. This flexing motion activates a hydraulic pump, creating electricity.

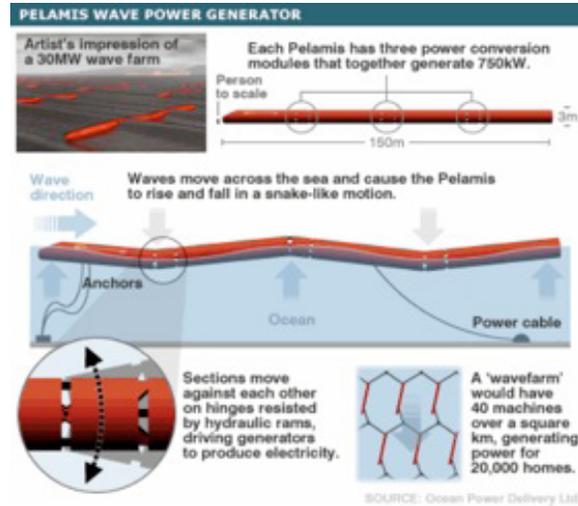


Figure 5: Attenuator<sup>94</sup>

- **Point Absorbers** consist of a fixed outer cylinder and a mobile inner buoy. They are placed vertically in the water. As the wave passes, the changing pressure causes the buoy to rise or fall within the fixed cylinder. The movement of the buoy powers an energy converter.<sup>95</sup>

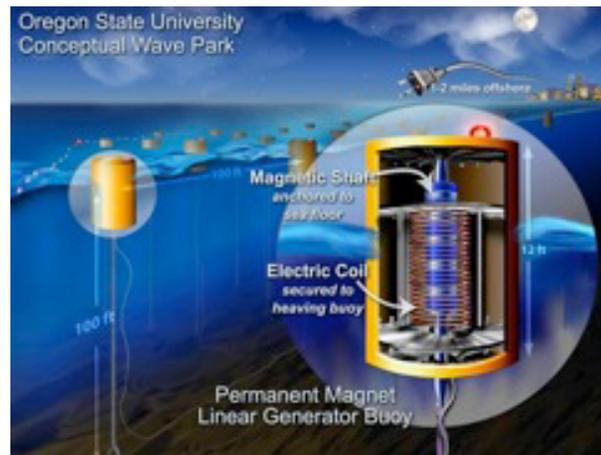


Figure 6: Point Absorber<sup>96</sup>



Terminator devices, for example, are placed vertically in the water, and these devices use changes in pressure beneath the surface of a wave to power a turbine and generate electricity. These devices are suitable for use in shallow waters, where they are attached to the sea floor, or in deeper waters, where they are attached to a floating grid. Additional devices include overtopping devices constructed to trap incoming waves; attenuators, which rest atop the water's surface, perpendicular to the shoreline; and point absorbers placed vertically in the water to react to the changing pressure of passing waves.

Despite the variations in water column or surface placement, each of these technologies will have similar issues and use considerations when sited in the State's coastal environment. While energy facilities may be capable of extracting large amounts of renewable energy, the installation and removal of these facilities must be undertaken with care as their use has the potential to produce adverse environmental impacts. For example, the impact these facilities will have on shipping, boating and other marine uses must be researched and anticipated. MMS has suggested that reduction in wave height,<sup>97</sup> noise and spatial conflicts with shipping lanes or fisheries are potential negative impacts of any wave energy facility.<sup>98</sup> However, the facilities may also provide habitat for marine life in years following installation.<sup>99</sup>

States such as Oregon and Hawaii already have begun adding wave energy to their renewable energy portfolios and are leading the way in wave energy research. For example, the Oregon State University Wallace Energy Systems and Renewables Facility has been researching the feasibility of large-scale wave energy facilities since 1998.<sup>100</sup> Additionally, the State of Oregon is involved in a public-private partnership with the People of Oregon for Wave Energy Research (POWER) in order to develop a wave energy facility on the Oregon coast.<sup>101</sup> A 2004 survey of potential wave energy sites identified seven locations along the Oregon coast that would be capable of supporting a 1500 MWh annual output wave energy facility. The survey also found these sites could support a transition from 1500 MWh to 300,000 MWh output annually from a commercial facility.<sup>102</sup> Oregon has two energy plans that it is implementing that look to increase renewable energy usage in the public and private sectors. These are the State's 2007-2009 Energy Plan<sup>103</sup> and a Renewable Energy Action Plan<sup>104</sup> supervised by the Renewable Energy Working Group, a collaboration involving the Oregon Department of Energy and the Governor's Office.

Hawaii has been testing wave energy technology since 2004, and the State's alternative energy objectives include increasing indigenous energy production and reducing greenhouse gases.<sup>105</sup> Hawaii also has created renewable energy portfolio standards that require electric utilities to derive 20% of their energy from renewable resources by 2020.<sup>106</sup> The Hawaii Legislature has introduced two bills that could provide \$20 million to support a three-turbine wave energy site proposed for the waters off the north coast of Maui.<sup>107</sup> The project is estimated to be complete in 2009.

Internationally, there have been efforts to develop wave energy projects as well. For example, Pelamis Wave Power Company has placed online the first commercial-scale wave energy "farm" off Portugal, which could power as many as 15,000 homes.<sup>108</sup> Pelamis also is involved in other projects in Scotland and England.<sup>109</sup> Another group, the European Marine Energy Centre (EMEC), is an organization backed by the government of Scotland that provides developers of wave and tidal energy devices with a performance testing facility that would enable them to link their prototypes to the national electric grid for testing.<sup>110</sup>



While coast states such as Oregon have strong potential for wave energy development, an important question is whether North Carolina has sufficient wave density to make energy development feasible. As part of an ongoing study conducted by Dr. Len Pietrafesa and colleagues at North Carolina State University,<sup>111</sup> the wave energy signatures off North Carolina and South Carolina were lower compared to that of Oregon. As the graph below illustrates, Oregon has three times the wave energy of North Carolina, while the average monthly wave heights for North Carolina and South Carolina are comparable. However, further research is needed on North Carolina's wave energy potential.

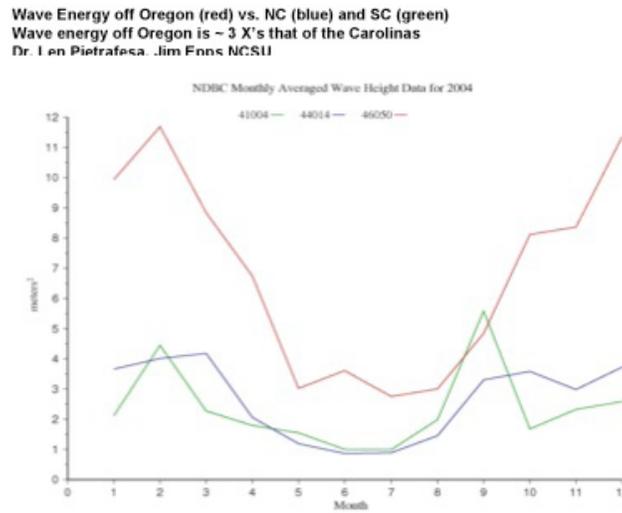


Figure 7: While not dispositive, the graph highlights the need for further study of North Carolina's wave energy potential.

## Current Energy

Current energy refers to energy that can be produced from ocean currents, as opposed to tidal currents. Ocean currents flow in one direction at a relatively constant speed, whereas the flow of tidal currents is bi-directional and varies regionally and through tidal cycles. The Gulf Stream is an example of a warm ocean current, which flows up the eastern coast of the US. Due to its density, moving water can generate many times the energy of an equivalent amount of airflow.<sup>112</sup> Current energy production is a relatively new concept, and there are limited technologies available to convert the energy.

- **Horizontal Axis Turbines** are similar in design to wind turbines. The turbines would be attached to the sea floor in order for it to stay upright as the current flows through the turbines, generating electricity.
- **Vertical Axis Turbines** rotate on a vertical axis, like a revolving door.<sup>113</sup> These also would be attached to the sea floor so that the current can flow through the turbine.



Groups of turbines could be arranged much like proposed wind energy sites. There is potential for exploiting this form of energy, according to a white paper on ocean current energy potential on the OCS that was prepared by MMS:

The total worldwide power in ocean currents has been estimated to be about 5,000 GW, with power densities of up to 15 kW/m<sup>2</sup>. The relatively constant extractable energy density near the surface of the Florida Straits Current is about 1 kW / m<sup>2</sup> of flow area. It has been estimated that capturing just 1/1,000th of the available energy from the Gulf Stream, which has 21,000 times more energy than Niagara Falls in a flow of water that is 50 times the total flow of all the world's freshwater rivers, would supply Florida with 35% of its electrical needs.<sup>114</sup>

However, there are potential difficulties as well. Since the technology is still in its infancy, the cost associated with its implementation likely would be high. Turbines will have to be protected from corrosion and marine growth because of their location. Therefore, maintenance may be a challenge. Furthermore, finding appropriate sites for such turbines will require detailed research into the characteristics of ocean currents off the North Carolina coast.<sup>115</sup>

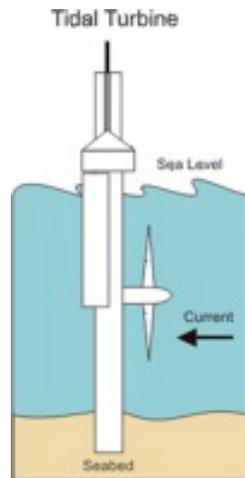


Figure 8: Horizontal Axis Turbine<sup>116</sup>

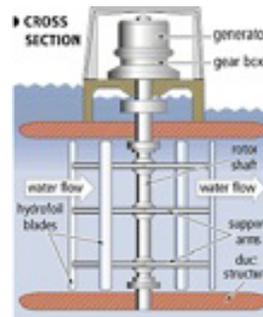


Figure 9: Vertical Axis Turbine<sup>117</sup>

Additionally, there may be adverse environmental effects from the construction and placement of these turbines to fish or other marine life. Another concern is the effect that large-scale current energy extraction would have on the ocean current's own energy. If the energy loss of the current is significant, it may have far-ranging effects.<sup>118</sup> Florida Atlantic University's Center of Excellence in Ocean Energy Technology has begun a pilot program that will explore the feasibility of harnessing ocean current energy in the Gulf Stream,<sup>119</sup> including the environmental effects of the turbines.



## Tidal Energy

Tidal energy is the production of energy from flowing water in rivers, bays, estuaries and coastal waters. There are two primary technologies that harness tidal energy, which are tidal barrage plants and tidal in-stream energy conversion (TISEC) devices. Tidal barrage plants operate like dams or overtopping devices. As the tide flows in, it is trapped in a reservoir. When the tide flows out, the water level of the reservoir is higher than the surrounding waters. When the water is released, it rushes down, powering turbines that generate electricity. TISEC devices are horizontal-axis or vertical-axis turbines, like those used to extract current energy. TISEC devices can be bi-directional, extracting energy from incoming and outgoing tides, and have fewer environmental impacts because they do not trap tidal waters or substantially alter the natural seascape.<sup>120</sup>

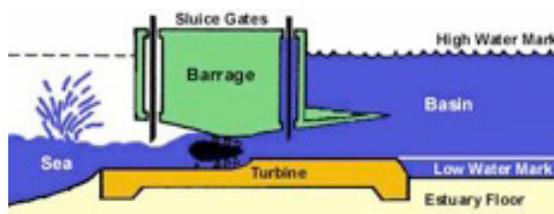


Figure 10: Tidal Barrage System<sup>121</sup>

There is the potential for harnessing tidal energy in the US. A 1998 US Department of Energy study estimated that in the US, “there is an undeveloped in-stream capacity of 70,000 MW. Even if only half of these sites are commercially viable, there could still be upwards of 40,000 MW of power available.”<sup>122</sup> Additional efforts, like a 2005 the Electric Power Research Institute (EPRI) study, examined the feasibility of tidal energy sites in the US<sup>123</sup> and stressed tide type (diurnal or semi-diurnal)<sup>124</sup> and tidal current speed<sup>125</sup> as the most important criteria for turbine siting. Since tides, like ocean currents, are fairly stable occurrences there is the potential for a tidal energy system to produce a more predictably energy system than a wind energy application.<sup>126</sup>

The present regulatory scheme for installing a TISEC system is quite complex. Under the FPA,<sup>127</sup> FERC licenses and regulates all hydropower projects, including tidal energy, in the US. However, in order to be licensed by FERC, projects must obtain approval from federal agencies, such as the Corps, NOAA, Fish and Wildlife Service and Coast Guard, as well as from relevant state agencies.<sup>128</sup>

Even with the complex regulatory scheme, one tidal energy project is currently in place. The Roosevelt Island Tidal Energy project is an experimental tidal energy system installed in New York’s East River. The project uses bidirectional turbines and has provided the city of New York with approximately 50 MWh of electricity.<sup>129</sup> The project suffered early setbacks as strong currents damaged the turbine blades.<sup>130</sup> However, the company has begun testing new designs to correct these earlier flaws.<sup>131</sup>



## Alternative Energy Development and the Law

As is the case with wind energy, most if not all of the alternative energy projects sited off the North Carolina coast would include placing permanent structures in public trust waters of the state or federal government. As a result, federal permits or state permits or perhaps both will be required for construction, operation and maintenance of the facility. Most facilities also will include more than an energy production platform, including transmission cables to route energy offshore to land. These facilities will also require land-based substations, dredging and construction activities, even if the facility is located in federal waters, projects will require state easements for the transmission of energy onshore.<sup>132</sup> Despite any technical and economic challenges surrounding alternative energy development in North Carolina's coastal waters or in federal waters off North Carolina, the legal and regulatory framework for permitting such projects at the federal and state levels must be understood. The regulatory components of alternative energy facility siting are discussed below in the context of wind energy, however the laws, regulations and concerns characteristic of offshore wind energy production will be similar to those for any alternative energy technology employed off North Carolina's coast. Since because wave, current and tidal energy facilities and equipment occupy either large areas of the water surface or are suspended from the ocean bottom, they present some issues not associated with wind turbines. Similarly, wind turbines also will have unique considerations as they are affixed to the ocean bottom, but also occupy the air space high above the surface of the water.

### Federal Law

At the time the Cape Wind project was proposed, the US had no offshore wind policy or regulatory framework. This was one of the chief criticisms of Cape Wind in its earlier phase of the permitting process, and many commented on the potential detriments to ad hoc permitting of offshore wind projects. The Energy Policy Act of 2005 addressed this issue peripherally by vesting authority to MMS over federal offshore renewable energy and alternate uses of the nation's offshore public lands along the Outer Continental Shelf (OCS).<sup>133</sup> Authority was vested within MMS because of its long ranging environmental, engineering and regulatory expertise managing energy and mineral resources in federal waters.

In addition to the Energy Policy Act of 2005, other applicable laws regarding the siting of an offshore wind energy facility include NEPA, OSLA, CZMA, RHA, Clean Water Act (CWA), Clean Air Act (CAA), Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA) and National Historic Preservation Act (NHPA). The additional laws that may be triggered by the proposal of offshore wind energy projects are discussed below. The Submerged Lands Act is also relevant, and the current language of the act may serve as a limitation to wave and tidal energy projects sited in State coastal waters.

### National Environmental Policy Act

NEPA requires the federal government to take into account environmental impacts when issuing permits. When a federal action is proposed, the lead federal agency (since multiple agencies could have jurisdiction over a proposed project, as in the case of an offshore wind project) conducts an Environmental Assessment to determine whether the project's impacts are significant enough to warrant a full Environmental Impact Statement (EIS), which requires a more rigorous review. If the lead agency determines instead that a proposed project will not have a significant impact on the environment, then a Finding of No Significant Impact (FONSI) is issued. However, it is likely the impacts of a proposed offshore wind project will be deemed significant enough to warrant a full EIS.



### Clean Water Act

The CWA was passed in order to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters,”<sup>134</sup> and the EPA was given jurisdiction to administer the CWA and regulate the discharge of pollutants into the waters of the US.<sup>135</sup> There are several implementation strategies of the CWA, a few of which may be relevant to a water-based wind project, including Section 404 for the dredging and filling of waters and wetlands, Section 401 water quality certification from the state with jurisdiction<sup>136</sup> and a National Pollutant Discharge Elimination System (NPDES) permit for discharge of pollutants from point sources. It is likely that a water-based wind energy project would need one or more of these permits, depending on the project and its proposed location.

### Coastal Zone Management Act

The CZMA was passed “to preserve, protect, develop, and where possible, to restore or enhance” the nation’s coastal resources.<sup>137</sup> The CZMA encourages the participation of coastal states and provides financial and technical assistance as incentives. For states that choose to participate, they first must develop a state-level coastal management plan that defines permissible land and water uses within their coastal zone. Once a federally approved CMP is in place, federal activities or project proposals that require a federal permit can be subject to the consistency provision of the CZMA, which requires an activity to be “consistent” with the enforceable policies of the affected state’s CMP.<sup>138</sup> It should be noted that in the case of federal activities, the agency must consistent to "the maximum extent practicable. If a state determines the activity is inconsistent with its CMP, then that state may negotiate conditions in order for the activity to become consistent. However, if negotiations cannot be reached and the inconsistency determination remains (thereby disallowing the activity), then the applicant may appeal the state's decision to the Secretary of the US Department of Commerce, who

has the authority to override the state's decision. state or the federal government. Since coastal states only have jurisdiction over submerged lands up to three geographical miles,<sup>140</sup> if a party wishes to lease submerged lands beyond this limit, then a submerged lands lease from the US Department of the Interior is needed.<sup>141</sup>

### Rivers and Harbors Act

The Corps of Engineers has jurisdiction over navigable waters of the US, and Section 10 of the RHA requires a permit for structures or work in or affecting those waters.<sup>142</sup> A water-based wind project by its very nature would require structures to be built over navigable waters, and thus, a Section 10 permit would be necessary.

### Endangered Species Act and Marine Mammal Protection Act

An offshore wind project likely would involve impacts to protected wildlife species. If so, review under the ESA and MMPA also would be needed. Additional review would be needed if a project likely would affect fisheries or essential fish habitat.<sup>143</sup>

### National Historic Preservation Act

A wind project proposed off North Carolina’s coast could trigger the NHPA due to the location of shipwreck sites along the state’s coast. The NHPA requires a federal agency with direct or indirect jurisdiction over a proposed federal, or federally assisted, project and the head of the federal agency having authority to license such project to take into account the effect of the proposed project on any district, site, building, structure, or object that is included in, or eligible for inclusion in, the National Register.<sup>144</sup>



### Submerged Lands Act

The relationship between federal authority and state authority over wave, current and tidal energy projects proposed for state coastal waters is a special case and, at this time, rather murky. It is clear that any such project, to the degree it occupies state-owned submerged lands, would need a lease from the state, and any transmission lines from the water-based project to shore would need a submerged lands easement from the state as well. Furthermore, the determination of whether to allow the exploitation of any natural resource in a state's waters would be a decision made by the state. Also, normally any royalties derived from such exploitation would belong to the state. However, the use of water for the production of power is a special case.

A coastal state's title and power to administer the submerged lands and natural resources located in coastal waters within its jurisdiction is derived from the Submerged Lands Act. The act provides that:

- (1) Title to and ownership of the lands beneath navigable waters within the boundaries of the respective States, and the natural resources within such lands and waters; and
- (2) The right and power to manage, administer, lease, develop, and use the said lands and natural resources all in accordance with applicable state law be, and they are, subject to the provisions hereof, recognized, confirmed, established and vested in and assigned to the respective States.<sup>145</sup>

The problem lies within the definition of "natural resources." The Submerged Lands Act specifically excludes from the definition of "natural resources" "water power, or the use of water for the production of power."<sup>146</sup> Under the act, the United States retains:

All its navigational servitude and rights in and powers of regulation and control of said lands and navigable waters for the constitutional purposes of commerce, navigation, national defense, and international affairs, all of which shall be paramount to, but shall not be deemed to include, proprietary rights of ownership, or the rights of management, administration, leasing, use, and development of the lands and natural resources which are specifically recognized, confirmed, established, and vested in and assigned to the respective States and others by section 1311 of this title.<sup>147</sup>

Because the use of water for the production of power was not a natural resource specifically vested in the coastal states by the act, that resource would appear to remain with the federal government.

The reason for the particular language in Section 1301(e) is likely related to the US Supreme Court decision in United States v. Chandler-Dunbar Water Power Co.<sup>148</sup> In its decision, the Supreme Court stated that "the running water in a great navigable river is [not] capable of private ownership."<sup>149</sup> Therefore, there can be no Fifth Amendment claim for compensation when the federal government, for any purpose, interferes with the use of the *flow* of a navigable stream or river.<sup>150</sup> The language in the Submerged Lands Act negates any claim that the act changes this basic contention and other related US Supreme Court decisions.

The implications of this curious<sup>151</sup> split of control over water for power production are uncertain. Although submerged lands leases and easements may be necessary for wave, current and tidal energy projects located in North Carolina's coastal waters, the authority to decide whether and how to exploit this important resource may be vested to the federal government. North Carolina should encourage Congress to amend the Submerged Lands Act to make clear that control of the use of state ocean waters for the generation of energy is in the hands of the State.



## Future Regulation

While not yet in effect at the time of this report, the federal government is moving forward with developing a regulatory program for alternative energy development on the OCS. The Energy Policy Act of 2005 authorized the Department of the Interior to grant leases, easements and rights-of-way for energy-related development on the OCS.<sup>152</sup> The OCS is the area of seafloor and subsurface between the seaward boundary of the states' territorial sea and the boundary of federal jurisdiction. Currently, MMS is developing regulations that will shape the development of energy production on the OCS. MMS completed its OCS Alternative Energy and Alternate Use Programmatic Environmental Impact Statement (EIS) in 2007.<sup>153</sup> This EIS outlines the possibilities for alternative energy development in the OCS. In July 2008, MMS unveiled proposed rules to govern alternative energy projects and alternate uses of existing facilities for the OCS. The proposed rules are comprehensive in scope and apply to leasing, construction, operations and decommissioning of facilities.<sup>154</sup> In the meantime, MMS has enacted interim policy to authorize resource assessment and technology testing activities in support of future alternative energy development on the OCS.

However, there has been disagreement between MMS and FERC over which regulatory agency has primary jurisdiction over hydropower projects, such as wave and ocean current energy projects, on the OCS. It is important to note that this dispute does not extend to wind energy projects on the OCS. MMS has contended that it has jurisdiction based on the Outer Continental Shelf Lands Act and the Energy Policy Act of 2005, while FERC has contended the Federal Power Act provides them with such authority, including over projects on the OCS.<sup>155</sup> The Department of the Interior and FERC stated their intent to work together to resolve this disagreement, and both agencies have signed a memorandum of understanding to that effect. According to Secretary of the Interior Kenneth Salazar, "a broader memorandum of understanding outlining the process by which permits and licenses related to offshore renewable energy resources would be developed."<sup>156</sup>

## North Carolina Law and Alternative Energy Facilities

Any alternative energy projects sited within three miles of North Carolina's coast or within its estuarine waters would be located in State waters and require authorization by the State. In addition, transmission lines and related infrastructure for bringing power generated by alternative energy facilities, such as wind turbines, located in federal waters, would cross State-owned submerged lands and coastal areas of environmental concern regulated under the CAMA program. Therefore, certain North Carolina laws and regulations will apply to aspects of alternative energy projects located solely in federal waters. Finally, under the CZMA consistency provision, North Carolina also will have a voice on projects looking to place alternative energy facilities in federal waters adjacent to State waters.

## Regulatory Framework Issues

North Carolina has not developed policy to govern water-based alternative energy projects or the necessary regulatory framework for the siting of these facilities. This may change regarding wind energy, if H.B. 809 is passed into law. H.B. 809 was introduced during the 2009-2010 session of the General Assembly and would, if enacted, vest permitting authority of wind energy along the North Carolina coast to the CRC.<sup>157</sup> The introduction of this bill underscores the need for a regulatory framework to provide the legal tools necessary to evaluate project proposals, or components of projects, to be located in State waters. A regulatory framework will provide such projects with the necessary legal rights to proceed with a clear expectation of what would be required by the permitting process. It would also allow the State's Coastal Program



to have federally approved enforceable policies in place for the purpose of reviewing projects to be sited in federal waters under the CZMA consistency provision. Since H.B. 809 has not been passed into law yet at the time of this writing, the report will focus on regulatory issues that are still present. Among the issues that need to be addressed to create an effective regulatory framework are:

- The roles of the Coastal Resources Commission, Utilities Commission and Environmental Management Commission, and which commission will take the lead; and
- Which existing statutes and regulations are applicable to water-based alternative energy projects; the gaps that exist within those statutes and regulations; the barriers existing statutes and regulations present to siting these projects in State waters; and the ways in which the State could address any gaps or deficiencies.

#### Regulatory Authority of the Coastal Resources Commission, Utilities Commission and Environmental Management Commission

One major question is whether primary jurisdiction over permitting a water-based wind project would fall under the CRC, the Utilities Commission or the EMC. With respect to the regulatory authority of the CRC and the Utilities Commission, the question seems to depend on the definition of “development” that is set forth in CAMA, which requires a permit from the CRC if a proposed project will be located in an area of environmental concern.<sup>158</sup> “Development” is defined as:

Any activity in a duly designated area of environmental concern (except as provided in paragraph b of this subdivision) involving, requiring, or consisting of the construction or enlargement of a structure; excavation; dredging; filling; dumping; removal of clay, silt, sand, gravel or minerals; bulkheading, driving of pilings; clearing or alteration of land as an adjunct of construction; alteration or removal of sand dunes; alteration of the shore, bank or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake or canal; or placement of a floating structure in an area of environmental concern identified in G.S. 113A-113(b)(2) or (b)(5).<sup>159</sup>

The statute lists exceptions to the definition of “development” including “work by any utility and other persons for the purpose of construction of facilities for the development, generation, and transmission of energy to the extent that such activities are regulated by other law or by present or future rules of the Utilities Commission regulating the siting of such facilities (including environmental aspects regarding siting) and work on facilities used directly in connection with the above facilities.”<sup>160</sup>

Under the NC Public Utilities Act, the Utilities Commission regulates public utilities.<sup>161</sup> The definition of “public utility” includes facilities that generate electricity to be furnished to public for compensation,<sup>162</sup> which would encompass water-based alternative energy facilities. Therefore, *to the extent* that activities associated with the construction, operation, and maintenance of such facilities are addressed in rules of the Utilities Commission, CAMA permit requirements would not apply. However, because presently existing Utilities Commission rules do not address the environmental and other unique impacts associated with placing alternative energy generating facilities in state estuarine AECs or ocean waters AECs,<sup>163</sup> existing CAMA permit requirements would apply to any such development.

Water-based alternative energy facilities, whether located in state or federal waters, will require transmission lines to bring the energy to shore-side receiving facilities. Here, there also is a potential conflict between the



role of the Utilities Commission and the CRC. The Utilities Commission is authorized to regulate transmission lines.<sup>164</sup> N.C. Gen. Stat. Section 62-101 states that:

- (a) No public utility or other person may begin to construct a new transmission line without first obtaining from the Commission a certificate of environmental compatibility and public convenience and necessity.<sup>165</sup>

An applicant for such a certificate must file an application containing the following information, pursuant to N.C. Gen. Stat. Section 62-102(a)(4):

An environmental report setting forth:

- The environmental impact of the proposed action;
- Any proposed mitigating measures that may minimize the environmental impact; and
- Alternatives to the proposed action.

The commission may issue the certificate for construction of the proposed transmission line if it finds, pursuant to N.C. Gen. Stat. Section 62-105(4) and (5):

- That the impact the proposed transmission line will have on the environment is justified considering the state of available technology, the nature and economics of the various alternatives, and other material considerations; and
- That environmental compatibility, public convenience, and necessity require the transmission line.

Insofar as construction of a transmission line in AECs is concerned, it is the Utilities Commission that has the ultimate statutory authority over the issuance of the necessary permission to construct the line. Furthermore, it is the Utilities Commission that is charged with weighing the environmental impacts of any proposed transmission line. Therefore, if the Utilities Commission chooses to address the environmental impacts, the activity would not be “development” requiring a CAMA permit from the CRC. However, the current practice is for the Utilities Commission to defer to the CRC.

The EMC also may play a substantial role in the permitting of alternative energy facilities in North Carolina’s coastal waters. In 2007, the General Assembly granted the EMC the authority to:

Establish a procedure for evaluating renewable energy technologies that are, or are proposed to be, employed as part of a renewable energy facility, as defined [and to establish] standards to ensure that renewable energy technologies do not harm the environment, natural resources, cultural resources, or public health, safety, or welfare of the State; and, to the extent that there is not an environmental regulatory program, establish an environmental regulatory program to implement these protective standards.<sup>166</sup>

This means the EMC’s authority extends to all forms of renewable energy, whether land-based or water-based, which would include wind energy. What is unclear at the time of this report is what the relationship will be between the CRC and the EMC. Will the EMC defer to the CRC’s rules for projects located in AECs? If passed into law, H.B. 809 would address this issue, because the bill would grant authority to



the CRC to permit wind energy facilities on the coast.<sup>167</sup> This makes sense because the CRC's regulatory program to implement CAMA is an existing one and already has some rules and standards that would be applicable to water-based alternative energy facilities and has a developed expertise about development in coastal AECs. However, if the bill is not passed, in the interim, the two commissions could enter into a memorandum of understanding to clarify how authority over alternative energy projects in AECs would be handled.

Insofar as the permitting of transmission lines, the Utilities Commission would still appear to be the entity empowered to issue the necessary certificate authorizing the construction of such lines. However, there is a potential conflict between the authority of the EMC and the Utilities Commission. If the EMC's rules would prohibit the placement of transmission lines in a certain location, the issue is whether the Utilities Commission is bound by the rules. N.C. Gen. Stat. Section 62-105(a) allows the Utilities Commission to weigh the adverse environmental impacts against the state of technology, the nature and economics of various alternatives, and other material considerations. However, Section 143B-282(a), which is the later statute, would appear to empower the EMC to establish environmental standards that are binding on other state entities, such as the CRC and Utilities Commission, when authorizing renewable energy technologies.

#### Leases and Easements for Alternative Energy Projects

Another issue of some concern is how a project sponsor may obtain the legal rights to occupy State coastal waters and State-owned submerged lands. It is unclear whether the existing statutes provide adequate authority to grant all the necessary rights needed to place an alternative energy facility and infrastructure on State-owned submerged lands. What is clear is that given the complexity of the issues surrounding placement of alternative energy facilities in State waters, a comprehensive statute should be enacted and a set of rules developed similar to those being developed by MMS for similar activities in federal waters.

Under N.C. Gen. Stat. Section 146-10, DOA is authorized to lease or rent "vacant and unappropriated" lands, swamplands and lands acquired by the State, upon terms DOA deems proper. However, that authority may not be sufficient to allow the siting of wind turbines in State coastal waters. DOA has authority under Section 146-10 to enter into leases of State-owned submerged lands, but is missing express authority to lease the right to use the water column and air space above those submerged lands. Energy facilities such as wind turbines are different from piers or isolated structures located in state waters. Although an individual wind turbine may occupy only a small portion of State-owned submerged lands and a small portion of the water column, the total project will occupy a large area of State-owned submerged lands, many segments of the water column, and the turbines will intrude several hundred feet into the air space. Wave, tidal or current energy equipment may be attached to the bottom, but also will occupy large areas of the surface water or the water column. Section 146-10 does not provide DOA with explicit authority to grant the necessary legal rights to occupy the water column, the water surface or the significant portions of the air space above public trust submerged lands and waters.

N.C. Gen. Stat. Section 146-11 also grants certain authority to DOA. This statute allows the agency to grant easements, rights-of-way, dumping rights and other interests in State lands when such rights are necessary "to cooperate with the federal government, utilize the natural resources of the State or otherwise serve the public interest." This does provide DOA with authority to grant the necessary permission for the placement of transmission lines in State waters. However, this statute, as is the case with Section 146-10, does not expressly authorize DOA to grant rights to occupy the water column, water surface or air space above



the water's surface. Consequently, a comprehensive statute similar to Section 146-12 regarding riparian easements should be enacted, and the appropriate commission should develop comprehensive rules similar to those that are being developed by MMS regarding alternative energy and alternate uses of existing facilities on the OCS.

### The CRC's Statutory Authority

Although the CRC has statutory authority to develop regulations governing the siting of wind, wave, tidal and current energy generation facilities and equipment in public trust waters, it has not promulgated regulations addressing the unique issues they pose. Expansion of alternative energy facilities is a State priority, and the CRC, by providing a known regulatory framework, could help promote that priority. Having such regulations in place prior to the filing of any application for siting such energy facilities or equipment in State coastal waters or in federal waters would assure that all significant impacts of such projects would be addressed during the application process and would provide meaningful guidance as to CRC policy for entities considering undertaking such projects and a regulatory framework which would encourage investment in such projects. In addition, the State also would have a set of enforceable policies for purposes of CZMA consistency review of any similar projects proposed for federal waters.

The circumstances under which the CRC may deny a permit are set forth in N.C. Gen. Stat. Section 113A 120 regarding the granting or denial of permits. The statute provides that:

- (a) The responsible official or body shall deny an application for a permit upon finding:
- (1) In the case of coastal wetlands, that the development would contravene an order that has been or could be issued pursuant to G.S. 113 230.
  - (2) In the case of estuarine waters, that a permit for the development would be denied pursuant to G.S. 113 229(e).
  - (3) In the case of a renewable resource area, that the development will result in loss or significant reduction of continued long range productivity that would jeopardize one or more of the water, food or fiber requirements of more than local concern identified in subdivisions a through c of G.S. 113A 113(b)(3).
  - (4) In the case of a fragile or historic area, or other area containing environmental or natural resources of more than local significance, that the development will result in major or irreversible damage to one or more of the historic, cultural, scientific, environmental or scenic values or natural systems identified in subdivisions a through h of G.S. 113A 113(b)(4).
  - (5) In the case of areas covered by G.S. 113A 113(b)(5), that the development will jeopardize the public rights or interests specified in said subdivision.
  - (6) In the case of natural hazard areas, that the development would occur in one or more of the areas identified in subdivisions (a) through (e) of G.S. 113A 113(b)(6) in such a manner as to unreasonably endanger life or property.
  - (7) In the case of areas which are or may be impacted by key facilities, that the development is inconsistent with the State guidelines or the local land use plans, or would contravene any of the provisions of subdivisions (1) through (6) of this subsection.
  - (8) In any case, that the development is inconsistent with the State guidelines or the local land use plans.



- (9) In any case, that considering engineering requirements and all economic costs there is a practicable alternative that would accomplish the overall project purposes with less adverse impact on the public resources.
- (10) In any case, that the proposed development would contribute to cumulative effects that would be inconsistent with the guidelines set forth in subdivisions (1) through (9) of this subsection. Cumulative effects are impacts attributable to the collective effects of a number of projects and include the effects of additional projects similar to the requested permit in areas available for development in the vicinity.

(b) In the absence of such findings, a permit shall be granted. The permit may be conditioned upon the applicant's amending his proposal to take whatever measures or agreeing to carry out whatever terms of operation or use of the development that are reasonably necessary to protect the public interest with respect to the factors enumerated in subsection (a) of this section.

Upon examination of each of the grounds upon which the CRC may deny a CAMA development permit, it is apparent that only two of the statutory grounds are likely to be relevant to decisions about the siting of alternative energy facilities. Those two subsections are Section 113A-120(a)(5) regarding public trust waters and (7) regarding key facilities. Subsection 113A-120(a)(8) regarding inconsistency with land-use plans, (9) regarding practicable alternatives and (10) regarding cumulative effects may play a role in a particular project. However, only (a)(5) and (7) would have direct application to all proposals to site facilities in public waters, and (7) simply incorporates by reference the limitations set forth in (1) through (6). Each of these grounds for denial of a CAMA major development permit could be relevant to particular projects. For areas impacted by key facilities, subsection (a)(7) incorporates by reference almost everything that is in Section 113A-120(a). Especially significant is the denial of a permit on the ground that it is inconsistent with the State [CAMA] guidelines because, when permits are denied by the CRC, it is usually on the basis of such inconsistency.<sup>168</sup>

While existing CRC regulations do not specifically address the siting of alternative energy facilities in coastal waters, the CRC declared that wind turbines were not water-dependent structures and any proposed project would require a variance from the Commission's rules. Coastal and ocean waters are public trust areas,<sup>169</sup> and generally in public trust areas uses which are not water dependent are not permitted.<sup>170</sup> One test of water dependency is that the structure must be placed in a water site in order to perform an essential function. Wind turbines do not require access to water in order to perform their basic function of generating wind energy and, therefore, have been declared to fall within the general prohibition against siting non-water dependent facilities in public trust waters. On the other hand, tidal, current and wave energy generation facilities and equipment do require placement in coastal or ocean waters in order to perform their basic function and thus would not fall under the same prohibition.

If wind turbines were proposed for coastal ocean or estuarine waters, then the CRC would need to declare wind turbines a permissible non-water dependent use. Although the use standards for public trust areas contain the blanket statement that "uses which are not water dependent shall not be permitted in coastal wetlands, estuarine waters and public trust areas," that blanket prohibition is qualified later in the regulation. 15A NCAC 07H.0208(a)(3) states:

When the proposed development is in conflict with the general or specific use standards set forth in this Rule, the CRC may approve the development if the applicant can demonstrate that the activ-



ity associated with the proposed project will have public benefits as identified in the findings and goals of the Coastal Area Management Act, that the public benefits clearly outweigh the long range adverse effects of the project, that there is no reasonable and prudent alternate site available for the project, and that all reasonable means and measures to mitigate adverse impacts of the project have been incorporated into the project design and will be implemented at the applicant's expense. These measures taken to mitigate or minimize adverse impacts may include actions that will:

- (A) Minimize or avoid adverse impacts by limiting the magnitude or degree of the action;
- (B) Restore the affected environment; or
- (C) Compensate for the adverse impacts by replacing or providing substitute resources.

Advocates of water-based wind energy facilities seeking a CAMA development permit may make the following arguments: (1) the long-term energy benefits to the people of the State outweighs any long-term adverse effects of the project;<sup>171</sup> (2) open water siting of such facilities is preferable to land-based sites; and (3) steps will be taken to mitigate or minimize any adverse impacts. If water-based wind energy facilities satisfy this standard for non-water dependent facilities, the question is what other specific standards would the proposed facility have to meet?

A potential significant barrier to providing the infrastructure necessary to support offshore alternative energy facilities, especially wind energy development projects, whether located in State or federal waters is the CAMA prohibition on almost all forms of "development" seaward of the erosion setback lines and on or through the beach and dunes.<sup>172</sup> Cutting through the beach and dunes would be necessary for transmission lines coming from offshore alternative energy facilities, but that activity is currently not permitted under existing rules.<sup>173</sup> Unless excepted, CRC regulation 15A NCAC 07H .0309 prohibits such activity. 15A NCAC 07H.0309 contains a list of exceptions for some types of development seaward of the oceanfront setback line. However, electrical transmission lines are not one of the excepted types of development. Furthermore, even excepted development is permitted only if it is landward of the vegetation line; involves no alteration or removal of primary or frontal dunes which would compromise the integrity of the dune as a protective landform or the dune vegetation.<sup>174</sup> Since CRC rules also allow some types of development seaward of the ocean setback line,<sup>175</sup> It could provide an exception for transmission lines that bring electricity generated by facilities located offshore.

### [Addressing CAMA Alternative Energy Issues Through the Variance Process](#)

It is possible that the applications for permits to locate transmission lines in State waters that also pass through beaches and dunes could be addressed through the CAMA variance procedure. N.C. Gen. Stat. Section 113A-120.1 provides that:

- (a) Any person may petition the Commission for a variance granting permission to use the person's land in a manner otherwise prohibited by rules or standards prescribed by the Commission, or orders issued by the Commission, pursuant to this Article. To qualify for a variance, the petitioner must show all of the following:
  - (1) Unnecessary hardships would result from strict application of the rules, standards, or orders.



- (2) The hardships result from conditions that are peculiar to the property, such as the location, size, or topography of the property.
- (3) The hardships did not result from actions taken by the petitioner.
- (4) The requested variance is consistent with the spirit, purpose, and intent of the rules, standards, or orders; will secure public safety and welfare; and will preserve substantial justice.

(b) The Commission may impose reasonable and appropriate conditions and safeguards upon any variance it grants.<sup>176</sup>

The steering committee advises the CRC to amend its coastal energy policies to establish clear guidance regarding the permitting of alternative energy facilities in State waters rather than rely on the variance process. This guidance should reference both facility and infrastructure siting on or under State-owned submerged lands, and across or under beaches and dunes.

## ***Recommendations***

### ***Enactment of Comprehensive Statute And Promulgation of Rules Addressing Granting of Easements and Leases of State-Owned Submerged Lands and Associated Water Column and Air Space for Alternative Energy Projects***

In addition to any necessary CAMA or other state agency permits to site alternative energy projects in state waters, the developers of such projects will need easements and leases from the State to occupy State-owned submerged lands and associated water column and air space. In light of limitations in existing statutes, the steering committee recommends the enactment of a comprehensive statute designed for alternative energy projects. This statute could be modeled after N.C. Gen. Stat. Section 146-12 (easements in lands covered by water) and could include such factors as:

- Identification of areas that could be occupied;
- Include submerged lands, water column and air space;
- Establishing qualification criteria to be an acceptable applicant
- Duration of the easement or lease;
- Rights of the lease or easement holder;
- Maintenance and decommissioning obligations;
- Performance bonds or other security;
- Compensation to the State;
- Identify other permitted uses in the area;
- Authorize granting of easements for transmission cables; and
- Require all of the above to be subject to CRC, EMC and Utilities Commission permit requirements.

In addition, a set of comprehensive rules for the siting of alternative energy facilities in State coastal waters should be developed by the EMC or CRC or jointly. These rules could be modeled after the regulations being written by MMS for alternative energy facilities proposed for siting in federal waters. Furthermore, the steering committee recommends amendments to the CRC's rules to establish clear guidance as to under what circumstances, if any, placement of non-water dependent alternative energy facilities will be permitted for



location in State waters as well as what infrastructure, such as transmission lines, will be allowed to be located not only on or under State-owned submerged lands, but also across or under beaches and ocean dunes.

### *Review and Amendment of Existing CRC Rules Affecting Alternative Energy Facilities Sited in State and Federal Waters*

- The CRC and DCM staff should review 15A NCAC 07M.0400 on coastal energy policies to ensure it adequately covers alternative energy development and is updated to address new technologies. Currently, the regulation focuses on oil and gas development and LNG facilities;
- If H.B. 809 is not passed into law, the CRC should adopt a rule creating an exception to the requirement that structures placed in state waters be water dependent, for the siting of non-water dependent alternative energy facilities and infrastructure in state waters; and
- The present rules prohibiting the placement of alternative energy facilities in state waters as well as the location of transmission lines from alternative energy facilities across or under the beach and ocean dunes be reviewed and modified to permit such activity under appropriate circumstances and conditions.

### *Additional Recommendations*

The steering committee recommends that the CRC, EMC and Utilities Commission clarify their respective roles in the development of rules to be applied to alternative energy projects proposed for siting in state waters.

In 2008, the General Assembly authorized the University of North Carolina to study the feasibility of wind energy development in Albemarle and Pamlico Sounds. The steering committee recommends that DCM continue to monitor the progress of this feasibility study.

In light of studies being conducted on the feasibility of wind energy in coastal waters and the sounds, the steering committee recommends that the CRC not change its definition of water-dependent structures to include wind turbines. Instead of changing the water dependency requirement to allow wind turbines in coastal waters, the CRC could craft an exception for water-based wind turbines and develop a new rule for wind energy projects.



## Endnotes – Chapter 2

<sup>58</sup>16 U.S.C. §791 et seq.

<sup>59</sup>See, e.g., “Wind Energy Bumps Into Power Grids Limits,” *The New York Times* (August 27, 2008) (hope of replacing fossil fuels is bumping into a power grid that can not handle the new demands).

<sup>60</sup>In 2001 Energy Management Inc (EMI) proposed a 130-turbine wind field in Nantucket Sound about nine miles from shore. Construction may begin in 2010 or 2011. Geotimes, “The Wind Over the Waves: Is Offshore Wind Power the Renewable Energy of the Future” (April 2008).

<sup>61</sup>In 2006, Bluewater Wind proposed a large-scale wind farm to be located 17 kilometers (approximately 11 miles) off the coast of Delaware. If the company obtains all the necessary permits, it could be functional by as early as 2013. Geotimes. A June 24, 2008 *Washington Post* article describes the project as larger than earlier descriptions, stating that the project will consist of 150 wind turbines and generate 600MW. “Agreement Reached on Del. Wind Farm,” *The Washington Post* (June 24, 2008).

<sup>62</sup>New Jersey Board of Public Utilities, “Renewable Energy Incentive Programs,” at <http://www.njcleanenergy.com/renewable-energy/programs/programs>.

<sup>63</sup>New Jersey Board of Public Utilities, “Board Order on Offshore Wind Rebate Program for the Installation of Meteorological Towers,” available at <http://www.njcleanenergy.com/files/file/Board%20Orders/11-21-08-8A.pdf>.

<sup>64</sup>New Jersey Board of Public Utilities, “Board of Public Utilities Approves Grant of \$4 Million for Offshore Wind Project Proposal,” available at <http://www.njcleanenergy.com/files/file/Press%20Releases/20081003.pdf>.

<sup>65</sup>See R.I. Gen. Laws §39.26.4.

<sup>66</sup>State of Rhode Island, “Carcieri Names Deepwater Wind as Developer for Rhode Island’s Off-Shore Wind Farm,” at <http://www.ri.gov/press/view.php?id=7202>.

<sup>67</sup>See *id.*

<sup>68</sup>In 2005, the Long Island Power Authority proposed a 40-turbine farm in federal waters, anticipating it would be operational by 2009. Geotimes, “The Wind over the Waves: Is offshore shore wind power the renewable energy of the future” (April 2008).

<sup>69</sup>Walter Brooks, “Long Island Offshore Wind Farm Scuttled: Cape Wind Predicted This Outcome 4 years Ago,” *Cape Cod Today* (August 24, 2007), at [http://www.capecodtoday.com/blogs/index.php/2007/08/24/long\\_island\\_offshore\\_wind\\_farm\\_scuttled?blog=109](http://www.capecodtoday.com/blogs/index.php/2007/08/24/long_island_offshore_wind_farm_scuttled?blog=109).

<sup>70</sup>*Id.*

<sup>71</sup>*Id.*, quoting Cape Wind President Jim Gordon.

<sup>72</sup>See Babcock & Brown, “BBSN Restructure Proposal,” at <http://www.babcockbrown.com.au/bnb-investor-information/bbsn-restructure-proposal.aspx> (accessed March 4, 2009). See also Delmarva Media Group, “Delaware: Bluewater Wind’s owner’s financial woes threaten offshore project” (February 9, 2009), at <http://www.delmarvanow.com/article/20090209/DW01/90209013/-1/DW> (accessed February 15, 2009).

<sup>73</sup>On October 23, 2005, 11,000 acres in the Gulf of Mexico was leased to Galveston Offshore Wind, a division of Wind Energy Systems Technologies (WEST). *The Associated Press*, “Texas Plans Offshore Wind Farms,” November 7, 2005. In October 2007, WEST purchased four additional offshore wind leases in the Gulf. See Geotimes, “The Wind Over the Waves: Is Offshore Wind Power the Renewable Energy of the Future” (April 2008).

<sup>74</sup>Peter Fairley, “Wind Power That Floats,” *Technology Review*, at <http://www.technologyreview.com/energy/20500/?a=f> (April 2, 2008).

<sup>75</sup>Geotimes, “The Wind Over the Waves: Is Offshore Wind Power the Renewable Energy of the Future” (April 2008) (“supports used to anchor turbines... have only been designed for use in shallow waters no deeper than about 30 meters”).

<sup>76</sup>Floating turbines are being designed and tested and may provide a solution to locating turbines in deep-water areas. In October 2008, New Jersey approved a project, if built, would be located 16-20 miles off the coast in waters 100 feet deep (approximately 30 meters). The company behind the project plans to use the same technology as used to build oil and gas rigs in the Gulf of Mexico. Ken Belson, “Huge Offshore Wind Farm Wins Approval,” *The New York Times* (October 3, 2008).



<sup>77</sup>See Wind Service Holland, “Off- and Nearshore Wind Energy: Operational Projects,” at <http://home.wxs.nl/~windsh/offshore.html> (accessed February 2, 2009).

<sup>78</sup>North Carolina Wind Stations and Nearshore Bathymetry. [computer map]. 1:3,000,000. Department of Marine Sciences [GIS data files]. Chapel Hill, N.C.: UNC Chapel Hill, 2008. Using ArcGIS [GIS software]. Version 9.2. Redlands, CA: Environmental Systems Research Institute, 1992-2008. According to the bathymetry map from the UNC Department of Marine Sciences, the offshore 20-meter and 30-meter depth lines meander off the coast of North Carolina so the distance from shore is not uniform.

<sup>79</sup>Peter Fairley, “Wind Power That Floats,” Technology Review, at <http://www.technologyreview.com/energy/20500/?a=f> (April, 2, 2008).

<sup>80</sup>Geotimes, “The Wind Over the Waves: Is Offshore Wind Power the Renewable Energy of the Future” (April 2008) (“cost can be 50 to 100 percent higher for offshore than onshore”).

<sup>81</sup>Geotimes, “The Wind Over the Waves: Is Offshore Wind Power the Renewable Energy of the Future” (April 2008). In 2008, the Long Island Power Authority released a study concluding over a 20-year period the cost of building and connecting its proposed 40-turbine offshore facility would cost consumers an extra \$66 million per year.

<sup>82</sup>“A Few Snags, but Hopes Are Still Hill for Offshore Wind in Texas,” The New York Times (October 10, 2008) (WEST is still looking for investors for its proposed 62-turbine farm that would be located off the coast of Galveston, losing two investors in 2008, Lehman Brothers and Wachovia, as a result of the economic downturn.)

<sup>83</sup>See Reuters, “Bluewater To Work With Delaware On Wind Farm” (November 12, 2007), at <http://uk.reuters.com/article/environmentNews/idUKN0823936520071112>.

<sup>84</sup>The Cape Wind project is estimated to cost \$2 billion. The Bluewater Wind project to be located off the coast of Delaware is estimated to cost \$1.6 billion. Reuters, “Bluewater To Work With Delaware On Wind Farm” (November 12, 2007), at <http://uk.reuters.com/article/environmentNews/idUKN0823936520071112>.

<sup>85</sup>The Cape Wind project area is described as in the company’s Draft EIS / EIR / DRI, p. 1-4, as “24 square miles” which is slightly smaller than the original “28 square miles.” *Id.*

<sup>86</sup>See Cape Cod Today, quoting Mark Rodgers, Communications Director of Cape Wind, explaining why Horseshoe Shoal in Nantucket Sound was picked as the location for the Cape Wind project.

<sup>87</sup>Information about these programs is available at the Florida Energy Office of the Governor’s Office of Energy and Climate Change at <http://www.dep.state.fl.us/energy/>.

<sup>88</sup>Other projects that received funding related to solar energy, biodiesel fuel, and ethanol production. See <http://www.dep.state.fl.us/energy/energyact/grants.htm>.

<sup>89</sup>Information about the different incentive programs is available at the California Energy Commission’s website at <http://www.energy.ca.gov/renewables/index.html>.

<sup>90</sup>NC Solar Center, Coastal Wind Initiative, at [http://www.ncsc.ncsu.edu/programs/The\\_Coastal\\_Wind\\_Initiative.cfm](http://www.ncsc.ncsu.edu/programs/The_Coastal_Wind_Initiative.cfm).

<sup>91</sup>To learn more about how a wind turbine works, visit the Department of Energy, “How Wind Turbines Work,” at [http://www1.eere.energy.gov/windandhydro/wind\\_how.html](http://www1.eere.energy.gov/windandhydro/wind_how.html). To learn more about how an offshore wind facility works, visit British Wind Energy Association, “How An Offshore Wind Farm Works,” at <http://www.bwea.com/offshore/how.html>.

<sup>92</sup>Image courtesy Minerals Management Service, Renewable Energy and Alternate Use Program, “Technology White Paper on Wave Energy Potential on the US Outer Continental Shelf,” at [http://ocsenergy.anl.gov/documents/docs/OCS\\_EIS\\_Whitepaper\\_Wave.pdf](http://ocsenergy.anl.gov/documents/docs/OCS_EIS_Whitepaper_Wave.pdf).

<sup>93</sup>Image courtesy of The Carbon Trust, at [http://www.carbontrust.co.uk/technology/technologyaccelerator/Wave\\_devices.htm](http://www.carbontrust.co.uk/technology/technologyaccelerator/Wave_devices.htm).

<sup>94</sup>Image courtesy of Pelamis Wave Power, at <http://www.pelamiswave.com/index.php>.

<sup>95</sup>These descriptions are adapted from Minerals Management Service Renewable Energy and Alternate Use Program, “Technology White Paper on Wave Energy Potential on the US Outer Continental Shelf,” at [http://ocsenergy.anl.gov/documents/docs/OCS\\_EIS\\_Whitepaper\\_Wave.pdf](http://ocsenergy.anl.gov/documents/docs/OCS_EIS_Whitepaper_Wave.pdf). The white paper itself contains more detailed descriptions of these technologies, as well as energy output estimates.

<sup>96</sup>Image courtesy Oregon State University Wallace Energy Systems and Renewables Facility, at <http://eecs.oregonstate.edu/wesrf/>.



<sup>97</sup>Reduced wave height is cited as a consideration in only certain circumstances (e.g., effect on recreational surfers) and is described as a potential “isolated impact” as a result of wave energy conversion devices. However, this impact would be observed only one to two km away from the wave energy converter in the direction of the wave travel. This means that onshore impact would not be significant if the converters were a greater distance from the shore. See Minerals Management Service Renewable Energy and Alternate Use Program, “Technology White Paper on Wave Energy Potential on the US Outer Continental Shelf,” at [http://ocsenergy.anl.gov/documents/docs/OCS\\_EIS\\_Whitepaper\\_Wave.pdf](http://ocsenergy.anl.gov/documents/docs/OCS_EIS_Whitepaper_Wave.pdf).

<sup>98</sup>*Id.*

<sup>99</sup>*Id.*

<sup>100</sup>Further information about the facility and its research is available at <http://cecs.oregonstate.edu/wesrf>.

<sup>101</sup>Further information regarding Oregon’s wave energy efforts is available at [http://www.oregon.gov/ENERGY/RENEW/Hydro/Ocean\\_Wave.shtml](http://www.oregon.gov/ENERGY/RENEW/Hydro/Ocean_Wave.shtml).

<sup>102</sup>EPRI Survey and Characterization of Potential Offshore Wave Energy Sites in Oregon, May 2004, 2-3, at [http://www.oregon.gov/ENERGY/RENEW/Hydro/docs/EPRISite\\_Report.pdf](http://www.oregon.gov/ENERGY/RENEW/Hydro/docs/EPRISite_Report.pdf).

<sup>103</sup>A copy of the 2007-2009 Oregon Energy Plan is available at <http://www.oregon.gov/ENERGY/docs/Energy-Plan07-09.pdf>.

<sup>104</sup>A copy of the 2005 Renewable Energy Action Plan is available at <http://oregon.gov/ENERGY/RENEW/docs/Final-REAP.pdf>.

<sup>105</sup>Haw. Rev. Stat. §226-18.

<sup>106</sup>B.J. Reyes, “Ocean of Energy,” Honolulu Star-Bulletin, February 5, 2008, at <http://hawaii.gov/dbedt/info/energy/renewable/oceanlinx-sb-2008feb5.pdf>.

<sup>107</sup>*Id.*

<sup>108</sup>Jason Margolis, “Wave Farms Show Energy Potential,” BBC News, March 2, 2007, available at <http://news.bbc.co.uk/2/hi/technology/6410839.stm>.

<sup>109</sup>*Id.*

<sup>110</sup>More information about EMEC is available at <http://www.emec.org.uk>.

<sup>111</sup>Pietrafesa, Len, M. Peng, S. Bao and J. Epps, “Winds, Waves and Sea Level on the North Carolina Coast” (manuscript in preparation).

<sup>112</sup>Minerals Management Service Renewable Energy and Alternate Use Program, “Technology White Paper on Wave Energy Potential on the US Outer Continental Shelf,” at [http://ocsenergy.anl.gov/documents/docs/OCS\\_EIS\\_Whitepaper\\_Wave.pdf](http://ocsenergy.anl.gov/documents/docs/OCS_EIS_Whitepaper_Wave.pdf), 3 (“Water is about 835 times denser than wind, so for the same area of flow being intercepted, the energy contained in a 12-mph water flow is equivalent to that contained in an air mass moving at about 110 mph”).

<sup>113</sup>*Id.* at 3

<sup>114</sup>*Id.* at 3.

<sup>115</sup>The North Carolina Coastal Ocean Observing System (<http://ncoos.org>) is a useful resource for tracking currents off North Carolina’s coast.

<sup>116</sup>Image courtesy of the US Energy Information Administration.

<sup>117</sup>Image courtesy of Pure Energy Systems News.

<sup>118</sup>Minerals Management Service Renewable Energy and Alternate Use Program, “Technology White Paper on Wave Energy Potential on the US Outer Continental Shelf,” at [http://ocsenergy.anl.gov/documents/docs/OCS\\_EIS\\_Whitepaper\\_Wave.pdf](http://ocsenergy.anl.gov/documents/docs/OCS_EIS_Whitepaper_Wave.pdf), 4-5.

<sup>119</sup>Information regarding the pilot program is available at Florida Atlantic University Center for Ocean Energy Technology’s website at <http://coet.fau.edu/?p=pilot>.

<sup>120</sup>Michael B. Walsh, A Rising Tide in Renewable Energy: The Future of Tidal In-Stream Energy Conversion (TISEC), 19 Vill. Env’tl L. J. 193, 202-203 (2008).

<sup>121</sup>Image courtesy Australian Institute of Energy, Tidal Energy Fact Sheet, at [http://www.aie.org.au/national/factsheet/FS10\\_TIDAL%20ENERGY.pdf](http://www.aie.org.au/national/factsheet/FS10_TIDAL%20ENERGY.pdf).

<sup>122</sup>*Id.* at 197-98.



<sup>123</sup>All the reports produced by the study are available at <http://oceanenergy.epri.com/streamenergy.html#reports>.

<sup>124</sup>EPRI Guidelines for Preliminary Estimates of Power Production by TISEC Devices 5, available at [http://oceanenergy.epri.com/attachments/streamenergy/reports/TP-001\\_REV\\_3\\_BP\\_091306.pdf](http://oceanenergy.epri.com/attachments/streamenergy/reports/TP-001_REV_3_BP_091306.pdf).

<sup>125</sup>*Id.* at 7-8

<sup>126</sup>*Id.* at 198.

<sup>127</sup>16 U.S.C. §791 et. seq.

<sup>128</sup>Michael B. Walsh, A Rising Tide in Renewable Energy: The Future of Tidal In-Stream Energy Conversion (TISEC), 19 Vill. Env'tl L. J. 193, 211 (2008).

<sup>129</sup>Verdant Power, The RITE Project, available at [http://www.verdantpower.com/wp-content/themes/Verdant/downloads/VerdantPower\\_RITE.pdf](http://www.verdantpower.com/wp-content/themes/Verdant/downloads/VerdantPower_RITE.pdf) (describing the project's progress and effects so far).

<sup>130</sup>Anthony DePalma, "East River Fights Bid to Harness Its Currents for Electricity," The New York Times, August 13, 2007, available at [http://www.nytimes.com/2007/08/13/nyregion/13power.html?\\_r=2&oref=slogin&oref=slogin](http://www.nytimes.com/2007/08/13/nyregion/13power.html?_r=2&oref=slogin&oref=slogin).

<sup>131</sup>*Id.*

<sup>132</sup>To learn more about how a wind turbine works, visit the Department of Energy, "How Wind Turbines Work," at [http://www1.eere.energy.gov/windandhydro/wind\\_how.html](http://www1.eere.energy.gov/windandhydro/wind_how.html). To learn more about how an offshore wind facility works, visit British Wind Energy Association, "How An Offshore Wind Farm Works," at <http://www.bwea.com/offshore/how.html>.

<sup>133</sup>*See* 43 U.S.C. §1337.

<sup>134</sup>33 U.S.C. §1251.

<sup>135</sup>*See id.*

<sup>136</sup>Section 401 of the CWA requires certification from the relevant state that the proposed activity will not cause or contribute to a violation of relevant state water quality standards, before a federal agency can issue a license or permit for construction or other activity. *See* 33 U.S.C. §1341.

<sup>137</sup>16 U.S.C. §1452.

<sup>138</sup>16 U.S.C. §1456.

<sup>139</sup>*See id.*

<sup>140</sup>*See* Submerged Lands Act, 43 U.S.C. §§1311-1314. The exceptions to this rule are Texas and the west coast of Florida. Their jurisdiction extends out nine geographical miles because these states had established their jurisdictions over a larger area before statehood. *See* 43 U.S.C. §1312.

<sup>141</sup>The EPA Act gave the Department of the Interior authority to develop and implement an alternative energy and alternate use program. *See* Pub. L. No. 109-58, 119 Stat. 868 (codified in 26 U.S.C. and 42 U.S.C.). *See also* OCS Alternative Energy and Alternate Use Programmatic Final EIS at <http://ocsenergy.anl.gov/index.cfm>.

<sup>142</sup>*See* 33 U.S.C. §403.

<sup>143</sup>*See* Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §1801 et seq. *See also* Essential Fish Habitat Regulatory Guidelines, 50 C.F.R. §600.

<sup>144</sup>16 U.S.C. §470f.

<sup>145</sup>43 U.S.C. §1311(a).

<sup>146</sup>43 U.S.C. §1301(e).

<sup>147</sup>43 U.S.C. §1314.

<sup>148</sup>229 U.S. 53 (1913).

<sup>149</sup>*Id.* at 69.

<sup>150</sup>*Id.* *See also* United States v. Willow River Power Co., 324 U.S. 499, 502 (1945). This includes activities not encompassed by the federal navigation servitude.

<sup>151</sup>The reason for the exclusion of the use of water for the production of power probably has nothing to do with wind, wave, or current energy. That language was most likely included because of concerns about the construction of dams in freshwater navigable rivers. At the time the act was passed, wave, current, and tidal energy development was far into the future.



<sup>152</sup>See FERC Press Release, “FERC Asserts Jurisdiction Over Outer Continental Shelf Hydroelectric Projects” (October 16, 2008), at <http://www.ferc.gov/news/news-releases/2008/2008-4/10-16-08-h-2.asp>.

<sup>153</sup>The full EIS is available online at <http://ocsenergy.anl.gov/index.cfm>.

<sup>154</sup>To read the proposed rules, visit the MMS web page re: regulatory development and policy for its alternative energy program at <http://www.mms.gov/offshore/AlternativeEnergy/RegulatoryInformation.htm>. Scroll down to the “rule development” section.

<sup>155</sup>See FERC Press Release, “FERC Asserts Jurisdiction Over Outer Continental Shelf Hydroelectric Projects” (October 16, 2008), at <http://www.ferc.gov/news/news-releases/2008/2008-4/10-16-08-h-2.asp>.

<sup>156</sup>FERC and Department of the Interior Press Release, “Interior and FERC Announce Agreement on Offshore Renewable Energy Development” (March 17, 2009), at <http://www.ferc.gov/news/news-releases/2009/2009-1/03-17-09.pdf>.

<sup>157</sup>H.B. 809 also provides a definition of “wind energy facility” and a general overview of the permit process for such a facility if sited on the coast. The text of H.B. 809 can be found at <http://www.ncga.state.nc.us/Sessions/2009/Bills/House/HTML/H809v1.html>.

<sup>158</sup>See N.C. Gen. Stat. §113A-118(a).

<sup>159</sup>N.C. Gen. Stat. §113A-103(5)a.

<sup>160</sup>N.C. Gen. Stat. §113A-103(5)b.

<sup>161</sup>See N.C. Gen. Stat. §62-2(b).

<sup>162</sup>“Public utility” means “a person, whether organized under the laws of this State or under the laws of any other state or country, now or hereafter owning or operating in this State equipment or facilities for: producing, generating, transmitting, delivering or furnishing electricity, piped gas, steam or any other like agency for the production of light, heat or power to or for the public for compensation; provided, however, that the term ‘public utility’ shall not include persons who construct or operate an electric generating facility, the primary purpose of which facility is for such person’s own use and not for the primary purpose of producing electricity, heat, or steam for sale to or for the public for compensation.” N.C. Gen. Stat. §62-2(b).

<sup>163</sup>Letter of Robin W. Smith, Asst. Secretary for Environment, NC Department of Environment and Natural Resources, to Renewable Energy Committee of the NC Environmental Management Commission, November 12, 2008, p. 5. See generally N.C. Gen. Stat. §62-110 and §62-110.1 (environmental considerations not mentioned as factor in granting certificate of necessity and convenience).

<sup>164</sup>See N.C. Gen. Stat. §62-101.

<sup>165</sup>N.C. Gen. Stat. §62-101(a). There are some exceptions but none would be applicable to transmission lines coming from water-based alternative energy production facilities. See N.C. Gen. Stat. §62-101(c).

<sup>166</sup>2007-397 N.C. Sess. Laws 9.

<sup>167</sup>In addition to H.B. 809, in a memo to the Environmental Review Commission, the Renewable Energy Committee of the EMC also recommended that permitting wind energy facilities on the coast be vested in the CRC. See Memorandum from the Renewable Energy Committee of the Environmental Management Commission to the Environmental Review Commission, “Development of a Wind Energy Permitting Program in North Carolina,” pg. 5 (March 16, 2009).

<sup>168</sup>Telephone interview with Allen Jernigan, Special Deputy Attorney General, North Carolina Department of Justice (February 23, 2009).

<sup>169</sup>See 15A NCAC 7H.0207(a) (description of public trust areas). See also 15A NCAC 7H.0206(a). The use standards for estuarine waters are the same as those applicable to public trust areas. 15A NCAC 7H.0206(d).

<sup>170</sup>15A NCAC 7H.0208 states: (a) General Use Standards (1) Uses which are not water dependent shall not be permitted in coastal wetlands, estuarine waters, and public trust areas. Restaurants, residences, apartments, motels, hotels, trailer parks, private roads, factories, and parking lots are examples of uses that are not water dependent. Uses that are water dependent may include: utility easements; docks; wharfs; boat ramps; dredging; bridges and bridge approaches; revetments, bulkheads; culverts; groins; navigational aids; mooring pilings; navigational channels; simple access channels and drainage ditches.

<sup>171</sup>One of the legislative goals for CAMA is to establish policies, guidelines and standards for “the economic development of the coastal area.” N.C. Gen. Stat. §113A-102(b)(4)(b).

<sup>172</sup>See 15A NCAC 7H.0301 et seq. See also 15A NCAC 7H.0306.



<sup>173</sup>The general permit for the installation of aerial and subaqueous utility lines is not applicable to the ocean hazard area AEC. *See* 15A NCAC 7H.1601. The ocean hazard AEC includes the ocean beaches, frontal dunes, and inlet areas as well as other areas. *See* 15A NCAC 7H.0301.

<sup>174</sup>15A NCAC 7H.0309(a).

<sup>175</sup>15A NCAC 7H. 0309(d).

<sup>176</sup>*See also* 15A NCAC 7J.0701.



## Chapter 3: Ocean Outfalls

Ocean outfalls are pipes or tunnels that carry municipal or industrial wastewater, stormwater, sewer overflows or cooling water to the ocean, where they are discharged. Discharge can take place either above or beneath the water's surface. Usually, the discharge is treated before it reaches the ocean, but not always. Ocean outfalls are utilized in many coastal states in the US, including North Carolina. Currently, there are 15 active ocean outfall systems along the coast—eight in Dare County, one in Kure Beach, five in Emerald Isle and one in Atlantic Beach.<sup>177</sup> There is also an ocean outfall operated by Progress Energy in Brunswick County. It is important to note, however, that the majority of these outfalls are for the discharge of stormwater, not wastewater.<sup>178</sup> However, the ocean outfall system operated by Progress Energy does include a low percentage of wastewater among its discharge.<sup>179</sup> Although a majority of the outfalls in North Carolina are for stormwater, this chapter will focus on the potential for outfalls for wastewater as an emerging issue.

Wastewater in North Carolina's coastal region traditionally has been disposed of through central collection and treatment facilities or by underground septic systems. Past efforts, including "North Carolina's Ocean Stewardship Area: A Management Study," cited location and local oceanographic conditions as variables contributing to the success or failure of ocean outfall design. In the early 1990s, the widespread distribution of North Carolina's coastal population was seen as a major limiting factor in the development and siting of ocean outfalls, as it adds significant cost to the construction of an extensive collection and disposal system.<sup>180</sup> However, as coastal communities continue to experience significant population growth, the demands for municipal sewage treatment will continue to grow.

Ocean outfalls in North Carolina have been the subject of several initiatives, including the 1993 North Carolina Ocean Outfall Forum<sup>181</sup> and a study commissioned by the Regional Wastewater Task Force.<sup>182</sup> More recently, the North Carolina CHPP also contained recommendations relative to ocean outfall development.

Other references to ocean outfalls can be found under N.C. Gen. Stat. Section 143B-434.01, which calls for the generation of a Comprehensive Strategic Economic Development Plan and contains a reference suggesting that, as part of an environmental review, data regarding the "assimilative capacity of riverine, estuarine or ocean outfalls" is to be included as a first step to developing a plan under the statute.<sup>183</sup> In addition to establishing the EMC and authorizing it to adopt water quality standards for water quality classifications of state water, N.C. Gen. Stat. Section 143 Article 21 outlines the State's water quality strategy.<sup>184</sup> North Carolina has not developed a classification for its coastal-ocean waters, other than those in place for tidal salt waters. Instead, the EMC in 1983 adopted EPA standards for the discharge of wastewaters to the Atlantic Ocean. Article 21 does, however, specifically prohibit discharges into ocean water:

Unless permitted by a rule of the Commission, the discharge of wastes... to the open waters of the Atlantic Ocean over which the State has jurisdiction is prohibited.<sup>185</sup>

Furthermore, Article 21 states that, in developing stormwater runoff rules and programs, the EMC may "utilize stormwater rules established by the Commission to protect classified shellfish waters, water supply watersheds and outstanding resource waters and to control stormwater runoff disposal in coastal counties and other nonpoint sources."<sup>186</sup>



Additionally, there are both direct and indirect references to ocean outfalls in a number of DENR divisional regulations. For example, the Division of Marine Fisheries has adopted regulations pertaining to authority to proscribe fishing in areas adjacent to ocean outfalls.<sup>187</sup> Regulations developed by the NC Division of Water Quality (DWQ) also may be applicable, as they cover coastal water treatment,<sup>188</sup> coastal waste treatment disposal<sup>189</sup> and stormwater management,<sup>190</sup> and since DWQ has dictated that it will follow guidelines and requirements established by the EPA for the discharge of wastewaters to the Atlantic Ocean (40 C.F.R. 125.120–125.124).<sup>191</sup> Outside these few references, however, ocean outfall information is lacking. Despite a lack of guidance, a CAMA major permit would be required, as the instillation of an outfall would be considered a development activity occurring in the public trust AEC.

One of the interesting questions addressed by North Carolina Sea Grant and DCM's 1994 ocean policy study is that since the construction of an ocean outfall would require a CAMA permit, would the CRC play a role in growth management by examining potential impacts on the public trust and estuarine water AECs from a comprehensive wastewater treatment plan?

### Federal Laws and Programs

Part of the reason for this lack of guidance could be that federal legislation places “a rather onerous burden on ocean outfalls.”<sup>192</sup> One likely reason for the dearth of State legislation is that the Federal Ocean Discharge Program (Section 403) and the Secondary Treatment Waiver Program (Section 301(h) of the CWA)<sup>193</sup> operate through the National Pollutant Discharge Elimination System (NPDES) to control some of the issues related to ocean outfalls.

The federal Ocean Discharge Program “requires that all permanent point source discharges to ocean waters cause “no unreasonable degradation to the marine environment.”<sup>194</sup> In general, however, the focus of this program has been regulating discharges from offshore oil and gas facilities, not ocean outfalls.<sup>195</sup>

Section 301 of the CWA, on the other hand, “provided an opportunity for publicly owned treatment works (POTW) to seek a waiver from the law’s technology-based secondary treatment requirements” if the POTW could show “that their less-than-secondary discharge will allow for the protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife, and allow for recreational activities in and on the water.”<sup>196</sup> Based on the data on hand during the 1993 Ocean Outfall Forum, very few POTWs were granted such waivers.<sup>197</sup> Notably, one quote from a forum participant in response to calls for a science-based approach to wastewater management in coastal waters, was: “the technology-based controls established in law 20 years ago, and now in place for wastewater treatment, have served the nation well.”<sup>198</sup>

### Recent North Carolina Developments

While it appears that the 1990s saw a great deal of discussion regarding ocean outfalls in North Carolina,<sup>199</sup> relatively little recent action has taken place. The CHPP<sup>200</sup> provides an exception in that included among its goals is a directive to “enhance and protect water quality.”<sup>201</sup> Under this broad heading, DENR recommended “[a]dopt[ing] or modify[ing] rules or statutes to prohibit ocean wastewater discharges.”<sup>202</sup> Moreover, “[e]nhanced coordination with and financial / technical support for local government actions to better manage... wastewater,” also was recommended.<sup>203</sup>



The CHPP identified the EMC as the lead to conduct the necessary rulemaking that would implement the former recommendation of adopting or modifying rules or statutes to prohibit ocean wastewater discharges. Despite this charge, it does not appear that the EMC has made much headway in this respect since the CHPP was adopted.<sup>204</sup>

The latter recommendation—to encourage and support local governments to better manage wastewater—is not one that lends itself to rulemaking, according to the CHPP. Instead, the plan proposes a multi-agency approach, spearheaded by DENR, but accompanied also by DWQ, DCM and Environmental Health to bring State and local officials together to encourage advances in wastewater management. In a sense, this recommendation is a reiteration of the suggestions that came out of the 1993 Ocean Outfalls Forum; namely, to encourage multidisciplinary and inter-agency cooperation to address the complex issue of wastewater elimination via ocean outfalls in North Carolina. However, there does not appear to be substantial movement on this issue since.<sup>205</sup>

### **Ocean Outfall Models from Other States**

Ocean outfalls have been utilized in other states and have met with varying levels of success. Two state programs, Florida and California, will be briefly discussed, and common design components exist between these states due to federal statutes. Primarily, ocean outfalls are required to undergo secondary treatment for disposal<sup>206</sup> and should be directed to deeper waters (generally 200 feet deep). Several older outfalls are still in use in California, which were subject to early EPA waivers requiring only primary treatment of effluent. While the 200-foot depth standard generally requires an outfall terminus to be located significant distance offshore, some outfalls may be in shallower waters. At times, the 200-foot requirement can result in pipes crossing the state / federal jurisdictional boundary. In these cases, a joint permitting process is entered into with the EPA. While the EPA is given primary responsibility for review of ocean outfall sitings, state governments have significant input since plume size and regional ocean currents can direct plumes back into their territorial waters.

#### **Florida**

South Florida has six ocean outfalls, primarily for treated wastewater, in the three-county area of Palm Beach, Broward and Dade.<sup>207</sup> This region is characterized by increasing population growth and relatively high population density.<sup>208</sup> The Southeast Florida Outfall Experiment (SEFLOE) studies were undertaken in the 1990s as a joint project between NOAA, the Florida Department of Environmental Protection, EPA and the University of Florida, and a report entitled “Ocean Outfall Study: Final Report” was published.<sup>209</sup> This study provides up-to-date scientific information on ocean outfalls and their impact on the surrounding environment in Southeast Florida. From a regulatory standpoint, Florida leans heavily on the CWA, as described previously.<sup>210</sup> However, Florida also has enacted its own Air and Water Pollution Control Act,<sup>211</sup> which is similar to the federal law prohibiting the discharge of untreated wastewater into any state waters. Additionally, a series of state regulations outline the standards that wastewater effluents must meet.<sup>212</sup> Florida requires secondary treatment for wastewater.<sup>213</sup>

The report not only focused on ocean outfalls in Southeast Florida, but also on re-use strategies. Florida encourages and promotes water reuse as reflected in the state reuse, and these objectives are set forth by statute in Sections 403.064 and 373.250 of the Florida Statutes. According to the “Ocean Outfall Study” report:



Water reuse has been considered an important component of both wastewater management and water resource management in Florida. Benefits of water reuse include:

- Reuse decreases discharges of wastewater effluent to surface waters and deep injection wells and thus reduces environmental impacts associated with these disposal methods.
- Reclaimed water provides an alternative water supply for activities that do not require potable quality water such as irrigation and toilet flushing and helps to conserve potable quality water.
- High quality reclaimed water has the ability to recharge and augment existing water supplies.<sup>214</sup>

The report goes further to note that Florida's reuse capacity has increased significantly in the past 20 years, and that by 2020 Florida's goal is to reclaim and reuse 65% of all domestic wastewater.<sup>215</sup> However, the report acknowledges that challenges in meeting that goal, particularly in highly urbanized areas such as Southeast Florida.<sup>216</sup>

## California

There are 37 ocean outfalls in California that discharge over 1.5 billion gallons of wastewater effluent daily.<sup>217</sup> The California State Water Resources Control Board is charged with ensuring the "highest reasonable quality for waters of the State,"<sup>218</sup> but there is little information on the board's policy regarding wastewater treatment requirements for ocean outfall effluents. There is evidence, however, that California is at the forefront of the movement to encourage more stringent tertiary wastewater treatment before effluent is released via ocean outfalls.<sup>219</sup> The push for tertiary treatment may stem from the presence of outdated facilities along the coast. For example, in Los Angeles County, existing ocean outfalls were installed between 1950 and 1970 and have not been inspected since. The Los Angeles County Sanitation District is currently involved in a 2-year campaign to raise community support for a project to update four ocean outfalls. California's existing environmental regulations require water reclamation plants to undergo tertiary treatment, while the Joint Ocean Outfall system in Los Angeles County is only required to go through primary and secondary treatment. Even more stringent are California regulations pertaining to disposal of wastewater into closed estuaries. This practice requires micro-filtration Reverse Osmosis under state law. Whether or not the idea of applying tertiary treatment to ocean outfalls persists will depend on changing public perception of ocean outfalls and balancing increased costs associated with treatment.<sup>220</sup>

## Recommendations

The steering committee supports the recommendation in the CHPP that there should be no new or expanded ocean outfalls, whether the outfalls are for wastewater or for stormwater. The steering committee recommends decommissioning existing stormwater outfalls by using a phase-out process. This would include source reduction to existing outfalls, use of best management practices to clean discharge as needed and retrofitting existing outfalls in the interim. Reasons the steering committee cites for its recommendation include costs to reach deep water and to monitor, the public perception of outfalls near swimming areas and risk of spills caused by damage to infrastructure in exposed habitats. Instead, due to increased development along the North Carolina coast and the increased need for freshwater, the steering committee recommends that the State examine the potential for alternative water treatment methods, such as water reclamation and reuse facilities.



## Endnotes – Chapter 3

<sup>177</sup>The exact number of ocean outfall systems is difficult to determine because some systems actively discharge stormwater only part of the time. Some ocean outfall pipes are opened only on an as-needed basis, e.g., water backed up on streets due to a storm, and sanded over the rest of the time. Therefore, the number of active outfalls can change. The major ocean outfall systems in North Carolina that are almost always discharging, except perhaps during periods of severe drought, are the Dare County and Kure Beach systems. Telephone Interview with J.D. Potts, NC Division of Environmental Health (March 27, 2009).

<sup>178</sup>The NC Department of Transportation is currently working with the UNC Coastal Studies Institute to monitor stormwater outfalls in Dare County. The purpose of the project is “to identify the key microbial constituents of storm water in these ocean outfalls, determine concentrations and likely sources of indicator and tracer microorganisms in the storm water, and provide measures of patterns of loading in storm and ambient conditions in Dare County.” See UNC Coastal Studies Institute, “Ocean Outfall Monitoring,” at <http://csi.northcarolina.edu/content/research/outfall.htm> (accessed March 24, 2009).

<sup>179</sup>See Email from Matt Matthews, NC Division of Water Quality to Lisa Schiavinato, NC Sea Grant and Scott Geis, NC Division of Coastal Management (March 23, 2009, 3:51 PM ET) (on file with authors). However, note that the wastewater portion of the outfall is very small, approximately 91,000 gallons of the 1900 millions of gallons per day of cooling water that is discharged 2,000 feet offshore. *Id.*

<sup>180</sup>See Proceedings of the North Carolina Ocean Outfall Forum, April 19-20, 1993, Atlantic Beach, North Carolina.

<sup>181</sup>See *id.*

<sup>182</sup>Feasibility Study for Regional Wastewater Management, Prepared by Malcolm Pirnie Environmental Engineers, Scientists and Planners for the Carteret, Craven, Onslow and Pamlico Counties Regional Wastewater Task Force (1996).

<sup>183</sup>N.C. Gen. Stat. §143B-434.01(e)(4)(f).

<sup>184</sup>N.C. Gen. Stat. §§143-211 through 143-215.

<sup>185</sup>N.C. Gen. Stat. §143-214.2(c).

<sup>186</sup>N.C. Gen. Stat. §143-214.7.

<sup>187</sup>See e.g., 15A NCAC 03K.0107.

<sup>188</sup>15A NCAC 02H.0200.

<sup>189</sup>15A NCAC 02H.0400.

<sup>190</sup>15A NCAC 02H.1000.

<sup>191</sup>15A NCAC 02H.0404(d).

<sup>192</sup>Robert F. McGhee, “Introduction to Day Two of the Forum,” Proceedings of the North Carolina Ocean Outfall Forum, April 19-20, 1993, Atlantic Beach, North Carolina, at 89.

<sup>193</sup>33 U.S.C. §1251 et seq.

<sup>194</sup>Robert H. Wayland, III, “Federal Perspectives and Policies,” Proceedings of the North Carolina Ocean Outfall Forum, April 19-20, 1993, Atlantic Beach, North Carolina at 22.

<sup>195</sup>*Id.* at 23.

<sup>196</sup>*Id.* at 24.

<sup>197</sup>*Id.*

<sup>198</sup>*Id.*

<sup>199</sup>This study presented seven different scenarios for dealing with wastewater in four North Carolina counties (Carteret, Craven, Onslow and Pamlico), two of which included ocean outfalls with tertiary treatment. Of the seven, two (Status Quo and Consolidation of Existing Facilities) were deemed unacceptable from an environmental standpoint. The options incorporating ocean outfalls were seen as beneficial to fresh surface water quality by decreasing the discharge to rivers and estuaries, with the primary disadvantages being ‘Regulatory Complications’ and the increased costs associated with maintenance and monitoring relative to other options. From an economic perspective, the ocean outfalls were among the costliest options, and another key factor to consider.



<sup>200</sup>Michael W. Street et al, North Carolina Coastal Habitat Protection Plan (2005), at [http://www.ncfisheries.net/habitat/chpp2k5/\\_Complete%20CHPP.pdf](http://www.ncfisheries.net/habitat/chpp2k5/_Complete%20CHPP.pdf).

<sup>201</sup>*Id.* at 494.

<sup>202</sup>*Id.*

<sup>203</sup>*Id.*

<sup>204</sup>*See* Environmental Management Commission, at <http://h2o.enr.state.nc.us/admin/emc/>.

<sup>205</sup>*But see*, House Bill 1809. “An Act to Authorize the Legislative Research Commission to Study Methods of Disposing of Wastewater at Municipal Wastewater Treatment Systems.” April 19, 2007. Authorizing research into alternative types of wastewater disposal, including ocean outfalls.

<sup>206</sup>Required by the EPA under the Clean Water Act.

<sup>207</sup>Koopman et al., “Ocean Outfall Study: Final Report,” prepared for the Florida Department of Environmental Protection (April 18, 2006), at <http://dep.state.fl.us/water/reuse/docs/OceanOutfallStudy.pdf>.

<sup>208</sup>*Id.* at ES-2.

<sup>209</sup>*See* Section 6 EPA report at 6-3, at <http://www.epa.gov/region4/water/uic/downloads/ra/06-ocean.pdf>.

<sup>210</sup>*Supra*, note 139.

<sup>211</sup>Fla. Stat. §403.021 et seq.

<sup>212</sup>Fla. Admin. Code 62-600.420 et seq.

<sup>213</sup>Fla. Admin. Code 62-600.420(1)(a).

<sup>214</sup>Koopman et al., “Ocean Outfall Study: Final Report,” prepared for the Florida Department of Environmental Protection (April 18, 2006), at <http://dep.state.fl.us/water/reuse/docs/OceanOutfallStudy.pdf> at 1-1.

<sup>215</sup>*See id.*

<sup>216</sup>*See id.*

<sup>217</sup>Surfrider Foundation, State of the Beach: California, at [http://www.surfrider.org/stateofthebeach/05-sr/state\\_summary.asp?zone=WC&state=ca](http://www.surfrider.org/stateofthebeach/05-sr/state_summary.asp?zone=WC&state=ca).

<sup>218</sup>California Environmental Protection Agency State Water Resources Control Board, at <http://www.swrcb.ca.gov/about/swrcb.html>.

<sup>219</sup>Record of Decision for Construction and Operation of the Tertiary Treatment Plant and Associated Facilities at Marine Corps Base Camp Pendleton, California (June 22, 2004), at <http://www.epa.gov/EPA-IMPACT/2004/June/Day-22/i14107.htm>.

<sup>220</sup>Interview by Scott Geis, Policy Analyst, NC Division of Coastal Management with Don Avila and Michael Lyons, Los Angeles Regional Wastewater Quality Control Board, Los Angeles, CA (June 12 and 13, 2008).



## Chapter 4: Marine Aquaculture

Aquaculture, “the farming of aquatic organisms, including finfish, shellfish, and aquatic plants,”<sup>221</sup> is a method of food production that is becoming of increasing global significance.<sup>222</sup> Current estimates by the United Nations Food and Agriculture Organization (FAO) estimates that one-half of all fish consumed globally are harvested from aquaculture facilities.<sup>223</sup> Furthermore, the FAO estimates that by 2030 over 145.5 million metric tons of aquatic food will be needed to meet global demand, compared to the 105.5 million metric tons consumed in 2005.<sup>224</sup> Despite these estimates, and while other countries have invested heavily in their aquaculture industries, the US (ranked below the top 10 in total aquaculture production in 2004<sup>225</sup>) has lagged behind in developing aquaculture facilities. Currently, the US imports large quantities of aquaculture products from countries such as Japan, Chile and Norway, resulting in a trade deficit on aquaculture of over \$13.4 billion in 2006.<sup>226</sup> While the US aquaculture industry is small compared to countries such as Norway, there is potential for future growth. The question the State needs to answer is how strong is the potential for ocean-based marine aquaculture in North Carolina or in federal waters off North Carolina’s coast.

By expanding its aquaculture industry into federal waters, the US could capitalize on one of its largest competitive advantages, the Exclusive Economic Zone (EEZ). The EEZ covers over 3.5 million square miles and includes a variety of marine habitats.<sup>227</sup> While not all of the EEZ could be used for marine aquaculture activity, the US has the largest volume of “farmable” water in the world.<sup>228</sup> It is estimated that less than 0.01%, or approximately 35,000 square miles, of the EEZ would be necessary to produce approximately 600,000 metric tons of aquaculture products each year.<sup>229</sup> The technology for marine aquaculture facilities has been developed and employed in the territorial waters of Puerto Rico, New Hampshire and Hawaii.<sup>230</sup> However, these projects have been incorporated under the regulatory framework of each state, rather than being permitted in federal waters where there is currently no regulatory framework for this type of activity.

Presently, there are no US-based marine aquaculture operations other than those sited in Puerto Rico, New Hampshire (experimental only) and Hawaii.<sup>231</sup> The lack of facility development can be partially attributed to numerous issues associated with marine aquaculture. These issues include: (1) a need to ensure a facility’s economic and technical feasibility; (2) an assessment whether production systems are compatible with the marine ecosystem; and (3) the need to clarify regulatory ambiguity. While this chapter will explore these issues, it must be noted that marine aquaculture for the purposes of this chapter means operations in North Carolina’s coastal ocean waters and does not include operations in inlet and estuarine waters, which are already in existence in North Carolina and have a regulatory framework in place.

### How Marine Aquaculture Works

The process for marine aquaculture begins on land with the harvest of fish eggs in tanks at a hatchery facility.<sup>232</sup> Young fish are then relocated to an on-site location to be cared for until they are ready to be moved to an ocean environment.<sup>233</sup> Marine aquaculture facilities consist of floating net pens or submerged cages, which are designed to house the stock until such time as they can be harvested.<sup>234</sup> Fish remain in these pens until they are ready for harvest and shipment to land-based processing and shipping centers to be prepared for the commercial markets.



Marine aquaculture facilities are constructed so that there is direct interaction between the facility's operations and the marine ecosystem. This interaction leads to a number of practical issues that must be addressed to ensure that production is compatible with the marine ecosystem and that it is economically and technically feasible.

Below is an illustration of the mooring system design at the University of New Hampshire's Atlantic Marine Aquaculture Center (AMAC). AMAC's demonstration site can hold up to four cages and "is secured by a submerged mooring grid, 440 feet in perimeter and held fast to the sea floor by 12 anchors. The opposing forces of these anchors and submerged floats place tension on the structure, maintaining the desired geometry and preventing loose lines that could ensnare a marine mammal."<sup>235</sup>

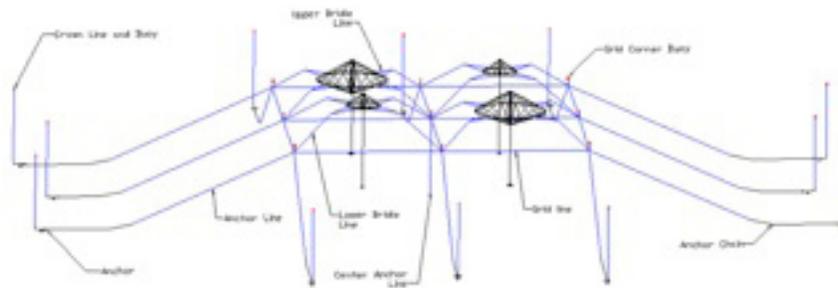


Figure 11: Marine Aquaculture Mooring System

## Ocean Shellfish Aquaculture

While marine aquaculture efforts have traditionally involved finfish production, additional technologies are being employed for the development of pelagic shellfish fisheries. Currently, the University of New Hampshire's AMAC is involved in research on the use of submerged longlines to farm blue mussel in the open ocean.<sup>236</sup> Using this technology, submerged longlines are set in ocean waters, taking into account the depth of water; the depth of the line below the surface (submerged mid-water depth); and the length of the longline (distance between anchors).<sup>237</sup> Both surface and submerged longline systems can be used for mussels, scallops, oysters and other mollusks.<sup>238</sup> While surface longlines are static structures utilizing surface buoys to maintain tension, these structures do not require a particular geometry as long as anchors resist strong currents and potential damage from boats during site maintenance and harvest activities.<sup>239</sup> In comparison, submerged lines have dynamic geometric structures that must be brought to the surface from a mid-water position for harvest.<sup>240</sup> The significance of this research to North Carolina is that State waters are within the blue mussel's range and represent a potential development area for future ocean-based aquaculture facilities. Although this technology has limited application in North America, it is believed to have the potential to solve site-specific problems associated with shellfish.<sup>241</sup> Concerns for the practice include:

- Increased wave action may cause mussels to fall off line and scallops and oysters to be stressed;
- Bio-fouling;
- Potential conflict with shipping lanes; and
- Possible lack of access to service the farms during adverse conditions.<sup>242</sup>



## Issues with Marine Aquaculture

A primary concern with marine aquaculture is that the siting and development of these facilities serves as an opportunity for the introduction of non-indigenous species into endemic environments. This introduction stems from the inevitable escape of farmed fish from the facility.<sup>243</sup> The reasons for fish escape are varied and include faulty facility construction, human error and natural events such as storms and hurricanes.<sup>244</sup>

Whatever the reasons for the escape, the interaction between the escaped fish and the marine ecosystem could be problematic for a variety of reasons. One reason is the issue of genetics. Genetic modifications are bred into farmed fish in order to promote commercially beneficial traits, such as increased growth rates.<sup>245</sup> If genetically altered fish escape and reproduce with wild populations, it is possible their offspring could be genetically anomalous.<sup>246</sup> Over time, these anomalous offspring could dilute the genetic traits of wild populations.<sup>247</sup> While this issue has solutions such as sterilization of farmed stock,<sup>248</sup> neither North Carolina nor the federal government has directly addressed this concern.

Another issue is interspecies competition. When farmed fish escape from facilities, they compete with wild populations for resources necessary for survival.<sup>249</sup> This problem is only heightened if the escaped species is genetically modified or non-indigenous, which could allow them to outcompete indigenous stocks for those resources.<sup>250</sup> This, in turn, could disrupt the marine ecosystem.<sup>251</sup> North Carolina only allows fish species native to the area to be harvested in aquaculture facilities. The farming of non-indigenous species may be undertaken only with special approval from the NC Division of Marine Fisheries (DMF).<sup>252</sup> However, this regulation does not address the issue of genetically modified fish or non-indigenous species that received permission to be farmed. Congress has recognized the issues associated with culturing non-indigenous species and has enacted laws to attempt to prevent their accidental release.<sup>253</sup>

Marine aquaculture operations also impact the surrounding ecosystem through the waste that is produced by these facilities. Waste includes the chemicals and drugs fed to fish stocks, as well as an abnormal concentration of fish feces. Chemicals of particular concern used within the aquaculture industry are nitrogen and phosphorus.<sup>254</sup> However, there are only a few drugs that are USDA-approved for aquaculture use, and most of these, if not all, require veterinary approval and are heavily regulated.<sup>255</sup> Furthermore, the impacts from these chemicals in the open ocean environment may be reduced because of the rate of experienced in an open ocean setting. It is also less likely that facility wastes will settle in surrounding benthic environments, as ocean currents would play a significant role in the transportation of waste that would neutralize, or at least localize, any impacts.<sup>256</sup>

In either case, during the release of waste materials or the potential introduction of industry related chemicals, North Carolina and the federal government have relevant legislation applicable to these types of activities. The NC Division of Water Quality requires that, in order to discharge waste from an aquaculture facility, the facility must have a NPDES permit.<sup>257</sup> The issue with a NPDES permit is whether it would adequately address the unique situation of marine aquaculture facilities, in the event chemicals were introduced into ocean waters. More applicable is the EPA's Ocean Discharge Criteria for the discharge of wastewater into the ocean,<sup>258</sup> which requires that discharges not create "unreasonable degradation of the marine environment."<sup>259</sup> Also, a NPDES permit applicant must produce extensive information on the chemicals to be discharged, as well as their possible effects before receiving a permit.<sup>260</sup> Once a NPDES permit is granted, the permit holder must monitor the waste to ensure that concentrations being discharged are within legal



limits.<sup>261</sup> North Carolina and the federal government both have specific laws to deal with the use of pesticides,<sup>262</sup> while the Food and Drug Administration has the authority to approve drugs or prohibit drugs that would be used in marine aquaculture<sup>263</sup> activities and that could potentially harm ocean ecosystems.

## Regulatory Ambiguity

### Marine Aquaculture in Federal Waters

Ultimately, aquaculture is a business, and a business needs regulatory certainty to assure investors and to allow for sound financial decisions. Currently, a host of regulatory agencies and entities have some level of control over activities in the open ocean.<sup>264</sup> However, there is currently no established process to obtain a permit for marine aquaculture operations in federal waters.<sup>265</sup> To address this lack of regulatory certainty, a bill for the National Offshore Aquaculture Act of 2007 was introduced in Congress.<sup>266</sup> Under the bill, the Secretary of Commerce would be authorized to develop a regulatory framework for aquaculture in federal waters.<sup>267</sup> One of the purposes of introducing the bill is to encourage the establishment of a regulatory system (and, therefore, create some measure of regulatory certainty), so that investors will be more likely to invest—not only in commercial ventures, but also in the continued research and development of technology and in feasibility assessments.<sup>268</sup> If enacted, the bill would:

- Authorize the Secretary of Commerce to issue offshore aquaculture permits;
- Require the Secretary of Commerce to establish environmental requirements;
- Require the Secretary of Commerce to work with other federal agencies to develop and implement a coordinated permitting process for offshore aquaculture;
- Exempt permitted offshore aquaculture from fishing regulations that restrict size, season and harvest methods;
- Authorize a research and development program for all types of marine aquaculture; and
- Authorize funding to carry out the Act and provide for enforcement of the Act.<sup>269</sup>

The 2007 bill is based on a similar 2005 bill, which did not get past the Congressional committee stage. The 2007 bill was developed in consultation with industry, conservation groups, states, the research community, as well as other interested groups. For the 2007 proposal, this diverse group of stakeholders recommended revisions in the areas of environmental requirements, permits, the role of the states, and research.<sup>270</sup> Of particular interest to coastal states may be Section 4(d), which allows coastal States to object to new offshore aquaculture development within 12 miles of their coastlines.<sup>271</sup> Based on this section, the Department of Commerce cannot issue any new offshore aquaculture permits within 12 miles of any coastal state that objects by submitting a written notice.<sup>272</sup> However, a caveat states that the coastal state's objection would not apply to permit applications received prior to the receipt of an objection.<sup>273</sup> Finally, a coastal state is allowed to revoke its objection at any time.<sup>274</sup>

### Marine Aquaculture in State Waters

Both the CRC and the Marine Fisheries Commission (MFC) would have jurisdiction over marine aquaculture operations conducted in State waters. Any placement of aquaculture facilities in these waters would be a “major development,” thus requiring a CAMA major development permit from the CRC. The General Assembly also has granted the MFC “jurisdiction over the conservation of marine and estuarine resources.”<sup>275</sup> Also, “[e]xcept as otherwise provided by law, it has jurisdiction over... the regulation of aquaculture facilities...



which cultivate or rear marine and estuarine resources.<sup>276</sup> MFC regulations state that a permit is required from DMF in order to conduct any aquaculture operations utilizing marine or estuarine resources.<sup>277</sup> Therefore, a person seeking to conduct aquaculture operations in State waters must first obtain an aquaculture permit from the DMF and then would need to obtain a CAMA major development permit from the CRC. Once the aquaculture facility was established, the actual operation and management of it would be governed by MFC regulations.

One area of uncertainty, similar to that associated with the development of water-based wind energy production facilities, is obtaining the necessary lease rights to occupy State-owned submerged lands and obtaining rights to use the water column. The MFC does not have express authority to manage the leasing of State-owned submerged lands and the public trust water column for all forms of aquaculture. N.C. Gen. Stat. Section 143B-289.52(b)(7) grants the MFC the authority to lease public waters for aquaculture, but this authority is limited to shellfish cultivation.<sup>278</sup> Specific authority to manage the leasing of state-owned submerged lands for other types of aquaculture operations is lacking. In the absence of such statutory authority for the MFC, by default the leasing authority would be within DOA. The most relevant statute would be N.C. Gen. Stat. Section 146-10. However, this statute, unlike the statute authorizing the issuance of shellfish cultivation leases,<sup>279</sup> does not authorize the leasing of rights to the water column. Such rights would be essential to any aquaculture operation utilizing pens or cages suspended in the water column. Providing the explicit authority for such water column and submerged land leases for all types of aquaculture operations would remove a potential impediment to the future development of ocean aquaculture, if such a venture is technically and economically feasible in the State's coastal-ocean environment.

### **Other Concerns**

The issues created by any developing industry are complex, and marine aquaculture is no exception. The different types of benefits and concerns that an expansion of the industry would create should be fully examined. However, there are some likely issues that merit discussion.

Any developing industry will have a substantial effect on the market. While the exact market impacts of the industry are unknown, there are some possibilities. One possible market impact is the creation of jobs that an expansion of marine-based aquaculture might offer. While these operations can be automated to an extent, the industry also supports secondary industries such as fish feed production, equipment manufacturing and packaging plants.<sup>280</sup> Of concern is the possibility that high labor costs in the US could lead to an increased presence of automated systems in the industry.<sup>281</sup> Yet, countries with similar wage levels, such as Norway and Canada, have not had a mass implementation of automated systems in their aquaculture operations.<sup>282</sup>

There are also some financial and technological issues that have investors hesitant to finance marine-based aquaculture operations. Financing this type of operation is expensive, with needs for unique equipment and training for the facilities personnel. Due to the location of these facilities, there would be high variable costs, such as fuel, transportation, and security costs.<sup>283</sup> All these expenses could create a situation where marine-based aquacultures expansion would not be economically feasible. Federally, there are programs such as the Saltonstall-Kennedy Grant Program that has provided commercial aquaculture projects between \$500,000 and \$1.7 million annually.<sup>284</sup> Technologically, there are some concerns with the size and design necessary to create a commercially viable facility.<sup>285</sup> There are also concerns on the technological ability to address many of the practical issues involved with such an operation. The National Sea Grant Program



has attempted to address such technological issues through promoting the development of disease control, food processing and environmental technology.<sup>286</sup> Sea Grant also has worked internationally to develop a technology exchange between multiple countries for the advancement of aquaculture practices.<sup>287</sup>

## Recent Developments

During the 2008 legislative session, the General Assembly passed H.B. 2431, which authorizes the Joint Legislative Commission on Seafood and Aquaculture (JLCSA) to study the feasibility of increasing the production, processing, and marketing of aquaculture products in the State, which includes (among other things) an analysis of the current and potential economic impact of the aquaculture industry in the State; the current and potential environmental impacts of the aquaculture industry; regulatory changes that may be necessary to increase the production, processing and marketing of aquaculture products; and recommend levels of funding necessary to increase the production, processing, and marketing of aquaculture products.<sup>288</sup> In response, the JLCSA released a request for proposals (RFP) for a consultant to assist in this study, and applications were due in February 2009. The RFP includes marine aquaculture as part of the JLCSA's planned study.

Although Congress has yet to authorize a national program for permitting marine aquaculture operations in federal waters, the Gulf of Mexico Fishery Management Council, a regional body that sets fishing regulations for the federal waters of the Gulf of Mexico, approved a fishery management plan (FMP) to allow large-scale marine aquaculture in federal waters in the Gulf at its January 2009 meeting.<sup>289</sup> According to the FMP, which includes a programmatic EIS, a regional permitting process for “regulating and promoting environmentally sound and economically sustainable aquaculture in the Gulf of Mexico” is established.<sup>290</sup> If the FMP is implemented, an estimated five to twenty marine aquaculture operations could be permitted in the Gulf of Mexico over an approximately ten-year period.<sup>291</sup> The FMP would serve as a basis for evaluating the impact of issuing permits for marine aquaculture operations located within federal waters in the Gulf of Mexico.<sup>292</sup> The FMP considered ten actions and a range of alternatives, as well as environmental consequences, for establishing such a permitting process. Actions include but are not limited to: establishing permit requirements; operational requirements and restrictions; duration of permits; species the Council would allow to be cultured; specific types of aquaculture systems (e.g., cages and net pens) that could be used; siting requirements and conditions; and establishment of restricted access zones around marine aquaculture facilities.<sup>293</sup> However, despite this approval from the Council, the FMP will need approval from NOAA and the Department of Commerce before it can be implemented.<sup>294</sup>



## ***Recommendations***

### ***Technical Assessment***

The steering committee recommends that the State conduct a technical assessment of the feasibility of marine aquaculture in North Carolina's coastal-ocean waters. According to Dr. Marc Turano, mariculture and blue crab specialist with NC Sea Grant, an assessment would be beneficial to study the feasibility of marine aquaculture operations in state coastal waters. A primary concern surrounding the feasibility of a marine aquaculture venture is that marine aquaculture facilities have specific water depth requirements for associated structures, and North Carolina's coastal environment may not provide adequate depth. Sufficient water depth may require going many miles off the coast (15 miles or more), which would be in federal waters.<sup>295</sup> Furthermore, a suitable location would need to be where wave action is not too rigorous and should offer some protection from tropical systems.<sup>296</sup> Dr. Turano estimates that a water depth of at least 140 feet would be needed for submerged cages to protect them from tropical systems. For these reasons, it is debatable whether North Carolina's coastal waters provide a suitable environment for marine-based aquaculture. There are examples where the failure to account for these concerns has resulted in significant problems for the facility. An experimental project off the coast of Mississippi was unsuccessful due to the finfish cage frequently breaking away from its moorings. At one point during a hurricane in the early 2000's, the cage was temporarily lost.<sup>297</sup> As a result, researchers were required to place a GPS device on the cage to aid future retrieval efforts.<sup>298</sup> Such anecdotes highlight the need for a technical assessment for marine aquaculture in North Carolina's coastal waters.

Another issue is whether Congress will pass a national offshore aquaculture bill in the future, particularly in light of the approval by the Gulf of Mexico Fishery Management Council of a FMP for marine aquaculture in Gulf federal waters. The steering committee recommends that the CRC continue to monitor the progress of the National Offshore Aquaculture Act of 2007, or similar future bills. If a bill is passed, then the steering committee recommends the State implement relevant policies as part of its coastal management plan for CZMA consistency purposes. The steering committee also recommends that the CRC monitor the progress of the Gulf of Mexico marine aquaculture FMP, as it moves through the process to receive approval by the Department of Commerce.



## Endnotes – Chapter 4

<sup>221</sup>Rebecca J. Goldberg et al, *Marine Aquaculture in the United States*, Pew Oceans Commission Report, iii, July 09, 2001, available at [http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting\\_ocean\\_life/env\\_pew\\_oceans\\_aquaculture.pdf](http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_aquaculture.pdf).

<sup>222</sup>National Oceanic & Atmospheric Administration, *Offshore Aquaculture in the United States: Economic Considerations, Implications & Opportunities*, July 2008, pages 73-74 (Pre-Publication Copy), available at [http://aquaculture.noaa.gov/pdf/econ/Econ\\_rpt\\_all.pdf](http://aquaculture.noaa.gov/pdf/econ/Econ_rpt_all.pdf).

<sup>223</sup>*Id.* at 3.

<sup>224</sup>*Id.* at 3-4.

<sup>225</sup>Food and Agriculture Organization of the United Nations. *The State of World Fisheries and Aquaculture- 2006*, pg. 9, at <http://www.fao.org/docrep/009/a0874e/a0874e00.htm>.

<sup>226</sup>National Oceanic and Atmospheric Administration, *Offshore Aquaculture in the United States: Economic Considerations, Implications and Opportunities*, July 2008, pg. 4 (Pre-Publication Copy), at [http://aquaculture.noaa.gov/pdf/econ/Econ\\_rpt\\_all.pdf](http://aquaculture.noaa.gov/pdf/econ/Econ_rpt_all.pdf).

<sup>227</sup>*Id.* at pg. 4.

<sup>228</sup>See Gunnar Knapp, *Five Economic Considerations in Thinking About United States Offshore Aquaculture*, Feb. 23, 2005, at [http://adfg.state.ak.us/special/knapp\\_offshore.pdf](http://adfg.state.ak.us/special/knapp_offshore.pdf).

<sup>229</sup>National Oceanic and Atmospheric Administration, *Offshore Aquaculture in the United States: Economic Considerations, Implications & Opportunities*, July 2008, pg. 5 (Pre-Publication Copy), at [http://aquaculture.noaa.gov/pdf/econ/Econ\\_rpt\\_all.pdf](http://aquaculture.noaa.gov/pdf/econ/Econ_rpt_all.pdf).

<sup>230</sup>*Id.* at pg. 7.

<sup>231</sup>*Id.* at pg. 3.

<sup>232</sup>See generally, Kona Blue Water Farms, *Our Sustainable Farming of Kona Kampachi*, at <http://www.kona-blue.com/sustainability.php>.

<sup>233</sup>*Id.*

<sup>234</sup>Thomas R. Head III, *Fisby Business – Regulating Aquaculture Operations in the United States*, NR&E, Summer 2003.

<sup>235</sup>Atlantic Marine Aquaculture Center, *Mooring System*, at [http://amac.unh.edu/finfish/finfish\\_mooring.html](http://amac.unh.edu/finfish/finfish_mooring.html).

<sup>236</sup>University of New Hampshire Atlantic Marine Aquaculture Center, *Shellfish Aquaculture*, at [http://ooa.unh.edu/shellfish/shellfish\\_about.html](http://ooa.unh.edu/shellfish/shellfish_about.html).

<sup>237</sup>*Id.*

<sup>238</sup>*Id.*

<sup>239</sup>*Id.*

<sup>240</sup>*Id.*

<sup>241</sup>See Fukui North America, *Submerged Longlines – Technology for Open Ocean Shellfish Culture*, at [http://www.fukuina.com/articles/sept\\_oct98.htm](http://www.fukuina.com/articles/sept_oct98.htm).

<sup>242</sup>*Id.*

<sup>243</sup>Erin R. Englebrecht, “Can Aquaculture Continue to Circumvent the Regulatory net of the Magnuson-Stevens Fishery Management Act,” 51 *Emory L.J.* 1187 (Summer 2002).

<sup>244</sup>Rosamond L. Naylor, *Environmental Safeguards for Open Ocean Aquaculture*, *Issues in Science and Technology*, page 53 Vol. 22 No. 3.

<sup>245</sup>Rebecca J. Goldberg et al, “Marine Aquaculture in the United States,” Pew Oceans Commission Report, pg. 7, July 09, 2001, at [http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting\\_ocean\\_life/env\\_pew\\_oceans\\_aquaculture.pdf](http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_aquaculture.pdf)

<sup>246</sup>US Commission on Ocean Policy, “An Ocean Blueprint for the 21st Century,” 331, Sept. 20, 2004; See Osha Gray Davidson, “The Farmer Goes to Sea,” *The Future of Fishing*, pg. 62, Vol. 268, No. 4. See also Rosamond L. Naylor, “Environmental Safeguards for Open Ocean Aquaculture,” *Issues in Science and Technology*, pg. 53, Vol. 22, No. 3.

<sup>247</sup>*Id.*

<sup>248</sup>Mary Liz Brenninkmeyer, “The Ones that Got Away: Regulating Escaped Fish and Other Pollutants from Salmon Fish Farms,” 27 *B.C. Env'tl. Aff. L. Rev.* 75.



- <sup>249</sup>Biliana Cicin-Sain et al., “Development of a Policy Framework for Offshore Marine Aquaculture in the 3-200 Mile US Ocean Zone,” Center for the Study of Marine Policy, University of Delaware, pg. 98, at <http://darc.cms.udel.edu/sgeez/sgeez1final.pdf>.
- <sup>250</sup>Dean and Mark Schwartz, “Fish Farms pose threat to ecology, jobs, report says,” Stanford Report, Oct. 1, 2003, at [http://cesp.stanford.edu/publications/fish\\_farms\\_pose\\_threat\\_to\\_ecology\\_jobs\\_report\\_says/index.html](http://cesp.stanford.edu/publications/fish_farms_pose_threat_to_ecology_jobs_report_says/index.html).
- <sup>251</sup>Congressional Research Service (CRS) Report for Congress (Open Ocean Aquaculture), May 15, 2007.
- <sup>252</sup>15A NCAC 03L.0104(a)(1).
- <sup>253</sup>16 U.S.C. §4701.
- <sup>254</sup>Rebecca J. Goldberg et al., “Marine Aquaculture in the United States,” Pew Oceans Commission Report, page 14, July 09, 2001, at [http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting\\_ocean\\_life/env\\_pew\\_oceans\\_aquaculture.pdf](http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_aquaculture.pdf).
- <sup>255</sup>Interview with Marc Turano, mariculture and blue crab specialist, North Carolina Sea Grant (July 31, 2008).
- <sup>256</sup>See Charles E. Helsley, “Open Ocean Aquaculture in Hawaii,” at [www.lib.noaa.gov/docuqua/hooarrprept.htm](http://www.lib.noaa.gov/docuqua/hooarrprept.htm); Osha Gray Davidson, “The Farmer Goes to Sea,” *The Future of Fishing*, page 62, Vol. 268, No. 4.
- <sup>257</sup>See NC Division of Water Quality, NPDES Documents, at <http://h2o.enr.state.nc.us/NPDES/documents.html#generalapps>.
- <sup>258</sup>2 NCAC 2H.0404(d).
- <sup>259</sup>40 C.F.R. §125.122.
- <sup>260</sup>*Id.*
- <sup>261</sup>40 C.F.R. §125.123(d)(3).
- <sup>262</sup>N.C. Gen. Stat. §143 (2008). See also 7 U.S.C. §136 (2008).
- <sup>263</sup>7 U.S.C. §136 (2008).
- <sup>264</sup>US Commission on Ocean Policy, “An Ocean Blueprint for the 21st Century,” 333, 20 Sept 2004, at [http://www.ocean-commission.gov/documents/full\\_color\\_rpt/welcome.html](http://www.ocean-commission.gov/documents/full_color_rpt/welcome.html).
- <sup>265</sup>National Oceanic and Atmospheric Administration, “Offshore Aquaculture in the United States: Economic Considerations, Implications & Opportunities,” July 2008, pg. 3 (Pre-Publication Copy), at [http://aquaculture.noaa.gov/pdf/econ/Econ\\_rpt\\_all.pdf](http://aquaculture.noaa.gov/pdf/econ/Econ_rpt_all.pdf).
- <sup>266</sup>*Id.*
- <sup>267</sup>National Offshore Aquaculture Act of 2007, H.R. 2010, 110th Congress (2007).
- <sup>268</sup>33 U.S.C. §1251. See also Mary Liz Brenninkmeyer, “The Ones that Got Away,” 27 B.C. Env'tl. Aff. L. Rev. 75.
- <sup>269</sup>National Offshore Aquaculture Act of 2007, H.R. 2010, 110th Congress (2007).
- <sup>270</sup>National Oceanic and Atmospheric Administration, National Aquaculture Program, at <http://aquaculture.noaa.gov/us/2007.html>.
- <sup>271</sup>National Offshore Aquaculture Act of 2007, H.R. 2010, 110th Congress (2007).
- <sup>272</sup>*Id.*
- <sup>273</sup>*Id.*
- <sup>274</sup>*Id.*
- <sup>275</sup>N.C. Gen. Stat. §113-132(a)(2008)
- <sup>276</sup>*Id.* See also N.C. Gen. Stat. §106-758(2008).
- <sup>277</sup>15A NCAC 3O.0502(f)(1)(2008)
- <sup>278</sup>N.C. Gen. Stat. §143B-289.52(b)(7) (2008). See also 15A NCAC 03O.0201-.0211.
- <sup>279</sup>N.C. Gen. Stat. §113-202.
- <sup>280</sup>See US Commission on Ocean Policy, “An Ocean Blueprint for the 21st Century,” 20 Sept 2004, at [http://www.ocean-commission.gov/documents/full\\_color\\_rpt/welcome.html](http://www.ocean-commission.gov/documents/full_color_rpt/welcome.html).



<sup>281</sup>Biliana Cicin-Sain et al., “Development of a Policy Framework for Offshore Marine Aquaculture in the 3-200 Mile US Ocean Zone,” Center for the Study of Marine Policy, University of Delaware, page 19, at <http://darc.cms.udel.edu/sgeez/sgeez1final.pdf>.

<sup>282</sup>“Miles Out, Controversy in a Cage,” *Business Week*, page 62, Vol. 3999.

<sup>283</sup>See CRS Report for Congress (Open Ocean Aquaculture), December 13, 2004.

<sup>284</sup>National Oceanic and Atmospheric Association, “NOAA’s Aquaculture Policy,” February 1998, at <http://www.lib.noaa.gov/docaquanoaapolicy.pdf>.

<sup>285</sup>Alison Rieser and Susan Bunsick, “Offshore Marine Aquaculture in the Exclusive Economic Zone (EEZ): Legal and Regulatory Concerns,” at [http://www.oceanservice.noaa.gov/websites/retiredsites/natdia\\_pdf/16rieser.pdf](http://www.oceanservice.noaa.gov/websites/retiredsites/natdia_pdf/16rieser.pdf).

<sup>286</sup>National Oceanic and Atmospheric Association, NOAA’s Aquaculture Policy, February 1998, at <http://www.lib.noaa.gov/docaquanoaapolicy.pdf>.

<sup>287</sup>*Id.*

<sup>288</sup>S.L. 2008-181.

<sup>289</sup>Chris Kirkham, “Gulf of Mexico Fish Farms OK’d, But Still Face Series of Hurdles,” *The Times-Picayune* (New Orleans), at [http://www.nola.com/news/index.ssf/2009/01/gulf\\_of\\_mexico\\_fish\\_farms\\_okd.html](http://www.nola.com/news/index.ssf/2009/01/gulf_of_mexico_fish_farms_okd.html) (January 29, 2009). Note: the Magnuson-Stevens Fishery Conservation and Management Act, at 16 U.S.C. §1852, grants the council authority to regulate fisheries in the federal waters of its jurisdiction.

<sup>290</sup>Gulf of Mexico Fishery Management Council and NOAA National Marine Fisheries Service, Fishery Management Plan for Regulating Offshore Marine Aquaculture in the Gulf of Mexico, January 2009, available at <http://www.gulfcouncil.org/Beta/GMFMWeb/downloads/Aquaculture%20FMP%20PEIS%20Final%201-13-09.pdf>.

<sup>291</sup>See *id.*

<sup>292</sup>See *id.*

<sup>293</sup>See *id.*

<sup>294</sup>See 16 U.S.C. §1852(h)(1). See also Chris Kirkham, “Gulf of Mexico Fish Farms OK’d, But Still Face Series of Hurdles,” *The Times-Picayune* (New Orleans), at [http://www.nola.com/news/index.ssf/2009/01/gulf\\_of\\_mexico\\_fish\\_farms\\_okd.html](http://www.nola.com/news/index.ssf/2009/01/gulf_of_mexico_fish_farms_okd.html) (January 29, 2009).

<sup>295</sup>Interview with Marc Turano, mariculture and blue crab specialist, North Carolina Sea Grant (July 31, 2008).

<sup>296</sup>*Id.*

<sup>297</sup>*Id.*

<sup>298</sup>*Id.*



## Chapter 5: Comprehensive Ocean Management

Coastal states such as California and Massachusetts are engaging in state-level planning and developing policy strategies that aim to effectively manage the development and protection of their coastal and marine resources. Over the past several years, this strategy has come to be labeled as comprehensive ocean management or ocean zoning. One of the benefits of this approach is that comprehensive ocean management can be utilized as a tool to minimize user conflicts over ocean resources.<sup>299</sup> The driving force behind efforts to institute these comprehensive programs may very well be the realization that many state governments already practice de facto zoning through the many rules and regulations established and enforced by their environmental agencies. For example, in North Carolina the designation of artificial reefs and Essential Fish Habitat by DMF, and even the dredging component of beach nourishment practices, permitted by DCM, are a form of zoning because they permit an exclusive use or designation of coastal waters to a specified temporal and spatial extent. Each of the emerging issues discussed prior to this section can be thought of in the context of ocean management, as each of these issues will utilize areas of the coastal ocean or estuaries and will present user conflict issues.

The benefit of comprehensive ocean management is that this strategy can potentially accomplish one or more of the following objectives: (1) separate heavy, extractive, and industrial uses from less intensive uses such as recreation and research; (2) determine compatible and incompatible marine uses and activities; (3) establish or incorporate existing no-take zones in a variety of key habitats and ecosystems; (4) surround the most protected areas with low-intensity buffer zones; or (5) permit amendments to the zoning plan as better scientific data becomes available.

Obstacles to establishing comprehensive ocean management are both inherent and policy-based. Inherent obstacles include the effectiveness of using any type of zoning strategy to protect mobile marine life populations, and the technical difficulty of creating boundaries in a marine ecosystem that does not lend itself to boundaries as easily as land.<sup>300</sup> However, recent developments, such as GIS technology and new undersea mapping technologies, can reduce these inherent obstacles.<sup>301</sup> Policy-based obstacles would be more difficult to overcome.

The US, at both federal and state levels, traditionally has approached ocean management and conservation on an issue-by-issue, species-by-species manner. As a result, different agencies and regulations apply to different activities in coastal and ocean waters. The following list illustrates the various agencies that have jurisdiction over the State's coastal and ocean waters and resources.

- Within the NC Department of Cultural Resources, the State Historic Preservation Office and Office of State Archaeology identify and protect historic and archaeological sites in North Carolina, including coastal and underwater sites.
- DENR has several divisions that regulate coastal areas. These are:
  - ♦ ***Division of Coastal Management:*** administers CAMA and the NC Dredge and Fill Law regulating development in the coastal area;
  - ♦ ***Division of Environmental Health:*** Public Water Supply Section, Shellfish Sanitation and Recreational Water Quality Section and On-Site Water Protection Section all potentially have coastal area applications;
  - ♦ ***Division of Forest Resources:*** manages and protects coastal forest resources;



- ♦ ***Division of Marine Fisheries:*** protects and manages fishery and shellfish resources; develops Strategic Habitat Areas and Primary Nursery Areas; administers the Public Trust/Submerged Lands Program and Artificial Reef Program; and regulates aquaculture facilities that cultivate or rear marine and estuarine resources;
- ♦ ***Division of Parks and Recreation:*** acquires and manages coastal parks and natural areas;
- ♦ ***Division of Soil and Water Conservation:*** assists local coastal Soil and Water Conservation Districts;
- ♦ ***Division of Water Quality:*** regulates and protects surface water and groundwater quality; and
- ♦ ***Division of Water Resources:*** manages water supply and water conservation efforts, as well as beach nourishment and waterway improvement projects.

Because comprehensive ocean management policies address many issues such as development, fisheries and recreational fishing, habitat and species protection and recreational uses, any institutional disconnect between different types of marine activities would need to be addressed in order to create an effective, comprehensive management plan for North Carolina's coastal and ocean waters.

## Examples of Comprehensive Ocean Management

### Australia

Although many marine policy experts have recommended ocean management in the US,<sup>302</sup> only Massachusetts and California have begun implementing such a plan thus far. Worldwide, however, one of the most commonly cited examples of a successful ocean-zoning regime is the Great Barrier Reef Marine Park in Australia. The park incorporates nine zones ranging from no-take, restricted-access zones to general use zones.<sup>303</sup> Dr. Elliot Norse of the Marine Conservation Biology Institute attributes the park's success to five reasons:

1. The legislation which created the park empowered the park's management authority to punish violators;
2. The park is managed as a whole, rather than on a piece-meal basis;
3. There is "meaningful dialogue" between the park authority and users regarding zoning decisions and regulations;
4. Public and political support for the park; and
5. Park authority has adapted the zones to fit changing patterns of use and new scientific understanding.<sup>304</sup>

### Rhode Island

In the US, there currently is not a program as comprehensive as the program for the Great Barrier Reef Marine Park. However, there are coastal states making significant headway into drafting comprehensive plans to manage their ocean resources and state waters. Rhode Island recently announced plans to create an ocean special area management plan (Ocean SAMP) for the state's territorial waters over the next two



years.<sup>305</sup> The project is a partnership between the University of Rhode Island and the Rhode Island Coastal Resources Management Council (CRMC).<sup>306</sup> According to the CRMC, the plan:

Will include a mapping exercise of existing uses of our ocean waters coupled with mapping for critical zones (transportation corridors, military reserves, essential habitat, etc.). Simultaneously, a screening of sites that have suitable characteristics for renewable energy will also be produced. Additionally, a conflict analysis will be performed to determine which area(s) may be desirable for a more intensive screening exercise.<sup>307</sup>

One product from the Ocean SAMP project will be a zoning map, which will be subject to public review and comment and involve state and federal agencies.<sup>308</sup> Rhode Island plans to have a draft version of a “floating zone tool” deployed by February 2009, with the Ocean SAMP itself complete and adopted by the CRMC by February 2010 and permitting completed by June 2010.<sup>309</sup> The Ocean SAMP will include a provision for renewable energy zones, as preparation for renewable energy projects in state and federal waters, including developing regulatory certainty for investors, was an impetus for the project.<sup>310</sup>

## Massachusetts

Perhaps the most significant attempt to establish a state-wide platform for ocean management is a bill passed in Massachusetts that will create the first comprehensive zoning plan for a state’s territorial waters in 2008. The passage of this law was the result of many years of effort and was based on work from a state ocean management task force that was charged with defining the guiding principles for the use of state waters and ocean resources. These guiding principles included:

- Examining Massachusetts coastal policies and the adequacy of the legal framework;
- Determining data requirements for managing state waters; and
- Examining the organization of governance over state waters to ensure that statewide interests are met.

The task force completed its work in 2004, releasing a report entitled “Waves of Change.”<sup>311</sup> The report consisted of policy recommendations, which included a comprehensive program for ocean planning. After several years of negotiations, the bill was signed into law in May 2008.<sup>312</sup> The law delegates responsibility of producing an ocean management plan to the Secretary of the Executive Office of Energy and Environment Affairs (EOEEA). However, the law does not supersede the authority of the state’s division of marine fisheries.<sup>313</sup> The EOEEA quickly began work on drafting an ocean plan by creating an ocean advisory commission and science advisory panel.<sup>314</sup> The EOEEA also held several “listening sessions” in the fall of 2008 to solicit public input on the draft plan.<sup>315</sup> The draft version of the Massachusetts ocean plan is scheduled for the summer of 2009, with final promulgation by December 31, 2009.<sup>316</sup>

## Oregon

Oregon has approached ocean management differently than Rhode Island and Massachusetts. The Oregon Ocean Resources Management Act<sup>317</sup> mandates the creation of the Territorial Sea Plan as a guide for the management of Oregon’s territorial sea. Instead of dividing the sea into zones, the plan outlines management goals and policies, amended in 2001, which prioritize conservation over development.<sup>318</sup> Instead of establishing a new administrative body to implement the plan, it emphasizes incorporation of the plan into each agency with jurisdiction over ocean and coastal resources and coordination among existing agencies.<sup>319</sup>



The plan itself is comprised of four parts and describes: 1) the relationships among State laws and participating agencies involved in the management of Oregon's coastal and ocean resources; 2) the establishment of mandatory procedures and standards for carrying out plan goals;<sup>320</sup> 3) a planning framework for specific coastal areas; and 4) uses of the sea floor.

In 2007, a bill providing funding for mapping the State's territorial sea floor was submitted in the Oregon House of Representatives.<sup>321</sup> The bill intends for these maps to be used as a tool for designating sites as Marine Protected Areas (MPAs). As a result, on March 26, 2008, Governor Kulongoski issued an executive order directing the Ocean Policy Advisory Committee (OPAC) to begin the process of recommending sites to be designated as marine reserves.<sup>322</sup> Since this time, Oregon Sea Grant has held a series of public meetings to educate the community about the process. Site proposals were accepted through September of 2008, with full implementation scheduled to begin in 2011.<sup>323</sup>

## California

Finally, California also has made efforts to implement a comprehensive ocean plan. In 2004, the California Ocean Protection Act was signed into law, creating an Ocean Protection Council (OPC). By statute, the council is responsible for:

- Coordinating the ocean-related activities of state agencies;
- Improving the state's protection of ocean and coastal resources;
- Coordinating the gathering and exchange of ocean and coastal data among agencies; and
- Making recommendations to the governor and state legislature for changes to state ocean policy.<sup>324</sup>

In 2006, the OPC released a five-year action plan outlining its priorities, goals, and strategies.<sup>325</sup> As of February 2008, the OPC is working on all but four of its 36 planned actions. As part of the action plan, two pilot ecosystem-based management programs have been implemented in California: Humboldt Bay and Morro Bay.<sup>326</sup> Authors Brian Baird and Amber Mace cite the flurry of activity in the two years following the plan's creation as positive.<sup>327</sup> However, the OPC has been criticized for its lack of "regulatory authority or management jurisdiction."<sup>328</sup> Because the OPC lacks management jurisdiction over ocean resources, it must rely on other agencies to implement its policy recommendations.

## North Carolina

While North Carolina does not currently have a comprehensive, overarching ocean management plan in place, there are examples of piece-meal, de facto management occurring at the State level. For instance, N.C. Gen. Stat. Sections 160A-176.1 and 160A-176.2 authorize local governments to exercise their police powers by regulating activities in adjacent waters. Limiting swimming and personal watercraft operation in certain areas is a type of de facto ocean management as it segregates a use or non-use of an area of public trust water. In practice, many of the permitting activities performed by DENR's divisions may be regarded as de facto management, as they provide individuals with the ability to conduct certain activities within a temporal and spatial window within coastal and ocean waters. An activity can be considered de facto ocean management based on the fact that it prevents another user or activity from occupying the same public trust area for a period of time. CAMA and other agency permits serve the purpose of providing an ability to carry out an activity in a defined location. Even the restriction of an activity could be considered the "zoning" of that particular activity.



The North Carolina Coastal Reserve Program is another example of de facto ocean management. Designating specific sites as marine managed areas and limiting permitted uses within their boundaries would qualify. More extensive examples of systems of marine managed areas that are zoned include the Florida Keys National Marine Sanctuary, the Monterey Bay National Marine Sanctuary, the Channel Islands National Marine Sanctuary, the Monitor Marine Sanctuary in North Carolina, and the Snowy Grouper Wreck MPA in North Carolina which is part of a larger marine “wildlife refuge” off the Southeast coast of the US that the National Oceanic and Atmospheric Administration created in January 2009. Washington State also has a network of aquatic reserves that are governed by site-specific management plans. In January 2008, The Washington Department of Natural Resources accepted nominations for additional sites to become aquatic reserves.<sup>329</sup>

A third example is in the North Carolina Coastal Habitat Protection Plan (CHPP).<sup>330</sup> In 1997, the General Assembly passed the Fisheries Reform Act (FRA) as a response to concerns about overfishing and protecting fish habitat. The FRA directed the protection and enhancement of habitats supporting coastal fisheries and required the cooperation of DENR agencies and the CRC, EMC and Marine Fisheries Commission to meet these goals. The CHPP emphasizes six habitats as high priority areas that are vital to the productivity of coastal fisheries, details information on each habitat and recommends management actions. The North Carolina Division of Marine Fisheries was charged with writing the plan. The CHPP:

- Documents the ecological role and function of aquatic habitats for coastal fisheries;
- Provides status and trends information on the quality and quantity of coastal fish habitat;
- Describes and documents threats to coastal fish habitat, including threats from both human activities and natural events;
- Describes the current rules concerning each habitat;
- Identifies management needs; and
- Develops options for management action using the above information.<sup>331</sup>

### **Limitations on the Authority of the CRC to Administer a Comprehensive Ocean Management Plan**

CAMA authorizes the CRC to designate AECs,<sup>332</sup> develop use standards for AECs<sup>333</sup> and to issue permits in accordance with use standards and local land-use plans.<sup>334</sup> The CRC designated estuarine waters<sup>335</sup> and public trust waters<sup>336</sup> as AECs. According to 15A NCAC 07H.0203:

[I]t is the objective of the Coastal Resources Commission to conserve and manage estuarine waters, coastal wetlands, public trust areas, and estuarine and public trust shorelines, as an interrelated group of AECs, so as to safeguard and perpetuate their biological, social, economic, and aesthetic values and to ensure that development occurring within these AECs is compatible with natural characteristics so as to minimize the likelihood of significant loss of private property and public resources.

The rules also set forth individual guidelines for the management of both estuarine waters and public trust areas.<sup>337</sup>

Under CAMA, the CRC does not have adequate authority to develop and administer a comprehensive plan for ocean management. Ocean waters fall within two CAMA AEC classifications: estuarine waters<sup>338</sup> and



public trust areas.<sup>339</sup> However the CRC's authority over AECs is limited to the granting or denial of permits for development. However, "development" under CAMA does not include recreational use or activities that do not physically alter the land or water.<sup>340</sup> Therefore, while the CRC has the authority over extraction, dredging and filling or construction through its permitting authority, it does not have the authority to regulate uses other than "development" as defined by the statute. In addition, even if an activity constitutes a CAMA development activity, the CRC may deny the permit only for one of the limited grounds specified in Section 113A-120. These statutory grounds may not be broad enough to allow the CRC to control activities not consistent with some aspect of a comprehensive zoning plan. Thus, the CRC's present permitting authority is too limited to effectively administer a comprehensive ocean management plan without amending CAMA.

## ***Recommendations***

### ***Update Maps of North Carolina's Coastal Ocean Resources***

As North Carolina considers addressing such issues as sand resource management, a beach and inlet management plan and renewable energy development in its sounds and coastal ocean, a comprehensive plan for managing uses in State waters could be beneficial to North Carolina and its communities. A recent bill was passed in the General Assembly authorizing a study of wind energy development in the sounds and wind energy investors are becoming interested in developing projects in North Carolina. MMS has released proposed rules for alternative energy development in the OCS, and these projects could impact North Carolina's coast. Development of a comprehensive plan to address various use issues, providing mapping of ocean resources and providing an atmosphere of regulatory certainty will afford the State an opportunity to promote wise use of its resources to the benefit of North Carolina's coastal communities and various user groups. Coastal states such as Massachusetts, Oregon, California and Rhode Island can serve as models from which North Carolina can learn.

Therefore, the steering committee recommends that North Carolina update maps of its coastal ocean resources. This information is critical for an understanding of the resources the State has in its coastal ocean waters in order to effectively manage their uses. Mapping will be crucial in the development of a comprehensive ocean management plan. The development of such a plan would also entail assignment of responsibility for implementation of the plan according to existing agency jurisdictions; or the State could expand the authority of a rule-making commission like the CRC or delegate primary authority to DENR. Delegation of authority to DENR or expansion of the CRC's authority would likely require legislative action. Examples of such delegation exist in other states such as Massachusetts, where authority for plan implementation was placed in the Executive Office of Energy and Environmental Affairs. In Oregon, there is incorporation of the plan into each relevant agency and coordination among the agencies is mandated, rather than vesting authority in one agency. This is similar to the CHPP in North Carolina.

There is strong support from the Ocean Policy Steering Committee for the continued implementation of the CHPP. The steering committee believes the CHPP can play an important role in any ocean mapping and any ocean management or planning efforts initiated by the State in the future.



## Endnotes – Chapter 5

- <sup>299</sup>See Elliot A. Norse, *Ending the Range Wars on the Last Frontier: Zoning the Sea*, in Marine Conservation Biology 422, 436 (Elliot A. Norse and Larry B. Crowder, eds., 2005).
- <sup>300</sup>See Fara, Courtney and Jack Wiggin, *Ocean Zoning for the Gulf of Maine: A Background Paper* at 7 (2003), available at <http://www.mass.gov/czm/oceanzoningreport.pdf>.
- <sup>301</sup>See Norse at 437-438.
- <sup>302</sup>Both the Pew Ocean Commission and the US Commission on Ocean Policy recommended regional ocean “zoning” programs. The reports can be found at [http://www.pewtrusts.org/uploadedFiles/www.pewtrusts.org/Reports/Protecting\\_ocean\\_life/env\\_pew\\_oceans\\_final\\_report.pdf](http://www.pewtrusts.org/uploadedFiles/www.pewtrusts.org/Reports/Protecting_ocean_life/env_pew_oceans_final_report.pdf) and [http://oceancommission.gov/documents/full\\_color\\_rpt/welcome.html](http://oceancommission.gov/documents/full_color_rpt/welcome.html).
- <sup>303</sup>See Great Barrier Reef Marine Park Authority, Zoning, at [http://www.gbrmpa.gov.au/corp\\_site/management/zoning](http://www.gbrmpa.gov.au/corp_site/management/zoning). This Web page contains an explanation of the park’s zoning scheme as well as maps and explanations of each zone within the park.
- <sup>304</sup>See Norse at 437.
- <sup>305</sup>Rhode Island Coastal Resources Management Council, RI Ocean Special Area Management Plan, at <http://www.crmc.state.ri.us/samp/ocean.html>. The Rhode Island CRMC website has proposal and planning documents available for download that provide more detail into the rationale behind the Ocean SAMP, the process and expected outcomes.
- <sup>306</sup>*Id.*
- <sup>307</sup>*Id.*
- <sup>308</sup>*Id.*
- <sup>309</sup>*Id.*
- <sup>310</sup>*Id.*
- <sup>311</sup>The full text of the report is available at [http://www.mass.gov/czm/oceanmanagement/waves\\_of\\_change/pdf/wave-sofchange.pdf](http://www.mass.gov/czm/oceanmanagement/waves_of_change/pdf/wave-sofchange.pdf).
- <sup>312</sup>Press Release, Conservation Law Foundation, MA Governor Signs Historic Ocean Management Bill (May 28, 2008), available at <http://www.masscoastaction.org/news4.html>. See also Press Release, Gov. Deval Patrick, Governor Patrick Signs Law Creating First-In-The-Nation Ocean Management Plan Balancing Preservation, Uses (May 28, 2008), available at [http://www.mass.gov/?pageID=gov3pressrelease&L=1&L0=Home&sid=Agov3&b=pressrelease&f=080528\\_oceans&csid=Agov3](http://www.mass.gov/?pageID=gov3pressrelease&L=1&L0=Home&sid=Agov3&b=pressrelease&f=080528_oceans&csid=Agov3).
- <sup>313</sup>Sivas, Deborah A. and Margaret Caldwell, “A New Vision for California Ocean Governance: Comprehensive Ecosystem-based Marine Zoning,” 27 Stan. Envt’l L. J. 209, 270 n.50 (2008).
- <sup>314</sup>Massachusetts Executive Office of Energy and Environmental Affairs, “Massachusetts Ocean Plan,” at <http://www.mass.gov/?pageID=eoeesubtopic&L=3&L0=Home&L1=Ocean+%26+Coastal+Management&L2=Massachusetts+Ocean+Plan&sid=Eoeea>.
- <sup>315</sup>See *id.*
- <sup>316</sup>See *id.*
- <sup>317</sup>OR Rev. Stat. §§196.405-196.515.
- <sup>318</sup>Available at [http://www.oregon.gov/LCD/OCMP/docs/Ocean/otsp\\_1-g.pdf](http://www.oregon.gov/LCD/OCMP/docs/Ocean/otsp_1-g.pdf).
- <sup>319</sup>Available at [http://www.oregon.gov/LCD/OCMP/docs/Ocean/otsp\\_1-f.pdf](http://www.oregon.gov/LCD/OCMP/docs/Ocean/otsp_1-f.pdf).
- <sup>320</sup>Territorial Sea Plan, Part One: Ocean Management Framework, (F)(1)(a), available at [http://www.oregon.gov/LCD/OCMP/docs/Ocean/otsp\\_1-f.pdf](http://www.oregon.gov/LCD/OCMP/docs/Ocean/otsp_1-f.pdf).
- <sup>321</sup>H.B. 2924, 74th Leg. Assem., Reg. Sess. (Or. 2007).
- <sup>322</sup>OR Executive Order 08-07 (March 26, 2008).
- <sup>323</sup>Regularly updated information about the project is available at <http://www.oregonmarinereserves.net/index.php>.
- <sup>324</sup>Cal. Pub. Res. Code §35615.



<sup>325</sup>California Ocean Protection Council, A Vision for Our Ocean and Coast: A Five Year Strategic Plan, available at [http://www.resources.ca.gov/copc/docs/OPC\\_Strategic\\_Plan\\_2006.pdf](http://www.resources.ca.gov/copc/docs/OPC_Strategic_Plan_2006.pdf).

<sup>326</sup>Information about the Humboldt Bay program is available at <http://www.humboldtbay.org> and information about the Morro Bay program is available at <http://www.mbnep.org/index.php>.

<sup>327</sup>Brian E. Baird & Amber J. Mace, Regional Ocean Governance: A Look at California, 16 Duke Envtl. L. & Pol'y F. 217, 222-225 (2006).

<sup>328</sup>See Sivas and Caldwell at 242.

<sup>329</sup>Information about the aquatic reserves program is available at [http://www.dnr.wa.gov/ResearchScience/Topics/AquaticHabitats/Pages/aqr\\_rsve\\_aquatic\\_reserves\\_program.aspx](http://www.dnr.wa.gov/ResearchScience/Topics/AquaticHabitats/Pages/aqr_rsve_aquatic_reserves_program.aspx).

<sup>330</sup>More information on the NC CHPP is available at <http://www.ncfisheries.net/habitat/index.html>.

<sup>331</sup>North Carolina Division of Marine Fisheries, What is a CHPP, at <http://www.ncfisheries.net/habitat/chpp2.html>.

<sup>332</sup>N.C. Gen. Stat. §113A-113(a).

<sup>333</sup>N.C. Gen. Stat. §113A-107(b).

<sup>334</sup>N.C. Gen. Stat. §113A-118.

<sup>335</sup>N.C. Gen. Stat. §113A-113(b)(2).

<sup>336</sup>N.C. Gen. Stat. §113A-113(b)(5).

<sup>337</sup>15A NCAC 07H.0206 and 15A NCAC 07H.0207, respectively.

<sup>338</sup>Defined in N.C. Gen. Stat. §113A-113(b)(2) as, “all the water of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters and inland fishing waters, as set forth in the most recent official published agreement adopted by the Wildlife Resources Commission and the Department of Environment and Natural Resources.” The CRC adopted both categories as AECs in 1977. Their description, significance, management objectives, and use standards are codified in 15A NCAC 07H.0206 and .0207, respectively. Since estuarine waters and public trust waters are classified as AECs, the CRC can issue permits for development within these areas.

<sup>339</sup>Defined in N.C. Gen. Stat. §113A-113(b)(5) as “[a]reas such as waterways and lands under or flowed by tidal waters or navigable waters, to which the public may have rights of access or public trust rights, and areas which the State of North Carolina may be authorized to preserve, conserve, or protect under Article XIV, Sec. 5 of the North Carolina Constitution.”

<sup>340</sup>N.C. Gen. Stat. §113A-103(5)(a) defines “development” as “any activity in a duly designated area of environmental concern ... involving, requiring, or consisting of the construction or enlargement of a structure; excavation; dredging; filling; dumping; removal of clay, silt, sand, gravel or minerals; bulkheading, driving of pilings; clearing or alteration of land as an adjunct of construction; alteration or removal of sand dunes; alteration of the shore, bank, or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake, or canal; or placement of a floating structure in an area of environmental concern identified in G.S. 113A-113(b)(2) or (b)(5).”



## **Appendix A: Comments from the Public and the Department of Defense**

Ocean Policy Steering Committee Draft Recommendations Public Meeting

Pine Knoll Shores Aquarium 5:30 – 7:30pm (lasted 1 hour 25 minutes)

Wednesday, February 25, 2009

Attendees: 13

OPSC Representation: Rudi Rudolph, Michelle Duval, Joe Kalo, Lisa Schiavinato

DCM Representation: Scott Geis, Guy Stefanski, John Thayer, Maureen Will

### **Introduction**

The meeting began with welcoming remarks by Scott Geis, Ocean and Coastal Policy Analyst for the NC Division of Coastal Management

Mr. Geis informed attendees that the meeting was designed to present the results of a DCM led effort to examine emerging policy issues related to NC's coastal and open ocean waters. Mr. Geis clarified that "emerging" refers to policy issues or changes NC may experience along its coastal waters due to climate change, the employment of new technologies, or changes in cultural and economic values, and as a result of these changes the State will need to be prepared from a regulatory standpoint to meet these changes head on.

Mr. Geis explained that this effort was conducted over the last year, during which DCM established an Ocean Policy Steering Committee comprised of 14 representatives from state and federal agencies, academic institutions, local governments, non-profits and stakeholder groups. The Committee was chaired by Lisa Schiavinato of NC SeaGrant and Professor Joe Kalo of UNC Law School and a full list of committee members is was provided in the meeting primer.

Mr. Geis mentioned that the effort's success was due largely to the tireless efforts of the steering committee and of Joe Kalo and Lisa Schiavinato who are co-directors of the NC Coastal Resources Law Planning and Policy Center. The project also received funding support from the US National Oceanographic and Atmospheric Association and NC Sea Grant.

Before the program began Mr. Geis informed attendees of the following:

- The draft report is available on DCM's and the Center's website. A report primer was also provided.
- A sign up sheet for public comments was provided.
- This effort launched by DCM is different from the Beach and Inlet Management Plan, although DCM anticipates both programs will work together in the future.
- Public comments will assist the OPSC in developing the final draft of the ocean policy report. Comments generated at each of the 4 scheduled public meetings will be provided in an appendix to the NC Coastal Resources Commission as well as in a summary document provided to commissioners along with the report.



## Program

- Presentation of draft recommendations developed by the Ocean Policy Steering Committee.
- General Q & A session specific to report preparation, steering committee makeup and general clarifications necessary for the information provided.
- Open comment period.

## Public Comments

Following the introduction Professor Kalo and Ms. Schiavinato presented the Committee's draft recommendations. Comments received are as follows:

### *Q: Resident Pine Knoll Shores*

So this report will go to the CRC, and the CRC will then decided which areas to go forward with?

#### *A: Scott Geis (DCM)*

Yes and it is also possible that this report could be elevated and presented to the Governor. The report will definitely go before other groups such as the EMC and the CHPP. Some of these groups are already interested in picking up some of these recommendations and discussing collaborative efforts to accomplish them.

### *Q: Robert Daneby (Commissioner, Town of Pine Knoll Shores)*

I noticed in your presentation that you haven't put any price tags on any of these recommendations, and it is nice to make presentations, but once you start putting some dollar signs to some of these proposals it may make them meaningless. So why haven't you put dollar signs to some of these things?

#### *A: Scott Geis (DCM)*

The easy answer to this is that it is difficult to assign dollar amounts to any of the recommendations. However, looking at it from the standpoint of comprehensive ocean management, there is already a starting point that may prove to be less costly. The idea of comprehensive management may seem grandiose, however if we throw a word out there that not many people like, which is zoning, then the idea becomes a little clearer because we already do it now. Any activity carried out by the State's environmental agencies such as DCM or DMF; any time we permit an activity such as a dredging operation for beach nourishment or the designation of a primary nursery area of essential fish habitat, we assign some level of value to the resources unique to that area. Maybe we do not have a monetary figure attached to that resource, however we do assign a value and in doing so we enter into a defacto zoning process because we limit or specify activities through our rules and laws that can take place within a specified temporal and spatial extent. So if I am dredging sand someone cannot put up a wind turbine in that area. Likewise, if a turbine is erected it is likely you won't be able to dredge within a certain buffer distance of the structure. We have multiple datasets for the numerous resources in our coastal waters, and the starting point of mapping resources will be to get all state agencies to put their information together in a common GIS mapping application. This step may have a smaller price tag, and it will also allow us to begin to identify areas and resources that are important to the state, that as we go forward with a comprehensive management plan to assign values.

#### *Michelle Duval (NC DMF)*

The other part of the answer to this question is that the steering committee was not charged with assigning values to the recommendations. The Committee was charged with identifying emerging



issues that the CRC need to be addressed with the knowledge that these issues would be presented to the CRC and the CRC would determine which issues were the most important for DCM staff to invest their time and effort in.

***Joe Kalo (UNC Law School)***

There are also some low hanging fruits, in terms of things that can be done or should be done, i.e. the water dependency determination for wind turbines. The rest of the larger recommendations at least have a starting point or incremental steps that can be taken, i.e. putting data together for mapping. We may not be able to fund a large scale mapping project but as the data becomes available we can begin taking these steps. The value of this question though is that the CRC will need to be informed of public concerns regarding funding.

***Q: Robert Daneby (Commissioner, Town of Pine Knoll Shores)***

Part of the town charter for Pine Knoll Shores is that the Town's jurisdiction extends 2,500 feet into the waters of the Atlantic. I do not believe this is common all the way up and down the state, so where do towns have ownership out to?

***A: Joe Kalo (UNC Law School)***

The jurisdiction of coastal communities do vary along the coast, however this jurisdiction has been held up in court, with regard to fisheries issues, that the towns have a limited jurisdiction over certain types of activities (jet skiing, swimming, surfing) and that they do not have ownership of the submerged lands. Instead these lands are owned by the State. The Ocean Policy Steering Committee did perform a review of town charters and their resulting jurisdiction in its research and has an excel spreadsheet including this information, which is available to anyone who would like it.

***Comment: Bill Forman Jr. PE (Engineer, Coastal Science & Engineering)***

The place where you recommend against any type of ocean outfall is ill advised, because when you say, "the State should examine potential alternative treatment methods," the treatment method for this building is advanced, and they treat all of the effluent produced here before it is discharged. What you are doing is ignoring the engineering capabilities and technology that has been around on for years to treat water for discharge. There are a lot of places around the US and Canada where treated water is discharged into trout streams, and this is the purest form of water body that there is. What it also does is to antagonize these places along the coast, which have wastewater problems now, the only alternative they have is land application and land application is so expensive that it just rules it out. So they end up staying where they are with nothing. So, this is really ill advised. The technology available is not some pie-in-the-sky method; it is actually done within several feet of this building.

***A: Scott Geis (DCM)***

I agree with you in that there are tertiary treatment methods for wastewater, and even reverse micro fracture osmosis, which is used for discharge into the most sensitive of environmental areas. And one idea that ties into this is water shortage and not just getting rid of the water but tying into technology such as water reclamation in order to address fresh water deficiencies. The Committee understands that in the past there have been significant economic barriers to large-scale water treatment facilities and/or major wastewater infrastructure along the barrier-islands due to the fact that municipalities are spread out over significant distances when you are dealing with these relatively thin islands.



***Joe Kalo (UNC Law School)***

Your point is well taken and this is a draft document, but the Committee's recommendation is that the State should look into alternative treatment facilities and reclamation because the idea is not to dump wastewater out at sea but to find ways to reclaim that water, and that needs to be our emphasis.

***Follow up: Bill Forman Jr. PE (Engineer, Coastal Science & Engineering)***

Large municipalities may still struggle with this because once you get past a certain capacity you can only reuse or reclaim so much. The aquarium for example reuses I think 75% of the wastewater generated here, so how much more would be demanded of a facility like this. In the end, your idea will take a lot of land, and often the best land, to accomplish this goal.

***Q: Resident***

With stormwater it seems that DOT gets a free ride and now when we talk about fresh water going into saltwater it seems that with the highways they get a free ride. So in this discussion of water reclamation where does that fall into?

***A: Michelle Duval (DMF)***

This was out of the scope of the steering committee's recommendations. However, DOT does follow standards for stormwater under the National Pollution Discharge Elimination System (NPDES) and adhere to a statewide system for monitoring. Another issue is that there are also a lot of illegal hookups to DOTs discharge systems in terms of residents, etc.

***Follow up: Bill Forman Jr. PE (Engineer, Coastal Science & Engineering)***

The thing is that there will always be water running across the land and into the ocean. Therefore you can't change that and you can't regulate that.

***A: Scott Geis (DCM)***

With the Committee, there were several concerns with wastewater treatment. One concern was that with deep ocean outfalls, to reach deep water, you need to go out to 200 feet which in some cases may be 40 plus miles from the shoreline and thus economically unfeasible. The other concern, as supported by some of the scientists on our committee, is that research suggests that there are natural cycles of onshore transport from deep sources that would ultimately place treated water back into local swimming areas and onto the beaches. These are some of the thoughts that led to the recommendation.

***Follow up: Adam Short (Masters Student, UNC Wilmington)***

Isn't the concern then that it is the public's perception of the use of ocean outfalls that will result in water coming back onto the beach?

***A: Lisa Schiavinato (NC Sea Grant)***

In part yes, but the recommendations are trying to shift the focus so that, as is the case in other states, there is the need to reuse as much of this water as possible because there are water quantity or availability issues as well. In addition, states rely on good quality water and clean beaches for its tourism economy.

***Comment: Jess Hawkins, MFC (not commenting for the commission but instead as a commissioner)***

I want to commend your group for trying to identify the State's most pressing emerging ocean resource issues. It appears there you have attempted to have great expertise on your committee in order to make cer-



tain you capture the pressing ideas. The press release was also good because it provided some background on these issues which may or may not have previously been discussed in the public forum. Beach nourishment for example has generated a lot of discussion, but some of these other issues like aquaculture not have not been. The summary of the report states that the study identifies North Carolina's most pressing emerging ocean resource issues. I would argue that marine aquaculture is not yet one of our most pressing issues. It will be if the federal government mandates a nationwide program and does not give each state a choice as to whether we would want such activities off our coast. Perhaps the committee could discuss suggesting that the states be given a choice as to whether they would want that type of activity off their coast, much like the policy discussions on energy exploration. At a federal level the government has endorsed several studies on aquaculture, which you made reference to, and NOAA has been moving in this direction in an effort to support more sustainable fisheries for our country. It will be interesting to see what the Obama administration says, and how future regulation is developed given the National Marine Aquaculture Act has not been passed because of concerns raised by citizens around the country.

The report also refers to the lack of regulatory framework and uncertainty surrounding the management of marine aquaculture. I would say that NC does have a regulatory framework for marine aquaculture in the ocean and out to three miles, and that this framework is clear and should be expanded on in the report. We have been told in the absence of a federal plan the marine fisheries commission has jurisdiction over state fisheries out to 200 miles. So even if NOAA hasn't come up with a plan and you are a state citizen and want to put up a farm, and you get licensed by the State the Marine Fisheries Commission has jurisdiction over you and a permit is required through the Division of Marine Fisheries.

*A: Joe Kalo (UNC Law School)*

The reason for the uncertainty statement was that when the Committee was looking into State statutes for marine aquaculture the statutes were really directed at aquaculture operations that are fresh water and the statutes don't exactly express this other than with respect to flounder.

*Continuation from Jess Hawkins*

While this may be true at the federal level, it is clear at the state level for North Carolina. It is clear from the general statutes that the North Carolina Marine Fisheries Commission (MFC) has regulatory authority for marine aquaculture and that a regulatory framework exists for internal coastal waters (estuarine) and for nearshore ocean waters out to 3 miles. General statute G.S. §113-132(a) states that the MFC has jurisdiction over the conservation of marine and estuarine resources. Except as may be otherwise provided by law, it has jurisdiction over all activities connected with the conservation and regulation of marine and estuarine resources, including the regulation of aquaculture facilities as defined in G.S. §106-758 which cultivate or rear marine and estuarine resources. G.S. §106-758 defines aquaculture as the propagation and rearing of aquatic species in controlled or selected environments, including, but not limited to, ocean ranching. There are several other statutes that refer to the responsibility of the MFC to regulate the cultivation of marine and estuarine resources. The MFC has passed several rules to deal directly with aquaculture in public trust waters and regulations clearly state that it is unlawful to conduct aquaculture operations using marine and estuarine resources without getting a permit from the division of marine fisheries(15A NCAC 030.0503(f)).

The MFC has been legally advised that in the absence of a federal plan the MFC can regulate boats licensed by North Carolina with regards to activities involving marine and estuarine resources (harvest, possession, gear type, etc) from 3 to 200 miles. It was interesting that you noted that the Gulf of Mexico federal council just passed a marine aquaculture plan. No such federal plan exists on the Atlantic coast. Allen Jernigan



would be the contact in the attorney general's office regarding the state's jurisdiction in the absence of a federal plan.

The last thing is that in your recommendation for a technical assessment concerning marine aquaculture is a good one, however it should be expanded to say that any technical assessment of marine aquaculture done for the state should include both the NC Marine Fisheries Commission and the Division of Marine Fisheries. This will allow you to bring the scientific and policy arms of these experts into the assessment. The report as a whole needs to be presented to the other Commissions such as the EMC and MFC because you may have issues on here like marine aquaculture which are not as pressing to the CRC but which are very important to these other groups.

If the CRC decides to endorse this report, it needs to be presented to the other resource commissions such as the MFC and EMC because of statutory responsibilities.

*Q: Sarah Gilliam (UNCW Masters Student)*

Since these policies are going to be looked at on a statewide level, will these recommendations be incorporated across the state, or will it be primarily looked at in coastal areas.

*A: Lisa Schiavinato (NC Sea Grant)*

These recommendations focus on CAMA's jurisdiction throughout the 20 coastal counties and therefore will have the greatest bearing on ocean and coastal activities.

Ocean Policy Steering Committee Draft Recommendations Public Meeting

New Hanover County Library, Northeast Branch 5:30 – 7:30pm

Thursday, February 26, 2009

Attendees: 18

OPSC Representation: Dr. Larry Cahoon, Donna Girardot, Joe Kalo, Lisa Schiavinato

DCM Representation: Scott Geis, Guy Stefanski

## Introduction

The meeting began with welcoming remarks by Scott Geis, Ocean and Coastal Policy Analyst for the NC Division of Coastal Management

Mr. Geis informed attendees that the meeting was designed to present the results of a DCM led effort to examine emerging policy issues related to NC's coastal and open ocean waters. Mr. Geis clarified that "emerging" refers to policy issues or changes NC may experience along its coastal waters due to climate change, the employment of new technologies, or changes in cultural and economic values, and as a result of these changes the State will need to be prepared from a regulatory standpoint to meet these changes head on.

Mr. Geis explained that this effort was conducted over the last year, during which DCM established an Ocean Policy Steering Committee comprised of 14 representatives from state and federal agencies, academic institutions, local governments, non-profits and stakeholder groups. The Committee was chaired by Lisa Schiavinato of NC SeaGrant and Professor Joe Kalo of UNC Law School, and a full list of committee members was provided in the meeting primer.



Mr. Geis mentioned that the effort's success was due largely to the tireless efforts of the steering committee and of Joe Kalo and Lisa Schiavinato who are co-directors of the NC Coastal Resources Law Planning and Policy Center. The project also received funding support from the US National Oceanographic and Atmospheric Association and NC Sea Grant.

Before the program began Mr. Geis informed attendees of the following:

- The draft report is available on DCM's and the Center's website. A report primer was also provided.
- A sign up sheet for public comments was provided.
- This effort launched by DCM is different from the Beach and Inlet Management Plan, although DCM anticipates both programs will work together in the future.
- Public comments will assist the OPSC in developing the final draft of the ocean policy report. Comments generated at each of the 4 scheduled public meetings will be provided in an appendix to the NC Coastal Resources Commission as well as in a summary document provided to commissioners along with the report.

### **Program**

- Presentation of draft recommendations developed by the Ocean Policy Steering Committee.
- General Q & A session specific to report preparation, steering committee makeup and general clarifications necessary for the information provided.
- Open comment period.

### **Public Comments**

Following the introduction, Professor Kalo and Ms. Schiavinato presented the Committee's draft recommendations. Comments received are as follows:

***Q: Brad Rosoff (Engineer, CPE)***

Can you speak directly to how this initiative and the recommendations produced from it will interact with the BIMP?

***A: Scott Geis (DCM)***

That is an important distinction that needs to be made, is that this is not the Beach and Inlet Management Plan. However the recommendations in our sand management chapter support a lot of the work the BIMP has done. The BIMP has been working to find out where the resources have come from in the past, where they may be available in the future and there are also some economic scenarios in terms of distances that sand may be transported for beach nourishment projects and remain economically feasible. So the OPSC's recommendations support the BIMP's efforts and will look to take data gathered through the BIMP and use it in the Comprehensive Management platform that is discussed in the last chapter of the report. So we may have a GIS mapping platform where we take the BIMP's data and combine it with other data to meet these goals. The BIMP and the OPSC come together under DCM's 5-year enhancement grant strategy as well.

***Q: Cameron Moore (Business Alliance for a Sound Economy)***

On your identification of available sand resources, the report talks about 4 different types of shoals and shelf units, as well as other sources. Was there any discussion of inland sources of sand?



***A: Scott Geis (DCM)***

No, we did not look at this specifically. There was some discussion of mining permits, since you would need a mining permit for an upland source but not for an ocean source.

***Q: Matt Liker (Wrightsville Beach resident)***

Is there some umbrella organization that will ensure that these programs you mentioned (the BIMP, OPSC, and estuarine shoreline study) are going to be implemented?

***A: Scott Geis (DCM)***

The CRC is the quasi rule making authority for issues related to coastal development. Therefore the report will go in front of the CRC and they will instruct DCM where to invest staff time and which issues need to be pursued. As far as the other projects, the BIMP and the estuarine shoreline project are active projects that we actually have man-hours invested in. The OPSC is different in that the recommendations in this report are areas that have been identified by the steering committee and the CRC will be responsible for telling us how to go forward. It is also possible that this report could be elevated and presented to the Governor, as well as presented to other environmental commissions within the state. So we anticipate there will be a number of avenues for collaborative efforts to make sure we have all the data necessary for the project.

***Q: Leyden Betsbold (Wilmington resident)***

Along the same lines, the CHPP ties the headwaters of the river systems that discharge into the estuaries. You mentioned that your efforts focus on the barrier-islands out, and it appears that to make it interlocking with these other studies and take the issues identified in this study right on up into the headwaters. WE find ourselves competing with areas like Charlotte and the Mountains, which have the ability to dump their issues onto the coast. I think that if you took these issues more inland you would be more effective at incorporating them throughout the state.

***A: Scott Geis (DCM)***

You are right that this is an important consideration and DCM will need platforms like the CHPP to spread management ideas through the state. DCM's jurisdiction is limited to the 20 coastal counties and we will therefore look to partner with groups like DWQ to examine upstream causes of coastal degradation.

***Comment: Wilmington resident***

One other comment on the Mining of the Beach, your verbage needs to be changed. You say the mining of the beach and sand, however you shouldn't say mining sand because the Mining Commission does regulate only the mining of beach quality sand from upland facilities.

***Comment: Cameron Moore (Business Alliance for a Sound Economy)***

Concerning the sea level rise component to CAMA land use plans; The IPCC was established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. However, it should be noted that the IPCC does not conduct any research nor does it monitor climate-related data or parameters. The IPCC reflects a wide range of competing views, expertise and wide geographical coverage on climate conditions. That being the case, one could argue that the viewpoints and statements that come from the IPCC on Sea Level Rise should be critically reviewed and examined.



The core principle behind a Land Use Plan is that it serves as the community's blueprint for growth. This is done through a collection of policies and maps. It should be noted that once a land-use plan is certified by the CRC, the Division of Coastal Management uses the plan in making CAMA permit decisions and federal consistency determinations. This means that proposed development projects and activities must be consistent with the policies of a local land-use plan, or DCM cannot permit a project<sup>5</sup> to go forward. Adding a sea level rise component, which is extremely subjective to begin with, to a CAMA land-use plan poses a potential risk for far-reaching policy guidelines that could lead to over extensive regulatory measures. WE would argue: how can a local government create an effective policy on sea level rise when the very nature of the criterion that is being measured does not have an accepted industrial standard for measurement? WE would further argue that before the Coastal Resources Commission's policy of retreat is expanded to include overall relocation of structures and buyout programs the economic and socio-economic ramifications need to be thoroughly weighed and reviewed. And this must be done by a committee of stakeholders, which would include elected officials and homeowners living along barrier-islands.

***A: Scott Geis (DCM)***

The idea that the Committee tried to approach through this recommendation was the question of, "If sea level does rise, and you had to retreat, where would you go." There is an economic benefit in answering this question in that even an answer from a municipality that we can't go anywhere, i.e., Wrightsville Beach has no vacant lots and relocation would result in an economic loss because properties x, y, and z would have to be moved to Wilmington. There were also competing ideas within our Committee and not all of the members were in favor of relocation because they felt it would be a detriment to coastal communities.

***Comment: Mayor Debbie Smith (Ocean Isle)***

If you put this idea into the CAMA land use plan, dealing with retreat, I would hate for it to come down to someone telling a municipality that they have to move.

***Comment: Gary Ferguson (Town of Carolina Beach)***

As a local planner I am concerned about this land use plan requirement and ask if it is even appropriate for it to be done at a local level? The local government that takes this on in a land use plan. I am not sure what you would be expecting it to say. I am not clear how this is going to dovetail with policies that are currently in place?

***A: Scott Geis (DCM)***

We haven't started looking at the implementation of these issues. These issues were just the Committee's perspective on what the emerging issues might be. We will be going in front of the CRC and asking them where they would like us to invest staff time and investigate these issues further. There will be a lot more study before any of this becomes State policy. So this is not a policy document as it stands now.

***A: Joe Kalo (UNC Law School)***

The Committee only had a year to review State policies and come up with emerging issues for the State to consider. So there is definitely a lot more study that is needed.

***A: Dr. Larry Caboon (UNCW)***

It isn't just a question of private property that is in jeopardy from sea level rise. On the Committee we also addressed concern for public infrastructure and discussed should we be building roads,



schools, police stations, etc. in places that will be underwater in 40 – 50 years. So the public infrastructure component is an important consideration.

***Comment: Cameron Moore (Business Alliance for a Sound Economy)***

Sand management is going to be a key element in any beach communities short and long-term management strategy. The granting of public easements seems to be a reasonable theory, and also falls in line with what the Beach and Inlet Management Plan is trying to accomplish. The BIMP appears to encourage a regional strategy to solve sediment-related problems by designing renourishment projects that are not specific to any one local jurisdiction but instead to an entire region. While this is a worthwhile approach, the biggest hurdle will be the financial capabilities that will have to be borne by the local communities. BASE will not support outright denial of sand if the community has demonstrated a need and the financial resources to underwrite the project.

***A: Joe Kalo (UNC Law School)***

The thinking behind this was that these sand resources ought to be preserved for public use and one of our concerns was we did not want private entities to be able to come in, occupy a large amount of the resource and then sell it back to a municipality. So the idea of establishing this legal right is to preserve the right for municipalities to the sand so they can perform beach nourishment activities. Figure 8 Island was mentioned as a private entity in the report because we they are not a municipality and therefore the decision will need to be made whether or not to accommodate them in a similar fashion to municipalities.

***A: Scott Geis (DCM)***

There was also the concern among the Committee members that the current practice is for sand to be allocated on a first come first serve basis, and if there is sea level rise or additional storm activity that requires two beach municipalities to compete for the resources a legal system for allocating those resources needs to be in place.

***Comment: Cameron Moore (Business Alliance for a Sound Economy)***

With respect to Disclosure of Natural Hazards for Coastal Real Estate Purposes; BASE agrees that it is very important for potential property owners to be knowledgeable and aware of the risks they assume when purchasing any type of real estate whether it be inland or coastal. Currently the NC Real Estate Commission enforces G.S. 47E and provides all the necessary disclosure materials for all residential sales by requiring sellers to provide for a disclosure (Residential Property Disclosure Statement). There is also another brochure available to all potential buyers of coastal property called “Purchasing Coastal Property in NC.” BASE will not support any legislation that would require additional disclosures for prospective purchasers of coastal property prior to acquisition. The legislation proposed in this recommendation essentially places the Coastal Resources Commission in the practice of regulating the potential sale and transfer of real estate. BASE feels strongly that this is not a practical use of resources for the CRC to be involved or engaged in.

These statements were endorsed and expanded on by Mayor Debbie Smith (Ocean Isle), who cited the wealth of information available to property purchasers via the internet.

***Comment: Cameron Moore (Business Alliance for a Sound Economy)***

We would like to see one item further explained that was not captured in the report. BASE would like to see more emphasis placed on region-wide beach vegetation plans. Beach and dune grass play a critical role in



the overall dynamics of beach protection and stabilization. Due to the interlacing pattern of the rhizomes, vegetation species such as *Spartina patens*, sea oats and American beach grass are able to recover quickly from storm erosion and thus stabilize the dune. Perhaps the BIMP will address the issue more in-depth.

**Q: Jason (student at UNCW)**

The disclosures you are talking about – does it include risks to building close to the public beach?

**A: Scott Geis (DCM)**

Current CAMA rules encompass and try to balance out the preservation of the public beach and the ability to use private property. So the recommendation was specific to coastal hazards disclosures for purchasing private property.

**Q: Leyden Betsbold (Wilmington resident)**

In your discussion of sand resource management, you may want to expand to look at other sources. For example, a lot of the materials coming out of the AIWW are not compatible materials. The use of upland confined disposal facilities will also be important because you are not going to be able to find large dumping grounds in the future. It may be that the only place we have to go in the future is in the ocean. In your assessment of or characterization of the resources along the coast, be aware that you are going to want to manage beach quality sand but also incompatible materials. So in your discussion on management of these materials you need to think not only about beach compatible materials but also the management of non-compatible materials and their disposal.

**A: Scott Geis (DCM)**

This idea comes into play under the umbrella of the last chapter of the report, which is comprehensive ocean management. The idea of comprehensive management may seem grandiose, however if we throw a word out there that not many people like, which is zoning, then the idea becomes a little clearer because we already do it now. Any activity carried out by the State's environmental agencies such as DCM or DMF; any time we permit an activity such as a dredging operation for beach nourishment or the designation of a primary nursery area of essential fish habitat, we assign some level of value to the resources unique to that area. Maybe we do not have a monetary figure attached to that resource, however we do assign a value and in doing so we enter into a defacto zoning process because we limit or specify activities through our rules and laws that can take place within a specified temporal and spatial extent. So if I am dredging sand someone cannot put up a wind turbine in that area. Likewise, if a turbine is erected it is likely you won't be able to dredge within a certain buffer distance of the structure. We have multiple datasets for the numerous resources in our coastal waters, and the starting point of mapping resources will be to get all state agencies to put their information together in a common GIS mapping application. This step may have a smaller price tag, and it will also allow us to begin to identify areas and resources that are important to the state, that as we go forward with a comprehensive management plan to assign values.

**Follow up: Leyden Betsbold (Wilmington resident)**

Spoil is something in your trash can. We need to talk about dredged materials. The component to this is that these incompatible materials are not washing onshore. They are coming down the rivers and into the inlets. If we could truly enforce erosion control guidelines in Charlotte, Raleigh or Greensboro, then we would not have to dredge it out and manage it.



**Q: Brad Rosoff (Engineer, CPE)**

Going back to the sand sources, there is the recommendation of further mapping the Cape Shoals Structures the question that comes to mind is, where are these recommendations going in terms of funding sources?

**A: Scott Geis (DCM)**

The steering committee was not charged with assigning values to the recommendations. The Committee was charged with identifying emerging issues that the CRC need to be addressed with the knowledge that these issues would be presented to the CRC and the CRC would determine which issues were the most important for DCM staff to invest their time and effort in. Another part of the answer is that we have multiple datasets for the numerous resources in our coastal waters, and the starting point of mapping resources will be to get all state agencies to put their information together in a common GIS mapping application. This step may have a smaller price tag, and it will also allow us to begin to identify areas and resources that are important to the state, that as we go forward with a comprehensive management plan to assign values. It is possible that the CRC may respond to our recommendations by saying that it is too expensive and therefore the report needs to be elevated and a State Ocean Policy Implementation Committee needs to be formed.

**Ocean Policy Steering Committee Draft Recommendations Public Meeting**

Nags Head Fire Station, South Wing 5:30 – 7:30pm

Tuesday, March 10, 2009

Attendees: 15

OPSC Representation: Joe Kalo, Lisa Schiavinato

DCM Representation: Scott Geis, Frank Jennings, Charlan Owens, John Cece

### **Introduction**

The meeting began with welcoming remarks by Scott Geis, Ocean and Coastal Policy Analyst for the NC Division of Coastal Management

Mr. Geis informed attendees that the meeting was designed to present the results of a DCM led effort to examine emerging policy issues related to NC's coastal and open ocean waters. Mr. Geis clarified that "emerging" refers to policy issues or changes NC may experience along its coastal waters due to climate change, the employment of new technologies, or changes in cultural and economic values, and as a result of these changes the State will need to be prepared from a regulatory standpoint to meet these changes head on.

Mr. Geis explained that this effort was conducted over the last year, during which DCM established an Ocean Policy Steering Committee comprised of 14 representatives from state and federal agencies, academic institutions, local governments, non-profits and stakeholder groups. The Committee was chaired by Lisa Schiavinato of NC SeaGrant and Professor Joe Kalo of UNC Law School and a full list of committee members is was provided in the meeting primer.

Mr. Geis mentioned that the effort's success was due largely to the tireless efforts of the steering committee and of Joe Kalo and Lisa Schiavinato who are co-directors of the NC Coastal Resources Law Planning



and Policy Center. The project also received funding support from the US National Oceanographic and Atmospheric Association and NC Sea Grant.

Before the program began Mr. Geis informed attendees of the following:

- The draft report is available on DCM's and the Center's website. A report primer was also provided.
- A sign up sheet for public comments was provided.
- This effort launched by DCM is different from the Beach and Inlet Management Plan, although DCM anticipates both programs will work together in the future.
- Public comments will assist the OPSC in developing the final draft of the ocean policy report. Comments generated at each of the 4 scheduled public meetings will be provided in an appendix to the NC Coastal Resources Commission as well as in a summary document provided to commissioners along with the report.

### **Program**

- Presentation of draft recommendations developed by the Ocean Policy Steering Committee.
- General Q & A session specific to report preparation, steering committee makeup and general clarifications necessary for the information provided.
- Open comment period.

### **Public Comments**

Following the introduction Professor Kalo and Ms. Schiavinato presented the Committee's draft recommendations. Comments received are as follows:

***Q: Webb Fuller (Nags Head)***

On the sand management chapter, it stopped with gathering data and scientific information and did not go into funding. Was it discussed or was it specifically left off?

***A: Scott Geis (DCM)***

The charge of the committee was just to identify emerging issues. Obviously all of the recommendations presented are going to take significant funding, but the Committee was only tasked with issue identification and it will be left up to the CRC to determine which issues to pursue in terms of staff time and implementation.

***Q: Perry White (Resident, Nags Head)***

How much of the current work being done along the coast are you aware of, meaning the studies being done on non-usable sand sources (i.e. Oregon inlet), and other sources off the coast? How much have you incorporated into your study, or will you be starting over and gathering new data?

***A: Scott Geis (DCM)***

We will be tapping into the information that already exists. For example we anticipate using numbers generated by the BIMP in terms of sand sources, cost benefit ratios, etc., as well as tying into other studies such as those done by the Army Corps Of Engineers, and others coming out of State Universities.

***Comment: Chaz Winkler (Volunteer, Beachcomber Museum and Nags Head Resident)***

You mentioned the Army Corps of Engineers and one of my concerns is that the oversight of these projects is usually done by groups who are vested in seeing them be successful. If the people of the coastal



communities can't trust the oversight of projects dealing with our limited coastal resources, if we don't address these problems, then you won't be able to gain confidence from the community and the project will end up being detrimental to the community. *(Mr. Winkler clarified that his concerns were not focused on the efforts of the Ocean Policy Steering Committee and he also addressed his concern that Nags Head Town officials are more concerned with the economy rather than the people that live there, however these comments were not directed at the Ocean Policy report and have therefore been omitted).*

**A: Scott Geis (DCM)**

I am hopefully that in the formation of this Committee, we attempted to take the process out of DCM's hands and put the issues in the hands of the stakeholders. We went out and contacted academics, state and federal agency representatives, local representation, homeowners associations, and non-profits, because we knew there were clashing ideas out there. We hope that through the makeup of this Committee, even though the recommendations were not all unanimous, we can present these issues with our best foot forward and show that these considerations were apparent in the beginning so that the project continues to move forward when its is presented to the CRC and other Commissions.

**Q: Robert McClendon (UNC Coastal Studies Institute)**

With regard to the Coastal Vulnerability index, does this refer to a vulnerability to sand loss?

**A: Scott Geis (DCM)**

As Lisa mentioned, several studies have been done in the past by the USGS and NCGS looking at coastal vulnerability, however these studies were done using large (1 to 5 kilometer) cells for the Atlantic Seaboard. These studies take several variables that are entered into mathematical equations to predict island vulnerability. These studies examined variables such as offshore geology, sand availability, etc. Primarily these studies have been concerned with examining island vulnerability to inlet formation, increased erosion, sea level rise, etc. The Committee's suggestion is to focus these studies more locally and in addition to examining real time and future coastal hazards, to examine the economic component to coastal hazards. The recommendation is designed to be a planning tool for coastal communities to examine ways to protect themselves or to designate areas of a community that may need to be let go.

**Q: Perry White (Resident, Nags Head)**

You were talking not only about wastewater management but also stormwater management and ocean outfalls. Was there any consideration of using wetlands for treatment? Dare County is trying to replace septic systems that leak into coastal waters of Stumpy Point, and in addition to treating the water there is talk of discharging it into wetlands for extra filtration before it gets to the open water. The Stumpy Point sewer project is in the process of gathering septic systems into a primary or secondary treatment system, which would then be released into wetlands. Are you considering this at all for either stormwater or wastewater?

**A:** The charge of the committee was to deal with issues from the barrier-islands out and the Committee did not look at wetlands. The way we approached this issue was to look at the past use and discussion of ocean outfalls. Previous studies from the 1980's showed that the development of island wide wastewater collection facility was cost prohibitive. The reason this issue was brought to the forefront of the Committee's discussion was there was talk by the Division of Water Quality about looking into the use of deep ocean outfalls to treat stormwater. This idea has also proven to be cost prohibitive because to reach deep water you need to go out to 200 feet in depth, which is located off the coast. The main concern of the Committee was to examine alternatives to outfalls and to promote technologies for water reclamation.



***Comment: Jan DeBlieu (NC Coastal Federation)***

8 of the State's 11 ocean outfalls are located in Dare County, which is why this issue is of significant concern.

***Comment: Robert McClendon (UNC Coastal Studies Institute)***

Did you say there were wastewater outfalls discharging into the ocean? The reason I ask this is because you comingle the discussion of wastewater and stormwater in your document, which may be leading to some confusion. You should separate the two more definitively in the paper.

***Q: Jan DeBlieu (NC Coastal Federation)***

Why didn't you address retreat? I haven't seen anything in the report about retreating from the beach. Why is that? Especially in terms of how you would plan for the infrastructure and everything around that? You identify areas of the coast that just cannot be saved, and this is not in terms of real estate but you think about the area around Pea Island where erosion is 12 to 14 feet per year. This area is going to be very difficult to save and should it just be let go? If the same kind of erosion is occurring in other areas, where there is coastal real estate, should that area be let go, or should some consideration be given to saving it? At what point does it become too expensive to maintain community infrastructure and should there be planning for that?

***A: Scott Geis (DCM)***

The Committee tried to address retreat in several places throughout the report. Specifically through the recommendations for 1) the creation of a State Coastal Vulnerability Index; 2) preparation of a Worst Case Scenario Planning document; 3) in our discussion of sand resources and planning for the use of a limited resource; and 4) the sea level rise component to CAMA Land Use Plans. These were the ways we tried to address the idea but there was not a specific area in the report dealing with retreat. The reason for this is the report was intended to look at emerging issues and we felt that the State's policy of retreat or relocation is an existing scenario and covered in CAMA rules.

***Follow up: Jan DeBlieu (NC Coastal Federation)***

My concern is that by not addressing retreat specifically in the report, it signifies that everybody recognizes retreat is an option. However there are many people who probably feel that it is not a viable option and failing to address it downplays it as an important policy issue.

***Follow up: Webb Fuller***

I think retreat was a word that could be used correctly 20 years ago. Retreat is generally not a viable option for a number of reasons. You retreat by either relocating on your existing lot or by taking your house and putting it on another lot. And if you look at it in today's environment, most people have retreated on their lot as far as they can. The houses on the oceanfront are not what was there 20 – 25 years ago, so if you have a house on the oceanfront, or if you find a lot you probably won't be able to fit a house on it. So we are really talking about removal or regeneration of an area not retreat. It needs to be looked at more extensively and I just wish people would stop saying retreat. Relocation is the same as retreat because you can't retreat on your lot anymore and there aren't any other lots to move to, and if there were the cost to do so is far too great to make it an option. So we are talking about redevelopment, reconstruction or removal.

***Follow up: Jan DeBlieu (NC Coastal Federation)***

We have all these structures on the oceanfront that are allowed to fall into the ocean. Is there anything in the report that talks about changes to the insurance laws that would allow for structures to be removed



once it is condemned and the owners would then get full compensation from the insurance and not have to wait until the house fell into the water?

*A: Scott Geis (DCM)*

We did not address this issue. We have gotten some similar comments focused on potentially increasing the conservation tax credit and applying it to the removal of threatened properties. So I think there is the potential to expand on some of these recommendations, especially once we receive all of the public comments.

*Q: John Cece (NC DCM)*

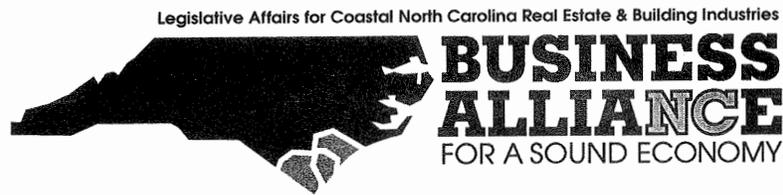
Has there been any indication of a similar study to the one you have done here for the sound side?

*A: Scott Geis (DCM)*

There are a couple of programs in place attacking different issues for the Sounds. There is an Estuarine Shoreline Mapping component that is being conducted by DCM which is using a GIS format to examine the number of miles of estuarine shoreline that have been hardened, in an effort to get at potential ecosystem function loss. This is being done on a county-by-county basis where we are actually going in and digitizing the shoreline. Joe also mentioned that UNC has been charged by the legislature to examine the potential for wind turbines in the sounds. The alternative energy component is being looked at through that study. As they look at this alternative energy question they are examining the makeup of the sounds in terms of the resources that are there, i.e. bottom type. So a lot of the information that comes out of that study will have a lot of relevance to other issues. Lastly, the chapter on Comprehensive Ocean Management will examine the State's need to specify uses within state waters. This zoning application will likely carry over from the ocean into the sounds.

*Comment: Willow Kelly*

Perhaps state policy needs to change in order to address other possibilities besides beach nourishment and retreat.



February 23, 2009

Division of Coastal Management  
N.C. Sea Grant  
N.C. Coastal Resources Law, Planning and Policy Center

Subject: Ocean Policy Comments

Dear Sirs:

The Business Alliance for a Sound Economy (BASE) is an organization of trade associations formed to take collaborative action on issues of concern to their broad membership engaged in residential and commercial real estate sales, land development, economic development, finance, property management and leasing. BASE represents the approximately 12,000 members of the Brunswick County Home Builders Association, the Brunswick County Landowners Association, the Topsail Island Association of REALTORS® and the Wilmington-Cape Fear Home Builders Association.

BASE formally submits the following comments in response to the draft Ocean Policy Report *“Developing a Management Strategy for North Carolina’s Coastal Ocean”*.

**Identification of Available Sand Sources**

Based upon the report there are generally four types of sand deposit sites and types that lie within the State’s coastal-ocean waters that could potentially be used for beach nourishment. These are: Paleo-river channels, Shore-oblique sand shoals, inner shelf stratigraphic units, and potentially Cape shoal structures. The Steering Committee has recommended that the State conduct additional studies to determine where acceptable sand sources are located and the amount of sand available from each potential source. BASE would certainly agree that this type of study needs to take place. However, we would suggest that the study areas be expanded to also include inland areas as well. While the practicality and overall logistics might be too much of a hurdle, inland sources of sand could potentially be of the same if not better quality than sand from ocean sources.

**Establishment of a System of Legal Rights to State-Owned Sand Resources**

Sand Management is going to be a key element in any beach communities’ short and long term management strategy. The granting or public easement seems to be a reasonable theory, and also falls in line with what the Beach Inlet Management Plan (BIMP) is trying to accomplish. The Beach Inlet Management Plan appears to encourage a regional strategy to solve sediment-related problems by designing renourishment projects that are not specific to any one local jurisdiction but instead to an entire region. While this is a worthwhile approach, the biggest hurdle will be the financial capabilities that will have to be borne by the local community. BASE will not support outright denial of sand if the community has demonstrated a need and the financial resources to underwrite the project.

3801-5 Wrightsville Ave. • P.O. Box 3101 • Wilmington, NC 28406  
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Division of Coastal Management  
N.C. Sea Grant  
N.C. Coastal Resources Law, Planning and Policy Center

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#### **Development of a Coastal Vulnerability Index**

Based upon the Steering Committee's recommendation to develop a Coastal Vulnerability Index (CVI) we would expect that the creation of any type of CVI should include a wide range of stakeholders with varying degrees of expertise and knowledge and not be limited to commission, agency or academic interests. It should be noted that while barrier island geomorphology is important to this study other indicators such as economic data, socioeconomic factors, infrastructure components, and financial resources all need to be looked at. BASE would argue that the outcome of such a document or mapping philosophy if not undertaken with the utmost care could do irreparable harm to the economic, social and political well-being of coastal NC and its citizens.

#### **Incorporation of a Sea Level Rise Component to CAMA Land Use Plans**

The IPCC was established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. However, it should be noted that the IPCC does not conduct any research nor does it monitor climate-related data or parameters. The IPCC reflects a wide range of **competing** views, expertise and wide geographical coverage on climatic conditions. That being the case, one could argue that the viewpoints and statements that come out of the IPCC on Sea Level Rise should be critically reviewed and examined.

The core principle behind a Land Use Plan is that it serves as the community's blueprint for growth. This is done through a collection of policies and maps. It should be noted that once a land-use plan is certified by the CRC, the Division of Coastal Management uses the plan in making CAMA permit decisions and federal consistency determinations. This means that proposed development projects and activities must be consistent with the policies of a local land-use plan, or DCM cannot permit a project to go forward. Adding a sea level rise component, which is extremely subjective to begin with, to a CAMA land use plan poses a potential risk for far-reaching policy guidelines that could lead to over extensive regulatory measures. We would argue: how can a local government create an effective policy on Sea Level Rise when the very nature of the criterion that is being measured does not have an accepted industry standard of measurement? We would further argue that before the Coastal Resources Commission's policy of retreat is expanded to include overall relocation of structures and buyout programs the economic and socioeconomic ramifications need to be thoroughly weighed and reviewed. And this must be done by a committee of stakeholders which would include elected officials and homeowners living along our barrier islands.

#### **Disclosure of Natural Hazards for Coastal Real Estate Purchases**

BASE agrees that it is very important for potential property owners to be knowledgeable and aware of the risks they assume when purchasing any type of real estate whether it be inland or coastal. Currently the NC Real Estate Commission enforces G.S. 47E and provides all of the necessary disclosure materials for all residential sales by **requiring sellers** to provide for a disclosure (Residential Property Disclosure Statement). There is also another brochure available to all potential buyers of coastal property called "Purchasing Coastal Property in NC." BASE will not support any legislation that would require additional disclosures for prospective purchasers of coastal property prior to acquisition. The legislation proposed in this recommendation essentially places the Coastal Resources Commission in the practice of regulating the potential sale and transfer of Real Estate. BASE feels strongly that this is not a practical use of resources for the CRC to be involved or engaged in.



Division of Coastal Management  
N.C. Sea Grant  
N.C. Coastal Resources Law, Planning and Policy Center

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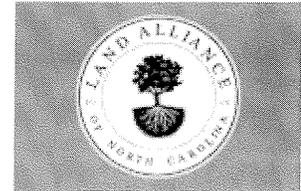
**Final Comments**

We would like to see one item further explored that was not captured in the report. BASE would like to see more emphasis placed on region-wide beach vegetation plans. Beach and dune grasses play a critical role in the overall dynamics of beach protection and stabilization. Due to the interlacing pattern of the rhizomes, vegetation species such as *Spartina patens*, sea oats, and American beach grass are able to recover quickly from storm erosion and thus stabilize the dune. Perhaps the Beach Inlet Management Plan will address this issue more in-depth.

BASE appreciates the opportunity to comment on the draft report "*Developing a Management Strategy for North Carolina's Coastal Ocean*." If you have any questions about these comments I can be reached at (910)799-2611.

Sincerely,

Cameron Moore, AICP  
Governmental Affairs Director



DT: March 10, 2009  
 TO: DIVISION OF COASTAL MANAGEMENT (DCM)  
 FR: The LAND ALLIANCE of NORTH CAROLINA ( LA-NC )  
 RE: DRAFT REPORT  
 DEVELOPING A MANAGEMENT STRATEGY FOR  
 NORTH CAROLINA'S COASTAL OCEAN: (DR-DMSCO)

*“I watch as the high spring tide laps around the staircases, swimming pools, and foundations of a group of ostentatious oceanfront beach cottages. . . .”, and, “... heavy equipment returns ... in a futile exercise to build sand berms in front of seventeen lots ... many of which support pretentious million-dollar houses.”*

From a scientific paper published in GEOTIMES by an eminent North Carolina Coastal Geologist.

**ABSTRACT:**

The Report starts with the 80's, thereby excluding public policy actions beginning in the 60's and 70's when the State asserted Ownership of submerged Beach to preclude private construction of jetties and bulkheads, on assurances that the State was better able to protect the Beach.

The State has supported ACOE Dredge Spoil Disposal Practices, Damming of Rivers, and other Policies that can be theorized as acting to starve the Coast Line of materials, thereby causing the erosion of North Carolina Beaches.

No State Educational Institution or Agency will do tests to determine the cause of Beach Erosion.

Concurrently, the State seeks to abrogate its obligations to protect the Beach, and endeavors, in this document, to blame erosion on Sea Level Rise, and make property owners responsible for building at the Beach.

In effect, the government is causing erosion of Beaches, and blaming the consequences on the owners of coastal property.

The DCM is seeking to establish a policy to retreat or lose your house.

The Report further deals with Energy, Outfalls, Aquaculture, and Ocean Management.

These issues are not addressed in these comments in a comprehensive manner.

We fought a revolution to stop the King ( State ) from unreasonable Taking and Taxing property.

The State of North Carolina is adopting the same authoritarian prerogatives the King asserted.

An Oligarchy of Environmental Agencies and Organizations now dominate and direct all policy in North Carolina, and the regulated property owners don't know what has happened until to late.

The Draft Report is contrived to support further "takings" of Private Property Rights.

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It is clear that the DR-DMSCO is intended by CRC/ DCM to be the Base Policy Document for future Management of the Coast and Ocean Regions of North Carolina, and outlines the CRC / DCM's intentions to further extend the State's authority to control and/ or take Rights of Private Property Owners.

This process began in the 60's, and 70's with the State's taking of lands below Sea level. The focus then pertained to Ocean Beach property with rules intended to preclude construction of bulkheads and jetties that obstruct walking along the Beach. Assurances were given, that the State was better able to protect the beach.

The Legal Premise for the "taking without compensation" was said to be based on English Common Law, when the State asserted Claims, that the King owned the waters and rivers, and the land beneath.

They were right.

In fact, the King effectively owned all the land, water, forests, and everything, and Granted use there of, or, could take away rights of use of all land and property in a manner limited by the Rights set in the Magna Carta.

That's why we fought a Revolution.

The American Revolution was engaged so the King ( State ) couldn't take property without just compensation, a practice that Governor Lord Tryon had expanded upon in order to build his Palace, in New Bern.

It is indeed ironic that our own State of North Carolina has rapidly and forcefully accelerated the takings of property rights in North Carolina, the Crown Colony that, in 1771 was the site of the Battle of Alamance, which some Historians say was the First Battle of the American Revolution.



This is not to say that rules and regulations that benefit the common good are bad, but rather to observe that Policy in North Carolina has been distorted to serve the Political Objectives of the State's Environmental Agencies, and Organizations that deem they know better than anyone else what is good and proper.

The problem is that these Environmental Elites, have made a practice of misrepresenting and distorting facts and science in order to get their way, and that is ( according to a highly regarded Scientist ) to return Coastal North Carolina to nature and make it a public park,, by saying Mother Nature will wash it all away.

It is asserted to the contrary, that it is State Supported Policies that are causing the Erosion.

CHAPTER 1  
SAND RESOURCE MANAGEMENT  
A) CAUSES OF EROSION:

The opening sentence in the DR-DMSCO attempts to assert and imply Climate Change and Sea Level Rise as the predominate causes of erosion : " Climate change, sea level rise and storms all have the potential to cause erosion or increase erosion that already has occurred along North Carolina's shorelines. As a consequence, structures may be damaged or destroyed during storms, creating the potential for structures to be abandoned in the surf zone or surrounded by sand bags." PG 1

This is contrary to NOAA data that shows Sea Level Rise for the North Carolina Coast has been relatively modest during the recent past when the Erosion has occurred. Moreover, if Sea level Rise is to be asserted as a cause of erosion, it should be reasonable and proper to demonstrate the Sea Levels from 1000 to 1100 when it was warmer than today. Geologic history teaches that the Greenland Glaciers were melted to an extent allowing growing crops by the Vikings. This report omits this historical condition.

The report fails to discuss all theories of erosion and fails to mention the " River of Sand " theory . The River of Sand theory assumes a current (or series of currents) carry materials along the East Coast of America from North to South . If the supply of sand to the system is reduced, the Along -Shore currents carry sand away , and, with reduced up drift supply, cause erosion .

In the Cape Fear Study , the ACOE admitted that a CY of sand removed from the littoral zone was a CY of material lost to down drift beaches.

In the Section 111 for Beaufort Inlet, the Corps admitted it's Wind Wave Computer models were 180 ° wrong and had predicted the NET bypass of Beaufort inlet was from West to East, but with actual on-site measurements, the Corps found the Net Material Bypass was from East to West.. They had no explanation as to why this was happening.

This Report fails to mention that none of the Scientists have done a valid and comprehensive study in the Littoral Zone , where the erosion is occurring, to determine and confirm the volume of such currents , the direction such currents, or the volumes of materials carried by such currents, or any other cause of erosion. Instead the Report states: " The natural course for many areas along the sediment-poor island segments of the North Carolina coast is that, without nourishment, some barrier island segments will be inundated in the future if sea level continues to rise. This problem can be exacerbated by storm surge associated with hurricanes and nor'easters." ( Pg. 15 )

This statement is totally misleading and completely ignores the fundamental problem, the Starving of the Littoral System for materials caused by:

- 1) ACOE Least Cost Dredging Material Disposal Policies , that remove Sand from inlets to be disposed far off shore beyond the along shore Littoral System.
- 2) And Suppression Of Natural forest fires that reduces erosions of uplands.
- 3) Damming of upland rivers that reduces natural Bore and Scour of flood waters that historically naturally transport materials to the Coast.

The Report fails to mention , that , if the "River of Sand" theory is correct, the Beaches are being starved by : Disposal of dredge spoil sand from Beaufort Inlet , offshore well beyond the along-shore currents . Va Beach Sand Trap at Rudi Inlet used to pump sand back up drift to nourish Va. Beach beach, ACOE dredging of Delaware and Chesapeake bay Inlets . NC/ ACOE Act to Starve Southern NC Beaches by renourishment of Bald Head Island, and Diminution of upland supply of materials by Flood Control and Power Dams at Jordan Lake Dam and Sharon Harris etc. Instead , the report attempts to confuse the causes of erosion, and attempts to transfer the cause to Sea Level Rise without demonstrated basis in science or the record .

B) INLET STABILIZATION :

The Repot Fails to acknowledge the efficiency of the Beaufort Inlet Jetties in stabilizing the inlet for over 150 Years. While it is clear that an un-stabilized inlet will move back in forth in response to hydraulic actin like a loose water hose. It is clear that if you fix locate the end of the hose , ( or inlet ) it will stabilize the flow. There appears to be no reason for DCM / CRC to disallow stabilization of inlets, except to increase the loss of property .

C) SAND TRANSPORT PIPE BYPASS

Report Fails to present Sand Bypass Systems ( STP) used in Florida to transport materials across inlets, as alternatives to Sand Mining ( renourishment ) . The unofficial excuse is that fixed structures are out lawed. Interestingly, the CRC acted to outlaw fixed structures as needed to implement a STP , in order to obstruct the implementation of such systems. It appears these systems would reduce erosion, and maintain navigable inlets at much less cost .

DCM / CRC action has been taken to obstruct means to reduce erosion, and pass regulations to increase erosion.

D) SAND MINING : This Report Objects to Sand Mining in order to renourish Beaches , "Another prevalent issue concerns sand that may be lost to the barrier island system due to sand mining, whether it is for beach nourishment projects or to maintain North Carolina's navigation channels." Pg. 8

In effect the Report supports the notion that ,, It's OK to reduce the flow of sand to the coast and beaches by polices of



Damming Rivers, and suppressing Natural Forest Fires, in order to protect upland property, and it's OK to Dredge Sand from the inlets and dispose beyond the littoral zone ... but it's not OK to renourish Beaches with materials taken from the System ( by State approved dredging policy) that is stock piled and available in the region.

E) RECOMMENDATION;

The Recommendations asserts that Planing should be done by academic Institutions :

“ This planning document should be developed by academic institutions with scientific expertise and include the input of multiple agencies, such as DENR, DOA and DOT.” Pg. 19.

While we agree that planing should be done by academic institutions, based on the glaring errors, omissions, and bias expressed by the authors and experts quoted in this report, we submit that the planning should be done by other academic institutions or agencies that are not so biased as the present .

Chapter 2

OCEAN ENERGY:

This should be studied more carefully.

No Comment .

Chapter 3

OUTFALLS :

The study objects to any new WW or SW ocean outfalls, ( Pg. 54.)

We object to the fixed opposition to SW outfalls ( Storm Drains.)

Whereas the subject of SW pollution as been so politicized, we believe that valid science to determine the sources and magnitude of polluting constituents should be properly studied before making such a policy statement.

Chapter 4

AQUACULTURE :

The bias in the Report obstruct Aquaculture based activity .

Typically, environmentalists publicly support Aquaculture in Public Relations, but find and insert technical reasons to obstruct such activities in policy .

In fact, it seems that environmentalists policy makers can find reasons to object to and obstruct most any activity known to man.

Chapter 5

COMPREHENSIVE OCEAN MANAGEMENT :

The Report states: “There is strong support from the Ocean Policy Steering Committee for the continued implementation of the CHPP. The steering committee believes the CHPP can play an important role in any ocean mapping and any ocean management or planning efforts initiated by the State in the future.” Pg. 75

Will citizens be able to use the Ocean without CHPPs approval?

=====

ELABORATIONS and AMPLIFICATIONS ON PREVIOUS COMMENTS

**JETTIES:** It is clear that the CRC / DCM , and the Coastal Federation are determined to have all the jetties removed from the Coast and plan to enforce a program of retreat of all structures from the Beach by asserting that Jetties don't stabilize inlets and Sea Level rise is going to wash everything away . It is interesting that the organizations don't say much about the Ft. Macon Jetties that, for over 150 years have stabilized Beaufort Inlet very well.

**ONSLow BAY EROSION:** Clearly much of the Atlantic Coastline has experienced erosion, and although it's beyond the scope of this monograph to analyze the Global Warming Issue \*\*, remember however, the erosion that has occurred to date, is in a time of relatively modest sea level rise as documented by NOAA data. In fact, maybe the erosion for the shoreline of Onslow Bay from Bogue Banks to Cape Fear, has NOT been caused by the jetties, overwash migration, or sea level rise, but by a simpler cause, the “ starving an Along-Shore “ current of material ?

In the late 90's, the Army Corps of Engineers ( ACOE) admitted\*\* that ( with the consent of the State) it has dredged and removed nearly 50 million CY of sand from Beaufort Inlet, and dumped it far offshore, well beyond the Onslow Bay along-shore Littoral zone. That's a pile of sand approximately 6' deep x 400' wide x 100 miles long. That's just about the distance from Beaufort Inlet to Cape Fear, and just about the amount of beach lost to erosion. ( The volume of 50 Mil, CY as stated, was later reduced, but even half that amount is a lot of sand , and that's still a lot of Beach .)

So has the ACOE's dredging caused the erosion? Surprisingly, NONE of the State or Federal Agencies or Environmental Groups, or Educational Institutions have done any valid analysis of Along-Shore currents to determine if that's what's happening or not . \*

Why not ?

**OUTER BANKS EROSION:**

To counter the above theory of erosion , detractors point to erosion of the Outer Banks Beaches, observing there is no significant dredging of inlets along that Line of Coast.

Let's consider. If an along -shore current is present from the North and running along the face of the Outer Banks, and if the up drift regions are being restricted of a sand supply, that Coastline would erode, just as the Onslow Bay coastline has eroded.



Consider that elementary school science and geology taught that the Appalachians mountains were old Warn Down Mountains, and the eroded materials built up the coastal plane, from the Fall Line to the Coast.

Government Policy today is to Dam up rivers for Flood Control, Water Supply, and Hydro power. Dams reduce the natural bore and velocity of natural storm waters that scours of river bottoms and naturally transported material to the Coast. Suppression of natural Forest Fires following natural droughts reduced natural exposure of dirt to be washed into the creeks and rivers and on to the Coast.

It's also interesting that the ACOE also dredges the Inlet to the Chesapeake Bay and disposes of the Spoils offshore. and Va. Beach has installed a Sand Trap at Rudi Inlet , to catch and pump what little material is left back up drift to nourish the Beach.

In effect, we have stopped the natural erosion of uplands that, over the eons, provided material to supply the along shore currents and Build Beaches.

In effect, the Government is starving the Beaches, and callously blame loss of houses on stupid property owners.

So why are the State and Federal agencies including the EPA, NOAA, ACOE, CDM, CRC, Sea Grant, and most all of the Universities embarked on a PR program to blame erosion on Sea Level Rise and Global Warming ?

As not many people remember, in the 1970's the State of North Carolina took possession of Private Ocean Beach Front property ( without compensation), as discussed above.

Maybe, if the data were to demonstrate conclusively that the cause of erosion is due to reduced supply of materials into the along-shore current system, that would invalidate theories of over-wash migration ( that assumes that sand runs uphill from the Continental Shelf ) , and the popular cause'celeb of "Sea Level rise". Moreover, if "starving the along-shore currents" of materials is definitively proven, the Liability of State and Federal Governments for erosion to date would be inescapable. But of course, for the Federal or State governments to pay for the damages they may have done to the beaches and property owners would cost a lot of money.

Alternatively, if the government can convince the General Public that Sea Level Rise is causing the erosion, that's good justification to make property owners and local Governments pay for renourishment, or make the property owners move their houses. And, it's an easy sell to blame the Beach Cottage owners for building on the beach.

We believe that, whatever the cause, either the State should do what it said it would do, and " Protect the Beach", or return the beach to the Owners and allow them to build Sea Walls or Jetties as they wish,, and be free to take action against Government Agencies for having dissipated the beach with irresponsible dredging practices and other actions to reduce supply of natural upland feeder materials.

Agreeably, while we don't believe that jetties located willy-nilly, all along the beaches is a good or attractive idea, but then, neither do we believe the State should simply abrogate the responsibilities it assumed when it took possession of the Beaches of North Carolina, ( especially after participating in removing the Sand from the beach. )

Bill Price 252-247-2112  
Land Alliance of North Carolina  
" Valid Science for Valid Rules "

\* The only study known is currently being conducted by UNC at Emerald Isle. Unfortunately, the ADCP test equipment is located nearly 1,000' offshore, well beyond the Near-Shore Littoral Zone where the Erosion is occurring.

\*\* We have also asked about the Global Warming of 1000<-> 1100 AD. and the so-called "Little Ice Age" that followed. It was reported on the Discovery Channel, that the Vikings \* were able to settle in Greenland in that time because they could grow Crops, which we can't now. SO if the Greenland Ice sheet was reduced by warming 1000 years ago, by how much, what was sea level then, and what caused it ? So far, we haven't found good answers to these questions.



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY  
INSTALLATIONS AND ENVIRONMENT  
REGIONAL ENVIRONMENTAL AND GOVERNMENTAL  
AFFAIRS-SOUTHERN  
101 MARIETTA STREET, NW, SUITE 3120  
ATLANTA, GA 30303-2711

April 16, 2009

Mr. Mike Lopazanski  
Coastal & Ocean Policy Manager, NC Division of Coastal Management  
NC Department of Environment and Natural Resources  
400 Commerce Avenue  
Morehead City, NC 28557

Dear Mr. Lopazanski:

I am the Department of Defense (DoD) Regional Environmental Coordinator for the states within EPA Region 4 and represent the military services on multiservice environmental issues within those states. On behalf of all of the military services, I first wish to convey our appreciation to North Carolina for its staunch support for the DoD. We believe that our cooperative relationship is essential to the success of the DoD and its ability to effectively train our war fighters. As the DoD REC, I am forwarding comments provided from all of the services on the draft report, *Developing a Management Strategy for North Carolina's Coastal Ocean*, scheduled for presentation and discussion at the 29-30 April 2009 NC Coastal Commission Meeting. We appreciate your willingness to receive and transmit our comments to the Commission in their pre-meeting documentation package. In addition, we would appreciate your consideration and inclusion of our comments as you prepare recommendations for the Commission.

The State of North Carolina's military installations face numerous challenges to meet mission requirements and sustain the environment. Our ranges, sea space, undersea space, airspace, and frequency spectrum requirements are all vital to the successful training of our service members. While each installation within North Carolina faces compatible land use and other environmental challenges, the near shore and off shore areas of North Carolina are particularly important. These areas provide vital DoD military readiness training areas which are, in some cases, the only areas along the eastern coast of the US where perishable battle skills can be practiced, and technical readiness qualifications can be achieved before units deploy into harm's way. While the military services support the development of alternative energy resources, we must emphasize the need to sustain these military readiness activities. We, therefore, support efforts to ensure that the coastal ocean policy promotes compatible development, while at the same time avoiding any direct or cumulative impacts, which degrade military capabilities. I have included the DoD policy for proposed wind farm locations as an example of our desire to cooperatively support alternative energy projects.

For example, near shore or off shore development can cause interference to surface ships and amphibious ships, as well as to underwater military training operations (such as mine detection and demolition). Onslow Bay, extending out several nautical miles, is absolutely critical to Navy/Marine Corps amphibious training exercises. These exercises must be done in conjunction with the amphibious beach and the live fire impact areas at Camp Lejeune. The NC coasts are the only areas available on the east coast to carry out these types of Navy/Marine Corps amphibious training exercises.



In its current form, the draft report contains only two references to military interests. We believe the ultimate strategy for managing North Carolina's coastal ocean development should reflect additional consideration for the potential impacts to military activities. Although, the current North Carolina code already requires special consideration of land use changes proposed in the vicinity of a military base (N.C. Gen. Stat. Sec. 153A-323 (2008)), we are concerned that this provision may not be broad enough to apply to proposed ocean uses or to those areas near military airspace.

We offer the following general and document specific comments to the draft policy, in light of these concerns and the potential negative impacts to military activities within the coastal counties and ocean areas of North Carolina:

1. **Military Review and Concurrence of Projects.** Similar to the rule proposed by the Mineral Management Service for establishing a program to manage energy projects on the Outer Continental Shelf, the final NC Ocean Policy Report should require applicants for projects to provide detailed analysis of the potential impacts to military activities affected by proposed activities. The policy should incorporate a requirement to institutionalize a review process that includes the DoD (i.e., an interdisciplinary NEPA-like review/permit). Project proposals could be sent for review and approval (optimally) or comment (minimally) to the DoD REC and the NC DoD Commanders Council. This would not be a new requirement, since the N.C. Gen. Stat. Sec. 153A-323 (2008) sets forth a model requiring notice to the military service, the opportunity for the military service to comment and the requirement for due consideration of any comment or analysis submitted by the military service. The management strategy could call for adopting this model for statutes and implementing regulations controlling coastal ocean development, or recommend establishing a new mechanism for achieving this end.

2. **Review of and coordination with military threatened and endangered (T&E) management plans.** Heightened training restrictions due to increased threatened and endangered (T&E) species emphasis could be catastrophic for the DoD. The wildlife and plant species found along the NC coasts are diverse and often threatened. The final NC Ocean Policy Report should note that any off shore developments that negatively impact marine mammals, T&E species and species at risk could cause implementation of additional protective restrictions and increase the environmental burdens on both the military and commercial ventures. The worst case scenario for the military would be for these restrictions to further restrict training capabilities. The final NC Ocean Policy Report should prohibit projects which increase these protective measures and reduce training flexibilities.

3. **Airspace Coordination.** Require any construction or alteration exceeding 200 ft above ground or sea level to provide an analysis of findings associated with the coordination of any proposed structures of concern to the Federal Aviation Administration (FAA) and military services. The analysis should use the preliminary project screening tool located at: <https://www.oceaaa.faa.gov/oceaaa/external/gisTools/gisAction.jsp?action=showLongRangeRadarToolForm>



4. Page 15: Development of a Coastal Vulnerability Index (CVI) – definition of CVI "might" need expansion to acknowledge and evaluate impact to military mission sustainability issues and concerns (e.g., airspace requirements; low-level military training routes; troop maneuvers; drop zones; water-based maneuvers; impacts to electronic media; microwave towers; and early coordination required with the appropriate FAA and regional military POCs on proposals for alternative energy projects - wind turbines, etc. which could "potentially" interfere with military operations).

5. Page 24: 1st Paragraph; Last Sentence: "Furthermore, applications or uses characterized by a more mobile or transient characteristic, such as shipping lanes and military air space, must be avoided." Change the sentence to read, "Furthermore, applications or uses characterized by a more mobile or transient characteristic, such as shipping lanes and military sea space, undersea space and air space, must be avoided."

6. Page 41-42: The last sentence under "Lease and Easements for Alternative Energy Projects" states: "although an individual wind turbine may occupy only a small portion of State-owned submerged lands and a small portion of the water column, the total project will occupy a large area of State-owned submerged lands, many segments of the water column, and the turbines will intrude several hundred feet into the airspace..." We would recommend adding a new footnote # 147 (then shifting other footnotes down a one digit accordingly). The new footnote # 147 (for the bottom of page 42) could state:

The Federal Code of Regulations (CFR) Title 14 Part 77.13 states that any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA:

- any construction or alteration exceeding 200 ft above ground level.
- any construction or alteration: within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 ft; within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft; within 5,000 ft of a public use heliport which exceeds a 25:1 surface.
- any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards, when requested by the FAA
- any construction or alteration located on a public use airport or heliport regardless of height or location.

7. Page 43: Designate all military facilities within the state as Key facilities. Last paragraph Second sentence: "...Those two subsections are §113A-120(a)(5) regarding public trust waters and (7) regarding key facilities. Subsections §113A-120(a)(8) regarding inconsistency with land use plans, (9) regarding practicable alternatives and (10) regarding cumulative effects may play a role in a particular project. However, only (a)(5) and (7) would have direct application to all proposals to site facilities in public waters and (7) simply incorporates by reference the limitations set forth in (1) through (6)." Military installations are likely NOT considered "key facilities" within NC per se - based on the definition provided. Military installations should be designated as key facilities since they "tend to induce development and urbanization of more



than local impact". Designation of installations as key facilities will provide additional requirements for scrutiny prior to project approval.

8. Page 48: Add an additional Recommendation. The recommended addition is as follows: Proponents of any "Ocean-based Alternative Energy" project proposals need: (1) to provide early notification and coordination to military commanders (and their key environmental and operational staff); (2) the military service Regional Environmental Coordinators (REC's) listed below; and (3) to coordinate with the FAA IF when any of the review criteria of the Federal Code of Regulations (CFR) Title 14 Part 77.13 apply (NOTE: listed above as a proposed document footnote).

We thank you for the opportunity to comment on the draft report. We will continue to monitor developments and would appreciate the opportunity to provide additional comments as the report is finalized. We would also like to attend the Commission meeting on 29, 30 April 2009 and hope that this can be arranged.

We welcome the opportunity to meet with you in person or telephonically, to discuss this letter. I look forward to working with you to continue the mutually beneficial relationship between the DoD and North Carolina. If you have questions or comments regarding contents of this letter, please email Mr. Marshall Williams at [marshall.williams@us.army.mil](mailto:marshall.williams@us.army.mil) or call him at 404-545-6599 and he will provide you assistance. I can be contacted at [susan.p.gibson@us.army.mil](mailto:susan.p.gibson@us.army.mil) or 404-524-5061x277.

Sincerely,

Susan P. Gibson  
DoD Regional Environmental Coordinator  
Region 4

Enclosure

CC:  
Tom Sims  
Scott Brewer  
Christine Porter



DDO  
POLICY BOARD  
ON FEDERAL AVIATION

OFFICE OF THE SECRETARY OF DEFENSE  
1480 DEFENSE PENTAGON  
WASHINGTON DC 20301-1480

JAN 29 2007

SUBJECT: Department of Defense (DoD) Policy on Proposed Wind Farm Locations

The DoD does not oppose the development of wind farms and other sources of renewable energy that do not adversely impact military readiness or training of U.S. Armed Forces. DoD will continue to work with the Federal Aviation Administration (FAA) and other regulatory agencies as necessary, to evaluate each wind farm proposal on a case-by-case basis. Where our assessment of a particular project suggests potential adverse impacts to military or other national security operations, we will raise those concerns with the appropriate regulatory authority in order to mitigate or prevent the adverse affects of that project through appropriate technologies and techniques. We will continue to work with the FAA and others to achieve mutually satisfactory wind farm project solutions.

A handwritten signature in cursive script, reading "Gerald F. Pease, Jr.", written in dark ink.

Gerald F. Pease, Jr.  
Executive Director



## Appendix B: Coastal Energy Policies, 15A NCAC 07M.0400

### SECTION .0400 – Coastal Energy Policies

#### 15A NCAC 07M .0401 DECLARATION OF GENERAL POLICY

(a) It is hereby declared that the general welfare and public interest require that reliable sources of energy be made available to the citizens of North Carolina. It is further declared that the development of energy facilities and energy resources within the state and in offshore waters can serve important regional and national interests. However, unwise development of energy facilities or energy resources can conflict with the recognized and equally important public interest that rests in conserving and protecting the valuable land and water resources of the state and nation, particularly coastal lands and waters. Therefore, in order to balance the public benefits attached to necessary energy development against the need to protect valuable coastal resources, the planning of future land uses, the exercise of regulatory authority, and determinations of consistency with the North Carolina Coastal Management Program shall assure that the development of energy facilities and energy resources shall avoid significant adverse impact upon vital coastal resources or uses, public trust areas and public access rights.

(b) Exploration for the development of offshore and Outer Continental Shelf (OCS) energy resources has the potential to affect coastal resources. The Federal Coastal Zone Management Act of 1972, as amended, requires that federal oil and gas leasing actions of the US Department of the Interior be consistent to the maximum extent practicable with the enforceable policies of the federally approved North Carolina Coastal Management Program, and that exploration, development and production activities associated with such leases comply with those enforceable policies. Enforceable policies applicable to OCS activities include all the provisions and policies of this Rule, as well as any other applicable federally approved components of the North Carolina Coastal Management Program. All permit applications, plans and assessments related to exploration or development of OCS resources and other relevant energy facilities must contain sufficient information to allow adequate analysis of the consistency of all proposed activities with these Rules and policies.

*History Note: Authority G.S. 113A-102(b); 113A-107; 113A-124;  
Eff. March 1, 1979;  
Amended Eff. November 3, 1997 pursuant to E.O. 121, James B. Hunt Jr., 1997;  
Temporary Amendment Eff. July 8, 1999; December 22, 1998;  
Amended Eff. August 1, 2000.*

#### 15A NCAC 07M .0402 DEFINITIONS

(a) “Impact Assessment” is an analysis which fully discusses the potential environmental, economic and social consequences, including cumulative and secondary impacts, of a proposed project. At a minimum, the assessment shall include the following and for each of the following shall discuss and assess any effects on any land or water use or natural resource of the coastal area, including the effects within the coastal area caused by activities outside the coastal area:

- (1) a full discussion of the preferred sites for those elements of the project affecting any land or water use or natural resource of the coastal area:
  - (A) In all cases where the preferred site is located within an area of environmental concern (AEC) or on a barrier island, the applicant shall identify alternative sites considered and present a full discussion [in terms of Subparagraphs (a)(2)



- through (9) of this Rule] of the reasons why the chosen location was deemed more suitable than another feasible alternate site;
- (B) If the preferred site is not located within an AEC or on a barrier island, the applicant shall present reasonable evidence to support the proposed location over a feasible alternate site;
  - (C) In those cases where an applicant chooses a site previously identified by the state as suitable for such development and the site is outside an AEC or not on a barrier island, alternative site considerations shall not be required as part of this assessment procedure;
- (2) a full discussion of the economic impacts, both positive and negative, of the proposed project. This discussion shall focus on economic impacts to the public, not on matters that are purely internal to the corporate operation of the applicant. No proprietary or confidential economic data shall be required. This discussion shall include analysis of likely adverse impacts upon the ability of any governmental unit to furnish necessary services or facilities as well as other secondary impacts of significance;
  - (3) a full discussion of potential adverse impacts on coastal resources, including marine and estuarine resources and wildlife resources, as defined in G.S. 113-129;
  - (4) a full discussion of potential adverse impacts on existing industry and potential limitations on the availability of natural resources, particularly water, for future industrial development;
  - (5) a full discussion of potential significant adverse impacts on recreational uses and scenic, archaeological and historic resources;
  - (6) a full discussion of potential risks of danger to human life or property;
  - (7) a full discussion of the procedures and time needed to secure an energy facility in the event of severe weather conditions, such as extreme wind, currents and waves due to northeasters and hurricanes;
  - (8) other specific data necessary for the various state and federal agencies and commissions with jurisdiction to evaluate the consistency of the proposed project with relevant standards and guidelines;
  - (9) a specific demonstration that the proposed project is consistent with relevant local land use plans and with guidelines governing land uses in AECs.

Any impact assessment for a proposal for oil or gas exploration activities shall include a full discussion of the items described in Subparagraphs (a)(1) through (9) of this Rule for associated exploration activity, including all reasonably foreseeable exploration wells and any delineation activities that are reasonably likely to follow a discovery of oil or gas.

(b) “Major energy facilities” are those energy facilities which because of their size, magnitude or scope of impacts, have the potential to affect any land or water use or natural resource of the coastal area. For purposes of this definition, major energy facilities shall include, but are not necessarily limited to, the following:

- (1) Any facility capable of refining oil;
- (2) Any terminals (and associated facilities) capable of handling, processing, or storing liquid propane gas, liquid natural gas, or synthetic natural gas;
- (3) Any oil or gas storage facility that is capable of storing 15 million gallons or more on a single site;
- (4) Electric generating facilities 300 MGW or larger;
- (5) Thermal energy generation;



- (6) Major pipelines 12 inches or more in diameter that carry crude petroleum, natural gas, liquid natural gas, liquid propane gas, or synthetic gas;
- (7) Structures, including drillships and floating platforms and structures relocated from other states or countries, located in offshore waters for the purposes of exploration for, or development or production of, oil or natural gas; and
- (8) Onshore support or staging facilities related to exploration for, or development or production of, oil or natural gas.

(c) “Offshore waters” are those waters seaward of the state’s three-mile offshore jurisdictional boundary in which development activities may impact any land or water use or natural resource of the state’s coastal area.

*History Note: Authority G.S. 113A-102(b); 113A-107; 113A-124;  
Eff. March 1, 1979;  
Amended Eff. October 1, 1988;  
Amended Eff. November 3, 1997 pursuant to E.O. 121, James B. Hunt Jr., 1997.  
Temporary Amendment Eff. July 8, 1999; December 22, 1998;  
Amended Eff. August 1, 2000.*

#### 15A NCAC 07M .0403 POLICY STATEMENTS

(a) The placement and operations of major energy facilities in or affecting any land or water use or natural resource of the North Carolina coastal area shall be done in a manner that allows for protection of the environment and local and regional socio-economic goals as set forth in the local land-use plan(s) and State guidelines in 15A NCAC 7H and 7M. The placement and operation of such facilities shall be consistent with state rules and statutory standards and shall comply with local land use plans and with rules for land uses in AECs.

(b) Proposals, plans and permit applications for major energy facilities to be located in or affecting any land or water use or natural resource of the North Carolina coastal area shall include a full disclosure of all costs and benefits associated with the project. This disclosure shall be prepared at the earliest feasible stage in planning for the project and shall be in the form of an impact assessment prepared by the applicant as defined in 15A NCAC 7M .0402. If appropriate environmental documents are prepared and reviewed under the provisions of the National Environmental Policy Act (NEPA) or the North Carolina Environmental Policy Act (NCEPA), this review will satisfy the definition of “impact assessment” if all issues listed in this

Rule are addressed and these documents are submitted in sufficient time to be used to review state permit applications for the project or subsequent consistency determinations.

(c) Local governments shall not unreasonably restrict the development of necessary energy facilities; however, they may develop siting measures that will minimize impacts to local resources and to identify potential sites suitable for energy facilities.

(d) Energy facilities that do not require shorefront access shall be sited inland of the shoreline areas. In instances when shoreline portions of the coastal zone area are necessary locations, shoreline siting shall be acceptable only if it can be demonstrated that coastal resources and public trust waters will be protected, the public’s right to access and passage will not be unreasonably restricted, and all reasonable mitigating measures have been taken to minimize impacts to AECs. Whether restrictions or mitigating measures are reasonable shall be determined after consideration of, as appropriate, economics, technical feasibility, area extent of impacts, uniqueness of impacted area, and other relevant factors.

(e) The scenic and visual qualities of coastal areas shall be considered and protected as important public resources. Energy development shall be sited and designed to provide maximum protection of views to



and along the ocean, sounds and scenic coastal areas, and to minimize the alteration of natural landforms. (f) All energy facilities in or affecting any land or water use or natural resource of the coastal area shall be sited and operated so as to comply with the following criteria:

- (1) Activities that could result in adverse impacts on resources of the coastal area, including marine and estuarine resources and wildlife resources, as defined in G.S. 113-129, and adverse impacts on land or water uses in the coastal area shall be avoided unless site specific information demonstrates that each such activity will result in no adverse impacts on land or water uses or natural resources of the coastal area.
- (2) Necessary data and information required by the state for state permits and federal consistency reviews, pursuant to 15 CFR part 930, shall completely assess the risks of oil spills, evaluate possible trajectories, and enumerate response and mitigation measures employing the best available technology to be followed in the event of a spill. The information must demonstrate that the potential for oil spills and ensuing damage to coastal resources has been minimized and shall factor environmental conditions, currents, winds, and inclement events such as northeasters and hurricanes, in trajectory scenarios. For facilities requiring an Oil Spill Response Plan, this information shall be included in such a plan.
- (3) Dredging, spoil disposal and construction of related structures that are reasonably likely to affect any land or water use or natural resource of the coastal area shall be minimized, and any unavoidable actions of this sort shall minimize damage to the marine environment.
- (4) Damage to or interference with existing or traditional uses, such as fishing, navigation and access to public trust areas, and areas with high biological or recreational value, such as those listed in Subparagraphs (f)(10)(A) and (H) of this Rule, shall be avoided to the extent that such damage or interference is reasonably likely to affect any land or water use or natural resource of the coastal area.
- (5) Placement of structures in geologically unstable areas, such as unstable sediments and active faults, shall be avoided to the extent that damage to such structures resulting from geological phenomena is reasonably likely to affect any land or water use or natural resource of the coastal area.
- (6) Procedures necessary to secure an energy facility in the event of severe weather conditions, such as extreme wind, currents and waves due to northeasters and hurricanes, shall be initiated sufficiently in advance of the commencement of severe weather to ensure that adverse impacts on any land or water use or natural resource of the coastal area shall be avoided.
- (7) Adverse impacts on species identified as threatened or endangered on Federal or State lists shall be avoided.
- (8) Major energy facilities are not appropriate uses in fragile or historic areas, and other areas in G.S. 113A-113(b)(4), such as parks, recreation areas, wildlife refuges, and historic sites.
- (9) No energy facilities shall be sited in areas where they pose a threat to the integrity of the facility and surrounding areas, such as ocean front areas with high erosion rates, areas having a history of overwash or inlet formation, and areas in the vicinity of existing inlets.
- (10) In the siting of energy facilities and related structures, the following areas shall be avoided:
  - (A) areas of high biological significance, including offshore reefs, rock outcrops and hard bottom areas, sea turtle nesting beaches, freshwater and saltwater wetlands, primary or secondary nursery areas and essential fish habitat-habitat areas of particular concern as designated by the appropriate fisheries management agency,



- submerged aquatic vegetation beds, shellfish beds, anadromous fish spawning and nursery areas, and colonial bird nesting colonies;
  - (B) Tracts of maritime forest in excess of 12 contiguous acres and areas identified as eligible for registration or dedication by the North Carolina Natural Heritage Program;
  - (C) crossings of streams, rivers, and lakes except for existing readily-accessible corridors;
  - (D) anchorage areas and congested port areas;
  - (E) artificial reefs, shipwrecks, and submerged archaeological resources;
  - (F) dump sites;
  - (G) primary dunes and frontal dunes;
  - (H) established recreation areas, such as federal, state and local parks, and other areas used in a like manner.
- (11) Construction of energy facilities shall occur only during periods of lowest biological vulnerability. Nesting and spawning periods shall be avoided.
- (12) If facilities located in the coastal area are abandoned, habitat of equal value to or greater than that existing prior to construction shall be restored as soon as practicable following abandonment. For abandoned facilities outside the coastal area, habitat in the areas shall be restored to its preconstruction state and functions as soon as practicable if the abandonment of the structure is reasonably likely to affect any land or water use or natural resource of the coastal area.
- (g) As used in this Section, an event that is “reasonable likely” to occur if credible evidence supports the conclusion that the event will likely occur.

*History Note: Authority G.S. 113A-102(b); 113A-107; 113A-124;  
Eff. March 1, 1979;  
Amended Eff. April 1, 1992;  
Amended Eff. November 3, 1997 pursuant to E.O. 121, James B. Hunt Jr., 1997;  
Temporary Amendment Eff. July 8, 1999; December 22, 1998;  
Amended Eff. August 1, 2000.*





UNC-SG-09-02  
North Carolina Sea Grant College Program  
919/515-2454



North Carolina Department of Environment and Natural Resources  
**Division of Coastal Management**

Beverly Eaves Perdue, Governor

**James H. Gregson, Director**

Dee Freeman, Secretary

June 9, 2009

**MEMORANDUM**

**CRC 09-09**

**TO:** Coastal Resources Commission

**FROM:** Jeffrey Warren, PhD, CPG  
Coastal Hazards Specialist

**SUBJECT:** Inlet Hazard Area study update

The first phase of the inlet hazard area (IHA) review by Division of Coastal Management (DCM) staff is comprised of IHA boundary review and, where appropriate, re-delineation. The results of this study were presented to the Coastal Resources Commission (CRC) in September 2007 (memo CRC 07-09) by myself and CRC Science Panel Chair Dr. Margery Overton. DCM recommended that the CRC not move forward with official adoption of the boundaries until an ongoing review of existing development policies within the IHA could be completed.

In July 2008, DCM presented the CRC with draft rule language regarding IHA development guidelines for their consideration, including a revised IHA boundary for Bald Head Island (memo CRC 08-28). At that time, the CRC requested DCM to continue to work with the Science Panel to review the DCM-proposed Bald Head Island IHA boundary change as well as continue discussion on how erosion rates and general oceanfront setback considerations within the IHA boundaries could/should be addressed. DCM met with the Science Panel three times between September and November and returned to the CRC in November 2008 with a Bald Head Island IHA boundary that represented additional amendments made by DCM based on Science Panel input (memo CRC 08-48). This boundary was approved by the CRC at that time and the CRC was informed that erosion rate and setback considerations were still ongoing.

In February 2009, a second set of policy recommendations was presented to the CRC (memo CRC 09-05). Dr. Overton and Science Panel member Spencer Rogers expressed the desire to continue working with DCM staff to address issues related to the application of erosion rates and oceanfront setbacks. Although DCM felt that their policy proposal addressed most of the Science Panel's concerns, they agreed to bring the issue back to the CRC after additional meetings with the Panel, including side-by-

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side comparisons of different methods and/or proposals. Since February, DCM has met twice with a Science Panel subcommittee that continues to analyze data and apply different methodologies to each proposed IHA to gauge the effect of potential policy recommendations on existing and future development. Both DCM and the Science Panel IHA Subcommittee believe their February and April meetings were extremely productive and that a consensus between the two groups was near. An additional IHA subcommittee meeting is scheduled for June 10<sup>th</sup> in Raleigh.

At the June CRC meeting, I and Dr. Overton will brief the CRC on this progress and outline the IHA development policy concepts being considered. In addition, I will be discussing the upcoming release of the final version of the IHA boundary update report. As DCM and the Science Panel reach consensus on many of the outstanding IHA issues, it is likely that a set of draft rule language representing a final set of policy concepts jointly developed between DCM and the Science Panel will be available for consideration and discussion by the CRC later this summer.



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue  
Governor

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Director

Dee Freeman  
Secretary

**CRC-09-15**

June 10, 2009

**MEMO TO:** Coastal Resources Commission

**FROM:** Doug Huggett  
Major Permits Coordinator

**SUBJECT:** Wind Facility Transmission Lines - Amendments to 15 NCAC 7H 0.309  
Use Standards for Ocean Hazard Areas: Exceptions

Based upon recommendations made by the N.C. Environmental Management Commission, the North Carolina General Assembly is currently considering legislation that would set up a permitting process for wind energy facilities in North Carolina. In addition to giving the CRC permitting authority for wind energy facilities in the CAMA counties, this legislation would define wind energy facilities as water dependent structures, potentially allowing these structures to be constructed in North Carolina's Sounds and ocean waters following an environmental review. However, one additional technical permitting obstacle exists to the permitting of a wind energy facility within ocean waters. Specifically, 15A NCAC 07H .0306(a) requires that, unless specifically allowed as an exception, all development within the Ocean Hazard Area of Environmental Concern must be located landward of the erosion setback line, landward of the toe of the frontal dune, and/or landward of the crest of the primary dune. This rule would prohibit the issuance of a permit to transmit electricity (i.e. transmission lines) from an ocean-based energy facility to a shore-based distribution center.

In an effort to compliment the efforts of the EMC and the General Assembly, staff recommends the addition of the following exception language to 15A NCAC 07H .0309. It should be noted that this exception would not eliminate the need for a wind energy facility, including transmission lines, to undergo a thorough environmental review, including siting of the facility, bird and fish impacts, impacts to aesthetics, and potential conflicts with recreational and other public trust uses.

## 15A NCAC 07H .0309 USE STANDARDS FOR OCEAN HAZARD AREAS: EXCEPTIONS

(a) The following types of development shall be permitted seaward of the oceanfront setback requirements of Rule .0306(a) of the Subchapter if all other provisions of this Subchapter and other state and local regulations are met:

- (1) campsites;
- (2) parking areas with clay, packed sand or gravel;
- (3) elevated decks not exceeding a footprint of 500 square feet;
- (4) beach accessways consistent with Rule .0308(c) of this Subchapter;
- (5) unenclosed, uninhabitable gazebos with a footprint of 200 square feet or less;
- (6) uninhabitable, single-story storage sheds with a foundation or floor consisting of wood, clay, packed sand or gravel, and a footprint of 200 square feet or less;
- (7) temporary amusement stands;
- (8) sand fences; and
- (9) swimming pools.

In all cases, this development shall be permitted only if it is landward of the vegetation line; involves no alteration or removal of primary or frontal dunes which would compromise the integrity of the dune as a protective landform or the dune vegetation; has overwalks to protect any existing dunes; is not essential to the continued existence or use of an associated principal development; is not required to satisfy minimum requirements of local zoning, subdivision or health regulations; and meets all other non-setback requirements of this Subchapter.

(b) Where application of the oceanfront setback requirements of Rule .0306(a) of this Subchapter would preclude placement of permanent substantial structures on lots existing as of June 1, 1979, single family residential structures shall be permitted seaward of the applicable setback line in ocean erodible areas, but not inlet hazard areas, if each of the following conditions are met:

- (1) The development is set back from the ocean the maximum feasible distance possible on the existing lot and the development is designed to minimize encroachment into the setback area;
- (2) The development is at least 60 feet landward of the vegetation line;
- (3) The development is not located on or in front of a frontal dune, but is entirely behind the landward toe of the frontal dune;
- (4) The development incorporates each of the following design standards, which are in addition to those required by Rule .0308(d) of this Subchapter.
  - (A) All pilings shall have a tip penetration that extends to at least four feet below mean sea level;
  - (B) The footprint of the structure shall be no more than 1,000 square feet or 10 percent of the lot size, whichever is greater.
  - (C) Driveways and parking areas shall be constructed of clay, packed sand or gravel except in those cases where the development does not abut the ocean and is located landward of a paved public street or highway currently in use. In those cases concrete, asphalt or turfstone may also be used.
- (5) All other provisions of this Subchapter and other state and local regulations are met. If the development is to be serviced by an on-site waste disposal system, a copy of a valid permit for such a system shall be submitted as part of the CAMA permit application.

(c) Reconfiguration of lots and projects that have a grandfather status under Paragraph (b) of this Rule shall be allowed provided that the following conditions are met:

- (1) Development is setback from the first line of stable natural vegetation a distance no less than that required by the applicable exception;
- (2) Reconfiguration shall not result in an increase in the number of buildable lots within the Ocean Hazard AEC or have other adverse environmental consequences; and
- (3) Development on lots qualifying for the exception in Paragraph (b) of this Rule shall meet the requirements of Paragraphs (1) through (5) of that Paragraph.

For the purposes of this Rule, an existing lot is a lot or tract of land which, as of June 1, 1979, is specifically described in a recorded plat and which cannot be enlarged by combining the lot or tract of land with a contiguous lot(s) or tract(s) of land under the same ownership. The footprint is defined as the greatest exterior dimensions of the structure, including covered decks, porches, and stairways, when extended to ground level.

(d) The following types of water dependent development shall be permitted seaward of the oceanfront setback requirements of Rule .0306(a) of this Section if all other provisions of this Subchapter and other state and local regulations are met:

- (1) piers providing public access (excluding any pier house, office, or other enclosed areas); and
- (2) maintenance and replacement of existing state-owned bridges and causeways and accessways to such bridges.

(e) Where application of the oceanfront setback requirements of Rule .0306(a) of this Section would preclude replacement of a pier house associated with an existing ocean pier, replacement of the pier house shall be permitted if each of the following conditions are met:

- (1) The associated ocean pier provides public access for fishing or other recreational purposes whether on a commercial, public, or nonprofit basis;
- (2) The pier house is set back from the ocean the maximum feasible distance while maintaining existing parking and sewage treatment facilities and is designed to reduce encroachment into the setback area;
- (3) The pier house shall not be enlarged beyond its original dimensions as of January 1, 1996;
- (4) The pier house shall be rebuilt to comply with all other provisions of this Subchapter; and
- (5) If the associated pier has been destroyed or rendered unusable, replacement of the pier house shall be permitted only if the pier is also being replaced and returned to its original function.

(f) In addition to the development authorized under Paragraph (d) of this Rule, small scale, non-essential development that does not induce further growth in the Ocean Hazard Area, such as the construction of single family piers and small scale erosion control measures that do not interfere with natural ocean front processes, shall be permitted on those non-oceanfront portions of shoreline that exhibit features characteristic of Estuarine Shoreline. Such features include the presence of wetland vegetation, lower wave energy and lower erosion rates than in the adjoining Ocean Erodible Area. Such development shall be permitted under the standards set out in Rule .0208 of this Subchapter. For the purpose of this Rule, small scale is defined as those projects which are eligible for authorization under 15A NCAC 07H .1100, .1200 and 07K .0203.

(g) Transmission lines necessary to transmit electricity from an offshore energy-producing facility, provided that each of the following conditions are met:

- (1) The transmission lines are buried under the ocean beach, nearshore area, primary and frontal dunes, all as defined in 07H.0305, in such a manner so as to ensure that the placement of the transmission lines involves no alteration or removal of primary or frontal dunes which would compromise the integrity of the dune as a protective landform or the dune vegetation;



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue  
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**CRC-09-16**

June 9, 2009

**MEMO TO:** Coastal Resources Commission

**FROM:** Doug Huggett  
Major Permits Coordinator

**SUBJECT:** Streamlining of Existing Bridge Replacement GP (15A NCAC 7H .2300)

The State of North Carolina has an acknowledged issue with the number of bridges in the state that are in need of replacement due to age and deterioration. Most of the bridges, around 4,500 statewide, are small two-lane bridges on secondary roads. Under current processes for project design and environmental review, including permit acquisition, it can take as long as 5-7 years from the time the N.C. Department of Transportation decides to replace such a bridge to the conclusion of construction.

With this information as a background, a multi-agency effort was recently enacted to come up with ways to improve the efficiency of the project design and environmental review processes for a certain class of bridge replacements. This effort is intended to apply to so-called "low-impact bridge replacement projects", with goals of shorting the delivery time for such bridges to one year, significantly reducing the cost of such replacements, and tripling the annual number of such bridge replacements. With the N.C. Department of Environment and Natural Resources, the N.C. Department of Transportation, the Federal Highway Administration, and the U.S. Army Corps of Engineers all serving as co-sponsors, a team comprised of staff and officials from various transportation and environmental agencies have been meeting since March of this year to develop an implementation plan for this effort.

This implementation team has identified several points in the project design and environmental review process where time and cost efficiencies can be realized. One of these options is to re-visit the use standards of the CRC's general permit for bridge replacement projects (15A NCAC 07H .2300), with an aim to increasing the applicability of this general

permit, while at the same time continuing to ensure that our state's coastal resources are protected. With this in mind, staff would like to propose the following course of action.

- Staff will develop a set of draft changes to the general permit.
- The draft changes to the general permit will first be distributed for review and comment to the bridge permit streamlining implementation team, which includes Department of Transportation staff.
- Following consideration and/or incorporation of comments from the bridge permit streamlining implementation team, the draft general permit revisions will be distributed to various state and federal agencies for review and comment.
- Following consideration and/or incorporation of comments from other state and federal agencies, the draft general permit revisions will be presented to the Coastal Resources Commission.

If this course of action is acceptable to the Commission, staff hopes to be able to present a draft proposal to the Commission at either its August or October meeting.



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

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Secretary

**CRC-09-14**

June 10, 2009

**MEMORANDUM**

**TO:** Coastal Resources Commission

**FROM:** Mike Lopazanski

**SUBJECT:** Draft Amendments to 15A NCAC 7H 0.1704-5 GP Permit Conditions for Emergency Work Requiring a CAMA and/or Dredge and Fill Permit - Temporary Erosion Control Structures

As a result of an interpretive ruling, the expiration of the extended sandbag removal deadline, and two Petitions for Rulemaking, the Commission has moved forward with amendments to 15A NCAC 7H .0308(a)(2) culminating in a public hearing held during the February 2009 meeting in Morehead City. Staff is now bringing the general and specific conditions for temporary erosion control structures (15A NCAC 7H 0.1704-5) under the General Permit for Emergency Work to the Commission for similar amendments.

These amendments include:

- Clarifying that the sandbags may be permitted more than 20 feet from the structure in cases where the structure, due to site specific conditions, is at an increased the risk of imminent damage and elevating the permit decision to the DCM Director or designee.
- Allowing an extended timeframe (8 years) for sandbags located in an Inlet Hazard Area if they are located in a community that is actively seeking an inlet relocation project.
- Allowing an additional 8 year extension should the structure become threatened again and the community seeks another inlet relocation project.
- A provision that requires sandbags to be removed when the structure is removed, relocated or no longer threatened, or upon completion of a beach nourishment or inlet relocation project.

Staff is recommending that these amendments be approved for public hearing in order to be consistent with the use standards provided under 15A NCAC 7H .0308(a)(2).

*Proposed amendments to 15A NCAC 7H .1704-5 GP Permit Conditions for Emergency Work Requiring a CAMA and/or a Dredge and Fill Permit*

**15A NCAC 07H .1704 GENERAL CONDITIONS**

(a) Work permitted by means of an emergency general permit shall be subject to the following limitations:

- (1) No work shall begin until an onsite meeting is held with the applicant and appropriate Division of Coastal Management representative so that the proposed emergency work can be appropriately marked. Written authorization to proceed with the proposed development can be issued during this visit.
- (2) No work shall be permitted other than that which is necessary to reasonably protect against or reduce the imminent danger caused by the emergency to restore the damaged property to its condition immediately before the emergency, or to re-establish necessary public facilities or transportation corridors.
- (3) Any permitted erosion control projects shall be located no more than 20 feet waterward of the ~~endangered structure.~~ imminently threatened structure or the right-of-way in the case of roads. If a building or road is found to be imminently threatened and at increased risk of imminent damage due to site conditions such as a flat beach profile or accelerated erosion, temporary erosion control structures may be located more than 20 feet seaward of the structure being protected. In cases of increased risk of imminent damage, the location of the temporary erosion control structures shall be determined by the Director of the Division of Coastal Management or their designee.
- (4) Fill materials used in conjunction with emergency work for storm or erosion control shall be obtained from an upland source. Excavation below MHW in the Ocean Hazard AEC may be allowed to obtain material to fill sandbags used for emergency protection.
- (5) Structural work shall meet sound engineering practices.
- (6) This permit allows the use of oceanfront erosion control measures for all oceanfront properties without regard to the size of the existing structure on the property or the date of construction.

(b) Individuals shall allow authorized representatives of the Department of Environment and Natural Resources to make inspections at any time deemed necessary to be sure that the activity being performed under authority of this general permit is in accordance with the terms and conditions prescribed herein.

(c) ~~There shall be no unreasonable interference with~~ Development shall not jeopardize the use of the waters for navigation or for other public trust rights in public trust areas or estuarine waters. ~~use of the waters during or after construction.~~

(d) This permit will not be applicable to proposed construction where the Department has determined, based on an initial review of the application, that notice and review pursuant to G.S. 113A-119 is necessary because there are unresolved questions concerning the proposed activity's impact on adjoining properties or on water quality; air quality; coastal wetlands; cultural or historic sites; wildlife; fisheries resources; or public trust rights.

(e) This permit does not eliminate the need to obtain any other state, local, or federal authorization.

(f) Development carried out under this permit must be consistent with all local requirements, CAMA rules, and local land use plans, storm hazard mitigation, and post-disaster recovery plans current at the time of authorization.

*History Note:* Authority G.S. 113-229(c1); 113A-107(a),(b); 113A-113(b); 113A-118.1;  
Eff. November 1, 1985;  
Amended Eff. December 1, 1991; May 1, 1990;  
RRC Objection due to ambiguity Eff. May 19, 1994;  
Amended Eff. August 1, 1998; July 1, 1994.

*Proposed amendments to 15A NCAC 7H .1704-5 GP Permit Conditions for Emergency Work Requiring a CAMA and/or a Dredge and Fill Permit*

**15A NCAC 07H .1705 SPECIFIC CONDITIONS**

(a) Temporary Erosion Control Structures in the Ocean Hazard AEC.

(1) Permittable temporary erosion control structures shall be limited to sandbags placed landward of above mean high water and parallel to the shore.

(2) Temporary erosion control structures as defined in Subparagraph (1) of this Paragraph ~~may~~ shall be used to protect only imminently threatened roads and associated right of ways, and buildings and their associated septic systems. A structure ~~will~~ shall be considered ~~to be~~ imminently threatened if its foundation, septic system, or, right-of-way in the case of roads, is less than 20 feet away from the erosion scarp. Buildings and roads located more than 20 feet from the erosion scarp or in areas where there is ~~not~~ no obvious erosion scarp may also be found to be imminently threatened when site conditions, such as a flat beach profile or accelerated erosion, ~~tend~~ to increase the risk of imminent damage to the structure.

(3) Temporary erosion control structures ~~may~~ shall be used to protect only the principal structure and its associated septic system, but not ~~such~~ appurtenances such as pools, gazebos, decks or any amenity that is allowed as an exception to the erosion setback requirement.

(4) Temporary erosion control structures may be placed seaward of a septic system when there is no alternative to relocate it on the same or adjoining lot so that it is landward of or in line with the structure being protected.

(5) Temporary erosion control structures ~~must~~ shall not extend more than 20 feet past the sides of the structure to be protected. The landward side of such temporary erosion control structures shall not be located more than 20 feet seaward of the structure to be protected or the right-of-way in the case of roads. If a building or road is found to be imminently threatened and at increased risk of imminent damage due to site conditions such as a flat beach profile or accelerated erosion, temporary erosion control structures may be located more than 20 feet seaward of the structure being protected. In cases of increased risk of imminent damage, the location of the temporary erosion control structures shall be determined by the Director of the Division of Coastal Management or their designee.

~~(6) The permittee shall be responsible for the removal of remnants of all or portions of any damaged temporary erosion control structure.~~

~~(7) (6) A temporary~~ Temporary erosion control ~~structure~~ structures may remain in place for up to two years after the date of approval if ~~it is~~ they are protecting a building with a total floor area of 5000 sq. ft. or ~~less, less~~ and its associated septic system, or, for up to five years ~~for a~~ if the building has with a total floor area of more than 5000 sq. ft. and its associated septic system. ~~A temporary~~ Temporary erosion control ~~structure~~ structures may remain in place for up to five years if ~~it is~~ they are protecting a bridge or a road. The property owner shall be responsible for removal of the temporary structure within 30 days of the end of the allowable time period.

~~(7) A temporary sandbag erosion control structure with a base width not exceeding 20 feet and a height not exceeding 6 feet~~ Temporary sandbag erosion control structures may remain in place for up to five years from the date of approval if they are located in a community that or until May 2008, whichever is later, regardless of the size of the structure it is protecting if the community in which it is located is actively pursuing a beach nourishment project, and up to eight years from the date of approval if they are located in an Inlet Hazard Area adjacent to an inlet for which a community is actively pursuing an inlet relocation project. project as of October 1, 2001. For purposes of this Rule, a community is considered to be actively pursuing a beach nourishment or inlet relocation project if it has:

- (A) an active ~~been issued~~ a CAMA permit, where necessary, approving such project, or
- (B) been identified an ongoing feasibility study by ~~a~~ the U.S. Army Corps of Engineers' Engineers Beach Nourishment Reconnaissance Study, General Reevaluation Report, Coastal Storm Damage Reduction Study, or an ongoing feasibility study by the U.S. Army Corps of Engineers and a commitment of local or federal money, when necessary; or
- (C) received a favorable economic evaluation report on a federal project; or project approved prior to 1986. If beach nourishment is rejected by the sponsoring agency or community, or ceases to be actively planned for a section of shoreline, the time extension is void and

*Proposed amendments to 15A NCAC 7H .1704-5 GP Permit Conditions for Emergency Work Requiring a CAMA and/or a Dredge and Fill Permit*

~~existing sandbags are subject to all applicable time limits set forth in Parts (1) through (15) of this Subparagraph. Sandbag structures within nourishment project areas that exceed the 20 foot base width and 6 foot height limitation may be reconstructed to meet the size limitation and be eligible for this time extension; otherwise they must be removed by May 1, 2000 pursuant to Part (15) of this Subparagraph.~~

- (D) is in the planning stages of a project that has been designed by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements and has been initiated by a local government or community with a commitment of local or state funds to construct the project and the identification of the financial resources or funding bases necessary to fund the beach nourishment or inlet relocation project.

If beach nourishment or inlet relocation is rejected by the sponsoring agency or community, or ceases to be actively planned for a section of shoreline, the time extension is void for that section of beach or community and existing sandbags are subject to all applicable time limits set forth in Part (6) of this Subparagraph.

(8) Once the temporary erosion control structure is determined to be unnecessary due to relocation or removal of the threatened ~~structure~~ structure, a storm protection project constructed by the U.S. Army Corps of Engineers, ~~or a large scale beach nourishment, nourishment project or an inlet relocation project, it must shall~~ be removed by the permittee within 30 ~~days.~~ days of official notification by the Division of Coastal Management regardless of the time limit placed on the temporary erosion control structure.

(9) Removal of temporary erosion control structures shall not be required if they are covered by dunes with ~~vegetation sufficient to be considered stable and natural, natural vegetation.~~

(10) The property owner shall be responsible for the removal of remnants of all portions of any damaged temporary erosion control structure.

(11) Sandbags used to construct temporary erosion control structures shall be tan in color and three to five feet wide and seven to 15 feet long when measured flat. Base width of the structure shall not exceed 20 feet, and the height shall not exceed six feet.

(12) Soldier pilings and other types of devices to anchor sandbags shall not be allowed.

(13) Excavation below mean high water in the Ocean Hazard AEC may be allowed to obtain material to fill sandbags used for emergency protection.

(14) An imminently threatened structure may only be protected once regardless of ~~ownership.~~ ownership unless the threatened structure is located in an Inlet Hazard Area and in a community that is actively pursuing an inlet relocation project in accordance with (7) of this Subparagraph. Existing temporary erosion control structures located in Inlet Hazard Areas may be eligible for an additional eight year permit extension provided that the structure being protected is still imminently threatened, the temporary erosion control structure is in compliance with requirements fo this Subparagraph and the community in which it is located is actively pursuing an inlet relocation project in accordance with Part (7) of this Subparagraph In the case of a building, a temporary erosion control structure may be extended, or new segments constructed, if additional areas of the building become imminently threatened. Where temporary structures are installed or extended incrementally, the time period for removal under Subparagraph (6) or (7) shall begin at the time the initial erosion control structure is installed. For the purpose of this rule:

- (i) a building and septic system will be considered as separate structures.
- (ii) a road or highway shall be allowed to be incrementally protected as sections become imminently threatened. The time period for removal of each section of sandbags shall begin at the time that section is installed in accordance with Subparagraph (6) or (7) of this Rule.

~~(14)~~(15) Existing sandbag structures may be repaired or replaced within their originally permitted dimensions during the time period allowed under Subparagraph (6) or (7) of this Rule.

~~(15) Existing sandbag structures that have been properly installed prior to May 1, 1995 shall be allowed to remain in place according to the provisions of Subparagraphs (7), (8) and (9) of this Paragraph with the pertinent time periods beginning on May 1, 1995.~~

*Proposed amendments to 15A NCAC 7H .1704-5 GP Permit Conditions for Emergency Work Requiring a CAMA and/or a Dredge and Fill Permit*

(b) Erosion Control Structures in the Estuarine Shoreline, Estuarine Waters, and Public Trust AECs. Work permitted by this general permit shall be subject to the following limitations:

(1) no work shall be permitted other than that which is necessary to reasonably protect against or reduce the imminent danger caused by the emergency or to restore the damaged property to its condition immediately before the emergency;

(2) the erosion control structure shall be located no more than 20 feet waterward of the ~~endangered structure;~~ imminently threatened structure. If a building or road is found to be imminently threatened and at increased risk of imminent damage due to site conditions such as a flat shore profile or accelerated erosion, temporary erosion control structures may be located more than 20 feet seaward of the structure being protected. In cases of increased risk of imminent damage, the location of the temporary erosion control structures shall be determined by the Director of the Division of Coastal Management or their designee.

(3) fill material used in conjunction with emergency work for storm or erosion control in the Estuarine Shoreline, Estuarine Waters and Public Trust AECs shall be obtained from an upland source.

(c) Protection, Rehabilitation, or Temporary Relocation of Public Facilities or Transportation Corridors.

(1) Work permitted by this general permit shall be subject to the following limitations:

(A) no work shall be permitted other than that which is necessary to ~~reasonably~~ protect against or reduce the imminent danger caused by the emergency or to restore the damaged property to its condition immediately before the emergency;

(B) the erosion control structure shall be located no more than 20 feet waterward of the ~~endangered~~ imminently threatened structure; structure or the right-of-way in the case of roads. If a public facility or transportation corridor is found to be imminently threatened and at increased risk of imminent damage due to site conditions such as a flat shore profile or accelerated erosion, temporary erosion control structures may be located more than 20 feet seaward of the facility or corridor being protected. In cases of increased risk of imminent damage, the location of the temporary erosion control structures shall be determined by the Director of the Division of Coastal Management or their designee;

(C) any fill materials used in conjunction with emergency work for storm or erosion control shall be obtained from an upland source except that dredging for fill material to protect public facilities or transportation corridors will be considered in accordance with standards in 15A NCAC 7H .0208;

(D) all fill materials or structures associated with temporary relocations which are located within Coastal Wetlands, Estuarine Water, or Public Trust AECs shall be removed after the emergency event has ended and the area restored to pre-disturbed conditions.

(2) This permit only authorizes the immediate protection or temporary rehabilitation or relocation of existing public facilities. Long-term stabilization or relocation of public facilities shall be consistent with local governments' post-disaster recovery plans and policies which are part of their Land Use Plans.

*History Note: Authority G.S. 113-229(c1); 113A-107(a),(b); 113A-113(b); 113A-118.1; Eff. November 1, 1985; Amended Eff. April 1, 1999; February 1, 1996; June 1, 1995; Temporary Amendment Eff. July 3, 2000; May 22, 2000; Amended Eff. August 1, 2002.*



**NORTH CAROLINA MARINE FISHERIES COMMISSION  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**

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March 12, 2009

Bob Emory, Chairman  
N.C. Coastal Resources Commission  
400 Commerce Avenue  
Morehead City, NC 28557

**RECEIVED**  
MAR 17 2009

**Morehead City DCM**

Dear Mr. Emory,

The N. C. Marine Fisheries Commission appreciates the opportunity to comment on the proposed dock rule changes (Section .1200, General Permit for construction of piers and docking facilities). Our commission is statutorily responsible for management of our state's coastal fisheries and the habitats that support those fisheries for the benefit of the public and we have the authority to review and comment on permit applications received by state agencies that may have an impact on the marine and estuarine resources of North Carolina.

First, I would like to thank the Coastal Resources Commission for proposing measures that will better protect critical fish habitats. Protection of critical fish habitats is a focus of the Coastal Habitat Protection Plan(CHPP). We support your efforts to protect those habitats.

Primary Nursery Areas, submerged aquatic vegetation, and shell bottom are ecologically valuable estuarine habitats that play a critical role in healthy survival and growth of juvenile fish and invertebrates. The structure of the grass and shell and the organic material composing the bottom in small shallow creeks provides refuge and foraging areas for juvenile fish and shellfish. North Carolina has an estimated 200,000 acres of submerged aquatic vegetation located near our higher salinity areas; our state's acreage is second only to that of Florida. The rich muddy substrate of Primary Nursery Areas supports the base of the estuarine food chain. Out of North Carolina's 2.3 million acres of estuarine habitat, the our commission has classified over 80,000 acres as Primary Nursery Areas. Yet, over 90 percent of commercially and recreationally important fishery species in North Carolina are dependent on this small amount of area for some portion of their life cycle.







North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue, Governor

James H. Gregson, Director

Dee Freeman., Secretary

## MEMORANDUM

CRC-09-17

**To:** The Coastal Resources Commission  
**From:** Michael Christenbury, Wilmington District Planner  
**Date:** June 9, 2009  
**Subject:** Certification of the Holden Beach Core Land Use Plan (June 25, 2009 CRC Meeting)

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**Staff Recommendation: Certification of the Town of Holden Beach Core LUP based on the determination that the document has met the substantive requirements outlined within the 2002 7B Land Use Plan Guidelines and that there are no conflicts evident with either state or federal law or the State's Coastal Management Program.**

### Overview

The Town of Holden Beach is a barrier island community located on the central coast of Brunswick County in southeast North Carolina, between the beach towns of Oak Island and Ocean Isle Beach. The town is separated from the mainland by the Atlantic Intracoastal Waterway and is linked to the mainland by a single high-rise bridge. The Town of Holden Beach has a year round population of approximately 850 with a seasonal population of approximately 10,500. The Town of Holden Beach does not have significant issues with oversized structures and has a height limit of 35 feet. The Town does not participate in regular beach nourishment projects, but has just completed a nourishment project on the east end of the island. The Future Land Use Plan Map depicts the vast majority of the town as residential type designations.

Holden Beach is considered a family beach with the vast majority of land uses consisting of residential with very little commercial or "resort" type uses within the town. The housing stock within the town is primarily single-family residential with some duplex and very little multi-family uses. With a year round population of 850 and a seasonal population of nearly 10,500, the majority of property owners are considered absentee owners.

Some notable policies and recommended actions in the plan include the following:

***Policy 9.3.A.4: Public Acquisition of Hazardous Areas:*** *The Town should consider purchasing parcels located in hazard areas or rendered unbuildable by storms or other events, for the purpose of public water access and conservation of open space if funding, including State or federal funding, is available. (page 85)*

***Recommended Action Item 9.3.A.5.a:*** *The Town supports the development of a privately operated off-island parking area to reduce vehicle traffic and congestion on*

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*the island. (page 85)*

***Policy 9.5.A.10: Land Acquisition:*** *The town supports the acquisition of property that is unsuitable for development due to coastal hazards when such acquisition serves a useful public purpose such as access to the beach or sound. Acquisition of appropriate properties is also encouraged by federal and state agencies. (Page 92)*

***Policy 9.5.A.12: Beach Nourishment:*** *The Town supports all beach nourishment programs. Nourishment activities must be done in an environmentally sensitive fashion and with respect to impacts on surrounding properties. (page 92)*

***Recommended Action 9.5.A.12.a:*** *The Town should continue to work with the COE to obtain approval for a 50-year plan of work to stabilize shoreline and inlet areas through techniques such as periodic beach nourishment of eroded areas. (page 92)*

***Recommended Action 9.5.A.12.b:*** *The Town in cooperation with the County should develop a strategy for the Town to become financially self sufficient so that regular beach nourishment projects can still be funded in the event that federal and state funding for beach nourishment projects is reduced. (page 92)*

***Policy 9.5.A.13: Bulldozing:*** *The practice of bulldozing on the beach shall be discouraged in non-emergency situations. (page 92)*

The Town of Holden Beach held a duly advertised public hearing and voted by resolution to adopt the land use plan on May 11, 2009. The plan was prepared through a facilitated process utilizing workshops with citizens, elected officials, and the Land Use Planning Committee. The goals and policies in the plan are a result of detailed analysis and discussion of key issues identified in the workshops.

The public had the opportunity to provide written comments up to fifteen (15) business days (excluding holidays) prior to the CRC meeting (June 25, 2009). June 4<sup>th</sup> was the deadline date. No comments were received, written or otherwise.

To view a hard copy of the Holden Beach Core Land Use Plan, go to the link below and scroll down to Holden Beach LUP.

[http://www.nccoastalmanagement.net/Planning/under\\_review.htm](http://www.nccoastalmanagement.net/Planning/under_review.htm)



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue, Governor

James H. Gregson, Director

Dee Freeman., Secretary

## MEMORANDUM

CRC-09-18

**To:** The Coastal Resources Commission  
**From:** Michael Christenbury, Wilmington District Planner  
**Date:** June 9, 2009  
**Subject:** Certification of the Ocean Isle Beach Core Land Use Plan (June 25, 2009 CRC Meeting)

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**Staff Recommendation: Certification of the Town of Ocean Isle Beach Core LUP based on the determination that the document has met the substantive requirements outlined within the 2002 7B Land Use Plan Guidelines and that there are no conflicts evident with either state or federal law or the State's Coastal Management Program.**

### Overview

The Town of Ocean Isle Beach is located in Brunswick County in southeast North Carolina, between the beach towns of Holden Beach and Sunset Beach. The town's planning jurisdiction is split between the barrier island and the mainland bisected by the Atlantic Intracoastal Waterway. The island is linked to the mainland by a single high-rise bridge. The Town of Ocean Isle Beach has a year round population of approximately 520 with a seasonal population of approximately 15,000.

Ocean Isle Beach is considered a family beach community with a mix of residential and some commercial and resort type land uses. The housing stock within the town is primarily single-family residential with some duplex and multi-family uses. With a year round population of 520 and a seasonal population of nearly 15,000, the majority of property owners are considered absentee owners. Ocean Isle Beach does not have significant issues with oversized structures and regulates height through town ordinances. The Town participates in regular beach nourishment projects for much of the beach strand. The Future Land Use Plan Map depicts the majority of commercial designations on the mainland with the barrier island depicted largely as residential type designations.

There are no policies in the Ocean Isle plan, which exceed state permitting rules. Some notable policies and recommended actions in the plan include the following:

***Policy 9.1.A.4: Future Annexation:*** *When annexing areas outside of the Town boundaries, the Town will provide preference for those areas that are already served by municipal water and sewer. (page 90)*

***Policy 9.1.A.5: Commercial Development:*** *Intense commercial development, beyond that necessary to serve tourists and residents is not encouraged on the Island. Retail shops, restaurants, and other tourism related businesses are uses that are encouraged on the Island. The Town supports a wide range of commercial development on the mainland along the corridor that provides access to the Odell Williamson Bridge, particularly those businesses that provide needed services to residents and visitors, provided that the impacts on traffic are minimized. (page 91)*

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***Policy 9.4.A.4: Reduction of Existing Stormwater Discharges:*** *The Town shall utilize structural and non-structural BMPs designed to reduce the quantity and increase the quality of existing stormwater discharges. (page 99)*

***Recommended Action 9.4.A.4.a:*** *When state roads are repaired or resurfaced, the Town shall require the Department of Transportation (DOT) to use infiltration systems and other structural or nonstructural BMPs necessary to treat stormwater generated from road surfaces. When town roads are repaired or resurfaced, the Town shall seek state funding to assist with its efforts to treat stormwater generated by road surfaces using infiltration devices and other structural and nonstructural BMPs. (page 99)*

***Policy 9.4.A.5: Stormwater Retrofits for Existing Development:*** *Where appropriate, the Town shall use economic incentives to encourage existing development to retrofit properties and install structural or nonstructural BMPs that reduce stormwater runoff. (page 99)*

***Policy 9.4.A.6: Stormwater Discharges From Municipal Sources:*** *Where practicable, the Town shall eliminate stormwater discharges resulting from municipal activities. Where elimination is not possible, the Town shall mitigate the sources of stormwater discharges to the maximum extent practicable. (page 99)*

***Recommended Action 9.4.A.6.a:*** *The staff of the Public Works Department shall expand its efforts to identify and eliminate stormwater discharges resulting from the Town's municipal activities. (page 100)*

The Town of Ocean Isle Beach held a duly advertised public hearing and voted by resolution to adopt the land use plan on May 12, 2009. The plan was prepared through a facilitated process utilizing workshops with citizens, elected officials, and the Land Use Planning Committee. The goals and policies in the plan are a result of detailed analysis and discussion of key issues identified in the workshops.

The public had the opportunity to provide written comments up to fifteen (15) business days (excluding holidays) prior to the CRC meeting (June 25, 2009). June 4<sup>th</sup> was the deadline date. No comments were received, written or otherwise.

To view a hard copy of the Ocean Isle Core Land Use Plan, go to the link below and scroll down to Ocean Isle Beach LUP.

[http://www.nccoastalmanagement.net/Planning/under\\_review.htm](http://www.nccoastalmanagement.net/Planning/under_review.htm)



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue, Governor

James H. Gregson, Director

Dee Freeman., Secretary

## MEMORANDUM

CRC-09-19

**To:** The Coastal Resources Commission  
**From:** Maureen Meehan Will, Morehead City District Planner  
**Date:** June 10, 2009  
**Subject:** Certification of the Carteret County Core Land Use Plan (June 24, 2009 CRC Meeting)

---

A copy of the plan and executive summary can be found on the Division of Coastal Management's website at the following link:  
[http://www.nccoastalmanagement.net/Planning/under\\_review.htm](http://www.nccoastalmanagement.net/Planning/under_review.htm)

**Staff Recommendation: Certification of the Carteret County Core LUP based on the determination that the document has met the substantive requirements outlined within the 2002 7B Land Use Plan Guidelines and that there are no conflicts evident with either state or federal law or the State's Coastal Management Program.**

### Overview

Carteret County is located in southeast North Carolina and is bordered by water on 3 sides. Major water bodies include the Atlantic Ocean, Newport River, Back Sound, Core Sound, Pamlico Sound, White Oak River, and North River. While there are large areas of ocean front property, the majority of the land is within the incorporated areas of Atlantic Beach, Pine Knoll Shores, Indian Beach, and Emerald Isle. The towns of Bogue, Cedar Point, and Peletier are included in the county's LUP and have not had their own LUPs.

Carteret County has an estimated permanent population of 59,383 and an estimated seasonal population of 112,142 for a total peak population of 171,525. Approximately 40% of the permanent population lives within incorporated areas of the county. The trends show that the seasonal population is growing at a faster rate than the permanent population and that the percentage of retirees has been increasing at the same time.

Historically, the county has been characterized geographically as western and eastern Carteret County. The western portion of the county is more urbanized and has a higher concentration of both residential and commercial development. The eastern portion, in contrast, is predominately rural and less dense with pockets of higher concentrations of residential and commercial development.

The county is partially zoned and enforces a subdivision ordinance, down east conservation ordinance, and several other ordinances to guide development. The LUP is the policy document that will guide future development through local ordinances. LUP implementation efforts include, but are not limited to, review and update of the subdivision ordinance to include low

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impact development measures, study and ordinance development of highway/transportation improvements, especially along the Highway 24 corridor, and an update to the Shoreline Access/Parks and Recreation Comprehensive Master Plan.

The following policy statements exceed State and Federal permitting rules:

***Policy 2.1.2:*** *When new navigational channels and canals must be constructed through coastal wetlands, Carteret County requires replacement of lost wetland areas at a 1:1 ratio. Pg. 75*

***Policy 2.1.5:*** *Carteret County opposes the installation of package treatment plants and septic tanks or discharge of any wastewater in coastal or freshwater wetlands. Pg. 75*

***Policy 2.4.2:*** *Carteret County will not allow floating structures in any public trust waters. (A floating structure is defined as any structure, not a boat, supported by means of flotation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce. A structure will be considered a floating structure when it is inhabited or used for commercial purposes for more than thirty days in any one location. A boat may be deemed a floating structure when its means of propulsion has been removed or rendered inoperative and it contains at least 200 square feet of living space area.) Pg. 75*

Other notable policy statements include:

***Policy 1.6:*** *Carteret County will maintain the regional Public Beach Access facility in Salter Path to ensure meeting current (2005) US Army Corps of Engineers access requirements for nourished beaches. Pg. 73*

***Policy 2.10:*** *Carteret County regulates building heights in zones areas and in close proximity to the Michael J. Smith Field. Residential structures are limited to fifty (50) feet, with commercial industrial, and other structures limited to sixty (60) feet. Heights adjacent to the runways of the Michael J. Smith Field are restricted through the Airport Height Regulations. Permitted heights are determined based on a sliding scale of distance from the runways. Pg. 76*

***Policy 4.13:*** *It is the policy of the county that there shall be no net loss of sand from the County's barrier beaches resulting from dredging activities to maintain and deepen navigation channels with tidal inlets and harbors. Specifically, the following shall apply to all beach compatible sand that is collected from dredging maintenance and deepening of the Morehead City Harbor Federal Navigation Project:*

- 1. The sand must be utilized for direct placement on beaches. If any dredging maintenance or deepening effort does not include the direct placement of sand on beaches, then an alternate plan must be approved by the County.*
- 2. If sand encountered during maintenance or deepening activities is placed elsewhere than the barrier beach, then an equal volume of sand from an alternative location shall be used to nourish barrier beaches.*

*The definition of beach compatible sand for the purposed of this policy is as defined by the Coastal Resources Commission through its rules and policies as contained in 15A NCAC 07H.0312 Technical Standards for Beach Fill Projects. Pg. 84*

**Policy 6.10:** *In an effort to protect existing military presence in Carteret County and its economic impact upon the area, the County will work to implement the recommendations of the Joint Land Use Study. In accordance with the study, Carteret County has recently implemented a zoning overlay adjacent and near Bogue Landing Field. (See 4.0 Natural and Man-made Hazards) Pg. 92*

Carteret County started their planning process in 2003, as one of the first round plans to be funded. After the first phase of work, the County lost its contract with the consultant working on the plan and work was delayed until another firm could be found, to finish the plan. The plan was prepared through a facilitated process utilizing workshops with citizens, elected officials, and the Land Use Planning Committee. The goals and policies in the plan are a result of detailed analysis and discussion of key issues identified in the workshops. During the LUP workshops it became apparent that there were segments of the community that felt they were not being represented in the LUP. The plan was again put on hold, in order for County Staff and Commissioners to hold special meetings, to hear the concerns of citizens, and construct a local ordinance for the “Down East” area of Carteret County.

When the plan was submitted for state review, DCM staff worked with the county to resolve mapping issues (corrupt and unusable data from the first consultant) and missing information from the plan. A final draft was completed in January 2008. The plan was forwarded to the County Commissioners for review and adoption, but the public hearing was canceled and postponed indefinitely. Carteret County held a duly advertised public hearing and voted by resolution to adopt the land use plan on April 20, 2009.

### **Public Comments**

The public had the opportunity to provide written comments up to fifteen (15) business days (excluding holidays) prior to the CRC meeting (June 24, 2009). June 3<sup>rd</sup> was the deadline date. Comments were received from Carteret County Crossroads and are attached to this memo.

The following discussions address the points found in the comments received:

- 1) Elimination of Effective Policies, Flawed Public Participation Process, and Unintended Consequences: The County has followed all of the required public participation guidelines. The county allowed comments at all meetings where the LUP was being discussed; to ensure all who wished to speak had an opportunity. Further, policies more restrictive than state permitting rules that were not carried over from the 1999 plan do not affect the ability of the LUP to meet the 7B planning guidelines.
- 2) Outdated Material: The most up to date information available, at the time the planning process started, was used for the development of the LUP. The 2007 certified population estimates from the North Carolina Office of State Budget and Management show an increase of 3,911 persons or an approximate increase of 6% since 2000. There is an

increase in population, but it is not considered substantial enough to rework the plan. Further, the carrying capacity and land use need analysis' required for the plan are established by using projected population figures. While staff encourages communities to update data as it becomes available, it was determined that the existing baseline data would suffice so a complete document could be obtained, without further delaying local adoption of the plan.

- 3) Actions Counter to Stated Policy: Since the letter dated November 15, 2007, DCM Staff has worked with the Carteret County Planning Department and its Planner in Charge to ensure all elements of the 7B Planning Guidelines have been met. Policy statements, including those that were specifically mentioned in the public comments received, have been revised to address DCM comments.

**COASTAL RESOURCES COMMISSION REVIEW GUIDE  
CARTERET COUNTY CORE LAND USE PLAN**

	<b>Page (s)</b>
<b><u>Organization of the Plan.</u></b> If document does not follow the outline of Rules, a matrix shall be included showing the exact location of required elements.	2-8
<b><u>Community Concerns and Aspirations:</u></b> Key issues & Vision statement:	9-12
<b><u>Analysis of Existing and Emerging Conditions within the planning jurisdiction.</u></b> <u>Population, Housing, and Economy.</u> Including 5 - 10 – 20 year) projections.	13-26
<u>Natural systems analysis.</u>	
○ Mapping and analysis of natural features.	27-37
○ Composite map of environmental conditions: Breaks community into 3 classes of developability based on environmental conditions.	38
○ Description of Environmental conditions:	39-45
<u>Analysis of Land Use and Development: Existing Land Use Map</u>	
○ Analysis of conflicts, trends, and areas expected to grow within next 5 years and areas of any potential conflicts w/composite map.	46-49
○ <u>Projections of future land needs.</u> Short term (5-10-20 year) projections population & land needs. May be increased up to 50%. Low or no growth projections of land needs may consider economic strategies.	49-51
<u>Analysis of Community Facilities.</u> Existing/planned capacity, location, & adequacy of key facilities that serve community's existing/planned population and economic base including:	
○ Public and private water supply and wastewater systems.	52-56
○ Transportation systems.	56-60
○ Stormwater systems & other systems & services	60-61
<u>Land Suitability Analysis &amp; Map</u>	62-65
<u>Review of Current CAMA Land Use Plan.</u>	66-68
<b><u>Plan for the Future:</u></b> Land use and development goals & Policies <b>Land Use Plan Management Topics</b>	
<b>Public Access:</b> <u>Goal:</u> Maximize public access/ <u>Objective:</u> Access opportunities for the public	
○ <u>Requirements:</u> Establish local criteria for frequency and type of access facilities & criteria for areas targeted for beach nourishment.	71-73
<b>Land Use Compatibility:</b> <u>Goal:</u> Ensure development/use of resources or preservation minimizes direct & secondary environmental impacts, avoids risks to public health, safety & welfare & is consistent w/capability of the land based on considerations of interactions of natural & manmade features.	
○ <u>Objective:</u> Policies balancing protection of natural resources/fragile areas w/economic development; provides clear direction for local decision-making, consistency findings for zoning, divisions of land, & projects.	
○ <u>Requirements:</u> Establish building intensity & density criteria for each land use designation on the FLUP Map; Establish local mitigation criteria and concepts.	74-76
<b>Infrastructure Carrying Capacity:</b> <u>Goal:</u> Ensure public infrastructure systems are appropriately sized; located & managed so quality & productivity of AECs/fragile areas are protected or restored.	
○ <u>Objective:</u> Establish level of service policies/criteria for infrastructure consistent w/Projections of Future Land Needs.	
○ <u>Requirements:</u> Identify/establish service area boundaries; Correlate FLUPM categories w/existing and planned infrastructure.	77-80

<p><b>Natural Hazard Areas:</b> <u>Goal:</u> Conserve/maintain barrier dunes, beaches, flood plains, &amp; other coastal features for natural storm functions &amp; their natural resources w/recognition to public health, safety, and welfare issues.</p> <ul style="list-style-type: none"> <li>○ <u>Objective:</u> minimize threats to life, property, &amp; natural resources from development located in/adjacent to hazard areas.</li> <li>○ <u>Requirements:</u> density/intensity criteria for new/existing development &amp; redevelopment including public facilities and infrastructure to better avoid or w/stand natural hazards; Correlate existing and planned development with existing and planned evacuation infrastructure.</li> </ul>	81-84
<p><b>Water Quality:</b> <u>Goal:</u> Maintain/protect where possible enhance WQ in all coastal wetlands, rivers, streams &amp; estuaries.</p> <ul style="list-style-type: none"> <li>○ <u>Objective:</u> help ensure that WQ is maintained if not impaired &amp; improved if impaired.</li> <li>○ <u>Requirements:</u> Policies that help prevent or control nonpoint source discharges; policies &amp; land use categories aimed at protecting open shellfishing waters/restoring closed or conditionally closed.</li> </ul>	85-89
<p><b>Local Areas of Concern:</b> <u>Goal:</u> Integrate local concerns with the overall goals of CAMA.</p> <ul style="list-style-type: none"> <li>○ <u>Requirements:</u> Evaluate local concerns and issues for the development of goals, policies and implementation strategies.</li> </ul>	90-92
<p><b>Future land use map.</b> Depicts policies application for growth and development, desired future patterns of land use/development with consideration given to natural system constraints &amp; infrastructure policies. Shall include at a minimum:</p> <ul style="list-style-type: none"> <li>○ 14-digit hydrological units encompassed by the planning area;</li> <li>○ areas/locations planned for conservation/open space w/description of compatible uses</li> <li>○ areas/locations planned for future growth/development w/descriptions of: <ul style="list-style-type: none"> <li>○ predominant &amp; supporting land uses that are encouraged in each area;</li> <li>○ overall density/development intensity planned for each area;</li> </ul> </li> <li>○ areas for infill, preservation, and redevelopment;</li> </ul>	93-103
<ul style="list-style-type: none"> <li>○ existing/planned infrastructure, including major roads, water, and sewer.</li> </ul> <p><b>Tools for Managing Development.</b> (initial five-year action plan for implementation)</p> <ul style="list-style-type: none"> <li>○ <u>Guide for land use decision-making</u></li> <li>○ <u>Existing development program.</u> This description of community's approach to coordinating these codes and rules to implement the LUP.</li> </ul>	104-105
<p><b>Policy Impact Analysis</b></p> <ul style="list-style-type: none"> <li>○ Contain description of type/extent of analysis to determine the impact of Plan policies on management topics; both positive &amp; negative; description of policies/methods/programs &amp; processes to mitigate negative impacts on applicable management topics.</li> </ul>	105-116
<ul style="list-style-type: none"> <li>○ If local policies exceed the State and Federal requirements, such policies must be identified &amp; to what extent. If the local body intends to rely on Federal/State laws &amp; regulations it shall reference in the plan.</li> </ul>	134-139
<ul style="list-style-type: none"> <li>❖ If development patterns/uses are not consistent w/natural systems analysis, or the LSA, then includes description of steps local government will take to mitigate the impacts.</li> </ul>	128
<ul style="list-style-type: none"> <li>❖ Include estimate/cost of any facilities or services that shall be extended or developed.</li> </ul>	N/A
<ul style="list-style-type: none"> <li>❖ Amount of land allocated to various uses shall be calculated and compared to the projection of land needs. The amount of land area thus allocated to various uses may not exceed projected needs; except for slow growth communities.</li> </ul>	101
	100

# Carteret County Crossroads

PO Box 155, Beaufort, NC 28516 • www.carteretcrossroads.org • 252-729-2521

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June 1, 2009

Maureen Meehan Will  
District Planner  
Division of Coastal Management  
400 Commerce Avenue  
Morehead City, NC 28557

Ms. Will,

Please accept the following comments concerning the Carteret County 2005 CAMA Land Use Plan update. I am writing as President of Carteret County Crossroads, a local environmental group of 300 members founded in 1980. We urge that this plan **NOT** be certified for the reasons outlined below.

## **1. Elimination of Effective Policies.**

Please find attached, as Appendix 1, information from the Carteret County Planning Department detailing the elimination of policies that were present in the 1999 County Land Use Plan (LUP). I also bring to your attention to statements on page 68 of the 2005 plan that state that a number of the eliminated policies had been “particularly effective” in “serving to protect both water quality and the County’s commercial and recreational fishing resources.” It is fundamentally flawed to eliminate effective policies that are designed to ensure of the health of North Carolina’s public trust waters.

## **2. Flawed Public Participation Process**

The original efforts to revise the 1999 Land use Plan were conducted by a paid consultant and the Carteret County Planning Board. This was a very open process with ample opportunity for discussion and questions and the perception that there was a viable mechanism for public input into the plan. In 2005, the Carteret County Commissioners took over the planning process and made major changes to the plan. This is detailed in the Appendix 1 referred to above. Once the County Commissioners took over plan development, public input was minimized. One could speak prior to a Commission meeting, but during debate and action on specific issues, there was no opportunity for public input. The culmination of the minimization of public participation was at the Land Use Plan Public Adoption hearing, April, 2009. There was no overall presentation of the LUP and there was no opportunity to ask Commissioners for clarification or justification of a particular action. Hence, the Plan was approved by a vote of 5-2 immediately after the Public hearing, which all but makes a mockery of the final public input process. For final public input to be other than a pointless formality, the public should be presented with the final draft Plan, allowed a time period to provide comment, and for these comments to be formally addressed before the Board before a final vote to adopt the Plan.

### **3. Outdated Material**

Land Use Plans under NC CAMA rules have a targeted revision or reissue schedule of five years. The current plan for Carteret County was adopted in 1999 but was targeted for 1996. So this 2005 LUP plan, approved by the County Commissioners in April 2009, is following precedent. The data presented and trends derived are 5-7 years in arrears, changes in those years warrant a fresh look at Carteret County's economic and population conditions, growth directions and options for sustainable development.

A Public Adoption Hearing was scheduled for April 2008. This was cancelled on one day's notice and when asked about the cancellation it was stated that the plan was being updated with a new Wind Ordinance as well as incorporating the revised Stormwater rules. There was a full year of Planning Department update; readily available current demographic data could have easily been incorporated into the plan.

### **4. Actions Counter to Stated Policies**

From letter to Carteret County Planning Department from Maureen Will, Division of Coastal Management, dated November 15, 2007:

“The following seven (7) items must be updated, to receive DCM's support that the County has made an adequate effort, to address both the State's comments and the requirements of the 2002 Land Use Plan Guidelines:

5. Policy Statements: There seems to be a number of policy statements that are implementation statements. While these statements seem to be guiding actions, they are really not policy and cannot be enforced. Please review these statements and provide a general outline statement prior to the implementation strategies.

Example: Policies 5.2 & 5.3 – there is an overall policy theme, but there is not one statement that can be implemented/enforced. It is important to remember that the policy statements are used for state and federal consistency determinations.”

The overall policy theme in sections 5.2 and 5.3 are consistent with the revised Coastal Stormwater Rules (adopted 2008). However, Carteret County spent significant time, energy, and money to fight any revision of the Coastal Stormwater Rules. Thus it appears that Carteret County is not acting in accordance with the spirit of its own policies. As stated in the letter referenced above, there need to be strategies and action plans to implement the stated policies. The County has not made significant efforts address the concerns detailed in the letter of November 15, 2007.

## 5. Unintended Consequences

The attached Appendix 1 documents the elimination of effective policies by the County Commissioners in 2005. An additional policy was eliminated by the County Commissioners in the winter of 2009. The last policy to be eliminated from the plan dealt with the number of boat slips allowed per lot in Primary Nursery areas. The Chairman of the Carteret County Board of Commissioners stated in an April 19, 2009, News Times newspaper article that the policy was removed so that it would mesh with the Morehead City Land Use Plan. The vast majority of Carteret County Primary Nursery system acreage is in the Down East area, totally thousands of acres. As a result of County Commissioners' action, environmental protection for the valuable Down East area is dictated by policies formulated for waters adjacent to Morehead City. The CAMA Land Use Plan process is designed to give local governments control of local issues; the County Commissioners could have implemented a policy for the Newport River area and left important protection for the rest of the County including the Core Sound area of Down East.

## 6. In Summary

The Carteret County Land Use Plan needs revised policies and implementation strategies that will effectively ensure the health of North Carolina's public trust waters. Half of Carteret County is covered by water, so land use policies matter. The estuarine waters of Carteret County support established and vitally important commercial and recreational fisheries. Our vibrant tourism industry is directly tied to the natural environment. As stated by Commissioner Robinson at the Public Adoption hearing; the development community has not suffered in the period, 1999-2009, as a result of the 1999 Land Use Plan and there have been no formal complaints against the Plan. Thus; there are no justifiable reasons for removing effective policies from the 1999 Plan. There is no reason to lessen protection for North Carolina's public trust estuarine waters that are adjacent to land in Carteret County.

Thank you,

Mark Hooper  
President, Carteret County Crossroads

## Appendix 1

### CAMA LAND USE PLAN POLICIES IN DRAFT PLAN MARCH 2005 VS. POLICIES RECOMMENDED BY BOARD OF COMMISSIONERS

The 1996 Carteret County CAMA Land Use Plan contained nine (9) policies that exceeded state minimum standards. The March 2005 draft was recommended by the Planning Commission to the Board of Commissioners with eight (8) policies that exceeded state minimum standards. After action by the Board of Commissioners, the plan was submitted to the state for review with only four (4) policies that exceeded state standards.

The one policy that the Planning Commission did not include in the Draft-March 2005 was the policy that addressed no new drainage ditches shall be constructed which discharge directly into primary nursery areas, unless essential for mosquito and vector control.

The policies contained in the draft CAMA Land Use Plan dated March 2005 are listed below. These are the policies discussed by the Board of Commissioners May 2, 2005 and at a special workshop on May 10, 2005. The policies that remained in the draft plan after action by the Board of Commissioners are shown as the highlighted policies. Of the four policies that remained, the policy addressing docks/piers along primary nursery areas was reworked to allow two slips per lot. Two of those policies remained unchanged and the policy about the installation of package treatment plants in wetlands was reworded. Those policies are also cited below as "Draft-June 2005 Appendix D".

#### DRAFT- MARCH 2005

(Draft policies as submitted from the Planning Commission to the Board of Commissioners, highlighted policies remained after BOC meetings May 2005.)

#### **Appendix D.**

Policies That Exceed State and Federal Minimum Standards for Development in AECs and

#### Fragile Areas

- In primary nursery areas, Carteret County will limit the size and frequency of docks and piers to reduce the cumulative impact of numerous structures. One dock or pier with four or less slips used for residential purposes or purposes directly related to commercial fishing shall be allowed per parcel of land that borders a primary nursery area. If the parcel has more than one-quarter mile (1,320 feet), but less than one-half mile (2,640 feet) of shoreline, measured along the normal high water line shown on the property survey, an additional dock with four or less slips used for residential purposes or purposes related to commercial fishing may be constructed. At the property owner's option, one dock or pier with eight or less slips may be

constructed in lieu of two separate structures for parcels having one-fourth mile to one-half mile of shoreline. In the event the parcel contains more than one-half mile of shoreline, an additional dock or pier with four or more slips may be constructed in the additional shoreline area. In no event may a dock or pier contain more than eight slips. This policy shall not apply to property subdivided prior to November 19, 1999.

\*This policy has been reworked in the June 2005 Draft to allow 2 slips per lot.

\* This policy was removed in 2009.

- Carteret County will not allow marina construction or expansion in coastal wetlands and primary nursery areas, and opposes upland marina construction with access channels connected to primary nursery areas. Coastal wetlands that have volunteered within upland marinas are exempt from this policy. Carteret County will allow access structures not exceeding six feet in width to be constructed over coastal wetlands for the purpose of providing access to marinas which otherwise meet state standards.

- Carteret County will not allow dredging associated with the construction of new marinas through any area defined by rules of the NC Marine Fisheries Commission as a natural shellfish bed (15A NCAC 30 .0201). According to these rules, a natural shellfish bed contains 10 bushels of shellfish or more per acre. Natural shellfish beds may be in waters that are open or closed to shellfish harvesting, may contain varied types of shellfish (oysters, clams, etc), and the shellfish may or may not be harvestable, based on size or water classification.

- When new navigational channels and canals must be constructed through coastal wetlands, Carteret County requires replacement of lost wetland areas at a 1:1 ratio.

\*This policy remains as stated in the June 2005 Draft.

- Industrial uses that are not water dependent or related to fishing or aquaculture activities will not be allowed in estuarine shoreline and ORW estuarine shoreline areas. This policy shall not apply to the estuarine shorelines of mosquito ditches.

- For all waterfront development, parking lots shall be set back from the shoreline 75' or 20% of the depth of the lot, whichever is less, and shall comply with state requirements regarding buffers, Outstanding Resource Waters, and other applicable regulations.

- Carteret County will not allow floating structures in any public trust waters. A floating structure is defined as any structure, not a boat, supported by means of floatation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce. A structure will be considered a floating structure when it is inhabited or used for commercial purposes for more than thirty

days in any one location. A boat may be deemed a floating structure when its means of propulsion has been removed or rendered inoperative and it contains at least 200 square feet of living space area.

\*This policy remains as stated in the June 2005 Draft.

• Carteret County opposes the discharge of any waste in areas classified as coastal wetlands or exceptional and substantial functional significance non-coastal wetlands.

\*This policy remains and has been reworded.

The policies that remain in the draft plan are as follows [and are found in](#) :

Appendix D ~~of #~~ the draft plan dated June 2005. The policy concerning the installation of package treatment plants in wetlands was inadvertently not listed but the policy is contained in the policy section as Policy 5.8 and is shown in italics as being more restrictive than the state minimum use standards.

DRAFT- JUNE 2005

(Policies after action by the Board of Commissioners on May 10, 2005)

D-1

#### **Appendix D. Policies That Exceed State and Federal Minimum Standards for Development in AECs and Fragile Areas**

• For land bordering primary nursery areas, Carteret County will limit the size of docks and piers to no more than two slips per lot, as “lot” is defined in the Carteret County Subdivision Ordinance. The ordinance defines a lot as a portion of a subdivision or any other parcel of land intended as a unit for transfer of ownership, or for development or both. The work “lot” includes “plot,” “parcel,” or “tract.” This policy shall not be construed to prohibit commercial or residential marinas.

**\* This policy was removed in 2009**

• When new navigational channels and canals must be constructed through coastal wetlands, Carteret County requires replacement of lost wetland areas at a 1:1 ratio.

• Carteret County will not allow floating structures in any public trust waters. A floating structure is defined as any structure, not a boat, supported by means of floatation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce. A structure will be considered a floating structure when it is inhabited or used for commercial purposes for more than thirty days in any one location. A boat may be deemed a floating structure when its means of propulsion has been removed or rendered inoperative and it contains at least 200 square feet of living space area.

- Carteret County opposes the installation of package treatment plants and septic tanks or discharge of any wastewater in areas classified as coastal wetlands or freshwater wetlands.

**The following policies are the existing policies from the 1996 Plan**

The following policies exceed state and federal standards for 404 wetlands and AECs:

- Carteret County opposes the installation of package treatment plants and septic tanks or discharge of waste in any areas classified as coastal wetlands or freshwater wetlands (404). This policy applies only to areas shown as freshwater wetlands and coastal wetlands on Maps 17A and B, Land Classification Maps.
- No marina associated dredging will be allowed through active shellfishing areas. When dredging through coastal wetlands is essential for access to upland marinas, as provided for in 15A NCAC 7H, the county requires replacement of lost wetland areas with mitigation at a 1:1 ratio.
- When new navigational channels and canals must be constructed through coastal wetlands, Carteret County requires replacement of lost wetlands areas with mitigation at a 1:1 ratio.
- Unless essential for mosquito and vector control, new drainage ditches shall not be constructed which discharge into primary nursery areas. Existing drainage ditches may be maintained but not increased in depth or width.
- Carteret County opposes the location of floating structures in all marinas, primary nursery areas, outstanding resource waters, public trust areas, and estuarine waters. Floating structures as defined as any structure or vessel used, designed, and occupied as a permanent dwelling unit, business, office, or source of any occupation or any private or social club, which floating structure or vessel is primarily immobile and out of navigation or which functions substantially as a land structure while moored or docked on waters within county jurisdiction. Floating structures shall not be used commercially or inhabited in one place for more than 15 days.
- Carteret County opposes marina construction or expansion in coastal wetlands and primary nursery areas, and opposes upland marina construction with access channels connected to primary nursery areas. Coastal wetlands that have volunteered within upland marinas shall be exempted from this policy. Carteret County will allow access structures not exceeding six feet in width to be constructed above coastal wetlands for the purpose of providing access to marinas which otherwise meet state standards.
- Carteret County opposes the construction of docks or piers with more than four boat slips in primary nursery areas. One dock or pier with four or less slips used for residential purposes or purposes directly related to commercial fishing shall be allowed per parcel of land which borders a primary nursery area. Waterfront parcels of land with more than one-quarter mile of shoreline bordering a primary nursery area shall be allowed one dock or pier with four or less slips for

residential purposes or purposes directly related to commercial fishing within every one-quarter mile (1,320 feet) of shoreline along the primary nursery area.

-- For all waterfront development, parking lots shall be set back from the shoreline 75' or 20% of the depth of the lot, whichever is less. This setback issue shall be further studied by any such committee established for the purpose of developing a county-wide Comprehensive Plan.

-- Industrial development should occur in areas classified as developed, urban transition, and limited transition. Industries generating only domestic sewage are acceptable in areas classified as community and rural with services. Carteret County does not oppose industries locating within rural classified areas. Industrial uses that are not water dependent or related to fishing or aquaculture activities will not be allowed in estuarine shoreline and ORW estuarine shoreline areas. This policy shall not apply to the estuarine shorelines of mosquito ditches.



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue  
Governor

James H. Gregson  
Director

Dee Freeman  
Secretary

## MEMORANDUM

CRC-09-20

**To:** The Coastal Resources Commission  
**From:** Charlan Owens, AICP, DCM Elizabeth City District Planner  
**Date:** June 10, 2009  
**Subject:** Requested Certification of Amendment #2 to the Currituck County 2006 Core Land Use Plan (LUP), as amended through September 25, 2008, to include the following components:

- A. Reconfiguring the designation of 58 acres on the Future Land Use Plan Map (FLUPM) from the "Limited Service" to the "Full Service" designation, providing for higher densities and more intense development; and,
- B. Updating background tables indicating FLUPM designation acreages and comparing acreages with projected land needs consistent with the proposed map reconfiguration; and
- C. Adding implementation policy Action 'CW-1' specific to a right to rescind clause for the 58 acre area designated "Full Service", converting back to "Limited Service" if CAMA permits are not issued for a proposed marina; and
- D. Adding Policy 'CW-1' specific to the addition of special area plans; and
- E. Updating background analysis in support of special area plans; and
- F. Amending Policy 'WQ-5' specific to wetland areas not being counted toward density, relying instead on a requirement for Low Impact Development (LID) techniques and buffers; and,
- G. Adding an inset map on the FLUPM to clarify community subarea boundaries.

---

**Staff Recommendation:** DCM staff believes that Currituck County has not adequately met the requirements outlined in the 2002 Land Use Plan Guidelines specific to internal consistency and consistency with CRC rules. There is an apparent internal consistency conflict between the Jarvisburg sub-area policy and the proposed Future Land Use Plan Map (FLUPM) amendment to a "Full Service" designation within the Jarvisburg sub-area specific to development density and intensity. Also, the implementation policy language associated with rescinding the "Full Service" designation needs further clarification to be consistent with CRC rules.

CONDITIONAL CERTIFICATION is recommended per 15A NCAC 07B.0802 (e) subject to the following:

1367 US 17 South, Elizabeth City, NC 27909  
Phone: 252-264-3901 | FAX: 252-264-3723; Internet: [www.nccoastalmanagement.net](http://www.nccoastalmanagement.net)

An Equal Opportunity \ Affirmative Action Employer

One  
North Carolina  
*Naturally*

- a. Reconcile the apparent conflict in the Jarvisburg 'Policy Emphasis' that does not support the 58 acre area "Full Service" designation specific to allowable densities and nonresidential uses. (Page 11-9, Currituck County 2006 LUP) [See Component A. discussion below.]
- b. Replace proposed implementation policy Action 'CW-1' with a Policy statement clearly conveying that the "Full Service" designation within the Jarvisburg subarea as shown on the Future Land Use Plan Map (FLUPM) will be in place upon amendment certification, shall sunset and revert back to the "Limited Service" designation if all CAMA approvals for a marina in the 58 acre "Full Service" area are not obtained within five (5) years after certification date of the amendment; and that the five (5) year sunset clause is intended to ensure that "Full Service" residential density is not realized prior to a marina receiving all CAMA approvals.

[See Component C. discussion below.]

In addition:

- c. Submittal of more easily readable Future Land Use Plan Maps sized 11X17 or larger are to be included as part of an approved certification submittal. (Map 11.1, Appendix I.) [See Component G. discussion below.]

The clarifications and any reconciling language will require only a 30-day notice of publication by the County prior to a public hearing. Per the requirements for CONDITIONAL CERTIFICATION, the adopted amendment will not have to return to the Coastal Resources Commission for certification. Instead, upon the Executive Secretary's determination that the clarifications outlined in this recommendation have been satisfied, amendment #2 will be effective and certified.

*If you have any questions please do not hesitate to contact me (Charlan Owens) at 252-264-3901.*

## OVERVIEW

An overview of each component of the amendment request is provided below followed by DCM staff's review and analysis of the changes. Referenced materials include: **Attachment A** County Planning staff report; **Attachment B** Applicant/Developer request for LUP amendment, and; the Currituck County 2006 LUP which is available on the DCM website at: [http://www.nccoastalmanagement.net/Planning/under\\_review.htm](http://www.nccoastalmanagement.net/Planning/under_review.htm)

The Board of Commissioners adopted the amendment by a unanimous vote at their March 16<sup>th</sup> meeting. An objection concerning the impacts of proposed future site development was voiced at the public hearing. No written objections were received.

## COMPONENT A.

**County Request.** Currituck County desires to convert 58 acres of the Future Land Use Plan Map (FLUPM) to “Full Service Areas” from “Limited Service Areas”. (See Attachment A, Page 3.)

The map amendment area is located on mainland Currituck County, west of US 158, on the south side of Fisher Landing Road (SR 1124) in the Jarvisburg community. The area consists primarily of farmland located along the North River and contains Areas of Environmental Concern (AECs) that are subject to CAMA permitting requirements. The western 38 acres of the amendment area are located within the 100-year floodplain (Zone AE). Approximately 19 acres of wetlands are located on the site.

The request to add acreage to “Full Service Areas” was initiated by an applicant interested in developing the property. Preliminary development plans include an upland marina with public access to the North River, associated residential homes, and ancillary commercial facilities (restaurant, ships store, tackle shop, etc.). An LUP amendment is the first step in the process to ensure development plans are consistent with the LUP. Local zoning, State permits, and local development approvals are separate issues that have not yet been decided.

The County’s plan states that the “Full Service Areas” designation is preferred for community centers. Current designated areas include parts of the County where a broad range of infrastructure and service investments have been provided or will be made available by the public and/or private sector. Residential density is contemplated to be 2 units per acre, but could be increased to 3-4 units an acre through local overlay zoning. Nonresidential uses may include clusters of businesses serving the immediate area and, where appropriate, a more extensive market territory.

The principle difference between the existing “Limited Service” and the proposed “Full Service” designation is the increase in density from 1 - 1.5 units per acre to 2 – 4 units per acre.

**Review/Discussion.** The amendment area is located within the Jarvisburg subarea. Subarea policy emphasis statements are referenced by page number on the FLUPM and are considered to be enforceable policy. Below is the character summary and policy emphasis for the subarea found on Page 11-9 of the LUP (*emphasis added*):

### Jarvisburg

#### *Summary of Area Character*

*Despite its favorable location relative to the Outer Banks, the Jarvisburg area has thus far remained largely rural in character with a development density of 1 unit per acre or less. Signs are emerging, however, that may soon bring considerable change to the area’s heretofore bucolic landscape. Like the Grandy area, the Jarvisburg area is coming under increasing pressure for development. The same land characteristics that traditionally have made this area suitable for farming*

*(cleared, relatively level land with man-made drainage), also make the area quite attractive for development. Currently, land speculation has become more commonplace in the Jarvisburg area, as optioned properties (closing often contingent upon rezoning), offer current owners purchase prices of three or four times their present value.*

*Policy Emphasis:*

*The policy emphasis of this plan is to allow the Jarvisburg area to accommodate quality residential development at low densities while preserving the rural landscape between such developments. Similar to the Grandy area, but at a lower overall density, new residential development should be encouraged to locate in compact, village like clusters, preferably near existing, non-agricultural activities and services. An example might be a new compact, walkable neighborhood of homes built near an existing or proposed church, school or compatibly designed general store. Residential development density can be higher than the truly expansive Shawboro/Crawford rural area, but still much less that the densities to be found in Grandy to the north or Point Harbor to the south. **The area is encompassed both the Conservation and Limited Service classifications and an average density of 1 unit per acre is contemplated.***

The Policy Emphasis for the Jarvisburg subarea area is not consistent with a map amendment to “Full Service”. The amendment, as proposed, would result in policies that are “internally inconsistent”. The concept of internal consistency holds that no policy conflicts can exist, either textual or map policy, between the components of the land use plan. Internal consistency means that the plan’s text, policies, and FLUPM should complement each other since each is integral to the LUP. Contradictory policies must be balanced and reconciled within the plan. **The Jarvisburg subarea description needs to be reconciled to accommodate a “Full Service” designation relative to allowable densities and non-residential uses for the 58 acre area.**

The County’s staff report indicated four (4) policies that were considered to be unsupportive of the map amendment request (See Attachment A, Page 10). DCM staff considers these policies to be directly related to future site development rather than the map amendment.

The 7B Rules require that if the FLUPM shows development patterns or land uses that are not consistent with the natural systems analysis or the land suitability analysis, then the plan shall include a description of the steps that the local government shall take to mitigate the impacts [15A NCAC 07B.0702 (d) (4) (E)]. Within the proposed 58-acre “Full Service Areas” designation, a portion of the property is located within lands containing serious hazards for development as indicated on the Environmental Composite Map (Map 3.6, Currituck 2006 LUP). As indicated in the Land Suitability Analysis Map (Attachment A, Page 14), approximately 18 acres have a “low suitability for development” rating and 15 acres have a “least suitable for development” rating.

Mitigation addressing the impacts due to conflicts between the maps can be found in other policy and implementation statements listed below:

## Mitigation Policies and Implementation

Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality
Policy PA5	Policy ES1	Policy WS3	Policy NH1	Policy WQ3
Policy PA6	Policy ES2	Action WS-4	Policy NH2	Action WQ-3
Action PA-5	Policy ES3	Policy WS8	Action NH-3	Action WQ-7
Policy PA7	Policy ES4	Policy PR6	Policy NH8	Action WQ-8
Policy PA8	Policy ES5	Policy PP2		Policy WQ4
Action PA-6	Policy ES8			Policy WQ5
	Policy HN1			Policy WQ6

See Currituck 2006 LUP Pages 9-3 through 9-22 and Pages 13-1 through 13-11 for specific language.

## COMPONENT B.

**County Request.** Adjustments to acreage totals shown in Table 11.1 and Table 11.2 of the LUP are provided, consistent with the map change. (See Attachment A, Pages 6 and 7.)

**Review/Discussion.** The amount of land allocated to various uses may not exceed projected land needs [15A NCAC 07B.0702 (d), last paragraph]. Table 11.1 Comparison of Land Allocated to Future Land Use and Projected Land Needs, 2025 indicates the acreage allocated to each designation on the FLUPM and the total acreage available for development as compared to the projected land need for development to the year 2025. The table indicates a projected land need of 37,183 acres. The existing acreage for development is 37,073 acres. The proposed acreage for development resulting from the map change to “Full Service Areas” and “Limited Service Areas” designations is 37,083 acres. The amendment meets the requirements of the Rule.

Table 11.2 Distribution of Acreages between the Classifications and Land Use Designations indicates existing land uses by acreage within each designation. This information has been updated to reflect revised designation acreage totals.

## COMPONENT C.

**County Request.** County approval of the “Full Service” designation is contingent upon the applicant/developer obtaining permits for a marina. As indicated in the County’s Resolution of Approval (See Attachment A, Page 2):

“...All CAMA approvals for a proposed marina must be obtained within five years of Coastal Resources Commission (CRC) approval, otherwise the approval

to Full Service designation is rescinded and the Future Land Use map reverts back to the original Limited Service designation...”

The contingency clause is specifically outlined in proposed implementation Action CW-1. (See Attachment A, Page 6). The language written into Action CW-1 also indicates that the Commissioners will execute the rescinding action at a public meeting.

**Review/Discussion.** The LUP can include language that sunsets policy or stages conditions on development to certain task accomplishments or timing of facilities and improvements. A sunset clause must clearly state the policy that governs in the interim. For the proposed amendment, the residential density and intensity of development to be allowed within the initial five year timeframe must be clear.

**The County’s requirement is better suited to a policy statement than an implementation/action statement. County reversion action will not be required once the CRC certifies a designation that includes a sunset clause within defined limits that are measurable by the State.**

## **COMPONENTS D and E.**

**County Request.** Policy CW-1 under the Local Countywide Concerns Management Topic and the background analysis statement specific to the Land Use Compatibility Management Topic are proposed by the County in support of Action CW-1 as well as special area plans that may be developed by the County. (See Attachment A, Pages 5 and 6).

**Review/Discussion.** The addition of this policy statement is to provide for the incorporation of small area plans as needed into the LUP. The removal of Action CW-1 recommended above will not impact Policy CW-1.

## **COMPONENT F.**

**County Request.** Policy WQ 5 currently indicates that “...Coastal and non-coastal wetlands shall not be considered part of a lot’s acreage for the purpose of determining minimum lot size or development density...” This language does not support the development plan contemplated specific to allowable density. Furthermore, it is not enforced in the County’s development regulations.

The County requests approval of amended language indicating that “...If coastal wetlands and non-coastal wetlands are considered part of a lot’s acreage for the purpose of determining minimum lot size or development density, Low Impact Development techniques or appropriate buffers shall be integrated into the development...” (See Attachment A, Page 5)

**Review/Discussion.** This is an example of LUP policy being in direct conflict with local ordinances. The density restriction outlined in the existing policy reduces the amount of

residential density that can be achieved on properties with wetland acreage, regardless of FLUPM designation.

The proposed language is not as definitive as the current statement; however it is in line with existing County development regulations. As proposed, it creates a less restrictive mitigation policy that focuses on site development techniques rather than density limits.

## **COMPONENT G.**

**County Request.** The County requests an amendment to the FLUPM to include an inset map clarifying the boundaries of the subareas (See Attachment B, Page 4).

**Review/Discussion.** The inset subarea boundary map was created by County staff over one (1) year ago and is used in project review. Callouts are used on the certified FLUPM. While the legal advertisement did not specifically address this amendment, the inset was included in the package of materials provided for consideration to the public, Planning Board, and Board of Commissioners. This amendment provides further clarification on subarea boundaries, which are not apparent from the callouts used on the current FLUPM.

Insertion of the inset map has resulted in an overall reduced map size, which is difficult to read. **Maps sized 11X17 or larger are needed as part of an approved for certification submittal.**



## Currituck County

Department of Planning  
Post Office Box 70  
Currituck, North Carolina 27929  
252-232-6029  
FAX 252-232-3026

MAY 19 2009  
COASTAL MANAGEMENT  
Elizabeth City

### MEMORANDUM

**To:** Charlan Owens, AICP  
DCM Elizabeth City District Planner

**From:** Ben Woody, <sup>BEW</sup>AICP  
Planning Director

**Cc:** Dan Scanlon  
County Manager

**Date:** May 8, 2009

**Re:** PB 09-04 Pittman/Williamson Land Use Plan Amendment

---

The Currituck County Board of Commissioners is requesting an amendment to the Currituck County Land Use Plan to designate approximately 57.58 acres of the Future Land Use map from Limited Service area to Full Service area. The map amendment request includes a contingency clause that specifies all CAMA approvals for a proposed marina must be obtained within five years of approval, otherwise the approval to Full Service designation is rescinded and the Future Land Use map reverts back to the original Limited Service designation. The amendment request also includes a change to Water Quality Policy (WQ5) to more effectively promote low impact development techniques.

The request for 57.58 acres of Full Service area was initiated by Eddie Valdivieso of Quible & Associates. The request to amend Water Quality Policy (WQ5) was initiated by county planning staff. Both requests were approved by the Currituck County Board of Commissioners at their April 20 meeting.

As required by the Coastal Area Management Act (CAMA), the Board of Commissioners is submitting a local resolution of adoption which includes findings that demonstrate this amendment is consistent with the policy objectives of the Plan. The following items are also included with the request:

- map amendments to the Future Land Use Map
- text amendment to Sections 9, 10, 11 and 13 of the Land Use Plan
- case analysis of amendment request (including policy and management topics analyses, recommendations, and additional map exhibits)
- meeting minutes of the Planning Board and Board of Commissioners
- supplementary information submitted by Quible & Associates

Should you have any questions, do not hesitate to contact me at 232-6029.

**RESOLUTION OF THE CURRITUCK COUNTY BOARD OF COMMISSIONERS  
AUTHORIZING AN AMENDMENT TO THE CAMA LAND USE PLAN**

**WHEREAS**, the County desires to amend its 2006 CAMA Land Use Plan, specifically the Future Land Use Map, to designate approximately 57.58 acres as "Full Service Area" from "Limited Service Area"; and

**WHEREAS**, the County also desires to amend its 2006 CAMA Land Use Plan to amend Water Quality Policy (WQ5) to promote low impact development techniques; and

**WHEREAS**, on February 10, 2009, the Planning Board recommended denial of the draft amendment to the CAMA Land Use Plan; however, the Board of Commissioners finds the amendment to be consistent with the objectives of the Plan; and

**WHEREAS**, the County conducted a duly advertised public hearing on the draft amendment to the CAMA Land Use Plan at the Regular Meeting of the Board of Commissioners on Monday, March 16, 2009; and

**WHEREAS**, the amendment to the Land Use Plan has been evaluated for its consistency with other existing policies and no internal inconsistencies exist; and

**WHEREAS**, the amendment is consistent with the currently approved North Carolina Coastal Management Program and the rules of the Coastal Resources Commission; and

**WHEREAS**, the amendment is consistent with the six management topics outlined in the County's Land Use Plan; and

**WHEREAS**, the amendment does not violate any state or federal laws,

**NOW, THEREFORE, BE IT RESOLVED** that the Board of Commissioners of Currituck County, North Carolina, has adopted the draft CAMA Land Use Plan amendment; and

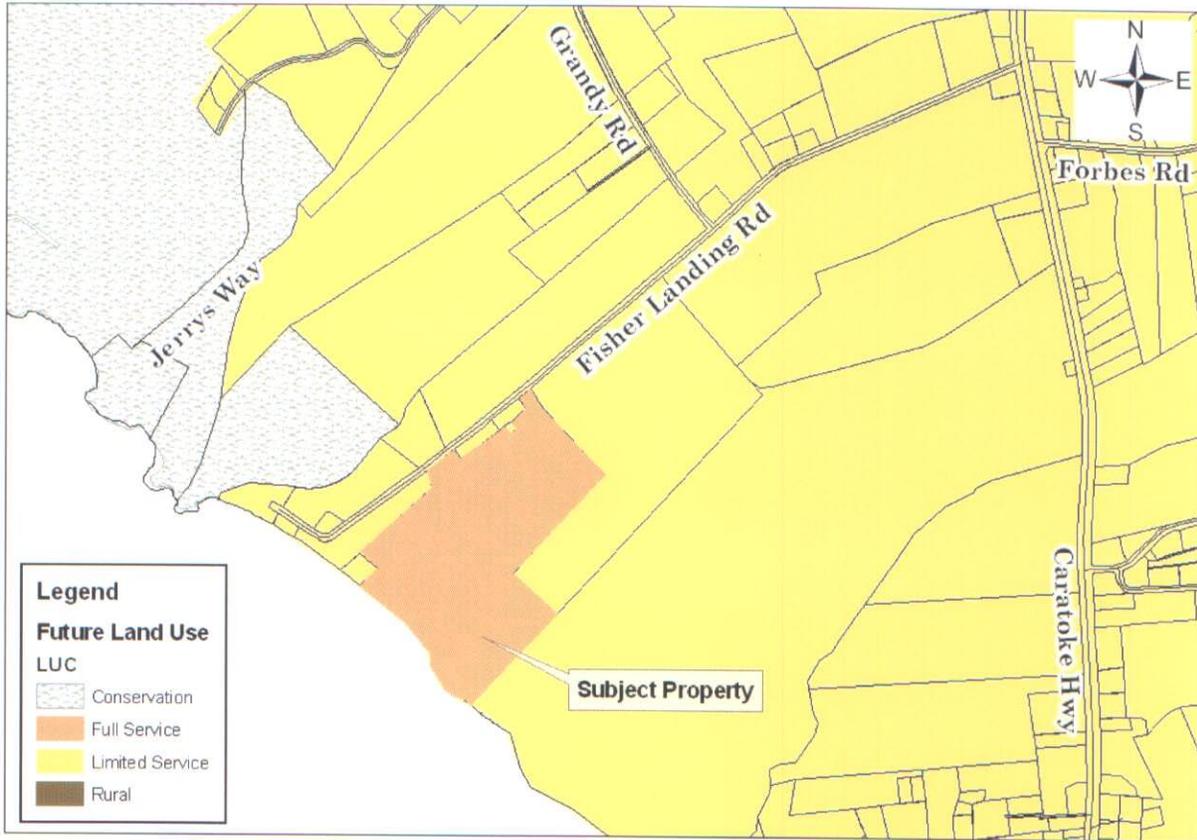
**BE IT FURTHER RESOLVED** All CAMA approvals for a proposed marina must be obtained within five years of Coastal Resources Commission (CRC) approval, otherwise the approval to Full Service designation is rescinded and the Future Land Use map reverts back to the original Limited Service designation; and

**BE IT FURTHER RESOLVED** that the County Manger of Currituck County is hereby authorized to submit the adopted CAMA Land Use Plan amendment to the State for certification as described above.

Adopted this 20 day of April 2009.

  
Board of Commissioners' Chairman  
Attest:

**Future Land Use Map Amendment:  
57.58 acres from Limited Service area to Full Service area**

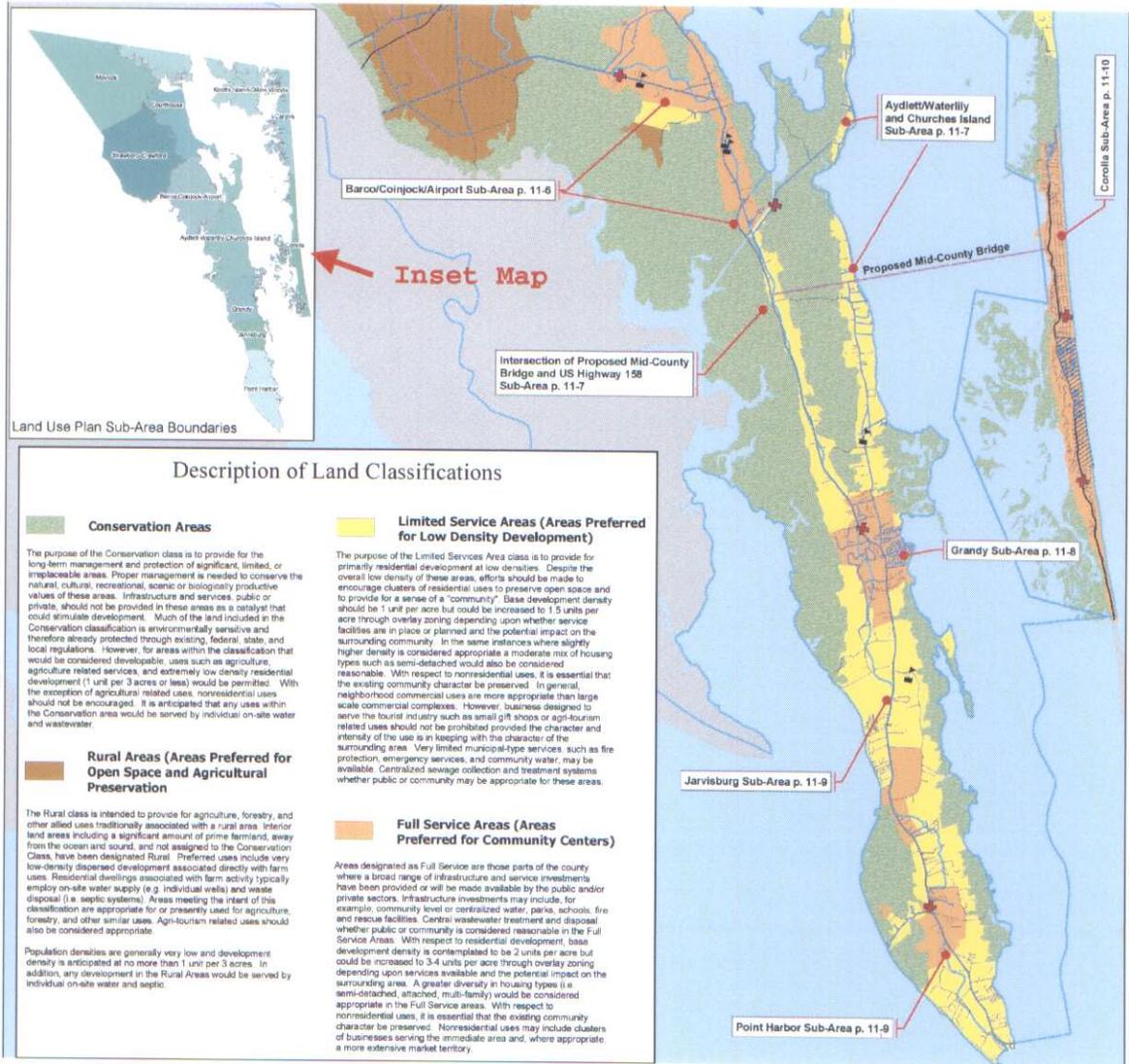


**PB 09-04 Pittman/Williamson  
Land Use Plan Amendment**

0 750 1,500 3,000 Feet  
Currituck County Planning Department



# Future Land Use Map Amendment: Addition of Sub-Area Inset Map



## LAND USE PLAN TEXT AMENDMENTS

**Section 9: Land Use and Development Policies**, is amended by adding the following underlined language and deleting the strikethrough language:

### Item 1 (page 9-17)

POLICY WQ5: Development that preserves the NATURAL FEATURES OF THE SITE, including existing topography and significant existing vegetation, shall be encouraged. ~~If COASTAL AND NON-COASTAL WETLANDS shall not be~~ are considered part of a lot's acreage for the purpose of determining minimum lot size or development density, Low Impact Development techniques or appropriate buffers shall be integrated into the development. Open space developments shall be encouraged to REDUCE IMPERVIOUS SURFACE AREAS associated with new development and redevelopment.

### Item 2 (pages 9-18 – 9-20)

#### LOCAL COUNTYWIDE CONCERNS

##### **SPECIAL POLICIES APPLICABLE COUNTYWIDE**

POLICY CW1: Currituck County may elect to amend or incorporate adopted small area plans into the Land Use Plan as needed. This includes consideration of citizen initiated amendments or county led planning efforts that recognize changing demographic, economic, or environmental conditions.

**Section 10: Relationship of Plan to Management Topics**, is amended by adding the following underlined language and deleting the strikethrough language:

### Item 1 (page 10-14)

***LOCAL COUNTYWIDE CONCERNS: Economic Development, Community Appearance, Historic Preservation, Public Safety Services, Special Policies impact on:***

***LAND USE COMPATIBILITY:*** Do the policies promote development patterns that protect natural systems while protecting development from natural and man-made hazards? Do the policies allow for economic development while providing clear direction for land use decision-making?

#### **Beneficial**

- Establishes criteria for identifying desirable new business and industry.
- Calls for coordination among economic development agencies and encourages regional cooperation and interaction.
- Acknowledges the value of small business start-ups, expansions and spin-offs.
- Calls for the advanced identification of primary and secondary sites suited for compatible industrial development.
- Reinforces the need for special development controls along US 158 and NC 168.
- Calls for community character districts in locations of significant historic significance such as around the old courthouse in Currituck and in Corolla Village.

- Encourages Plan updates to reflect changing demographic, economic, and environmental conditions.

**Section 13: Action Plan and Schedule**, is amended by adding the following underlined language, deleting the strikethrough language, and renumbering accordingly:

**Item 1 (page 13-13)**

19. Special Actions Concerning Countywide Policies	Policy Foundation	Priority	Time	Who Leads
Action CW-1: Amend the Currituck County Land Use Plan to designate approximately 57.58 acres of the Future Land Use map from Limited Service area to Full Service area (Parcel ID 0096000029C0000). The map amendment request includes a contingency clause that specifies all CAMA approvals for a proposed marina must be obtained within five years of Coastal Resources Commission approval, otherwise the approval to Full Service designation is rescinded and the Future Land Use map reverts back to the original Limited Service designation. The five year rescinding clause is intended to ensure Full Service residential density is not realized prior to the proposed marina receiving all CAMA approvals. In the event the proposed marina does not receive all CAMA approvals within the given five year time frame, the County Commissioners shall execute the rescinding action at a public meeting.	CW1	Priority	5 years	County Commissioners

**Section 11: Land Classification System**, Table 11.1 and Table 11.2 are amended by adding the following underlined language and deleting the strikethrough language:

**Table 11.1 Comparison of Land Allocated to Future Land Use and Projected Land Needs, 2025**

Land Use Class	Total Acres Allocated to Each Land Class (a)	% of Each Land Class in Development (b)	Total Acreage Available for Development as Projected (a) x (b)	Total Acreage Projected for Development
Full Service Areas	<del>17,653</del> <u>17,711</u>	80%	<del>14,122</del> <u>14,169</u>	
Limited Service Areas	<del>26,626</del> <u>26,568</u>	65%	<del>17,306</del> <u>17,269</u>	
Rural Areas	40,218	10%	4,021	
Conservation Areas	81,223	2%	1,624	
Totals	165,720	--	<del>37,073</del> <u>37,083</u>	37,183

**Table 11.2 Distribution of Acreages between the Classifications and Land Use Designations**

		Existing Land Use Classifications (Additional Land Area Needed for Development from Table 4.10)				Total Acreage 165,730
		Residential 15,248 A	Commercial 2,005 A	Industrial 701 A	Other (including undeveloped) 147,476	
<b>Future Land Use Designations (2006 LUP)</b>						
<b>Full Service</b> <b>17,613 A</b> <b><u>17,711 A</u></b> <b>(11%)</b>	80% in Development 14,090A <u>14,169 A</u>	6,100 A	1,000 A	400 A	10,113	<b>17,613</b> <b><u>17,711</u></b>
<b>Limited Service</b> <b>26,706 A</b> <b><u>26,568 A</u></b> <b>(16%)</b>	65% in Development 17,359A <u>17,269 A</u>	4,748 A	884 A	301 A	20,711	<b>26,706</b> <b><u>26,568</u></b>
<b>Rural</b> <b>40,218 A</b> <b>(24%)</b>	10% in Development 4,021 A	3,000 A	121 A		37,097	40,218
<b>Conservation</b> <b>81,183 A</b> <b><u>81,223 A</u></b> <b>(49%)</b>	2% in Development 1,624 A	1,400 A			79,855	<b>81,183</b> <b><u>81,223</u></b>
<b>Total Acreage</b> <b>165,720</b>	Total Acreage in Development 37,094 <u>37,083</u>	15,248	2,005	701	147,776	165,720

**CASE ANALYSIS FOR THE  
COASTAL RESOURCES COMMISSION  
MEETING DATE: June 24 - 26, 2009  
Currituck County Land Use Plan Amendment  
PB 09-04 Pittman/Williamson**

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**TYPE OF REQUEST:** To amend the Currituck County Land Use Plan to designate approximately 57.58 acres of the Future Land Use map from Limited Service Area to Full Service Area and to amend Water Quality Policy (WQ5) to promote low impact development techniques.

**LOCATION:** Map amendment located on Fisher Landing Road, Jarvisburg,

**CURRENT ZONING:** Agricultural (A)

**SURROUNDING PROPERTY:**

	<b>Land Use</b>	<b>LUP Classification</b>
<b>NORTH:</b>	Undeveloped, Sparse Residential	Limited Service
<b>SOUTH:</b>	Undeveloped, Residential	Limited Service
<b>EAST:</b>	Undeveloped	Limited Service
<b>WEST:</b>	North River	NA

**LAND USE PLAN  
ANALYSIS:**

**Existing Map Classification- Limited Service**

The purpose of the Limited Services Area class is to provide for primarily residential development at low densities. While low-density development may continue to locate in these areas, it is recognized that soil limitations, flood prone areas, and a lack of infrastructure and services may prevent these areas from ever reaching an urban level of development.

Despite the overall low density of these areas, efforts should be made to encourage clusters of residential uses to preserve open space and to provide for a sense of a "community". Base development density should be 1 unit per acre but could be increased to 1.5 units per acre through overlay zoning depending upon whether service facilities are in place or planned and the potential impact on the surrounding community. In the same instances where slightly higher density is considered appropriate a moderate mix of housing types such as semi-detached would also be considered reasonable.

With respect to nonresidential uses, it is essential that the existing community character be preserved. Design criteria should be established to ensure that commercial development protects and preserves the existing community in scale, architectural style, materials, landscaping, and site design. In general, neighborhood commercial uses are more appropriate than large scale commercial complexes. However, business designed to serve the tourist industry such as small gift shops or agri-tourism related uses should not be prohibited provided the character and intensity of the use is in keeping with the character of the surrounding area.

### **Proposed Map Classification- Full Service**

Areas designated as Full Service are those parts of the county that are preferred for community centers. A broad range of infrastructure and service investments have been provided or will be made available by the public and/or private sectors. Infrastructure investments may include, for example, community level or centralized water, parks, schools, fire and rescue facilities.

With respect to residential development, base development density is contemplated to be 2 units per acre but could be increased to 3-4 units per acre through overlay zoning depending upon services available and the potential impact on the surrounding area. A greater diversity in housing types (i.e. semi-detached, attached, multi-family) would be considered appropriate in the Full Service areas.

With respect to nonresidential uses, it is essential that the existing community character be preserved. Design criteria should be established to ensure that commercial development protects and preserves the existing community in scale, architectural style, materials, landscaping, and site design. Nonresidential uses may include clusters of businesses serving the immediate area and, where appropriate, a more extensive market territory.

**Jarvisburg Sub-Area** – The policy emphasis of the Jarvisburg Sub- Area is to allow the area to accommodate quality residential development at low densities while preserving the rural landscape between developments. Similar to the Grandy area, but at a lower overall density, new residential development should be encouraged to locate in compact, village like clusters, preferably near existing, non-agricultural activities and services.

## **SUPPORTIVE POLICIES**

**POLICY PA1:** Public access to the sound and ocean waters of Currituck County is essential to the quality of life of residents and visitors, as well as the economy of the area. The County supports the establishment of ADDITIONAL PUBLIC AND PRIVATE ACCESS opportunities to the waters of Currituck County.

**POLICY PA5:** PUBLIC AND PRIVATE MARINAS offering access to area waters should be encouraged when developed in accordance with the CAMA specific use standards for marinas (i.e. docks for more than 10 vessels). Marinas shall not be approved, however, that are incompatible with nearby land uses or whose designs fail to meet the environmental quality and development standards of the County's Unified Development Ordinance.

**POLICY PA6:** MARINAS IN UPLAND LOCATIONS generally shall be preferred over marinas in open water, thereby better preserving the visual appearance of the shoreline as well as avoiding the "consumption" of available public trust surface waters.

**POLICY ED1:** NEW AND EXPANDING INDUSTRIES AND BUSINESSES should be especially encouraged that: 1) diversify the local economy, 2) train and utilize a more highly skilled labor force, and (3) are compatible with the environmental quality and natural amenity-based economy of Currituck County.

#### **UNSUPPORTIVE POLICIES**

**POLICY HN1:** Currituck County shall encourage development to occur at densities appropriate for the location. LOCATION AND DENSITY FACTORS shall include whether the development is within an environmentally suitable area, the type and capacity of sewage treatment available to the site, the adequacy of transportation facilities providing access to the site, and the proximity of the site to existing and planned urban services. For example, projects falling within the Full Services areas of the Future Land Use Map would be permitted a higher density because of the availability of infrastructure as well as similarity to the existing development pattern.

**POLICY TR11:** ACCESS TO HIGHER INTENSITY DEVELOPMENT shall generally not be permitted through an area of lower intensity development. For example, access to a multi-family development, a major park facility or other large traffic generator shall not be permitted through a local street serving a single-family residential neighborhood.

**POLICY AG3:** County ACTIONS CONCERNING INFRASTRUCTURE (e.g. schools, parks, and utilities) and regulations shall serve to direct new development first to targeted growth areas near existing settlements identified as Full Service Areas on the Future Land Use Map, rather than "leapfrogging" to locations in the midst of farmland and greenspace identified as Rural and Conservation areas on the Future Land Use Map.

**POLICY ML1:** Currituck County recognizes the particular interest of residents and property owners in the Mainland Area in PRESERVING FARMLAND AND OPEN SPACE. The County shall exercise diligence in applying policies, plans and actions that will encourage compact growth and the preservation of farmland and open space in the Mainland Area.

## **MANAGEMENT TOPICS**

*Staff responses are in italics and follow each management topic.*

**Public Access** – To provide suitable public access opportunities to the County's public trust waters and shorelines so as to allow for a wide range of activities.

*The 57.58 acre site proposed for Full Service area will provide boat and pedestrian public access to the North River.*

**Land Use Compatibility** – To properly develop in accordance with the suitability of the land, infrastructure availability and the compatibility of surrounding uses.

*The upland area of the site proposed for Full Service area is classified as a combination of high, medium and low suitability for development. There is a county water main approximately 2,000 feet eastward of the development at the intersection of Fisher Landing and Grandy Roads. Emergency medical services are readily available to the site, as well as vehicular access from a State maintained road. Land uses in close proximity include an elementary school, small medical offices, restaurants, agricultural operations, and a proposed 244 acre planned unit development.*

**Infrastructure Carrying Capacity** – To avoid taking or approving actions related to infrastructure and the provision of services that could induce intensive development in environmentally fragile areas.

*Infrastructure capacity such as improved roads and public water are accessible to the site proposed for Full Service area.*

**Natural and Man-Made Hazards** – To exercise caution, foresight, and common sense in dealing with the risks of coastal development.

*With environmental oversight from the State and local tools such as conditional zoning and floodplain management, the county is in a position to ensure development proposals are responsive to coastal development concerns.*

*The changes proposed to Water Quality Policy (WQ5) provide for a more sustainable approach toward coastal development.*

**Water Quality** – To preserve and improve water quality in the coastal waters of Currituck County; To preserve critical natural areas as the source of biological diversity and productivity on the County's ocean and estuarine environments.

*The scope of development associated with this request is primarily limited to the upland areas of the site proposed for Full Service. The overall intensity of the project may be of concern; therefore the site will need to be designed in a manner that minimizes potential impacts on water quality. The use of central wastewater, Low Impact Development (LID) stormwater techniques, vegetative buffers, and natural shoreline stabilization are critical to the proposal's consistency with Land Use Plan management topics.*

*The changes proposed to Water Quality Policy (WQ5) are intended to discourage the use of a density calculation to promote water quality. Based on current trends in stormwater management and environmental planning, an emphasis on conservation of natural areas, integration of low impact development techniques, and buffers from wetlands are more appropriate strategies.*

**Local Concerns** – To protect and conserve the area's natural beauty and coastal resources as the County's greatest asset for economic development and a high quality of life.

*The request attempts to minimize the impact of the developable area while promoting a high quality project that provides public access and other economic benefits to the county.*

**CAMA LAND  
SUITABILITY:**

According to the land suitability analysis included in the Land Use Plan, the site is primarily classified as low (approximately 18.1 acres) and least (approximately 15.33 acres) suitable for development. There are limited amounts of the site classified as medium (approximately 10.8 acres) and high (approximately 13.5 acres) suitability.

The land suitability analysis is a process for identifying land that is most suitable for development. It ranks land from least to most suitable for development based on characteristics such as soil septic suitability, proximity to water lines, presence of wetlands, etc.

**PUBLIC SERVICES  
AND UTILITIES:**

The site is located within the Jarvisburg Elementary School District. The Lower Currituck Volunteer Fire Department provides fire protection for this area. Public water is not currently available to this site. The nearest water line stubs off of Grandy Road approximately 2,000 feet eastward on Fisher Landing Road.

**TRANSPORTATION:** The site is accessible by vehicle from Fisher Landing Road and by boat from the North River.

**FLOOD ZONE:** Approximately 38 acres of the site are located in a Flood Zone AE (7) and approximately 2 acres are located in a Shaded "X" Flood Zone.

**WETLANDS:** Approximately 19.31 acres of wetlands are located on the site.

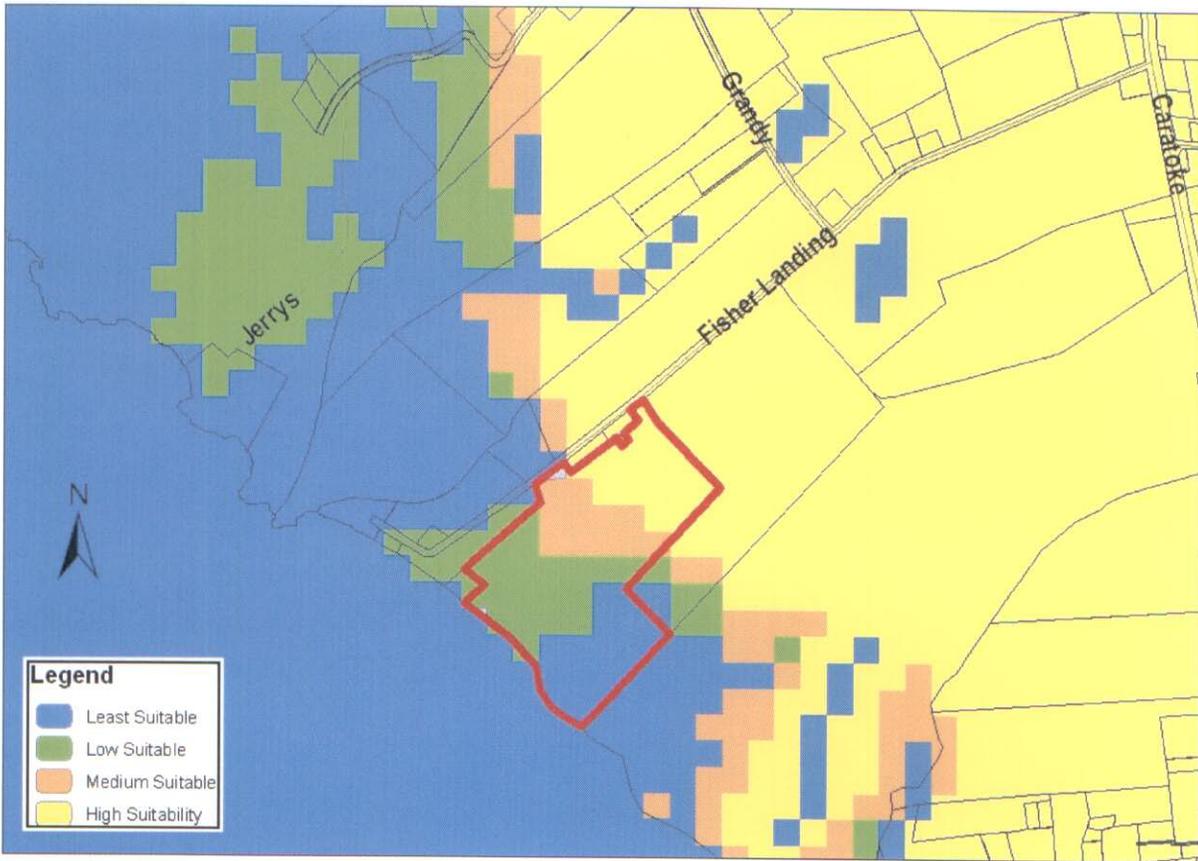
**SOILS:** The Currituck County Soils map indicates the property contains primarily suitable soils (approximately 25 acres). The rest of the site is mostly comprised of non-suitable soils (approximately 20.4 acres). There are limited amounts of marginal (9 acres) soils.

**RECOMMENDATION:** After hearing evidence presented at the public hearing and based on recommendations from the Planning Board and Planning Staff, the Board of Commissioners recommended approval of the request due to its consistency with existing Land Use Plan policies and management topics. Further, the Board of Commissioners included the following recommendations as part of their approval:

1. Future development proposals for the subject property must maintain public access, public boat launching, and parking facilities to the North River (Policies PA1, PA2, PA5, ML3).
2. Any future marina proposal shall participate and become a Certified Clean Marina in the North Carolina Clean Marina program (Policy PA7).
3. In an effort to preserve water quality and natural habitat, priority should be given to the retention and preservation of wetland areas. It is recommended that no development, land disturbing, or logging activities occur in areas designated as wetlands. (Policies ES2, WQ 5, WQ 6, ML1)
4. Future development proposals for the subject property must demonstrate that water quality is not adversely impacted. The use of Low Impact Development (LID) techniques and wetland preservation should be given high priority. In addition when developing near the shoreline, precedence should be given to "soft" stabilization approaches including but not limited to preservation of existing vegetation, creation of natural, living shorelines for areas needing stabilization, and establishment of vegetative buffers (Policies ES4, WQ3, WQ6, and Jarvisburg Sub-Area description).
5. All CAMA approvals for a marina must be obtained within five years, otherwise the approval to Full Service designation is rescinded and the Future Land Use map reverts back to the original Limited Service designation.

# ADDITIONAL MAP EXHIBITS

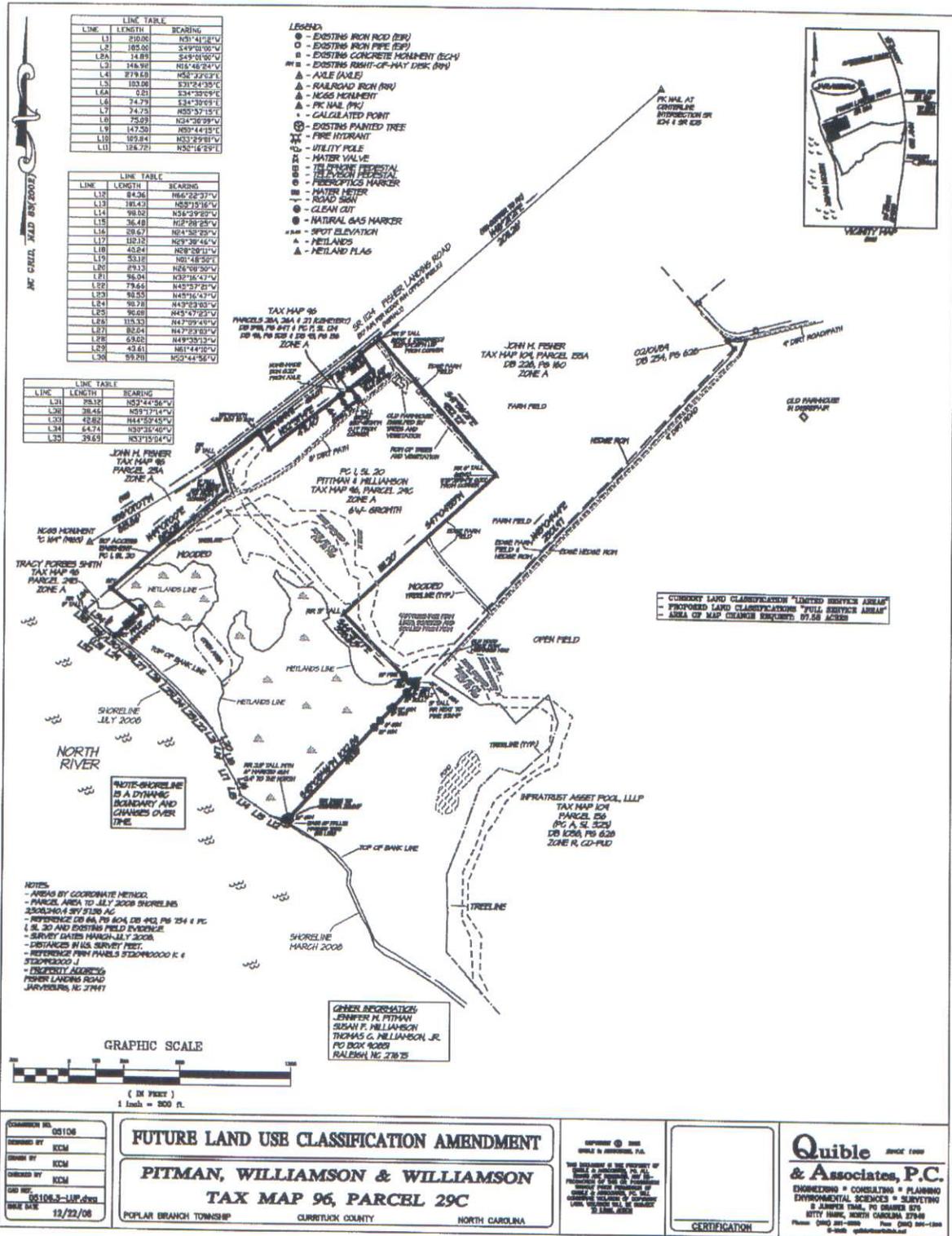
## CAMA Land Suitability Map



**PB 09-04 Pittman/Williamson**  
**Land Use Plan Amendment**  
*CAMA Land Suitability*

0 500 1,000 1,500 2,000  
Feet

# Property Survey Including Wetland Areas



## **PLANNING BOARD DISCUSSION**

Mr. Bell asked if this adjoined the Webber Tract.

Ms. White stated yes.

Mr. Clark asked what part of the conservation area are wetlands.

Mr. Woody provided a map showing the conservation area and wetlands.

Mr. Kovacs asked if this is similar to spot zoning when you change a designation in the middle of another designation.

Mr. Valdivieso stated that this would not be spot zoning because it is not a zoning issue. Mr. Valdivieso provided an overview of the site. Mr. Valdivieso stated that this is an appealing site for a potential upland marina because it complies with the county policies and LUP. They can get to the North River without impacting wetlands. They recognize that there may be some permitting issues that may prohibit a public upland marina from going on this site.

Mr. Kovacs asked if you don't get the permitting for the marina, would you still continue with the development of the project.

Mr. Valdivieso stated that the marina is the jewel of this project, if this is not available; they would still like to focus on a waterfront community.

The planning board discussed full service vs. limited service area, retail feasibility, traffic, free public access to the marina, connectivity to the marina, and Land Use Plan Policy WQ5.

Mr. Woody stated they would like to make a revision to Policy WQ5 even if this amendment does not go through. The recommendation would be, if wetlands are used to determine density then a developer must integrate low impact development techniques or appropriate buffers.

Mr. Valdivieso stated one of the recommendations states that in an effort to preserve water quality priority should be given to the retention and preservation of wetland areas. He understands the intention of this recommendation, but if in the future they want to put a boardwalk for public access through wetlands they don't want it to be a problem.

Mr. Woody stated that when an applicant has to get a CAMA major permit, CAMA requires the permit to be consistent with the LUP. CAMA takes policies like WQ5 quite literally.

Mr. Clark asked if this were to be approved by the Planning Board and the Board of Commissioners, could the applicant come back with a different idea.

Mr. Woody stated that if it were to be approved you still would need to go through a rezoning process. Mr. Woody stated that if the LUP amendment is approved by the BOC, the county would become the applicant and this would be the county's request before the Coastal Resources Commission.

Mr. Valdivieso stated if this is approved by CAMA they will bring it back as a conditional zoning district request which conditions can be applied.

Mr. Kovacs explained the development and public input of the 2006 Land Use Plan which is updated every five years.

#### **ACTION**

Mr. Clark motioned to recommend approval to amend the Currituck County Land Use Plan to designate approximately 57.58 acres of the Future Land Use map from Limited Services Area to Full Service Area as presented and with the amendment to LUP Policy WQ5. Ms. Robbins seconded the motion. Ayes: Mr. Clark, Mr. Etheridge, and Ms. Robbins. Ayes: Mr. Bell, Mr. West, Mr. Midgette, Mr. Kovacs, and Ms. Wilson. Motion failed on 5-3 vote.

#### **BOARD OF COMMISSIONEERS DISCUSSION**

Chairman Etheridge opened the public hearing.

Eddie Valdivieso, Engineer, reviewed the request.

Jerry Wright, stated he supports the concept but he has concerns about the water fowl and how to address with the property owner.

There being no further comments, Chairman Etheridge closed the public hearing.

#### **ACTION**

Commissioner Rorer moved to approve due to its consistency with the Coastal Area Management Act and that the amendment is consistent with the six management topics outlined in the current land use plan. Further the approval is contingent upon establishment of permit within 5 years, otherwise the approval to Full Service designation is rescinded and the Future Land Use map reverts back to the original Limited Service designation. Chairman Etheridge seconded the motion. Motion carried on a unanimous vote.

# Quible

Quible & Associates, P.C.

ENGINEERING • ENVIRONMENTAL SCIENCES • PLANNING • SURVEYING  
SINCE 1959

P.O. Drawer 870  
Kitty Hawk, NC 27949  
Phone: 252-261-3300  
Fax: 252-261-1260

PRINCIPALS  
Sean C. Boyle, P.E.  
Joseph S. Lassiter, C.E.P.  
Eduardo J. Valdivieso, P.E.

ASSOCIATES  
Joseph J. Anlauf, P.E.  
Katherine C. Marchello, P.L.S.

December 22, 2008

Mr. Ben Woody, Director  
Department of Planning and Inspections  
County of Currituck  
Post Office Box 70  
Currituck, NC 27929

Re: Land Use Plan Amendment  
Pittman / Williamson Tract  
Parcel 0096000029C0000  
Fisher Landing Road, Jarvisburg, NC

Dear Mr. Woody,

Enclosed find a completed application for an amendment to the Currituck County Land Use Plan involving the referenced Pittman/Williamson Tract located on Fisher Landing Road in Jarvisburg, NC.

The total tract area is approximately 57.58 acres.

The Land Use Plan amendment is to reconfigure the Pittman/Williamson Tract designation of 57.58 acres on the Future Land Use Plan Map from "Limited Services Areas" to "Full Services Areas".

The request is intended to support a proposed upland basin marina development with public access to the North River, associated residential homes and ancillary commercial facilities (restaurant, ships store, tackle shop, etc.).

In addition to the application, enclosed find:

1. A full scale copy of the subject Future Land Use Map amendment general site survey.
2. Review fee check for \$150.00 made payable to Currituck County.

Please review and contact with any questions or comments. This submission is intended for placement on the February 10, 2009 Currituck County Planning Board agenda.

Sincerely,  
QUIBLE & ASSOCIATES, P.C.

  
Eduardo J. Valdivieso, PE  
Vice President

cc: Susan F. Williamson  
Michael R. Herman, InfraTrust Asset Pool, LLLP

**APPLICATION**  
WILLIAMSON TRACT LAND USE PLAN AMENDMENT  
Jarvisburg Sub-Area

QUIBLE & ASSOCIATES, P.C  
P.O. Drawer 870  
Kitty Hawk, NC  
252-261-3300  
December 22, 2008

OFFICIAL USE ONLY:

Petition Number: \_\_\_\_\_

Date Filed: \_\_\_\_\_

Receive By: \_\_\_\_\_

Amount Paid: \_\_\_\_\_

**CURRITUCK COUNTY  
DEPARTMENT OF PLANNING**  
Post Office Box 70  
Currituck, NC 27929  
Web Site: [www.co.currituck.nc.us](http://www.co.currituck.nc.us)

**Instructions for Filing a Land Use Plan Amendment**

1. Schedule a pre-application meeting with the Planning Director or designee.
2. Submit a completed application for an amendment to the Land Use Plan (LUP).
3. If it is a request to amend the Future Land Use Classification Map, submit a general site survey showing the following:
  - a. Lot/parcel dimensions,
  - b. Existing uses and structures;
  - c. Zoning of the site and surrounding area;
  - d. Future land use map designation, including sub-area;
  - e. Proposed boundaries of change;
  - f. Location of existing streets that border the parcel.
4. Submit a written rationale that addresses how the amendment meets the requirements of the North Carolina Administrative Code (15A NCAC 07B.0700) - CAMA Land Use Plan Requirements and the CAMA Management Goals. Use the questions provided to construct the narrative.
5. Submit cash, check or money order made payable to Currituck County:  
Fees: \$150 plus costs for copies of the amended document as required by the NC Division of Coastal Management (to be determined if the amendment is approved by Currituck County)

**The Land Use Plan Amendment Process:**

**Step 1:**

Hold a pre-application conference with the Planning Director or designee to discuss your request and the Land Use Plan amendment process. Submit a completed LUP Amendment application to the Currituck County Planning Department. All applications must be submitted according to the Planning Board meeting. During this period, the planning staff will review the application and prepare a staff analysis for the Planning Board.

**Step 2:**

The application and planning staff analysis will be forwarded to the Currituck County Planning Board once it is completed. The Planning Board meets the second Tuesday of every month at 7:00 p.m. in the Board of Commissioners (BOC) meeting room, on the second floor of the Historic Courthouse. The Planning Board will review the application and make a recommendation for approval or denial to the Board of Commissioners. Once the Planning Board meeting date is determined, the applicant shall follow the procedures for notifying adjacent property owners according to UDO Chapter 12. The amendment request will be scheduled a minimum of 45 days before a Planning Board meeting after the staff analysis is completed.

**Step 3:**

The application, staff analysis and Planning Board recommendation will be reviewed by the Board of Commissioners on the first Monday of the month following the Planning Board's review. The meeting will begin at 7:00 p.m. in the BOC meeting room, on the second floor of the Historic Courthouse. The Board of Commissioners will make the decision for approval/denial of the amendment based upon whether the proposed amendment advances the public health, safety or welfare and meets the requirements of the Coastal Area Management Act.

**Step 4:**

All Land Use Plan amendments have to be certified by the N.C. Coastal Resources Commission (CRC). If Currituck County approves the amendment, the N.C. Division of Coastal Management staff will process the application for the next available CRC meeting, which meets six times a year. The Currituck Planning Staff will prepare the plan

submission and the applicant will be responsible for the associated costs for the amended plan to be submitted to the CRC.

If you have any questions regarding the LUP Amendment process, please contact the Currituck County Planning Department at (252) 232-3055, ext. 6029 or 6033.

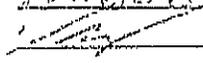
**Owner/Agent/Applicant Information (if applicable)**

It is understood by all parties hereto including the owner, petitioner, and/or agents that while this application will be carefully considered and reviewed, the burden of providing its need rests with the below named petitioner.

I do hereby certify that all information which I have provided for this application is accurate, I/we the property owner (s) hereby designate Quible & Associates, P.C. to serve as agent regarding this application, to receive and respond to administrative comments, to resubmit plans on my behalf, and to represent me in any public meeting regarding this application.

Property Owners Jennifer W. Pittman  
Susan F. and Thomas C. Williamson, Jr.  
 Address 5105 Glen Forest Drive, Raleigh, NC 27612  
 Phone 919-255-8302  
 Fax 919-387-7329  
 E-Mail Susanqu@ncbmerentals.com  
 Signature Susan F. Williamson

Agent Quible & Associates, P.C.  
 Address P.O. Drawer 870, Killy Hawk, NC 27948  
 Phone 252-261-3300  
 Fax 252-261-1260  
 E-Mail cddjev@quible.com  
 Signature 

Applicant InfraTrust Asset Pool, LLLP  
 Address Five Concourse Parkway, Suite 3100, Atlanta, GA 30328  
 Phone 678-332-5000  
 Fax 678-332-5050  
 E-Mail whs@infrastructure.com  
 Signature   
*Whs Secretary for Infrastructure Partners, Inc., 20*  
*General Partner*

**Land Use Plan Amendment Section 11: Land Classification System as follows:**

Convert 57.58 acres of the Future Land Use Plan Map (FLUPM) to "Full Service Areas" from "Limited Service Areas" (Consult Exhibit A); and to subsequently revise acreage totals shown in Table 11.1 of the Land Use Plan to be consistent with map changes (Consult Exhibit B).

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**Property Information (if amending a LUP map) See Exhibit A**

Street Address: Fisher Landing Road, Jarvisburg, NC 27947

Parcel ID Number(s): 0096000029C0000

Deed References: Book 66, Page 604; Book 492, Page 734

Township: Poplar Branch

**Description of Property (if amending a LUP map)**

Size (in acres): 57.58 acres

Size of Area for Amendment 57.58 acres

Street Frontage (feet): 406 ft. on Fisher Landing Road (SR1124)

Current Zoning District: Agricultural (A)

Current Land Use of Property: Vacant, Undeveloped

Surrounding Land Use: North: Single Family Residential

South: Undeveloped

East: Agricultural

West: North River

Current Future Land Use Map designation: Limited Service Area

Proposed Future Land Use map designation: Full Service Area

### Pre-application Conference Information

Date of pre-application conference: November 24, 2008

Applicant/ representative in attendance: Sheila Garrison, Joe Lassiter, Brian Rubino

Planning Department staff in attendance: Ben Woody, Holly White

### Justification

Please provide sufficient information to explain and justify how the Land Use Plan Amendment request satisfies the following questions. Attach additional sheets if necessary.

1. Will the proposed amendment support uses that are suitable in view of the use and development of adjacent and nearby properties? **Yes. The proposed amendment is in consideration and support of a proposed public/private marina and associated residential community that should directly benefit the citizens of Currituck County, particularly adjacent and nearby property owners and residents, by incorporating a rare opportunity for a mainland public boat ramp, public parking facilities, and an outdoor boat storage (dry stack facility), with convenient access to/from Rt. 158 along Fisher Landing Road directly into the development. In addition to providing "lower Currituck" public access to the North River, other commercial uses such as a restaurant, ships store, tackle shop or other small scale ancillary retail facilities are planned for the site to support the marina use as well as addressing demand from the surrounding community.**

**As stated above, this development also envisions residential homes around an inland "upland" marina basin with private docks/boat slips for the use of the property owners. With a plan of development and water feature design intended to limit the impact on natural resources, an LUP amendment to support such uses would be suitable to nearby properties.**

**Consult Exhibit C for draft conceptual development plan.**

2. Will the proposed amendment adversely affect the existing use or usability of adjacent or nearby properties? **No. Adverse impacts to the existing use or usability of neighboring properties is not anticipated due to potential increase in property values resulting from close proximity to an improved public access to the water, incorporation of professional land planning practices and due to mitigations/conditions that could be considered with any subsequent rezoning request.**
3. Would the proposed amendment support uses that could result in an excessive or burdensome use of existing public facilities such as streets, schools, transportation facilities, or utilities? **No. The proposed amendment would encourage and support uses that could, through conditional zoning and other planning tools, identify, balance and**

**mitigate potential impacts with the benefits of an expanded mainland commercial tax base, expanded/improved utility infrastructure and public access to the North River.**

4. How does the proposed amendment conform to the recommendations of the Future Land Use Plan, and any other applicable long range plans? **The proposed amendment would be a positive step toward Currituck's stated need to expand commercial tax base on the mainland, as discussed in various economic development forums. It would also provide needed public access to the North River. The amendment will conform to many LUP Policy and implementation statements to mitigate impacts (if any) for the proposed development, some are listed below:**

**Public Access Policy**      **PA1: Public Access**  
   **PA2: Forms of "Access"**  
   **PA5: Public and Private Marinas**  
   **PA6: Marinas in Upland Locations**  
   **PA7: Marina Best Practice Operating Program**  
   **PA8: Development Standards for Boat Ramps/Parking Areas**  
   **ML3: Mainland Area residents access to . . estuarine waters**

**Again, this amendment would facilitate direct public access to the North River.**

5. Are there any existing or changing conditions affecting the use or development of the property which justifies either approval or disapproval of the request? **The current Limited Service Area designation policy prefers primarily residential development at low densities of up to 1.5 dwelling units per acre. At this density, the economics of constructing a marina development associated with a residential subdivision, some ancillary commercial uses and providing public access facilities to the North River will prohibit the project. The proposed Full Service Area designation supports a residential dwelling density of 3 to 4 units per acre. This higher density can support the needed economics for development of the marina based community concept.**
6. Is there a public need for additional land space to be classified to this request?  
**Yes, see above responses to questions 1 thru 5.**
7. How does this request relate to the land suitability analysis found in the Land Use Plan? Are there factors that have changed since the suitability analysis was completed? **There is a greater interest and market demand for non-agricultural uses on the mainland of Currituck County, as supported by various marketing and economic development studies commissioned by the County, and by the applicant. The balance between public use/water access and private mixed use development can support suitability analyses. The land suitability analysis appears to have labeled the majority of upland areas on site (eastern portion) in the "medium suitability rating" class. The western portion appears to have a "least suitable rating" class. It is our professional opinion that our development concept plan is in full compliance with these designations.**

# **EXHIBIT A**

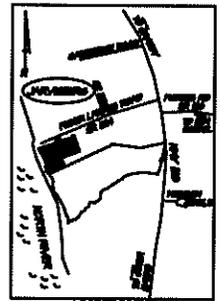
Reduced Scale Copy of General Site Survey

LINE	LENGTH	BEARING
L1	210.00	N51°41'12"W
L2	165.00	S49°01'00"W
L2A	14.89	S49°01'00"W
L3	143.32	N51°46'24"W
L4	279.68	N52°23'03"E
L5	103.00	S31°24'35"E
L6A	0.21	S34°30'09"E
L6	74.79	S34°30'09"E
L7	74.75	N55°57'15"E
L8	75.99	N34°30'09"W
L9	147.59	N50°44'15"E
L10	109.84	N33°29'01"W
L11	126.72	N52°16'29"E

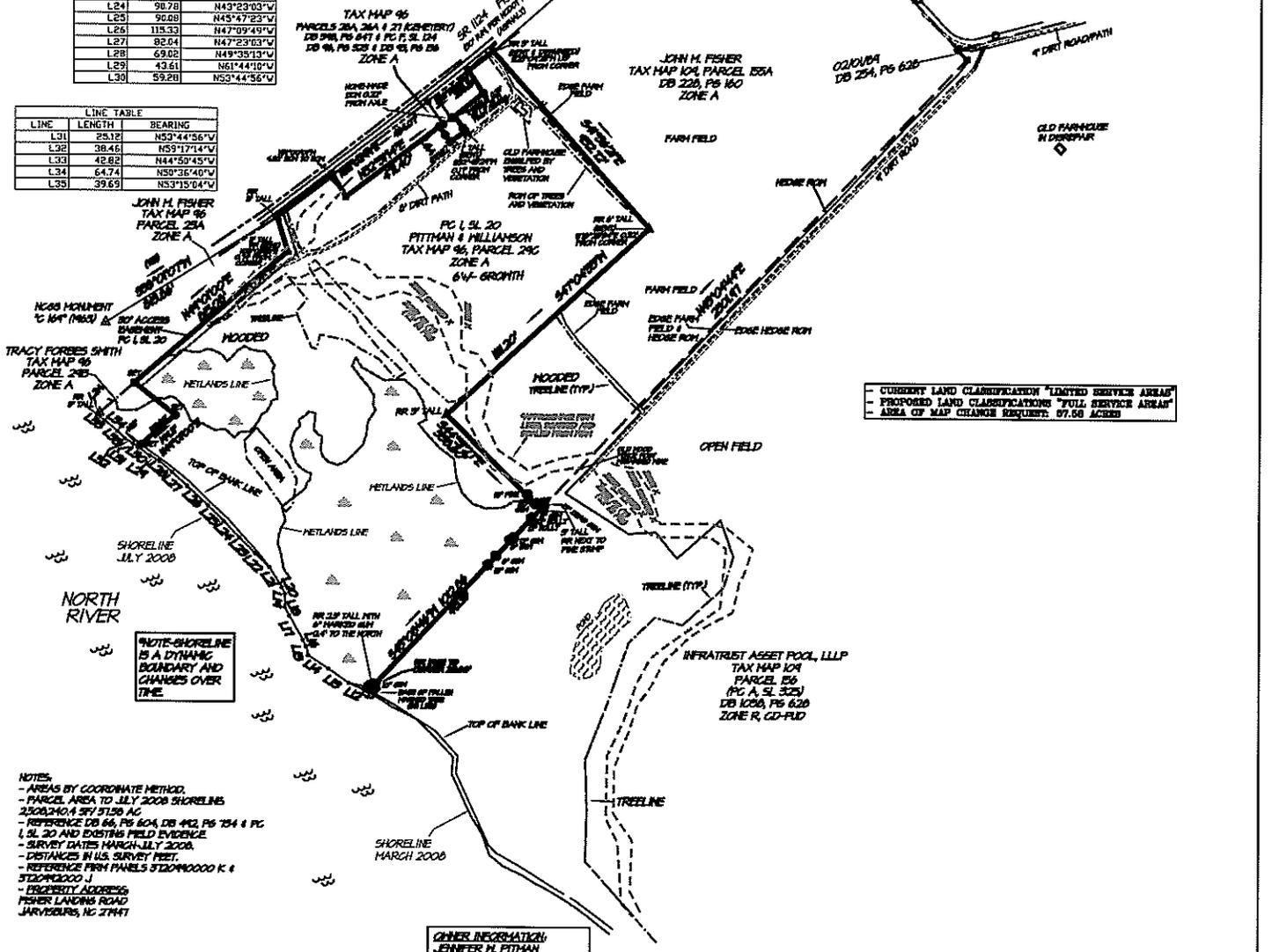
LINE	LENGTH	BEARING
L12	84.36	N66°22'37"W
L13	101.43	N51°51'51"W
L14	98.82	N56°39'28"W
L15	36.48	N12°28'25"W
L16	28.67	N24°52'25"W
L17	112.12	N29°38'44"W
L18	48.24	N28°28'11"W
L19	53.12	N01°48'30"E
L20	23.13	N25°00'55"E
L21	96.04	N32°16'47"W
L22	79.66	N45°57'21"W
L23	50.55	N45°16'47"W
L24	90.78	N43°23'03"W
L25	90.68	N45°47'23"W
L26	115.33	N47°09'49"W
L27	82.04	N47°23'37"W
L28	69.02	N49°33'13"W
L29	43.61	N61°44'10"W
L30	59.28	N53°44'56"W

LINE	LENGTH	BEARING
L31	25.12	N53°44'56"W
L32	38.46	N59°17'14"W
L33	42.82	N44°50'45"W
L34	64.74	N50°36'40"W
L35	39.63	N53°15'04"W

- LEGEND**
- - EXISTING IRON ROD (EIR)
  - - EXISTING IRON PIPE (EIP)
  - - EXISTING CONCRETE MONUMENT (ECM)
  - ⊕ - EXISTING RIGHT-OF-WAY DISK (RW)
  - △ - AXLE (AXE)
  - ▲ - RAILROAD IRON (RR)
  - △ - NCGS MONUMENT
  - ▲ - PK NAIL (PK)
  - - CALCULATED POINT
  - ⊙ - EXISTING PAINTED TREE
  - ⊕ - FIRE HYDRANT
  - ⊖ - UTILITY POLE
  - ⊕ - WATER VALVE
  - ⊖ - TELEPHONE PEDestal
  - ⊕ - TELEVISION PEDestal
  - ⊖ - FIBEROPTIC MARKER
  - ⊕ - WATER METER
  - ⊖ - ROAD SIGN
  - ⊕ - CLEAN OUT
  - ⊖ - NATURAL GAS MARKER
  - - SPOT ELEVATION
  - ▲ - NETLANDS
  - ▲ - NETLAND FLAG



NO CURR. ROAD 08/2002



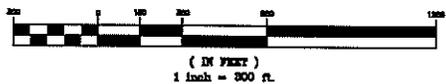
- CURRENT LAND CLASSIFICATION "LIGHT SERVICE AREAS"  
 - PROPOSED LAND CLASSIFICATION "FULL SERVICE AREAS"  
 - AREA OF MAP CHANGE REQUEST: 07.66 ACRES

**NOTE-SHORELINE IS A DYNAMIC BOUNDARY AND CHANGES OVER TIME**

- NOTES**
- AREAS BY COORDINATE METHOD.
  - PARCEL AREA TO JULY 2008 SHORELINE 2502240.1 SQ FT/29.15 AC
  - REFERENCE DB 66, PG 604 DB 462, PG 734 & PG 1, SL 20 AND EXISTING FIELD EVIDENCE
  - SURVEY DATES MARCH-JULY 2008
  - DISTANCES IN U.S. SURVEY FEET.
  - REFERENCE FROM PANELS 512090000 K & 512090000 J
  - PROPERTY ADDRESS FISHER LANDS ROAD JARVISBURG, NC 27447

**OWNER INFORMATION:**  
 JENNIFER M. PITTMAN  
 SUSAN F. WILLIAMSON  
 THOMAS C. WILLIAMSON, JR.  
 PO BOX 9088  
 RALEIGH, NC 27675

**GRAPHIC SCALE**



COMMISSION NO.	05106
DESIGNED BY	KCM
DRAWN BY	KCM
CHECKED BY	KCM
CD NO.	05106-3-LUP.dwg
DATE	12/22/08

**FUTURE LAND USE CLASSIFICATION AMENDMENT**

**PITTMAN, WILLIAMSON & WILLIAMSON**

**TAX MAP 96, PARCEL 29C**

POPLAR BRANCH TOWNSHIP      CURRUTUCK COUNTY      NORTH CAROLINA

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**& Associates, P.C.**

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CERTIFICATION

# **EXHIBIT B**

Current Table 11.1 and Proposed Table 11.1

**CURRENT TABLE 11.1**

Table 11.1 Comparison of Land Allocated to Future Land Use and Projected Land Needs, 2025

Land Use Class	Total Acres Allocated to Each Land Class (a)	% of Each Land Class in Development (b)	Total Acreage Available for Development as Projected (a) x (b)	Total Acreage Projected for Development
Full Service Areas	17,653	80%	14,122	
Limited Service Areas	26,626	65%	17,306	
Rural Areas	40,218	10%	4,021	
Conservation	81,223	2%	1,624	
Totals	165,720		37,073	37,183

*Amended 08-18-08 (PB 08-22) Reference 2006 Currituck County LUP, page 11-12*

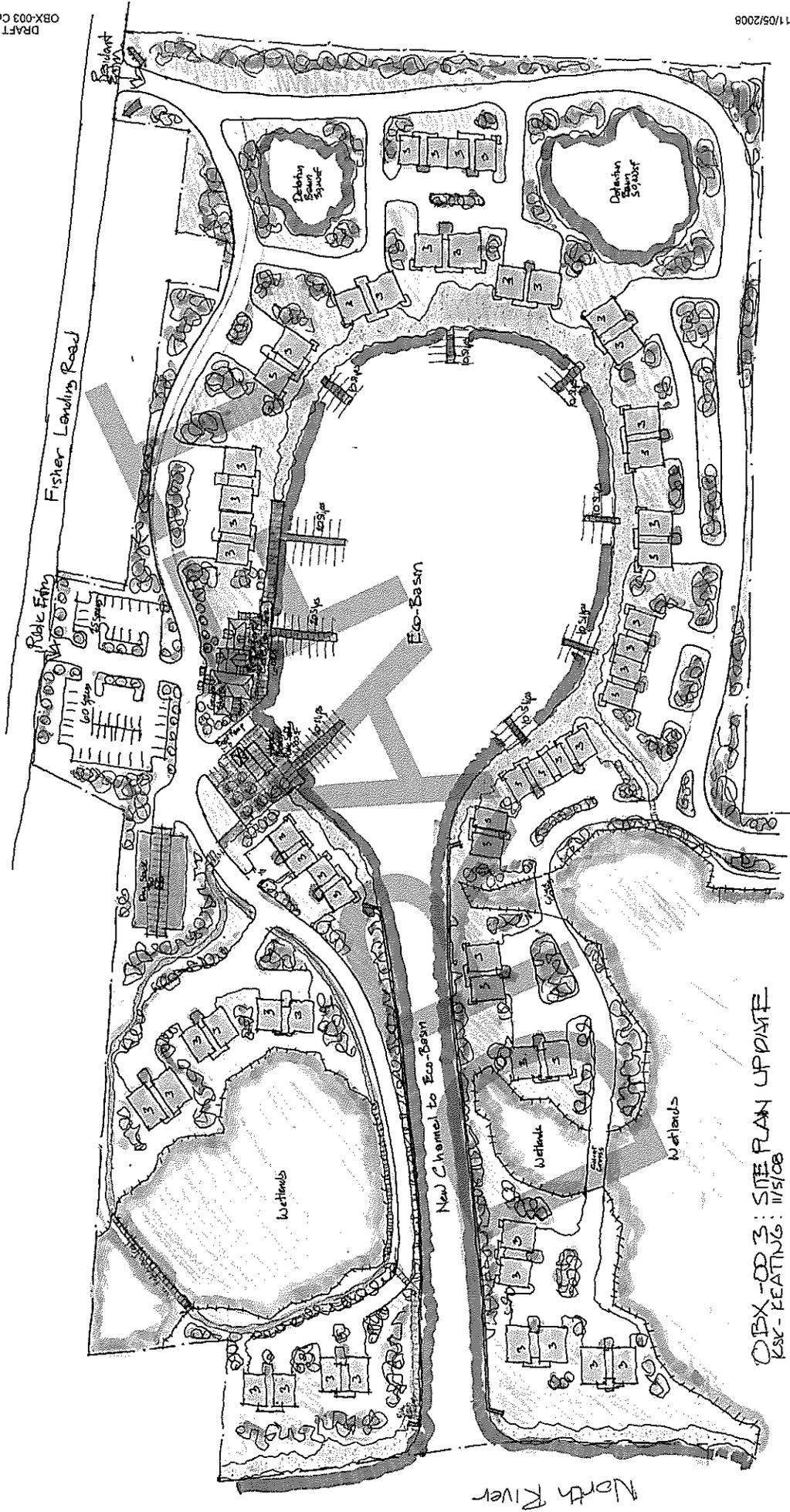
**PROPOSED TABLE 11.1**

Table 11.1 Comparison of Land Allocated to Future Land Use and Projected Land Needs, 2025

Land Use Class	Total Acres Allocated to Each Land Class (a)	% of Each Land Class in Development (b)	Total Acreage Available for Development as Projected (a) x (b)	Total Acreage Projected for Development
Full Service Areas	17,771	80%	14,169	
Limited Service Areas	26,568	65%	17,269	
Rural Areas	40,218	10%	4,021	
Conservation	81,223	2%	1,624	
Totals	165,720		37,083	37,183

The table indicates a projected land need of 37,183 acres. The existing acreage for development is 37,073 acres. The proposed acreage for development resulting from the subject 58 acre Pittman/Williamson map amendment to "Full Service Areas" and "Limited Service Areas" designations is 37,083 acres. The proposed amendment meets Rule 15A NCAC 07B.702 (d), which states "the amount of land allocated to various uses may not exceed projected land needs."

**EXHIBIT C**  
Reduced Scale Copy Draft Concept Plan



North River

OBX-003: SITE PLAN UPDATE  
KSC - FEATINGS: 11/5/08

**Land Use Attributes**  
**Proposed Fisher Landing Village and Jarvisburg Marina**  
**(57.58 Acres- Pittman Tract)**  
**February 2009**

A land use plan (LUP) amendment application has been filed with Currituck County requesting a Full Service Area designation for the Pittman Tract in the Jarvisburg sub-area. The site is currently classified as a Limited Service Area district. While such a request is considered in a nonspecific scenario for allowable uses in a Full Service district, the intent of this application is to support a specific waterfront and mixed use development with public, private, and economic development components.

While independent of the LUP request, a “conditional district” PUD zoning application is currently being prepared for submittal by the next available filing date. This application is intended to compliment and track closely behind the LUP application. It will also serve to expedite the rezoning process in consideration of significant commercial interest in the proposed development. Commercial interest to date is strong due to the potential of a waterfront development concept, and if environmental permits are granted, amenities such as a boat access and/or docking areas would enhance the opportunity for a theme-based retail interest.

A Full Service designation is needed to support the proposed Fisher Landing Village residential condominium density. It is planned as desirable waterfront community with water related recreational amenities for the residents, with opportunities for public access as well. Waterfront access to the North River, the Albemarle Sound, and the Intercoastal Waterway would be a unique attribute for this development, and to the Currituck County mainland community. Given the increase in density, zoning approval, and requisite environmental permitting, such a location could feasibly support uses such as a local market, eatery, retail shop(s), water sports and recreational activities, and related light commercial uses in keeping with the overall architectural theme and spirit of the proposed development and surrounding coastal agricultural community. The zoning application will request approval of a residential zoning and Conditional District -Planned Unit Development overlay designation, to include 10% of the area in LBH zoning to support the non-residential possibilities for the development. Architectural themes are envisioned with “Village” feel, managed through covenants and restrictions.

Fishers Landing Village will be a valuable asset to the County and bring a number of opportunities. According to a study prepared for Currituck County by the UNC Center for Competitive Economics, “Currituck’s Tourism Industry is a Precious Asset”, and “its Retail Potential is Understated”. With zoning approval and environmental permitting, this development could potentially provide amenities and support associated uses to boost tourism and retail sales in the County. The study speaks of “targeted retail” which would be allowed under the requested LUP and Zoning request. Other needs identified by the study which potentially could be met by the development include: jobs during construction and jobs in the Village businesses; balancing the County’s economic base between the beaches and the mainland to mitigate storm vulnerability of the beaches and their eroding shorelines; and leveraging opportunities for off-season attraction of visiting family groups typical of Currituck through the eco-tourism uses of the public area and educational facility.

In addition to the UNC study, if approved, the project plans would address and/or meet stated local goals and objectives. The residential community would be pedestrian-friendly with internal pedestrian circulation. Wetlands and other environmental sensitivities would be avoided. Public access to the North River would be included in a CAMA major environmental permit application. The following Currituck County policies could be met if the proposed LUP amendment and PUD zoning applications are approved, if policy WQ5 (gross density calculation) is brought into compliance with other County ordinances, and if a major CAMA permit is issued:

- Policy PA1- public access to the water and public use of the coastline
- Policy PA5- public boat access
- Policy CD8- mixed use development
- Policy WQ6- preservation and protection of vegetated buffers
- Policy ML3- access to the ocean and estuarine waters by mainland residents
- Policy ES2- non-coastal wetlands conservation

In summary, the proposed LUP, supported by the rezoning request and policy considerations, can meet many goals and objectives of Currituck County and provide an opportunity for desirable economic growth. The Full Service District designation and amendment of WQ5 will facilitate building at a density required to support desirable public elements proposed with the development, as well as potential retail components that will undoubtedly compliment and/or facilitate other commercial opportunities on the mainland. This unique resort development has the potential to capture and preserve environmental attributes, recapture local history via theme-based non-residential components, increase waterfront recreation and access on the mainland, create educational opportunities via commercial and recreational uses (i.e. eco-kayak tours, nature walks, etc), and enhance economic development opportunities for the mainland- all within a pedestrian friendly waterfront residential neighborhood.

February 1, 2009

The following information is taken from a proprietary retail feasibility study recently commissioned by the applicant for Fishers Landing Village (Pittman-Williamson Property in Jarvisburg), also the owner/developer of planned North River Resort (former Webber property). The study was prepared by Jeff Green Partners (jeffgreenpartners.com). The report contains a detailed analysis of pent-up demand for retail, local and regional competition, and local community characteristics to be considered in any future development by the applicant.

Jeff Green Partners concludes that proposed development by the applicant in Jarvisburg, North Carolina not only has the opportunity to be developed into unique and targeted retail to serve the under-retailed Currituck and surrounding communities, the close-in residential base that will be developed as part of the North River Resort, and buyers at proposed Fishers Landing Village, and to the benefit of Currituck County's commercial tax base, will undoubtedly capture the strong tourist population base that visits the area.

The study found the central location, combined with the easy access provided by Highway 158, (and Fishers Landing Road) attractive for retail development to achieve sales over distance from the year-round residents, which are currently underserved by quality retail and have to travel north into the Virginia Beach area for many of their regional shopping needs. Additionally, the study found the location well positioned to intercept traffic as it heads south from the Virginia Beach area to the Outer Banks. It further found that retail competition to the proposed developments is very limited close-in as well as in the primary trade area. Most retail in the county is located in the Outer Banks area and is community in orientation. The strongest (and what would be the closest competing) retail hub is located in Elizabeth City, however, the regional retail is older and limited and there is a high retail vacancy rate in that city.

Generally, Jeff Green Partners recommends to the developers of Fishers Landing Village and North River Resort that the following types of targeted retail would compliment their planned development, Currituck County and its residents, and would be anticipated to be highly successful:

- Boutique-style department store
- National sporting goods retailer
- National boutique-style brands for apparel, shoes, outfitters, and others
- Specialty foods
- Local brew-house
- Smaller boutique eatery's such as ice cream, pizza, café's
- Significant restaurant establishments

The report encourages attracting existing Outer Banks businesses to add locations to the proposed retail locations to compliment the new and potentially larger entrants into the market for the development. Proximity to the shoreline and access to the estuarine and ocean waters from the property is a strong advantage for attracting and maintaining general water-related retail sales, specialty outfitters, and water sport vehicle sales. The report contains sales tables and rationale to support its findings and recommendations.

Attached to this summary are excerpts from the developer's proprietary report for review and consumption in consideration in the pursuit of entitlements to support the proposed retail and commercial components of the developer's proposed projects. These areas of the report include discussion of the following: Issues; Methodology; Assumptions; Rationale; Access characteristics; Trade Area and demographics; local lifestyle characteristics; and Tourist Population Base.



**Issues.** The issues to be addressed in this study include the following:

- What is the existing retail market in the vicinity of the site? What changes to the retail landscape are expected over the next five years? Are there any planned centers under construction? If so, will that impact (and how will it impact) the viability of retail at the proposed site?
- What trade area is currently being served by the existing retail base in the area and to whom do the existing retailers appeal? What, if any, will be the change in the trade area served, should additional retail be developed?
- What is the population, demographic and lifestyle (psychographic) characteristics of year-around residents in the trade area projected for 2010 and 2015, given the population growth in the market? What new residential development is planned for the area?
- How many seasonal residents and tourists live in the trade area but are not included in the US Census data? If available, what are the demographics and retail expenditure of these patron segments?
- What is the projected growth for retail expenditures (retail potential) from 2010 through 2015?

- What retail types are supportable as part of the proposed master-planned community in Jarvisburg?
- Are small, specialty-box retailers supportable as part of this project? If so, who are the recommended tenants, what are their supportable sizes and forecasted sales?
- Is a traditional or specialty grocer supportable as part of this project? If so, which format (and specific retailer) is best, at what size and at what projected sales volume?
- What various entertainment components (movies, restaurants, etc.) are supportable as part of this project? How large should these components be, and what are their forecasted sales?
- Are lifestyle-oriented, small specialty retailers supportable as part of this project? How much lifestyle/specialty retail is supportable by retail type and who are the likely tenants? What sales volumes can be achieved by these lifestyle tenants?
- Is the proposed project vulnerable to competitive projects? If so, how can this project best compete with (or complement) the other centers?
- In short, how much total retail is supportable at the proposed site? Based on this, what retail format and tenant mix is optimal for the proposed site in 2010 and 2015?

**Methodology.** We employed the following methodology to address the above issues:

Step 1.        Site Evaluation. We undertook a thorough evaluation of the site with respect to its physical configuration, visibility, accessibility, competitive shopping facilities, ingress/egress, planned/proposed road improvements, etc.

Step 2.        Competitive Analysis. While in the field evaluating the site, we also assessed all existing shopping centers and other retail concentrations in Currituck and the surrounding counties that have an impact on the proposed retail center. These centers/concentrations will be evaluated on their location, tenant mix, co-tenancy, price point and merchandising characteristics.

Step 3.        Trade Area Definition. Based on the accessibility characteristics of the site, location of competitors, distribution of population, population growth and demographic characteristics, as well as other appropriate factors, we defined a trade area that will be served by possible retail formats, realizing the convenience and destination nature of the proposed project.

Step 4. Population of Residents and Tourists. We collected the most recent population and household estimates, along with future projections from local planning agencies (and all other appropriate sources) for the trade area.

As part of this analysis, we also gathered the number and type of seasonal residents living in the area as well as tourists, both of whom do not show up in census data. We further quantified their demographic and lifestyle/psychographic characteristics.

Step 5. Demographics. The most recent demographic information (i.e., income levels, age factors, household size, employment type, etc.) were gathered from local planning agencies (and all other appropriate sources). Further, we thoroughly drove the trade area to make visual observations to better acquaint ourselves with the demographic makeup of area consumers.

Step 6. Mapping. Using our MapInfo GIS (Geographic Information Systems) programs, we produced numerous maps to visually depict the trade areas, retail competition, population density, population growth and various demographics.

Step 7. Retail Expenditure Potential Determination and Sales Forecasts. During our subsequent in-office analysis, current and projected population levels, and the demographic characteristics of residents were determined. We also computed current and future estimates of trade area expenditure potential by retail type. Many of these estimates were derived using Jeff Green Partner's proprietary models of expenditure potential, developed for various retail types. We also used data from the *Census of Retail Trade*, sales tax information and trade area population levels, to determine trade area expenditure potentials for various retail types.

Expenditure potential by retail type were adjusted to reflect the purchasing habits of consumers within the trade area, as indicated by their unique demographic and socioeconomic characteristics. These calculations serve as the foundation from which our recommended tenant mix and sales forecasts are based.

Step 8. Recommended Tenant Mix. Based on the sales estimated for each tenant, we developed our recommended tenant mix strategy. The results of our field analysis and in-office analysis were used to make these recommendations.

**Assumptions**. As part of this study, we made the following assumptions:

- Population, household growth and demographic data supplied by national and local sources are accurate, reliable and reflect both the current and projected greater Jarvisburg/Currituck County/Outer Banks market.
- Expenditure data estimated for the residential population base, as well as that provided by the Outer Banks Visitor Bureau for tourist expenditures also accurately reflect expenditure potential available to retailers within the defined trade area.
- The economic conditions of the greater Currituck County and the Outer Banks area will remain as projected through 2015.
- The proposed retail portion of the site will be developed with easy ingress/egress, ample parking and excellent visibility. Signage, as needed, will also be provided to assure excellent visibility.
- Most (80% to 85%) household growth in the development will be inhabited year-round, reflecting the household base in the home census tract. Incomes and lifestyles in the North River Resort project, however, are more apt to be similar to those in the Outer Banks area than those in the home census tract.
- Changes in the retail environment that we have included in our sales projections include:
  - ***Tanglewood*** – A 400,000 GLA community-oriented retail center proposed to be located at the intersection of U.S. Highway 17 Bypass and Halstead Extended in Elizabeth City. This center will be across from the existing Shoppes at Tanglewood, and will be anchored by a Wal-Mart Supercenter.
  - ***Shoreside Center (Kitty Hawk)*** – Harris Teeter will open a new unit in Spring 2009.

development and their sales projections should they locate to the center. These tables also show, by retail category, the trade area expenditure potential.

**Rationale.** The following presents our rationale for our conclusions and recommendations:

- The population and household base for the site is good and growing. The primary trade area offers a base of nearly 65,200 persons (over 26,600 households) growing to nearly 71,000 persons (nearly 29,000 households) by 2010 and over 85,250 persons (34,950 households) by 2015. In the total trade area, the population and household base is over 142,600/57,250 and projected to grow to nearly 150,650/60,700 by 2010 and 170,700/69,350 by 2015.
- Incomes within both the primary and total trade area are moderate, though stronger in the primary trade area. The average and median household incomes are reported as \$66,579 and \$51,783 in the primary trade area and \$56,316 and \$44,180 in the total trade area, respectively. Per capita incomes in the area are also moderate, reported as \$27,205 in the primary trade area and \$22,784 in the total trade area. Within three miles of the site, average and median household incomes are reported as \$51,920 and \$40,513 and per capita incomes are reported as \$21,270.
- The trade area lifestyles reflect a strong core “Rural Resort Dwellers” segment of Tapestry Lifestyles. As a group, these residents are older, married consumers without children. They are conservative in their purchasing patterns and are active in their communities. However, this group is less represented in the total trade area, with the lifestyle falling to only 20% of the total household base.

The second largest lifestyle is “Midland Crowd”, which represents 27% of the primary trade area’s household base and 23% of the total trade area’s base. The “Midland Crowd” lifestyle represents those living in rural markets, many of which are employed in farming, manufacturing or service sectors. “Midland Crowd” households are also conservative in their purchasing patterns and apt to eat at family or fast-food restaurants. Please refer to the *Analysis* portion of this report for further detail.

- The site is well positioned to serve a strong tourist component, with the North River Resort located along the main thoroughway to the Outer Banks (U.S. Highway 158). There are an estimated five million visitors to the Outer Banks area per year, most (three million) of which visit during the summer months. The visitors tend to be older (average age of 50 years), married without children, with good education levels and incomes (\$80,966 per year).

- Site characteristics are very good at the North River Resort site, with easy regional access and visibility from U.S. Highway 158, with good traffic volumes (approximately 17,000 per day). Visibility, ingress/egress and parking are assumed to be excellent.
- Retail competition to the proposed site is very limited close-in as well as in the primary trade area. Most retail in the county is located in the Outer Banks area and is community in orientation. The strongest retail hub is located in Elizabeth City, however, the regional retail is older and limited and there is a high retail vacancy rate in the city.

Access to the site from nearby Camden County and Pasquotank County is provided by U.S. Highway 168.

The following table details the most recent traffic counts as reported by the North Carolina Department of Transportation near the site:

<i>Location</i>	<i>Traffic Count</i>	<i>Year</i>
US Highway 158 and Fisher Landing	17,000	2006
US Highway 168, north of US Hwy 158	11,000	2006
US Highway 169, west of US Hwy 158	7,100	2006
US Highway 158, Bridge to Outer Banks	18,000	2006

**Ingress/Egress, Parking and Visibility.** Ingress/egress points to the proposed development are assumed to be easy and adequate from U.S. Highway 158. Parking is also assumed to be adequate for the planned retail uses (at minimum 4.5 spaces per 1,000 square feet of GLA) The visibility of the retail is assumed to be easy from all directions, with ample signage to assure visibility of the site from U.S. Highway 158.

**Adjacent Retail Support.** Currently, there is little retail in the area of the site that will either impact or enhance the sites ability to attract sales over distance.

**Primary and Total Residential Trade Area.** Based on our detailed field analysis of the Jarvisburg, North Carolina market and surrounding communities, our in-house database of trade area retailers currently in the market, along with our experience defining trade areas for similar retail concentrations, we defined the primary and secondary residential trade area by U.S. Census Tracts that will be served by retailers at the proposed sites.

The trade areas defined for the proposed Jarvisburg site extend as follows:

<i>Direction</i>	<i>Primary Trade Area</i>	<i>Total Trade Area</i>
North	Approximately 30 miles to State of Virginia	Approximately 30 miles to State of Virginia
East	Approximately 7 Miles to Atlantic Ocean	Approximately 7 Miles to Atlantic Ocean
South	Approximately 20 Miles to Nags Head and Albemarle Sound	Approximately 37 miles to Dare/Hyde County Line
West	Approximately 20 miles to Camden/Pasquotank County Line	Approximately 48 miles to Albemarle Sound



Also, please refer to the maps in Appendix 1 for a visual depiction of the primary and total trade area boundaries, as described above.

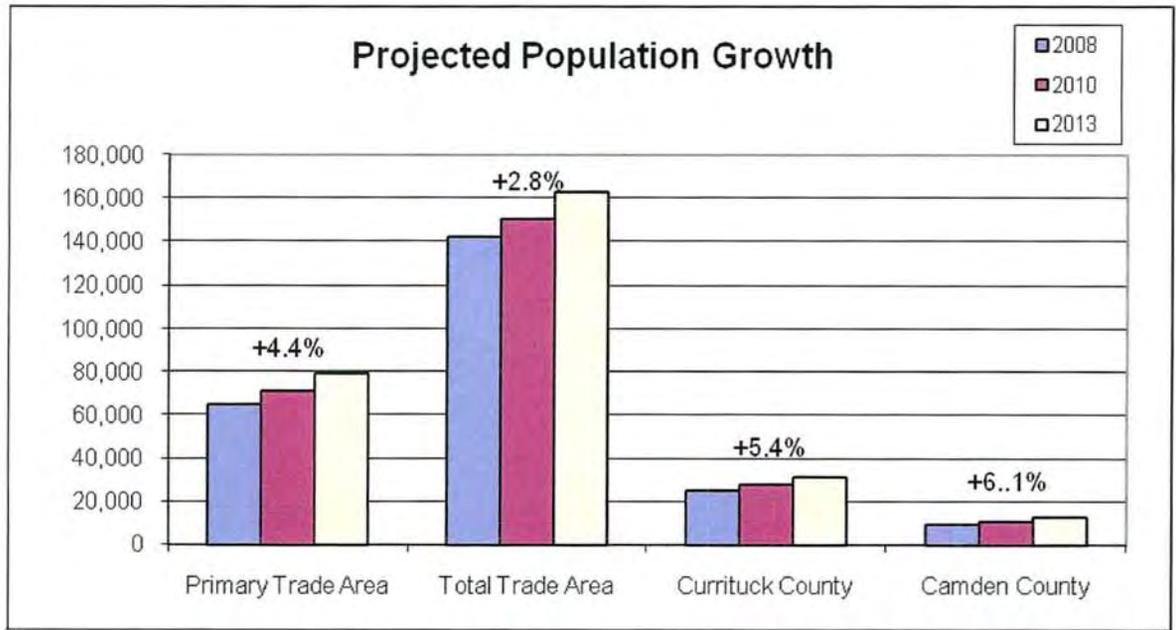
**Population and Demographic Characteristics**. Based on the trade areas defined, we collected relevant residential population, demographic and lifestyle data on a primary, secondary and total trade area basis, as well as on a disaggregate basis (census tract). For most retailers, the primary trade area will provide for 55% to 65% of the total store sales. The secondary trade area will provide for an additional 10% to 15%, with the remaining sales (25% to 30%) derived from the tourists visiting the area.

Within the defined primary trade area, the current estimated population level is 65,276 persons, which is projected to grow 4.4% annually through 2015, with 70,985 persons projected for 2010, 79,549 projected by 2013 and 85,258 persons projected in 2015. The strongest percentage of population growth is projected in Census Tract 110.101 (7.8% annual growth projected through 2015) located in the northern Outer Banks or Corolla area. Strong growth is also projected for north Currituck County (Census Tract 110.200 – 6.4% annual growth), Camden County/Census Tract 50.100 (6.1% annual growth) and the home census tract of 110.400 (5.2% annual growth).

The secondary trade area offers an additional 77,333 persons for a total trade area population base of 142,609 persons. The total trade area population base is also projected to grow through 2015, but not as fast as the primary trade area (2.8% annual growth) with 150,635 persons projected in 2010, 162,674 projected by 2013 and 170,700 projected by 2015.

By comparison, the Outer Banks communities (Kill Devil Hills, Kitty Hawk, Nags Head and Southern Shores) have current population bases of 7,514, 3,668, 3,466 and 2,608 persons and are projected to increase 2.7% to 3.3% annually to 9,270, 4,430, 4,263 and 3,094, respectively, by 2015. Currituck County has a current estimated population base of 25,089 that is projected to increase 5.4% annually to 34,508 persons by 2015.

The following table details the projected population growth for the defined primary and total trade areas compared to the Counties of Currituck and Camden. Please note the predicted percentage growth is annual growth. A visual depiction of the projected population growth in the defined trade area by census tract can be found on the maps in Appendix 1.



The current (2008) population estimate within three miles of the North River Resort site is approximately 1,857 persons, which represents an increase from 1,545 persons (2.9% annually) since 2000. This base is projected to increase to 2,753 persons by 2013 (9.7% annually), due primarily to the assumed North River Resort project. Within a five- and ten-mile radius of the site, the current base is estimated to be 3,702 persons and 10,733 persons, respectively. This base is projected to increase to 4,824 persons and 12,563 persons (6.1% annually and 3.4% annually) by 2013 (five- and ten-mile radius, respectively).

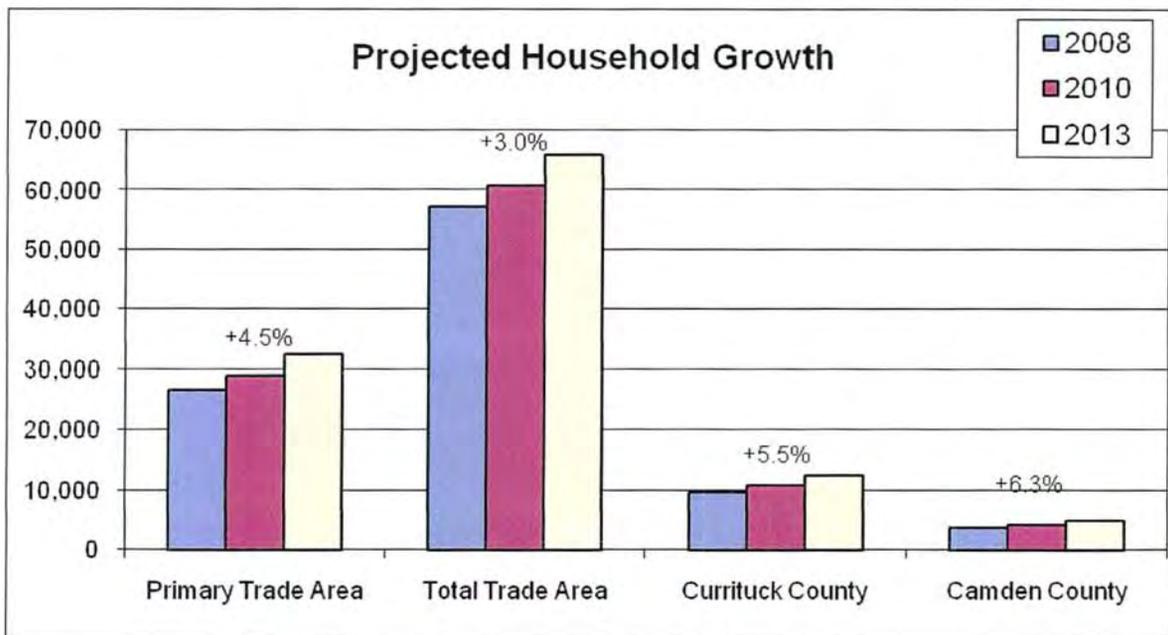
By drive-time, there are an estimated 3,073 persons within minutes of the site, growing to 6,132 within twenty minutes and 17,777 within thirty minutes of the site. This base is projected to increase 6.8%, 4.7% and 2.5% annually to 4,119, 7,563 and 20,027 persons by 2013, respectively.

**Households** within the defined primary trade area are currently estimated to be approximately 26,601 households that is projected to grow 4.5% annually to 28,981 by 2010, 32,552 by 2013 and 34,932 households by 2015. As with the projected population growth, the strongest percentage household growth within the primary defined trade area is Census Tract 110.101 located in the north Outer Banks area (8.0% annually), followed by Census Tracts 110.200 (6.5% annually), 50.100 (6.3% annually) and home Census Tract 110.400 (5.3% annually). The total trade area's household base is currently estimated to be 57,236 and projected to grow 3.0% annually to 60,694 households in 2010, 65,880 household in 2013 and 39,338 households by 2015.

Currity County has a current household base of 9,706 that is projected to grow 5.5% annually to 10,778 by 2010, 12,386 in 2013 and 13,458 in 2015. Neighboring Camden County has a current base of 3,835 that is projected to grow 6.3% annually to 4,321 in 2010, 5,051 in 2013 and 5,553 by 2015,

Currently most of the housing units in the total trade area are owner-occupied (57%), due to a strong base of seasonal households (30.6% in the primary trade area and 22.7% in Currity County). As expected, the seasonal housing base is strongest in the Outer Banks area (Census Tracts 110.101 and 70.100-70.400) with a reported seasonal housing base of 32% to 70% (North Outer Banks/Corolla).

Persons per household in the defined primary and total trade areas are reported as 2.44. The home census tract has a reported median persons per household of 2.45 and Currity County has a reported persons per household of 2.57.

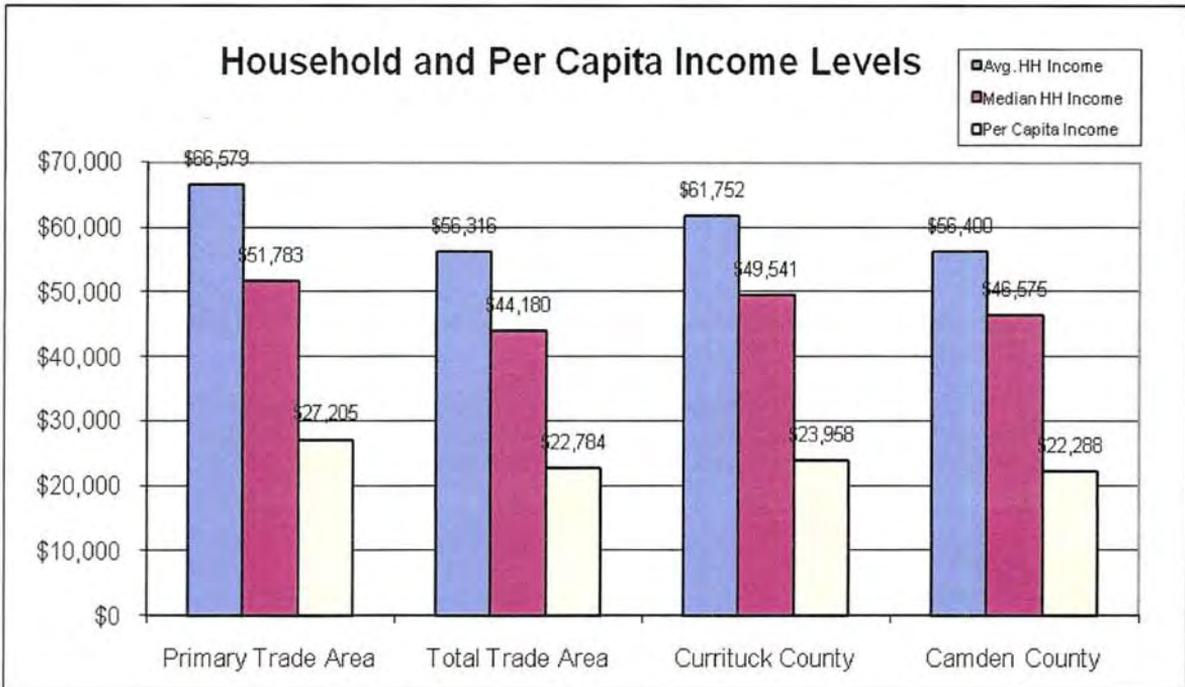


Incomes throughout the primary trade area vary widely, however, are homogeneous throughout the secondary trade area. The *average* household income reported for the primary trade area is \$66,579, compared to \$56,316 in the total trade area. Incomes in the north Outer Banks area near Corolla have the strongest income levels, with a reported average household income of \$127,071. The home census tract incomes are more moderate and reported as \$54,177. Trade area *Median* household incomes are reported as \$51,783 and \$40,180 (primary and total trade areas). Once again, the northern Outer Banks area reports the strongest (\$76,814) median household incomes. *Per capita* incomes are reported as \$27,205 in the primary trade area, dropping to \$22,784 in the total trade area.

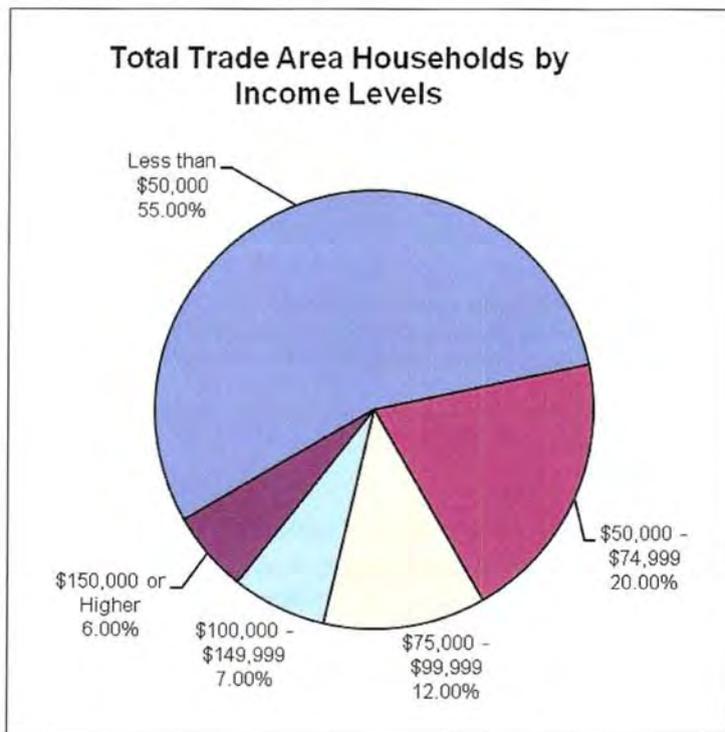
Currituck County reports average and median household incomes of \$61,752 and \$49,541 compared to \$56,400 and \$46,575 for Camden County.

In the total trade area, 5.8% (3,292) of the households report incomes of \$125,000 or higher, compared to 6.5% (3,696 households) reporting household incomes between \$100,000 and \$124,999 and 11.6% (6,636 households) reporting incomes between \$75,000 and \$99,999.

The following table details the average, median and per capita incomes for the primary and total trade areas, as well as for Currituck and Camden Counties:



The following chart shows the breakdown of households by income in the total trade area:



Current incomes by radius are moderate close-in to the North River Resort site and growing stronger over distance with average household incomes reported as \$51,920, \$51,187 and \$72,431 within the three-, five- and ten-mile radius. Median and per capita incomes are reported as \$41,218/\$21,270, \$40,513/\$21,049 and \$52,900/\$30,340 for the same radii. Over 20% of the households within three miles of the site report incomes of \$75,000 or higher, followed by an additional 17% with households between \$50,000 and \$74,999.

Based on a demographic trend analysis report by Claritas, incomes in the market area are increasing. Within three miles of the North River Resort location, incomes are projected to increase 14% from \$51,920 to \$59,038 (average household income) and 13% from \$41,218 to \$46,879 (median household income) by 2013. Within a five-mile radius, the respective income projections for 2013 are \$58,276 and \$46,783 (increases of 13% and 14%). In the primary trade area, the average household income of \$66,579 is projected to rise to \$74,940 by 2013 and median household incomes are projected to increase from \$51,783 to \$58,690, increases of 13%. Please refer to the table on the facing page for the projected increase in both incomes and change in the ages for the site.

The primary and total trade area's population is primarily white (90% and 75%), which is similar to that found in Currituck (90%) and Camden Counties (80%). Approximately 7% of the population base is African American in the primary trade area, growing to 22% in the total trade area.

The median age in the primary trade area is 42.2 years, compared to an average age of 41.3 years in the total trade area, 41.4 years in Currituck County and 41.7 years in Camden County. North Outer Banks reports the population base with the oldest median age (53.6 years) in the primary trade area.

The majority of the primary and total trade area residents are employed in white-collar occupations (53% and 51%), with approximately 12% employed in sales, followed by 11% in administrative support, 9% in managerial/farming and 7% in education positions (total trade area).

Of those age 25 years and older, only 22% have a bachelor's degree or higher education in the primary trade area and 18% in the total trade area, compared to 13% in Currituck County and 16% in Camden County.

Please refer to Appendix 1 for a detailed population and demographic table by census tract, along with the expanded trade area demographic profile for the three-, five- and ten-mile radii and for the 10-, 20- and 30-minute drive time report for the site.

**Lifestyle Characteristics.** To better understand the propensity of local residents to shop retailers proposed for the site, we examined the lifestyles of residents located within the defined trade areas.

Tapestry lifestyles combine aggregate consumer demand with demographic variables to form 65 different lifestyles as a predictor of consumer purchasing patterns. These lifestyles are based on the smallest geographical basis available, and updated annually to insure the most current and accurate data.

The following table details the top lifestyles found within the defined trade areas:

Tapestry Lifestyle	Primary Trade Area	Total Trade Area	Short Description
Rural Resort Dwellers	8,375 31.5%	11,174 19.5%	Favoring milder climates and pastoral settings, <i>Rural Resort Dwellers</i> live in rural non-farm areas throughout the United States. They are older than most Tapestry segments, with a median age of 46.2 years. About 40 percent of <i>Rural Resort Dwellers</i> are married with no children living at home. More than 90 percent of them are white. Simple living and consumer tastes describe the <i>Rural Resort Dwellers</i> . Coal and wood stoves, kerosene heaters, riding lawnmowers, garden tillers, tractors and chain saws are some of the home improvement and garden equipment they buy and own to maintain their properties. Home improvement projects they have installed include kitchen countertops, carpeting and insulation. <i>Rural Resort Dwellers</i> residents take their four-wheel-drive vehicles to gas stations for service, buy books at the supermarket. Shopping favorites include True Value for hardware, Wal-Mart Pharmacy for prescriptions and the L.L. Bean, Eddie Bauer and Land's End catalogs for clothing.
Midland Crowd	7,288 27.4%	13,313 23.3%	<i>Midland Crowd</i> represents Tapestry's largest market with more than ten million people, nearly four percent of the United States population. They mirror the United States norm with a median age of 35.9 years. these neighborhoods are found in rural areas that have been growing by three percent annually since 2000. Most of these residents are white. The rural location and their traditional lifestyle dictate the consumer preferences of <i>Midland Crowd</i> residents. Purchases of work boots, hunting clothes and craft supplies reflect their employment, lifestyle and leisure activities. They fill prescriptions at the Wal-Mart Pharmacy, buy craft and hobby supplies by mail, phone or online and stop in the local True Value store for hardware. If they eat out, <i>Midland Crowd</i> residents prefer family or fast food restaurants such as Golden Corral, Chick-Fil-A or Hardee's.
Rooted Rural	2,423 9.1%	8,071 14.1%	The population is older than the national median of 36.0 years with a median age of 40.4 years. Married couples with and without children are typical of <i>Rooted Rural</i> households. Most of the <i>Rooted Rural</i> residents are white. <i>Rooted Rural</i> residents are "do-it-yourselfers"; they have installed vinyl flooring and service their vehicles themselves. They might spend more than \$500 per year on tires. They own welders, chainsaws and drill presses. They buy tillers, tractors, lawnmowers, vegetable plants and seeds to tend their gardens. Favorite grocery stores are IGA and Winn-Dixie. They use shortening, yeast and cornmeal for meal preparation. They take prescription medications for diabetes and arthritis. <i>Rooted Rural</i> residents order merchandise from the J.C. Penney catalog, and seeds, plants and coffee by mail, phone or online.

Tapestry Lifestyle	Primary Trade Area	Total Trade Area	Short Description
Salt of the Earth	2,040 7.7%	2,609 4.6%	These married couples with and without children have a median age of 39.5 years. One fifth of <i>Salt of the Earth</i> residents live in single-person households. Nearly 95 percent of the population is white. <i>Salt of the Earth</i> residents live in blue-collar neighborhoods in rural areas or small towns. Hardworking, primarily in agriculture, manufacturing, or mining. As the segment name implies, <i>Salt of the Earth</i> residents are settled, traditional and hard working. Their consumer preferences reflect their background; they concentrate on home, yard and auto maintenance. They're frequent shoppers at True Value hardware stores and order garden supplies, seeds and plants by phone, mail or online. As the segment name implies, <i>Salt of the Earth</i> residents are settled, traditional and hard working. Their consumer preferences reflect their background; they concentrate on home, yard and auto maintenance. They're frequent shoppers at True Value hardware stores and order garden supplies, seeds and plants by phone, mail or online. Always searching for bargains, <i>Salt of the Earth</i> residents patronize chain grocery and warehouse stores. Health-conscious <i>Salt of the Earth</i> residents take One-A-Day vitamins, visit nurse practitioners, and take prescription medications.
Silver & Gold	2,161 8.1%	2,161 3.8%	With a median age of 57.6 years, more than 20 years above the national average, <i>Silver and Gold</i> households are made up primarily of older married couples without children. These seniors are well educated and financially prosperous. Retired from professional occupations, the wealthiest seniors have relocated to sunny climates. <i>Silver and Gold</i> residents drink imported wines, buy books at a warehouse store, would buy a PC directly from the manufacturer, and own a fax machine. They search the Yellow Pages for landscaping and appliance repair services. They read epicurean and travel magazines and watch <i>The West Wing</i> on television. <i>Silver and Gold</i> residents order from the L.L. Bean, Eddie Bauer, and Land's End catalogs. They order cookware, kitchen accessories and flowers by phone, mail and online. They purchase golf clothing and women's swimsuits, own a hot tub or whirlpool spa, go to the beach and dine out at least once a week. They go sailing, power boating, fishing and golfing and have taken an overseas cruise vacation.

Most (32%) of the primary trade area residents are found in the "Rural Resort Dwellers" segment of Tapestry Lifestyles. As a group, these residents are older, married consumers without children. They are conservative in their purchasing patterns and are active in their communities. However, this group is less represented in the total trade area, with the lifestyle falling to only 20% of the total household base.

The second largest lifestyle is "Midland Crowd", which represents 27% of the primary trade area's household base and 23% of the total trade area's base. The "Midland

Crowd" lifestyle represents those living in rural markets, many of which are employed in farming, manufacturing or service sectors. "Midland Crowd" households are also conservative in their purchasing patterns and apt to eat at family or fast-food restaurants.

Please refer to the primary Tapestry Lifestyle table found in Appendix 2.

**Tourist Population Base.** As noted in the trade area household data, there is a strong base of seasonal households in the trade area, most of which are located along the Outer Banks area. The site is well positioned to serve this population base, as most have to drive by the site en-route to the Outer Banks.

In total, Currituck County estimates there are over five million visitors per year, with most (three million) visiting during the peak summer months (June through August).

According to a study of the Outer Banks Visitors Bureau and a study of tourists that was conducted by Strategic Marketing and Research in September 2006, most visiting the area come from Washington, DC (9.7%), followed by Norfolk/Portsmouth/Newport News (6.9%), Philadelphia (6.5%), Richmond/Petersburg, Virginia (4.9%), New York City (4.4%) and Baltimore, Maryland (4.1%). Combined, these six origins represent 36.5% of the total visitor population. Those living in the closer areas were more apt to visit in the spring or winter seasons, while those living further away were more apt to visit during the peak summer and fall months.

The typical visitor profile tended to be:

- 50 years old
- Married (86%) with no children (only 37% had children with them on the trip)
- Average household income of \$80,966
- 36% college educated
- 95% white

However, the winter visitors tended to be older and less affluent than the summer visitors and less likely to have children.

First-time visitors tended to be younger (45 years) with similar incomes (\$80,859) and many more were traveling with children (54%). Race and education levels were similar to that of the total visitor profile.

Overall, visitors stayed an average of 5.7 nights, with summer visitors staying the longest (6.2 nights) and spring trips averaging only 4.3 nights.

The average travel party size was reported as 6.3 people, with summer visitors reporting a mean of 7.6 and winter visitors only 3.8.

Not surprisingly, most stayed in the seasonal housing stock (45%) followed by a rental condominium (12%) and a national hotel (12%) or local/non-chain hotel (7%). The remaining visitors stayed at a campground, with friends or in a small bed and breakfast/cottage.

Expenditures varied widely seasonally as shown below:

	<i>Summer</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>	<i>Overall</i>
<i>Lodging</i>	\$1,502	\$827	\$474	\$538	\$1,139
<i>Meals/Groceries</i>	494	340	291	384	421
<i>Entertainment</i>	54	23	28	28	40
<i>Shopping</i>	290	228	205	213	258
<i>Transportation</i>	245	139	272	187	207
<i>Attractions</i>	73	49	56	69	63
<i>Other</i>	93	35	45	25	65
<b>Total:</b>	<b>\$2,751</b>	<b>\$1,641</b>	<b>\$1,370</b>	<b>\$1,444</b>	<b>\$2,193</b>
<b>Per Person/ Per Night</b>	<b>\$58</b>	<b>\$61</b>	<b>\$70</b>	<b>\$84</b>	<b>\$61</b>



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue, Governor

James H. Gregson, Director

Dee Freeman., Secretary

**MEMORANDUM**

**CRC-09-21**

**To:** The Coastal Resources Commission

**From:** Michael Christenbury, Wilmington District Planner

**Date:** June 9, 2009

**Subject:** Requested Certification of Amendment #1 of the 2007 Brunswick County Core Land Use Plan

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**Staff Recommendation: Certification of the Brunswick County Core LUP Amendment based on the determination that the amendment has met the substantive requirements outlined within the 2002 7B Land Use Plan Guidelines and that there are no conflicts evident with either state or federal law or the State's Coastal Management Program.**

**Overview:**

This is the first amendment to the 2007 Brunswick County Core Land Use Plan (LUP), certified by the Coastal Resources Commission (CRC) on November 30, 2007. Specifically, this amendment was requested by the Town of Belville and applies only to the Town of Belville jurisdiction. The Town of Belville participated in the development of the Brunswick County LUP and relies on the County LUP for permitting and planning purposes. Both Brunswick County and the Town of Belville adopted this amendment by resolution.

This amendment applies only to the Town of Belville Future Land Use Map (FLUM) and the FLUM designation descriptions. There are two components to this amendment.

- A. Make changes to the allowed uses within the 'Commercial/O&I' FLUM designation and the 'Conservation' FLUM designations. **See Exhibit A.**
- B. A map amendment or adjustment to the Belville Future Land Use Plan Map (FLUM), shifting an area designated as 'Conservation' to 'Commercial O&I'. **See Exhibit B (1), (2), and (3).**

Component A of the amendment is to allow for residential and residential mixed uses within the "Commercial O&I" FLUM designation. Component A also removes residential uses from the "Conservation" FLUM designation and limits uses in the "Conservation" designation to water dependent uses. **See Exhibit A.**

Component B of this amendment is a map amendment to the Belville Future Land Use Map. Specifically, this map amendment applies only to a small area within the Belville Central Business District along Old River Road. Currently, the high ground along Old River Road is designated as 'Conservation' on the Belville Future Land Use Map. This map amendment changes the 'Conservation' designation of the high ground adjacent to Old River Road to 'Commercial O&I' and limits the 'Conservation' designation to the AEC. **See Exhibit B (1), (2), and (3).**

The Brunswick County Commissioners adopted the amendment following a public hearing that was held on May 18, 2009. At the hearing, officials from the Town of Belville spoke in favor of this amendment and no individuals spoke in opposition to the amendment.

Brunswick County reviewed the amendment and determined that it is not in conflict with other policies or sections of the 2007 Brunswick County Land Use Plan.

The public has had the opportunity to provide written comments up to fifteen (15) business days (excluding holidays) prior to the CAC meeting. No comments have been received, written or otherwise as of the date of this memorandum.

To view the full 2007 Brunswick County Core Land Use Plan, go to the following link and scroll down to Brunswick County LUP:

[http://www.nccoastalmanagement.net/Planning/under\\_review.htm](http://www.nccoastalmanagement.net/Planning/under_review.htm)

**Exhibit A: Text Amendment**

**Exhibit B (1), (2), (3), & (4): Illustration of Minor Map Amendment**

EXHIBIT A

## SECTIONS A AND B AMENDED AS SHOWN BELOW:

2. Town of Belville

## a. Commercial/O&amp;I

Commercial and O&I land uses in Belville are located at the intersection of US Highway 17/74/76 and NC Highway 133 and along NC Highway 133. Future commercial development will continue to occur at the intersection with future office and institutional land uses occurring along NC Highway 133.

Corresponding zoning district: BR, Business Residential; BH, Business Highway; CBD, Central Business District

Appropriate uses: General retail uses; institutional, **commercial** recreational, and services uses; **residential mixed-use, and hotel** ~~some animal-relate service-facilities; and contractors without outside storage.~~ Please note that not every use listed in one district is permitted in another district.

Inappropriate uses: ~~Residential and Industrial~~ and manufacturing uses.

Allowable densities: No density requirement.

Maximum height: No height requirement.

Minimum lot size: No lot size requirement.

## b. Conservation

The Conservation designation is located as a buffer along the Brunswick River where there is a potential for flooding. Medium and high density development is ~~discouraged~~ **not allowed** in this area.

Corresponding zoning district: R-15, Residential District

Appropriate uses: ~~Single-family residential development~~ **Marinas, boardwalks** parks, and water oriented uses such as boat launch facilities, docks, and piers.

Inappropriate uses: Commercial and industrial development.

Allowable density: 2.9 units / acre.

Maximum height: 35 feet.

Minimum lot size: 15,000 s.f.

## c. Industrial

Existing industrial areas are located on US Highway 17/74/76. Future industrial development will be located along US Highway 17/74/76, the area adjacent to US Highway 17, and along the northwest portion of NC Highway 133.

Corresponding zoning districts: I, Industrial.

Appropriate uses: Agricultural uses, communications facilities, contractors/ construction facilities (with or without outside storage), certain retail and service uses, manufacturing operations, and wholesale facilities.

Inappropriate uses: Residential development and most commercial development.

Allowable density: No density requirement.

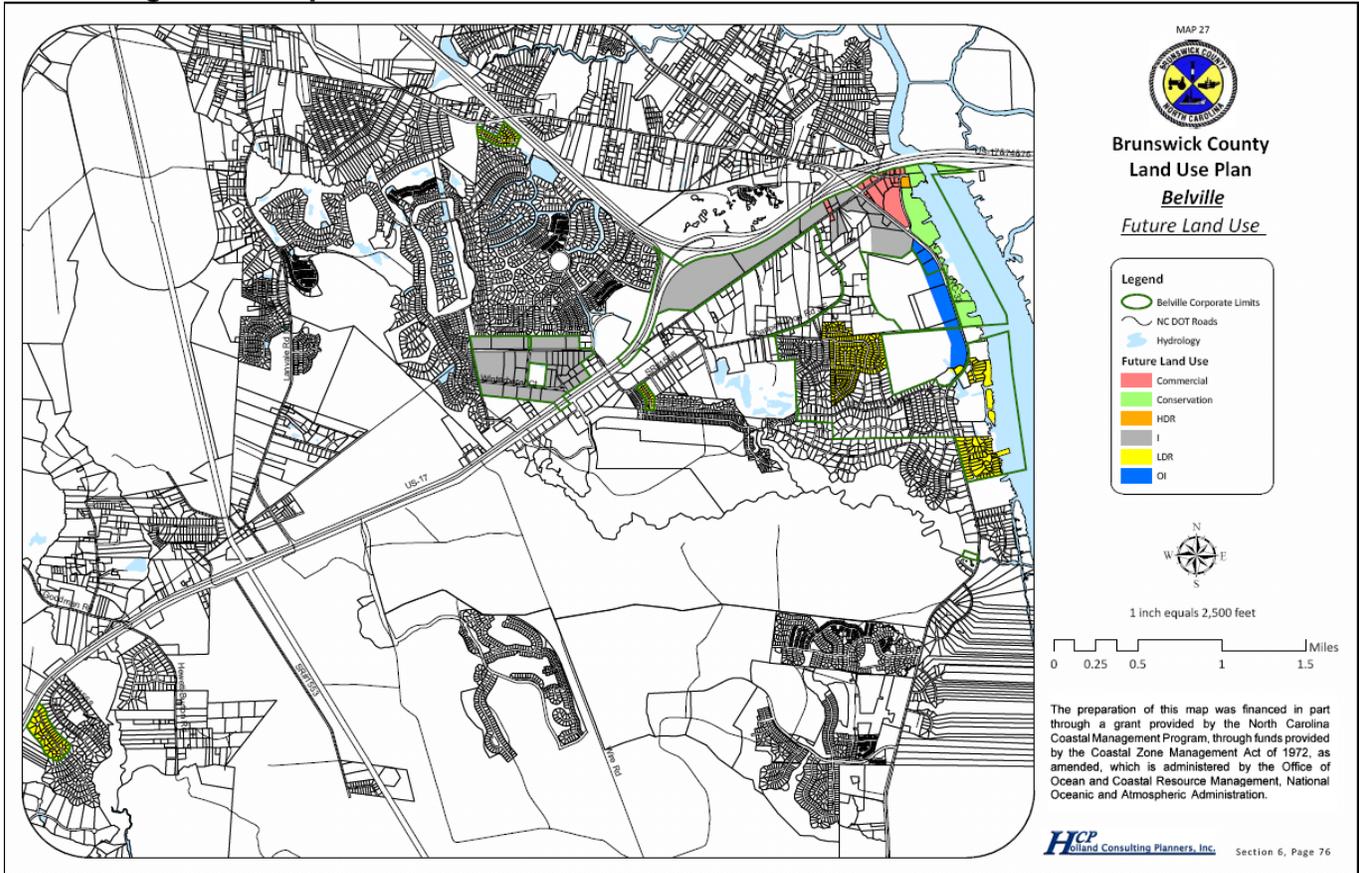
Maximum height: No height requirement.

Minimum lot size: No lot size requirement.

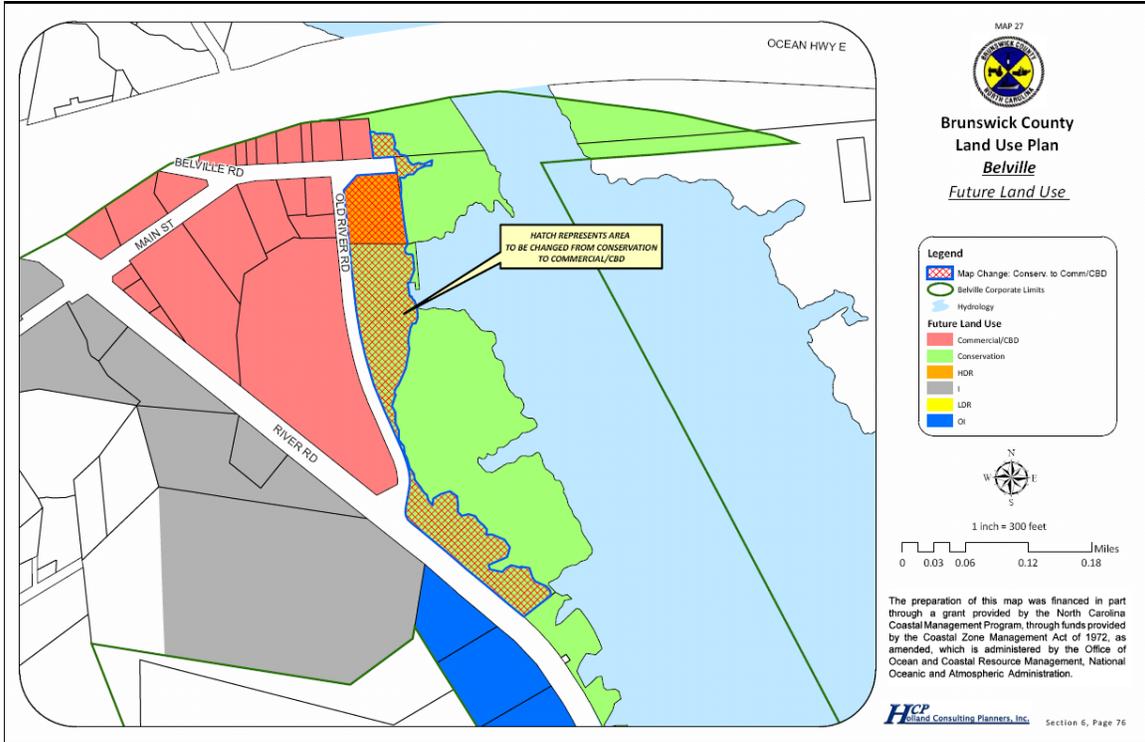
**EXHIBIT B**

AMENDMENTS TO THE FUTURE LAND USE MAP ARE AS SHOWN:

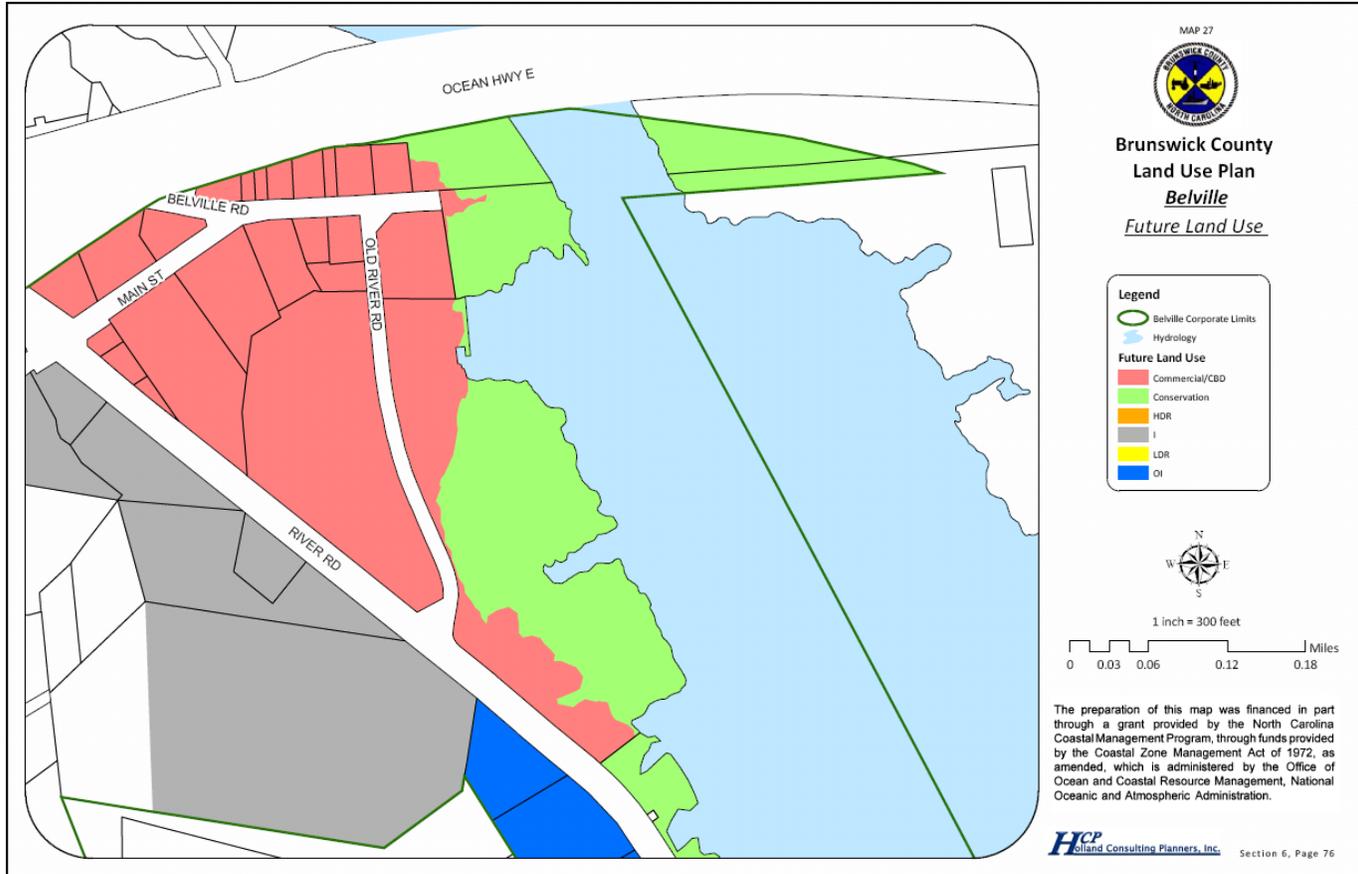
**1. Existing FLUP Map**



## 2. Supplemental Map Showing Affected Area



### 3. Supplemental Map (Close-up View)





North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue  
Governor

James H. Gregson  
Director

Dee Freeman  
Secretary

## MEMORANDUM

**To:** Coastal Resources Commission

**From:** Charlan Owens, AICP, DCM Elizabeth City District Planner

**Date:** June 10, 2009

**Subject:** Land Use Plan Implementation Status Reports [**Information Only-No Action Required**]

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### Overview

Per 15A NCAC 07L.0511 (a), a Land Use Plan (LUP) implementation status report is to be submitted by a local government every two (2) years following the date of LUP certification. Implementation status reports for the following LUPs are attached:

*Camden County 2004 LUP* – certified on June 17, 2005  
*Currituck County 2006 LUP* – certified on May 18, 2007  
*Town of Duck 2004 LUP* – certified on April 8, 2005  
*Town of Manteo 2007 LUP* – certified on July 27, 2007  
*Town of Kitty Hawk 2004 LUP* – certified on June 17, 2005

The implementation status report is based on the LUP Action Plan and identifies activities that the local government has undertaken in support of the LUP's policies and implementation actions.

### The following must be included in the report:

- All local, state, federal, and joint actions that have been undertaken successfully to implement its certified CAMA land use plan
- Any actions that have been delayed and the reasons for the delays
- Any unforeseen land use issues that have arisen since certification of the CAMA land use plan
- Consistency of existing land use and development ordinances with current CAMA land use plan policies
- Current policies that create desired land use patterns and protection of natural systems.

### Discussion

The implementation status report does not require approval by the CRC, but must be made available to the public and forwarded to DCM. Staff has reviewed the reports and finds that the local governments have met the minimum requirements.

BOARD OF COMMISSIONERS

PHILIP S. FAISON  
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MELVIN J. JERALDS  
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MAY 28 2009  
COASTAL MANAGEMENT  
Elizabeth City

RANDELL K. WOODRUFF  
County Manager

AVA GURGANUS  
Clerk to the Board

JOHN S. MORRISON  
County Attorney

May 27, 2009

Charlan Owens  
DCM District Planner  
1367 U. S. 17 South  
Elizabeth City, NC 27909

RE: Camden County CAMA  
Advanced Core Land Use Plan Implementation Status Report

Dear Charlan:

Camden County is pleased to submit the following status report on the implementation of the County's 2004 Advanced Core Land Use Plan, covering the period from the last update in June 2007. The status report below lists the actions taken as they relate to the five (5) types of action as requested in you memo of April 13, 2009.

***All local, state, federal, and joint actions that have been undertaken successfully to implement its certified CAMA land use plan;***

During this period the county has focused on constructing school and sewer infrastructure in order to have adequate capacity to service growth, and planning and obtaining funding for to support commercial development. Additionally the county has been reviewing and updating the Unified Development Ordinance to manage growth and protect environmental assets.

**Water Access**

1. Supported the funding and construction of a State Park Interpretive Center at Dismal Swamp Welcome Center.
2. Submitted Access grant application for development of the Treasure Point 4 H club property located along the Pasquotank River. The project includes a new pavilion, bathrooms, bulkhead, riprap, and canoe launch.

## **Land Use Compatibility**

1. Approved rezoning of 600 acre tract along US 17 for a mixed use Planned Unit Development with golf course, pedestrian and bike trails, 160,000 sq ft of commercial space and approximately 1700 mixed density housing units. The project emphasizes clustered development and smart growth land use principals through integrated development.
2. Approved Sketch Plan for a 165 lot residential subdivision.
3. Approve Sketch Plan for a 23 lot residential subdivision on 120 acres. The project takes advantage of an existing pond, establishes a trail system within the project, and protects approximately 70 acres of wetlands
4. Initiated requirement that all newly bulkheads must be designed and the construction verified by professional engineer.
5. Increased code enforcement efforts to eliminate dilapidated abandoned structures and automobiles
6. Support annual request to provide funds to maintain Dismal Swamp Canal.

## **Capital Improvement Funding**

1. Implemented Adequate Public Facilities Ordinance and related capital improvement program that includes voluntary mitigation of impacts.
2. Adopted capital improvement plan in June 2008, & 2009 along with county budget.
3. Submitted application for \$2.3 million funds through the American Recovery Act to improve efficiency and expand capacity of the county water treatment capacity.
4. Obtained Golden Leaf Initiative Grant to extend sewer and water service along US 17 corridor for commercial growth.
5. Applied for Rural Center grants to extend sewer along US 17 corridor for commercial growth, Clean Water Management Trust Fund grant to provide sewer service in the South Mills village, and to improve performance of sewer treatment facilities.

## **Infrastructure Carrying Capacity**

1. Completed construction of a new sewer system to serve school facilities and small service area in the Camden courthouse township with failing septic systems.
2. Purchased well sites to double capacity of South Camden Water District
3. Completed construction of new intermediate school adjacent existing elementary school.
4. DOT has let contract for the first phase of the widening of US 158 through county.
5. Continued meeting with joint committee of the South Mills Water District and the Camden County Water district, to prepare a bulk water sales agreement that will help fund expansion of treatment capacity to serve anticipated development in the northern part of the County.
6. Purchased site for future high school.
7. Initiated countywide Water & Sewer Master Plan through Rural Center Planning Grant
8. Approved commercial site plan for Albemarle Electric Cooperative to locate a substation in the South Mills Township for the purpose of meeting increasing demand from residential and commercial customers in the northern portion of the County

## **Affordable Housing**

1. CDBG Scattered Site Housing Program 2008 currently replacing 3 houses for low and moderate income residents.
2. NCHFA – SFR 2007 underway to rehabilitate 4 units
3. Assisted 6 low and moderate income households in connecting to public water supply, resulting in dependable potable water.

## **Storm Water & Water Quality**

1. Strengthened local storm water regulations to require that
  - o “Each residential/non residential subdivision or commercial site plan shall provide adequate storm drainage certified by a North Carolina registered engineer for all areas in the subdivision. A combination of storage and controlled release of stormwater run-off is required. The release rate of stormwater from all developments shall not exceed the ten-year stormwater run-off from the area in its natural state (post-development vs. pre-development).”
  - o Employed a stormwater consultant to conduct local review of all storm water plans assure compliance with local regulation.
2. Continued to research storm water and management needs and legal mechanisms toward the objective of establishing storm water fees to fund needed maintenance of lead ditches and tributaries.
3. Improved coordination with Division of Water Quality, Division of Land Resources, and Department of Transportation to assure that exiting subdivision stormwater systems are maintained according to their state approved plans.

## **Economic Development**

1. Participate regularly with Northeast Economic Development Commission, & the Albemarle Economic Development Commission, including a \$5000 annual contribution.
2. UNC completed a feasibility study for an eco friendly green business/industrial park along US17.
3. Department of Commerce designated County as a 21st Century Community for the purpose of assisting the county prepare an economic development strategy
4. Approved development of 6 unit commercial building within Camden Business Park along US 158.
5. Approved development of 15 acre multi-phase Camden Town Center mixed office/retail project in the center of the Courthouse Township.
6. Currently negotiating with Army Corp of Engineers to lease a deep water access site for the purpose of recruiting a major business with a critical need to transport bulk goods through the Albemarle Sound.
7. Approved 4 lot minor commercial subdivision along US 158 that will be anchored by a State Employees Credit Union and provide access to development sites both along road frontage and to the rear of the property, thus reducing strip commercial sprawl.

**Parks & Recreation**

1. Established a County Parks & Recreation Department, established several new youth athletic programs, and initiated various wellness/active living programs through the Blue Cross Blue Shield Foundation Fit Together grant program.
2. Completed expansion of Community Park to include a running track, lighted football/soccer field, picnic shelter, playground, walking trail, and large open space.

***Any actions that have been delayed and reasons for the delay;***

1. The Planning Board has considered and recommended establishing 2 highway overlay districts with specific design standards along the US 17 and US 158 commercial corridors. To date the Board of Commissioners has not acted to approve the concept and standards.

***Any unforeseen land use issues that have arisen since certification of the CAMA land use plan;***

1. Mounted legal and community campaign to oppose establishment of a military Outlying Landing Field on a site that is one of the most productive farming areas in northeast North Carolina.
2. One unforeseen issue that may have impact in many coastal counties is the emergence of requests regarding the installation of windmills for energy production. These requests range from single small windmills on an individual farm operation, to a major energy company interested in developing a wind farm. While the issue has been addressed to some degree in the mountainous areas of the state, there are few if any examples of local regulations of windmills in the east. .

***Consistency of existing land use and development ordinances with current CAMA land use plan policies; and***

While most of the County’s actions have been consistent with the Land Use Plan, some of the more difficult issues related to development patterns have met with political resistance. The resistance is primarily related to the “growing pains” associated with a very small, very rural, very poor county facing its first wave of rapid residential development, and a long tradition of non-interference of government into real and personal property rights.

Total Number of rezoning applications	14
• Approved	9
• Denied	3
• Consistent with LUP	6
 Total Number of SUP Applications	 11
• Approved	11
• Denied	0
 Subdivision SUPs	 2
• Number of lots	17

*Current policies that create desired land use patterns and protection of natural systems.*

1. Created new GIS map layer to show locations of farming Best Management Practices.
2. Created new GIS map layer to show loss of tree cover between 2002, 2004, and 2008
3. Developed and approved regulations and standards for installation of wind turbines for generation of electricity.
4. Completed complete rewrite of the regulations for Planned Unit Development based on Smart Growth principles.
5. Modified Permissible Use Table in zoning ordinance to allow greater number of business types to be permitted through administrative review rather than Special Use Permits.
6. The land use policies that will most affect land development in Camden at this time are related to development standards more so than development patterns. The standards requiring increased buffers around developments, and those related to storm water control will serve to protect both the natural systems and the built environment. The use of a “smart growth” scorecard to evaluate development proposals will also protect natural systems, and may create desired land use patterns.

Please let me know if you have any questions, need any additional information, or if you have comments on the enclosed.

Sincerely



Dan B. Porter

Planning Director  
Camden County

Cc: Randell Woodruff  
County Commissioners (via email)

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text -- Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
<b>PUBLIC ACCESS</b>		
<i>Policies</i>		
P.1 The county supports the Great Dismal Swamp Visitor/Welcome Center and tourism and recreational related developments that protect and preserve the natural environment while promoting the county as a tourist destination. It supports the private and public development of waterfront access through private funds and grant monies. It also supports the work of the Northeastern North Carolina Economic Development Commission.	<i>Continuing Activity.</i>	<ul style="list-style-type: none"> <li>Successfully applied for Access funds &amp; constructed pier, parking, and canoe launch known as Shiloh Landing at end of Mill Dam road to access Pasquotank River</li> <li>Supported the funding and construction of a State Park Interpretive Center at Dismal Swamp Welcome Center</li> </ul>
P.2 Camden County supports providing shoreline access for persons with disabilities.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Shiloh Landing Access project and Courthouse restoration projects both have accommodations for handicapped parking</li> <li>Submitted Access grant application for development of the Treasure Point 4 H club property located along the Pasquotank River. The project includes a new pavilion, bathrooms, bulkhead, riprap, and canoe launch</li> </ul>
P.3 Camden County supports the frequency of shoreline access as defined by 15A NCAC 7M, Section .0300, Shorefront Access Policies. However, emphasis will be placed on providing access to the Great Dismal Swamp and the Shiloh Township area.	<i>Continuing.</i>	
P.4 Camden County supports state/federal funding of piers for crabbing and fishing.	<i>Continuing</i>	
P.5 Camden County supports the development of estuarine access areas to ensure adequate shoreline access within all areas of the county. Areas that have traditionally been used by the public will be given special attention.	<i>Continuing</i>	
<b>Implementation Actions</b>		
I.1 Camden County will revise its subdivision ordinance to include the provisions of NCGS 153A-331 which allow for requiring the developer of a subdivision to be charged recreation fees as follows: "The subdivision ordinance may provide that a developer may provide funds to the county whereby the county may acquire recreational land or areas to serve the development or subdivision, including the purchase of land which may be used to serve more than one subdivision or development within the immediate area." The funds may be utilized to provide increased shoreline access.	<i>Fiscal Year 2005-2006.</i>	<ul style="list-style-type: none"> <li><b>Completed</b> - Amended UDO Sections 151.195, and 151.232 (l) (3) to require dedication of recreation space, and provides for fees in lieu of dedication</li> </ul>
I.2 Camden County will prepare a shoreline access plan and request Division of Coastal Management funding for the preparation of the plan.	<i>Fiscal Year 2005-2006</i>	No Action
I.3 Camden County will pursue funding under the North Carolina CAMA Shoreline Access funding program (15A NCAC 7M, Section .0300, Shorefront Access Policies).	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Successfully applied for Access funds &amp; constructed pier, parking, and canoe launch known as Shiloh Landing at end of Mill Dam road to access Pasquotank River.</li> <li><i>Unsuccessfully applied Access funds to construct parking &amp; pier to access Crooked Creek entry to North River</i></li> </ul>
I.4 Camden County will pursue private sources of funding for the development of shoreline access facilities, including donation of land.	<i>Continuing</i>	
I.5 In areas adjacent to the Great Dismal Swamp, Camden County will pursue funding from the Department of Archives and Natural History and the federal government for the provision of shoreline access sites.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>Supported the funding and construction of a State Park Interpretive Center at Dismal Swamp Welcome Center.</li> </ul>
I.6 The county will cooperate with state and federal agencies to secure estuarine access areas to ensure adequate shoreline access within all areas of the county.	<i>Continuing.</i>	
<b>LAND USE COMPATIBILITY</b>		
<i>Policies - Residential:</i>		
P.6 Camden County supports revisions to the North Carolina State Statutes which would allow the local imposition of impact fees or special legislation to allow them in Camden County.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Submitted Amicus Brief in support of Durham's school impact fee case.</li> <li>Lobbied state representatives to pass legislation authorizing</li> </ul>

# CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS								
P.7 The county supports repair and reconstruction of privately-owned dwelling units through private funds and/or grants. It supports the enforcement of existing regulations of the District Health Department regarding sanitary conditions.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Participate in CDBG Scattered Site Rehab &amp; NCHFA rehab programs</li> </ul>								
P.8 Camden County supports discouraging the re-zoning of existing residentially-developed or zoned areas to a non-residential classification as reasonably possible.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>There have been no rezoning from residential to commercial use.</li> <li>This policy is somewhat contrary to the County's efforts to increase commercial development</li> </ul>								
P.9 Camden County supports greater residential densities in areas that are accessible to water and/or sewer service(s). Agricultural and low density residential land uses should be located in areas that do not have county water or sewer service. Office/Institutional/Multi-family land uses should be developed along transportation thoroughfares to provide transition between commercial nodes and to preserve vehicle carrying capacity.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Planning board recommended new mixed use moderate density zoning classification focused on township areas. Rejected by Board of Commissioners</li> <li>Approved rezoning of 600 acre tract along US 17 for a mixed use Planned Unit Development with golf course, pedestrian and bike trails, 160,000 sq ft of commercial space and approximately 1700 mixed density housing units. The project emphasizes clustered development and smart growth land use principals through integrated development</li> </ul>								
P.10 Camden County supports quality development reflecting the spectrum of housing needs, from low-end (affordable) residences to high-end (luxury) residences.	<i>Continuing.</i>									
P.11 Camden County supports regulating growth to coincide with the provision of public facilities and services.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>Passed Adequate Public Facilities Ordinance and related capital improvement program,</li> <li>Implementing APFO</li> <li>Working on joint water agreement with South Mills Water Assoc</li> </ul>								
P.12 The county should discourage development in areas designated for low-density residential/agricultural use with the exception of low-density residential/agriculture land uses as much as reasonably possible.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>Approved rezoning of 190 acres industrial zoned property to residential (1 unit per acre)</li> <li>Approved use of scorecard to evaluate development proposals based on 10 "smart growth" principals</li> </ul>								
P.13 Camden County supports wooded buffers along thoroughfares.	<i>Continuing.</i>	No Action								
P.14 Camden County supports utilizing Office/Institutional/Multi-family development as a buffer between light industrial and commercial development and adjacent residential land uses.	<i>Continuing</i>									
P.15 The county supports providing adequate conservation/open space buffers between areas designated for residential development as indicated on the future land use map and any adjacent non-residential land use, including agricultural areas.	<i>Fiscal Year 2005-2006.</i>	<ul style="list-style-type: none"> <li>Completed - Approved UDO 151.232 (N) to require 50 ft buffers between major developments</li> </ul>								
P.16 The county supports the City of Chesapeake's efforts to develop the 4,000 acre tract of land located along US Route 17, adjacent to the northern Camden County border	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>County Manager in contact with developer of this property</li> </ul>								
<b>Implementation Actions - Residential</b>										
I.7 All re-zoning and subdivision approvals will consider the existing and future land use suitability maps and analyses which are included in this plan.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>Completed - Amended UDO 151.585 (C) (3), to require rezoning &amp; subdivision approvals to have LUP consistency statement.</li> </ul> <p>Total Number of rezoning applications</p> <table style="margin-left: 40px;"> <tr> <td style="padding-left: 20px;">• Approved</td> <td style="text-align: right;">14</td> </tr> <tr> <td style="padding-left: 20px;">• Denied</td> <td style="text-align: right;">9</td> </tr> <tr> <td style="padding-left: 20px;">• Consistent with LUP</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="padding-left: 20px;">• Consistent with LUP</td> <td style="text-align: right;">6</td> </tr> </table>	• Approved	14	• Denied	9	• Consistent with LUP	3	• Consistent with LUP	6
• Approved	14									
• Denied	9									
• Consistent with LUP	3									
• Consistent with LUP	6									
I.8 Camden County will permit residential development to occur in response to market needs provided that the following criteria are met:		<ul style="list-style-type: none"> <li>Approved APFO March 2007</li> <li>Adopted CIP June 2006 with county Budget</li> </ul>								
(1) Due respect is offered to all aspects of the environment.										

# CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text - Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
(2) If deficient community facilities and services are identified, the county should attempt to improve such to the point of adequately meeting demands.		<ul style="list-style-type: none"> <li>Approved APFO March 2007</li> <li>Adopted CIP June 2006 with county Budget</li> <li>Camden Plantation development donated 3 acres off-site and \$15,000 for construction of a new fire station</li> <li>Amended UDO 151.585 (C) (3), to require rezoning &amp; subdivision approvals to have LUP consistency statement</li> <li>Rezoned small group of properties to allow affordable housing (manufactured) in southern portion of county</li> <li>Rezoned 190 acres adjacent to proposed landfill, from I-1 to R-3 in northern area of county</li> <li>Approved Sketch Plan for a 165 lot residential subdivision.</li> <li>Approve Sketch Plan for a 23 lot residential subdivision on 120 acres. The project takes advantage of an existing pond, establishes a trail system within the project, and protects approximately 70 acres of wetlands</li> <li>Purchased site for future high school</li> <li><b>Completed</b> - UDO section 151.067 addresses FAR for non-residential structures</li> <li><b>Completed</b> - UDO Section 151.063; UDO Section 151.140; 151.232 (A) (4)</li> </ul>
(3) Additional residential development should concurrently involve planning for improvements to community facilities and services if excess capacity does not exist within those facilities and services.		
(4) Residential development is consistent with other Camden County policies and the land use map as contained in this plan update.		
I.9 Camden County will review its zoning and subdivision ordinances and consider establishing floor area ratio requirements to ensure that development is consistent with the density requirements of this plan.	<i>Fiscal Year 2005-2006.</i>	<ul style="list-style-type: none"> <li><b>Completed</b> - UDO section 151.067 addresses FAR for non-residential structures</li> </ul>
I.10 The county will consider revisions to the zoning ordinance for non-residential sites to ensure adequate buffering and landscaping to separate residential and incompatible non-residential uses, and adequate regulation of off-site lighting, hours of operation, and vehicular driveway locations.	<i>Fiscal Year 2005-2006.</i>	<ul style="list-style-type: none"> <li><b>Completed</b> - UDO Section 151.063; UDO Section 151.140; 151.232 (A) (4)</li> </ul>
I.11 The Camden County zoning ordinance will be revised to include an office/institutional zoning district.	<i>Fiscal Year 2005-2006.</i>	No Action
I.12 The county will require through zoning and subdivision regulation an interior road system that provides vehicular access to lots abutting major thoroughfares. Consider reviewing existing design standards to ensure effective limitation of driveway entrances.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li><b>Completed</b> - UDO 151.083 (B), (C), 151.232 (A) (3&amp;4)</li> </ul>
I.13 Camden County, through revision of its zoning ordinance, will limit "strip" residential development along highways and certain roads carrying heavy traffic and encourage service roads or an internal street pattern to eliminate direct driveway connections to highways and roads.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Required Tank Commercial Park to install acceleration/deceleration lanes</li> </ul>
I.14 The county will regulate through its zoning and subdivision ordinance the development of conflicting land uses along the US 17, US 158, and NC 343 highway corridors.	<i>Continuing.</i>	
I.15 The county will consider the merits of establishing a minimum housing code to ensure that all occupied structures are fit for human habitation.	<i>Fiscal Year 2006-2007</i>	<ul style="list-style-type: none"> <li><b>Completed</b> - UDO Section 150.01 - 151.2 establish minimum housing codes for county</li> <li>Increased code enforcement efforts to eliminate dilapidated abandoned structures and automobiles</li> </ul>
I.16 The county will pursue Community Development, North Carolina Housing Finance Agency, and United States Department of Agriculture funds from state and federal sources for rehabilitation or redevelopment of substandard housing.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>CDBG Scattered Site Housing Program 2002 replaced 4 units</li> <li>CDBG Scattered Site Housing Program 2005 rehabilitated 3 houses and replaced 2 houses</li> <li>2008 Scattered Site - 3 Replacements</li> <li>NCHFA - SFR 2007 proposed to rehabilitate 5 units.</li> </ul>
<b>Policies - Commercial/Industrial:</b>		
P.17 Camden County supports commercial development at the intersections of major roads (i.e., in a nodal fashion) consistent with the county's future land use map (see Map 29).	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Rezoning approved from industrial use to highway commercial, within a quarter mile of intersection of US 158 &amp; NC 34.</li> <li>Approved Camden Town Center mixed use commercial project @ intersection of NC 343 &amp; US 158.</li> </ul>
P.18 The county supports properly permitted mining activities within its borders.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Approved special use permit to locate sand mining operation in</li> </ul>

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text - Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
<p>P.19 Camden County deems industrial development within fragile areas and areas with low land suitability acceptable only if the following conditions are met:</p> <p>(1) CAMA minor or major permits can be obtained.</p> <p>(2) Applicable zoning ordinance provisions are met in zoned areas.</p> <p>(3) Within coastal wetlands, estuarine waters, and public trust waters, no industrial use will be permitted unless such use is water related.</p> <p>This policy applies to both new industrial development and to expansion of existing industrial facilities.</p> <p>P.20 Camden County opposes the establishment of private solid waste/landfill sites in the county which are not licensed by the county.</p>	<p><i>Continuing.</i></p>	<p>northern part of county, subject to state mining regulations</p> <ul style="list-style-type: none"> <li>• UNC Green Park Feasibility Study</li> <li>• Commission decision to use excess spray field property as Phase 1 of green business park</li> </ul>
<p>P.21 Camden County supports the recruitment and siting of environmentally compatible light industrial and commercial establishments within its borders in areas that are already similarly developed or in public or private industrial parks to minimize the sacrifice of prime agricultural lands for such development. The county also supports the Northeastern North Carolina Economic Development Commission in its efforts to promote economic development in the county. The county does not encourage the conversion of prime farmland to residential use.</p>	<p><i>Continuing</i></p>	<ul style="list-style-type: none"> <li>• Granted franchise to subsidiary of Waste Industries for regional solid waste facility</li> <li>• Project eliminated through State Legislation</li> </ul>
<p>P.22 Camden County supports industrial development which will be located adjacent to and/or with direct access to major thoroughfares.</p>	<p><i>Continuing</i></p>	<ul style="list-style-type: none"> <li>• Approved rezoning and subdivision special use permit for construction of a 50 acre private commercial park along US 158.</li> <li>• Participate regularly with Northeast Economic Development Commission, &amp; the Albemarle Economic Development Commission annual contribution.</li> </ul>
<p>P.23 Camden County supports the development of industrial sites that are accessible to county water and sewer services.</p>	<p><i>Continuing.</i></p>	<ul style="list-style-type: none"> <li>• Zoning map includes a 90 acres industrial property with direct access to US 17, at the county boundary with Virginia.</li> <li>• Camden has had no locations of new industries</li> </ul>
<p>P.24 Industries which are noxious by reason of the emission of smoke, dust, glare, noise, odor, and vibrations, and those which deal primarily in hazardous products such as explosives, should not be located in Camden County.</p>	<p><i>Continuing</i></p>	
<p>P.25 Industry should be located in conformance with the county's land use plan. This includes placing emphasis on light industrial development.</p>	<p><i>Continuing</i></p>	
<p><b>Implementation - Commercial/Industrial</b></p> <p>I.17 The county will enforce its zoning regulations and rely on state permitting agencies to regulate mining activities. The county will take a more active stance regarding the State permitting authorities and their oversight of mining activities by communicating grievances to the appropriate State agencies and officials.</p>	<p><i>Continuing.</i></p>	<ul style="list-style-type: none"> <li>• Approved special use permit to locate sand mining operation in northern part of county, subject to state mining regulations</li> <li>• Processing SUP for expansion of existing operation</li> </ul>
<p>I.18 Camden County will rely on its zoning ordinance in zoned areas and the CAMA permitting program with regard to new industrial development and expansion of existing industrial facilities.</p>	<p><i>Continuing</i></p>	
<p>I.19 Camden County will review its zoning and subdivision ordinances to ensure compliance with policies P.17 and P.20 through P.25.</p>	<p><i>Fiscal Year 2005-2006</i></p>	
<p><b>Policies - Conservation:</b></p> <p>P.26 Except as otherwise permitted in this plan, residential, commercial, and industrial development should not be supported in natural heritage areas or coastal wetlands. Residential, commercial, and industrial development which meets 15A NCAC 7H use standards will be allowed in estuarine shoreline, estuarine water, and public trust areas. In all other areas, development will be allowed that is consistent with applicable local, state, and federal regulations.</p>		<ul style="list-style-type: none"> <li>• Amended UDO to create "conservation" zone in critical areas, but no map delineation has been approved.</li> </ul>
<p><b>Continuing Activity:</b></p> <p>P.27 Camden County will support larger lots in conservation classified areas through enforcement of the county subdivision and zoning ordinances in zoned areas.</p>	<p><i>Continuing.</i></p>	
<p>P.28 Camden County supports the maintenance of its rural atmosphere.</p>	<p><i>Continuing.</i></p>	
<p><b>Implementation Actions - Conservation</b></p> <p>I.20 Protect Camden County's fragile areas from inappropriate, unplanned, or poorly planned development through the following:</p>	<p><i>Continuing.</i></p>	<ul style="list-style-type: none"> <li>• Completed \$800,000 restoration of historic county courthouse</li> <li>• Submitted community park expansion project to review by NC</li> </ul>

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
<p>--By implementing the Camden County Zoning Ordinance, limit land uses in the vicinity of historic sites and natural heritage areas to compatible land uses.</p> <p>--Camden County will coordinate all housing code enforcement/ redevelopment projects/public works projects with the NC Division of Archives and History to ensure the preservation and identification of significant historic structures and archaeological sites.</p> <p>1.21 Camden County will review its zoning and subdivision ordinances to ensure compliance with policies P.27 and P.28.</p>	<p><b>Fiscal Year 2005-2006</b></p>	<p>Division of Archives and History, and conducted archeological assessment of property prior to initiating project.</p> <ul style="list-style-type: none"> <li>• <i>Planning Board recommended and Board of Commissioners rejected increasing minimum lot size in General Use zones from 5 acres to 10 acres</i></li> </ul>
<p><b>Policies - Stormwater Control:</b></p> <p>P.29 Camden County supports reducing soil erosion, runoff, and sedimentation to minimize the adverse effects on surface and subsurface water quality.</p> <p>P.30 The county supports the enforcement of all controls and regulations, specifically design standards, tie-down requirements, construction and installation standards, elevation requirements, flood-proofing, CAMA regulations, and FEMA regulations, deemed necessary by the Board of Commissioners to mitigate the risks of lives and property caused by severe storms and hurricanes.</p>	<p><i>Continuing.</i></p> <p><i>Continuing.</i></p>	<ul style="list-style-type: none"> <li>• Initiated requirement that all new bulkheads must be designed and the construction verified by professional engineer.</li> <li>• Improved coordination with Division of Water Quality, Division of Land Resources, and Department of Transportation to assure that existing subdivision stormwater systems are maintained according to their state approved plans</li> </ul>
<p><b>Implementing Actions – Storm Water Control</b></p> <p>1.22 Camden County will consider adopting and enforcing a soil erosion and sediment control ordinance.</p>	<p><b>Fiscal Year 2005-2006.</b></p>	<ul style="list-style-type: none"> <li>• <b>Completed</b> - UDO 151.403 requires approval from State Division of Land Resources for as part of the approval process for major subdivisions.</li> </ul>
<p>1.23 Camden County will support control of agricultural runoff through implementation of Natural Resources Conservation Service "Agricultural Best Management Practices" program (see Appendix IV).</p>	<p><i>Continuing</i></p>	<ul style="list-style-type: none"> <li>• Created new GIS map layer to show locations of farming Best Management Practices</li> </ul>
<p>1.24 Camden County will support control of forestry runoff through implementation of "Forestry Best Management Practices" as provided by the North Carolina Division of Forest Resources (see Appendix III).</p>	<p><i>Continuing.</i></p>	<ul style="list-style-type: none"> <li>• Created new GIS map layer to show loss of tree cover between 2002, 2004, and 2008</li> </ul>
<p>1.25 Camden County will consider adopting a landscaping ordinance to require that a buffer of trees/vegetation be left between rights-of-way and any clear cut areas be consistent with applicable state and federal regulations.</p>	<p><b>Fiscal Year 2005-2006</b></p>	<ul style="list-style-type: none"> <li>• <b>Completed</b> - Adopted UDO 151.232 (N) to require 50 ft buffer around all major subdivisions</li> </ul>
<p>1.26 Camden County will consider adopting and enforcing a stormwater control ordinance which should include regulations for water detention and/or retention facilities in new developments and provide regulations to control the amount of impervious surface in a development.</p>	<p><b>Fiscal Year 2005-2006</b></p>	<ul style="list-style-type: none"> <li>• <b>Completed</b> - Adopted UDO 151.400 to require development to retain 10 year storm within project boundaries</li> <li>• Completed storm water study in preparation of setting up special storm water management districts.</li> <li>• Commission directed staff to research and prepare to set up special storm water management districts.</li> <li>• Distributed RFQ for consultant to assist in analyzing storm water plans for major development proposals.</li> </ul>
<p><b>Policies - Community/Highway Corridor Study Areas:</b></p> <p>P.31 Within the Community/Highway Corridor Study Areas, Camden County supports the concept of "smart growth" as described in Section VI (D) page 170 of this plan.</p>	<p><i>Continuing.</i></p>	<ul style="list-style-type: none"> <li>• Smart Growth Leadership Institute conducted site visit and prepared general design parameters for use in developing corridor design overlay districts along major corridors</li> </ul>
<p><b>Implementing Actions – Community/Highway Study Areas</b></p> <p>1.27 Camden County will review and update its zoning ordinance to incorporate the "smart growth" concept.</p>	<p><b>Fiscal Year 2006-2007.</b></p>	<ul style="list-style-type: none"> <li>• Smart Growth Leadership Institute conducted site visit and prepared general design parameters for use in developing corridor design overlay districts along major corridors</li> <li>• Adopted ordinance that upon expiration of subdivision moratoria evaluate major development proposals based on a "smart</li> </ul>



## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS programs
<p><b>Implementing Actions</b></p> <p>1.28 Implement the Camden County Growth Management Plan (2000) for water and sewer, and plans for the provision of water and sewer service to the South Mills, Camden, and Shioh communities (see Maps 29 through 37).</p>	<i>Continuing</i>	<ul style="list-style-type: none"> <li>• Initiated construction of a new sewer system to serve school facilities and small service area in the Camden courthouse township with failing septic systems. (projected completion in December 2007)</li> <li>• Purchased 5 well sites to double capacity of South Camden Water District</li> <li>• Working on joint water agreement with South Mills Water Assoc</li> <li>• Using \$2 Million Golden Leaf grant to extend sewer &amp; water lines up US 17 to Green business Park site</li> </ul>
<p>1.29 Camden County will update the Growth Management Plan. This plan addresses water and sewer needs Completed - and serves as a facility strategy plan and not a formal policy document. The county will utilize the master water and sewer plan (Growth Management Plan) as a guide to establishing service and funding priorities for developing industrial areas.</p>	<i>Fiscal Year 2006-2007.</i>	<ul style="list-style-type: none"> <li>• Initiated a joint committee of the South Mills Water District and the Camden County Water district, to coordinate adequate capacity and service delivery</li> <li>• Obtained Rural Center grant to prepare countywide water &amp; sewer master plan</li> </ul>
<p>1.30 Camden County will amend the future land use map, when needed, to reflect the county's water and sewer extension projects as they are planned.</p>	<i>Continuing</i>	
<p>1.31 Camden County will consult the future land use map when considering new public facilities and private development.</p>	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>• <b>Completed</b> construction of new intermediate school adjacent existing elementary school.</li> </ul>
<p>1.32 Camden County will consider revising water and sewer extension policies to ensure that public/private cooperation in the provision of infrastructure to serve new development is encouraged.</p>	<i>Fiscal Year 2006-2007.</i>	<ul style="list-style-type: none"> <li>• <b>Completed</b> - UDO 151.176 &amp; .176 permits the provision of private sewer treatment facilities if accompanied by a formal service assessment district</li> </ul>
<p>1.33 The county will rely on the Division of Environmental Management to oversee the operation and management of all package treatment plants in the county.</p>	<i>Continuing.</i>	
<p>1.34 The county will consider adopting an operating and capital financing plan for the development of water and sewer systems outside of the proposed water and sewer service areas.</p>	<i>Fiscal Year 2007-2008</i>	<ul style="list-style-type: none"> <li>• Adopt CIP Annually</li> </ul>
<p>1.35 Camden County will revise the subdivision ordinance to incorporate provisions to allow for the dedication of public park property and/or open space. This may include a provision for payment in lieu of dedication if approved by the county.</p>	<i>Fiscal Year 2005-2006</i>	<ul style="list-style-type: none"> <li>• <b>Completed</b> - Amended Sections 151.195, and 151.232 (l) (3) of the UDO to require dedication of recreation space, and provides for fees in lieu of dedication</li> </ul>
<p>1.36 Camden County will consider establishing a land banking fund into which the county may annually contribute funds.</p>	<i>Fiscal Year 2007-2008.</i>	No Action
<p>1.37 Provide sufficient emergency management personnel and facilities to adequately serve the projected population growth.</p>	<i>Continuing.</i>	
<p>1.38 The county will coordinate the development of recreational facilities with the school system.</p>	<i>Continuing</i>	<ul style="list-style-type: none"> <li>• Initiated expansion of community park to include football, soccer, track, and other facilities that will be available for use by the school system. Projected completion date is December 2007</li> <li>• Initiated its first Parks &amp; Recreation department to coordinate both community and school facilities and programs</li> <li>• Negotiated &amp; executed a memorandum of Understanding for use of park and school facilities</li> </ul>
<b>TRANSPORTATION</b>		
<b>Policies</b>		
<p>P.43 Camden County supports interconnected street systems for residential and non-residential development.</p>	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>• <b>Completed</b> - UDO Section 151.086</li> </ul>

# CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS		SCHEDULED	ACTIONS																							
		<i>Fiscal Year</i>																								
P.44	The county supports limited access from development along all roads and highways to provide safe ingress and egress.	<i>2005-2006.</i>	<ul style="list-style-type: none"> <li>Completed - UDO 151.083</li> </ul>																							
P.45	Camden County supports subdivision development which utilizes the North Carolina Department of Transportation Traditional Neighborhood Development Street Design Guidelines. A Traditional Neighborhood Development (TND) is a human scale, walkable community with moderate to high residential densities and a mixed use core	<i>2005-2006.</i>	<ul style="list-style-type: none"> <li>Completed - Substantially amended UDO 151.298 related to Planned Unit Developments</li> </ul>																							
P.46	Camden County specifically supports the following transportation improvement projects:		<ul style="list-style-type: none"> <li>RS-2414 Under construction</li> <li>E-4504 Complete</li> </ul>																							
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Project Number</th> <th>Location</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>R-2574*</td> <td>US 158</td> <td>East of NC 34 at Belcross in Camden County to NC 168 in Currituck County (widen to multiple lanes)</td> </tr> <tr> <td>R-2414</td> <td>US 158 to NC 34</td> <td>East OI Pasquotank in Elizabeth City to east of NC 34 in Belcross (widen to multiple lanes)</td> </tr> <tr> <td>B-4451*</td> <td>NC 343</td> <td>Jarvis Creek Replace Bridge No. 21</td> </tr> <tr> <td>B-4452*</td> <td>NC 343</td> <td>Sawyer Creek Replace Bridge No. 20</td> </tr> <tr> <td>B-3426*</td> <td>SR1224</td> <td>Joyce Creek Replace Bridge No. 2</td> </tr> <tr> <td>B-4453*</td> <td>SR 1235</td> <td>Creek Replace Bridge No. 19</td> </tr> <tr> <td>E-4504</td> <td>US 17, US 17 Bus., SR 1243 (Mullen Road)</td> <td>Virginia State Line to Village of South Mills (construct multi-use path)</td> </tr> </tbody> </table>	Project Number	Location	Description	R-2574*	US 158	East of NC 34 at Belcross in Camden County to NC 168 in Currituck County (widen to multiple lanes)	R-2414	US 158 to NC 34	East OI Pasquotank in Elizabeth City to east of NC 34 in Belcross (widen to multiple lanes)	B-4451*	NC 343	Jarvis Creek Replace Bridge No. 21	B-4452*	NC 343	Sawyer Creek Replace Bridge No. 20	B-3426*	SR1224	Joyce Creek Replace Bridge No. 2	B-4453*	SR 1235	Creek Replace Bridge No. 19	E-4504	US 17, US 17 Bus., SR 1243 (Mullen Road)	Virginia State Line to Village of South Mills (construct multi-use path)	
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P.47	The county supports maintaining an effective signage and addressing system for all streets, roads, and highways.	<i>Continuing.</i>	All addressing has been moved from Tax office to GIS responsibility																							
P.48	The county supports state and federal funding for maintenance/dredging of the Intracoastal Waterway.	<i>Continuing.</i>																								
<b>Implementing Actions:</b>																										
I.39	Camden County will require where reasonably possible the utilization of frontage roads in non-residential development along federal and state major highways.	<i>Fiscal Year 2005-2006.</i>	<ul style="list-style-type: none"> <li>Completed - UDO 151.083 (B) requires service roads in non-residential properties adjacent to major highways and roads</li> </ul>																							
I.40	Camden County will establish a requirement for reverse frontage lots within subdivisions to orient lots towards internal subdivision streets, not secondary roads and highways.	<i>Fiscal Year 2005-2006</i>	<ul style="list-style-type: none"> <li>Completed - UDO 151.232 (A) (4) requires reverse frontage to reduce driveways on principal arterials</li> </ul>																							
I.41	Camden County will require the construction of acceleration/deceleration lanes for the entrances to major commercial and residential developments. This should be accomplished through revisions to the county's subdivision ordinance.	<i>Fiscal Year 2005-2006.</i>	<ul style="list-style-type: none"> <li>Completed - UDO 151.084 requires acceleration/deceleration lanes when development will generate over 60 trips per peak hour</li> </ul>																							
I.42	Camden County will consider establishing traffic impact studies.	<i>Fiscal Year 2005-2006.</i>	<ul style="list-style-type: none"> <li>Completed - UDO 151.233 requires traffic impact studies for all major subdivisions</li> </ul>																							
I.43	Camden County will consider revising its subdivision ordinance to encourage the development of joint or shared driveways in newly approved subdivisions.	<i>Fiscal Year 2005-2006.</i>	<ul style="list-style-type: none"> <li>Completed - UDO 151.083</li> </ul>																							
I.44	The county will review and update its subdivision ordinance to ensure compliance with policies P.43 through P.48.	<i>Fiscal Year 2005-2006.</i>	Completed review & policies comply																							
<b>NATURAL HAZARD AREAS</b>																										
<b>Policies:</b>																										
P.49	The county supports the enforcement of local controls and the efforts of state and federal agencies with regulatory authority to restrict development within areas up to five feet above mean high water susceptible to sea level rise and wetland loss.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>County participates in FEMA flood program &amp; supports state &amp; federal regulations</li> <li>However, restricting development to above 5 feet</li> </ul>																							

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
P.50 The county supports the installation of properly engineered and permitted bulkheads.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Initiated requirement that all new bulkheads must be designed and the construction verified by professional engineer.</li> </ul>
P.51 Camden County supports the US Army Corps of Engineers' regulations and the applicable guidelines of the Coastal Area Management Act and the use of local land use ordinances to regulate development of freshwater swamps, marshes, and 404 wetlands.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Building restrictions related to wetlands are cited throughout UDO 151</li> </ul>
P.52 Camden County supports relocation of structures endangered by erosion, if the relocated structure will be in compliance with all applicable policies and regulations.	<i>Continuing</i>	
P.53 Camden County supports cooperation with local, state, and federal efforts to inform the public of the anticipated effects of sea level rise.	<i>Continuing</i>	
P.54 Camden County supports hazard mitigation planning. Refer to the hazard mitigation plan section of this document on page 210..	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Camden's Hazard Mitigation Plan will be updated in 2011</li> </ul>
P.55 Camden County supports the land use densities that are specified on page 199 of this plan. Through enforcement of the zoning ordinance, these densities will minimize damage from natural hazards and support the hazard mitigation plan.	<i>Continuing</i>	
<b>Implementing Actions:</b>		
I.45 Camden County will continue to enforce its Floodplain Ordinance and participate in the National Flood Insurance Program. It will rely on the North Carolina Department of Environment and Natural Resources, Division of Coastal Management to monitor and regulate development in areas up to five feet above mean high water susceptible to sea level rise and wetland loss. Subdivision regulations will be enforced – requiring elevation monuments to be set so that floodplain elevations can be more easily determined.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Adopted NFIP regulations and new North Carolina Flood Plain Maps in October 2004.</li> <li>Local regulations included a 1 foot freeboard requirement in AE flood zones</li> </ul>
I.46 The county will monitor development proposals for compliance with Section 404 of the Clean Water Act and will continue to enforce local land use ordinances to regulate development of freshwater swamps, marshes, and 404 wetlands.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>UDO 151.233 requires delineation of all 404 wetlands for all development proposals</li> </ul>
I.47 Camden County permits redevelopment of previously developed areas, provided all applicable policies, regulations, and ordinances are complied with. The county will encourage redevelopment as a means for correcting housing problems, upgrading commercial structures, and historic preservation (through rehabilitation and adaptive reuse). Redevelopment, including infrastructure, should be designed to withstand natural hazards..	<i>Continuing</i>	
I.48 Camden County will enforce the density controls in the zoning ordinance and subdivision ordinance in redevelopment areas to control growth intensity.	<i>Continuing</i>	
I.49 In response to possible sea level rise, Camden County will review all local building and land use related ordinances and consider establishing setback standards, density controls, bulkhead restrictions, buffer vegetation protection requirements, and building designs which will facilitate the movement of structures.	<i>Continuing</i>	
I.50 Camden County will utilize the future land use maps to control development. These maps are coordinated with the land suitability maps and proposed infrastructure maps.	<i>Continuing</i>	UDO 151.088
<b>WATER QUALITY</b>		
<b>Policies:</b>		
P.56 The county supports the guidelines of the Coastal Area Management Act and the efforts and programs of the North Carolina Department of Environment and Natural Resources, Division of Coastal Management and the Coastal Resources Commission to protect the coastal wetlands, estuarine waters, estuarine shorelines, and public trust waters of Camden County. It also supports the use of best management practices recommendations of the United States Soil Conservation Service for both agricultural and forestry areas.	<i>Continuing</i>	All land & building permits require compliance with CAMA regulations
P.57 Camden County supports conserving its surficial groundwater resources.	<i>Continuing</i>	
P.58 The county supports commercial and recreational fishing in its waters and will cooperate with other local governments and state and federal agencies to control pollution of these waters to improve conditions so that commercial and recreational fishing will increase. It also supports the preservation of nursery and habitat areas, particularly the Great Dismal Swamp.	<i>Continuing</i>	

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
P.59 The county supports the reforestation of clear cut timber lands and the use of best forestry management practices.	<i>Continuing.</i>	
P.60 Camden County opposes the disposal of any toxic wastes, as defined by the US Environmental Protection Agency's Listing of Hazardous Substances and Priority Pollutants (developed pursuant to the Clean Water Act of 1977), within its planning jurisdiction.	<i>Continuing.</i>	
P.61 Camden County recognizes the value of water quality maintenance to the protection of fragile areas and to the provision of clean water for recreational purposes and supports the control of stormwater runoff to aid in the preservation of water quality. The county will support existing state regulations relating to stormwater runoff resulting from development (Stormwater Disposal Policy 15 NCAC 2H.001-.1-1003.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Enforcement of state stormwater permits prohibiting changes to approved drainage plans in built out subdivisions, has met with significant resistance</li> </ul>
P.62 Camden County supports regulation of underground storage tanks in order to protect its groundwater resources.	<i>Continuing.</i>	
P.63 Camden County supports the policy that all State of North Carolina projects should be designed to limit to the extent possible stormwater runoff into coastal waters.	<i>Continuing.</i>	
P.64 Camden County supports implementation of the Pasquotank River Basin Water Quality Management Plan.	<i>Continuing.</i>	
P.65 The county supports protection of those waters known to be of the highest quality or supporting biological communities of special importance.	<i>Continuing</i>	
P.66 The county supports management of problem pollutants, particularly biological oxygen demand and nutrients, in order to correct existing water quality problems and to ensure protection of those waters currently supporting their uses. This effort should focus on residential development adjacent to Joyce, Areneuse, and Sawyer's Creeks.	<i>Continuing</i>	
P.67 Camden County opposes the installation of package treatment plants and septic tanks or discharge of waste in any areas classified as coastal wetlands, freshwater wetlands (404), or natural heritage areas. This policy does not apply to constructed wetlands.	<i>Continuing.</i>	
P.68 Camden County supports the following actions by the General Assembly and the Governor: <ul style="list-style-type: none"> <li>Sufficient state funding should be appropriated to initiate a program of incentives grants to address pollution of our rivers from both point sources and non-point sources.</li> <li>An ongoing source of state funding should be developed to provide continuous support for an incentives grant program.</li> <li>The decision-making process for the award of incentives grants should involve river basin organizations representing local governments and other interest groups in the review of all applications for state funding.</li> <li>The ongoing effort of the Department of Environment and Natural Resources to develop administrative rules implementing the Pasquotank River Basin Management Strategy should continue to involve local government officials in the development, review, and refinement of the proposal.</li> </ul>	<i>Continuing.</i>	
P.69 Camden County supports all aquaculture activities which meet applicable federal, state, and local policies and permit requirements. However, Camden County reserves the right to comment on all aquaculture activities which require Division of Water Quality permitting.	<i>Continuing</i>	
P.70 Camden County objects to any discharge of water from aquaculture activities that will degrade in any way the receiving waters. The county objects to withdrawing water from aquifers or surface sources if such withdrawal will endanger water quality or water supply from the aquifers or surface sources.	<i>Continuing and Fiscal Year 2005-2006</i>	
P.71 Camden County supports only aquaculture activities which do not alter significantly and negatively the natural environment or coastal wetlands, estuarine waters, and public trust areas.	<i>Continuing.</i>	
P.72 Camden County supports the establishment of mooring fields within its planning jurisdiction. However, the county recognizes that improperly regulated mooring fields may result in water degradation.	<i>Continuing.</i>	
P.73 Camden County does not support the location of floating homes within its jurisdiction.	<i>Continuing</i>	
<b>Implementing Actions:</b>		
I.51 The county will comply with CAMA and NC Division of Environmental Management stormwater runoff	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Currently purchasing well sites to double potable water capacity</li> </ul>

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text - Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
<p>regulations, and by coordinating local development activities involving chemical storage or underground storage tank installation/abandonment with Camden County Emergency Management personnel and the Groundwater Section of the North Carolina Division of Environmental Management. The county will plan for an adequate long-range water supply. In the planning process, Camden County will cooperate with adjacent counties to protect water resources.</p> <p>1.52 The county will enforce its zoning and subdivision regulations to aid in protecting sensitive shoreline areas. It will rely on state and federal agencies to promote and protect the Great Dismal Swamp, as well as other nursery and habitat areas.</p> <p>1.53 The county will review and amend the local zoning ordinance with regard to underground chemical and gasoline storage regulations to ensure a minimum of risk to local groundwater resources. This will include revisions to the county's zoning ordinance to establish a heavy industrial district and only allow large chemical/fuel storage facilities in the heavy industrial district.</p> <p>1.54 Camden County will rely on the technical requirements and state program approval for underground storage tanks (40 CFR, Parts 280 and 281), and any subsequent state regulations concerning underground storage tanks adopted during the planning period.</p> <p>1.55 Camden County will continuously enforce, through the development and zoning permit process, all current regulations of the NC State Building Code and North Carolina Division of Health Services relating to building construction and septic tank installation/replacement in areas with soils restrictions.</p> <p>1.56 Camden County will implement the following actions through local ordinances to improve water quality (Note: these actions are especially significant in areas adjacent to Areneuse, Sawyer's, and Joyce Creeks):</p> <ul style="list-style-type: none"> <li>- Use watershed-based land use planning</li> <li>- Protect sensitive natural areas, including coastal wetlands</li> <li>- Establish buffer network</li> <li>- Minimize impervious cover in site design</li> <li>- Limit erosion during construction</li> <li>- Maintain coastal growth measures</li> <li>- Restoration of impaired waters</li> <li>- Management of the cause and sources of pollution to ensure the protection of those waters currently supporting their uses allowing for reasonable economic growth.</li> <li>- Reduction of nutrients in Camden County waters.</li> </ul> <p>1.57 Preservation of wetlands is important to the protection/improvement of water quality in Camden County. The following will be implemented:</p> <ul style="list-style-type: none"> <li>- Consider preservation of large wetland areas (&gt; one acre) in a natural state to protect their environmental value.</li> <li>- Coordinate all development review with the appropriate office of the US Army Corps of Engineers and the Soil Conservation Service.</li> <li>- Require that wetland areas be surveyed and delineated on all preliminary and final subdivision plats.</li> <li>- Encourage cluster development in order to protect sensitive natural areas.</li> <li>- Make wetlands acquisition a priority in future expansions of Camden County parks and recreation areas.</li> </ul> <p>1.58 Camden County will revise its zoning ordinance to regulate the location of aquaculture activities</p> <p>1.59 Camden County will develop a local ordinance and a waterfront development plan to regulate the development of mooring fields.</p>	<p><i>Continuing</i></p> <p><i>Fiscal Year 2005-2006.</i></p> <p><i>Continuing.</i></p> <p><i>Continuing</i></p> <p><i>Review local ordinances annually</i></p> <p><i>Continuing Fiscal Year 2005-2006.</i></p> <p><i>Fiscal Year 2005-2006.</i></p> <p><i>Fiscal Year 2005-2006.</i></p>	<ul style="list-style-type: none"> <li>• Chemical/fuel storage facilities is not included in the UDO Table of Permissible Uses</li> <li>• All non-farm buildings in the county are inspected for compliance with North Carolina building Codes, and all permit applications require septic system approval by the Health department</li> <li>• Amended UDO 151.400 to require increased stormwater runoff analysis, and retainage of the 10 year storm within the development boundaries.</li> <li>• Working to establish storm water management districts based on 4 watersheds, for the purpose of better maintenance &amp; management</li> <li>• UDO 151.237 establishes a technical review committee which includes U.S. Army corps of Engineers, CAMA, and Soil and Water Conservation Service</li> <li>• UDO 151.233 requires wetland delineation for all subdivision plats.</li> </ul>
<p><b>LOCAL AREAS OF CONCERN</b></p> <p><b>Policies - Cultural, Historic, and Scenic Areas:</b></p> <p>P.74 The county supports local, state, and federal efforts to protect historic properties within its borders and to</p>	<p><i>Continuing.</i></p>	<ul style="list-style-type: none"> <li>• Completed \$800,000 restoration of the Historic Courtroom in</li> </ul>

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
P.75 Camden County supports protection and preservation of the Great Dismal Swamp which has both historic and environmental significance.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>the county courthouse</li> <li>Supported development of State Park Interpretative center to be located at Dismal Swamp Welcome Center</li> </ul>
<b>Implementing Actions - Cultural, Historic, and Scenic Areas:</b>		
1.60 Camden County will guide development so as to protect historic and potentially historic properties in the county and to perpetuate the county's cultural heritage.	<i>Continuing</i>	<ul style="list-style-type: none"> <li><b>Completed</b> \$800,000 restoration of the Historic Courtroom in the county courthouse</li> <li>County supports annual federal appropriation of funds to maintain the dismal Swamp Canal</li> </ul>
1.61 Camden County will encourage a county-wide survey of historical sites by local volunteers or state and federal agencies and will seek grant monies within the next two years for the complete inventory of historically significant structures and sites.	<i>Continuing.</i>	
1.62 Camden County shall coordinate all housing code enforcement/redevelopment projects with the NC Division of Archives and History, to ensure that any significant architectural details or buildings are identified and preserved.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>CDBG Scattered Site rehabilitation/replacement housing recipients are subject to environmental review, including Division of Archives &amp; History</li> </ul>
1.63 Camden County will coordinate all county public works projects with the NC Division of Archives and History, to ensure the identification and preservation of significant archaeological sites.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>Community Park expansion project conducted archeological study of site as required by division of Archives &amp; History</li> <li>Public works projects typically utilize some form of governmental assistance &amp; therefore require environmental review including NC Division of Archives &amp; History</li> </ul>
<b>Policies - Economic Development:</b>		
P.76 Tourism is important to Camden County and will be supported by the county.	<i>Continuing</i>	
P.77 The county will encourage development in Camden County to protect the county's resources, preserve its rural atmosphere, and simultaneously promote industrial and retail growth.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Approved rezoning and special use permit for development of Tark commercial park along US 158</li> </ul>
P.78 The county will encourage industrial and commercial development in areas with existing infrastructure that does not infringe on existing medium density residential areas.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Approved rezoning and special use permit for development of Tark commercial park along US 158</li> <li>Modified Permissible Use Table in zoning ordinance to allow greater number of business types to be permitted through administrative review rather than Special Use Permits.</li> </ul>
P.79 Camden County supports the extension of water services from existing systems and encourages the use of central systems for new developments whether residential, commercial, or industrial in nature (see policy P.35).	<i>Continuing.</i>	
P.80 The county supports the location of staging areas and support facilities for energy related activities – particularly exploration.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Approved SUP for Abemarle Electric Cooperative substation in South Mills</li> <li>Developed and approved regulations and standards for installation of wind turbines for generation of electricity</li> </ul>
<b>Implementing Actions - Economic Development:</b>		
1.64 Camden County will continue to support the activities of the North Carolina Division of Travel and Tourism; specifically, the monitoring of tourism-related industry, efforts to promote tourism-related commercial activity, and efforts to enhance and provide shoreline resources.	<i>Continuing</i>	
1.65 Camden County will continue to support the activities of the Camden County Department of Tourism.	<i>Continuing.</i>	<ul style="list-style-type: none"> <li>Instituted 6 % occupancy tax to be used for tourism activities</li> </ul>
1.66 Camden County will support projects that will increase public access to shoreline areas.	<i>Continuing</i>	<ul style="list-style-type: none"> <li>Constructed Shiloh Landing public access</li> <li>Applied for public access improvements to Crooked Creek Landing to provide better access to North River</li> <li>Approved a river front Planned Unit Development zoning to include public access as a condition of approval.</li> </ul>
1.67 Camden County will support North Carolina Department of Transportation projects to improve access to	<i>Continuing</i>	<ul style="list-style-type: none"> <li>County supports all DOT projects in Camden, including</li> </ul>

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

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POLICIES AND IMPLEMENTATION ACTIONS and within the county.	SCHEDULED	ACTIONS
<p>1.68 Camden County will support the following in the pursuit of industrial development:</p> <ul style="list-style-type: none"> <li>--Encourage placement of new heavy industrial development to have minimum adverse effect on the county's ecosystem and by encouraging areas of concentrations of such uses be considered first when suitable infrastructure is available consistent with the growth policy of the future land development map.</li> <li>--Re-zone additional parcels for industrial and commercial use along existing growth corridors with adequate infrastructure existing or planned and, when the need is demonstrated, provide a consistent growth policy with amendments to the future land development map when revision is needed. This will accommodate the future demand for additional industrial and commercial development in suitable areas.</li> <li>--Encourage industrial development in industrial park sites by improving the provision of services such as water, sewer, and natural gas.</li> </ul>	<b>Continuing.</b>	<p>widening of US 158 through county, and bridge replacements in various locations</p> <ul style="list-style-type: none"> <li>• Approved rezoning and special use permit for development of Tark commercial park along US 158</li> <li>• UNC completed a feasibility study for an eco friendly green business/industrial park along US17.</li> <li>• Department of Commerce designated County as a 21st Century Community for the purpose of assisting the county prepare an economic development strategy</li> <li>• Approved development of 6 unit commercial building within Camden Business Park along US 158.</li> <li>• Approved development of 15 acre multi-phase Camden Town Center mixed office/retail project in the center of the Courthouse Township.</li> <li>• Currently negotiating with Army Corp of Engineers to lease a deep water access site for the purpose of recruiting a major business with a critical need to transport bulk goods through the Albemarle Sound.</li> <li>• Approved 4 lot minor commercial subdivision along US 158 that will be anchored by a State Employees Credit Union and provide access to development sites both along road frontage and to the rear of the property, thus reducing strip commercial sprawl</li> </ul>
<p>1.69 Camden County will continue to maintain the Industrial Development Committee and seek grant monies to encourage and promote economic and industrial development.</p>	<b>Continuing.</b>	<ul style="list-style-type: none"> <li>• Participate and provide \$5000 annually to the Albemarle Economic Development Commission</li> <li>• Established 21<sup>st</sup> Century Community committee to prepare a Economic Development Strategy with the assistance of Division of Community Assistance</li> </ul>
<p><b>Policies - General Health and Human Services Needs:</b></p> <p>P.81 Camden County supports the continued public provision of solid waste disposal, law enforcement, and educational services to all citizens of the county.</p>	<b>Continuing.</b>	
<p>P.82 The county supports strengthening legislation to regulate off-road vehicle usage on private property.</p>	<b>Continuing</b>	<ul style="list-style-type: none"> <li>• Navy has eliminated previous OLF site from consideration</li> <li>• Camden is now 1 of 5 sites now being considered</li> <li>• County has hired special attorneys and PR firms to assist in opposing the OLF</li> <li>• Have solicited and received support from surrounding counties, state legislature, state &amp; federal elected officials, and the governor</li> <li>• Support the efforts of citizens group also opposing the OLF</li> </ul>
<p>P.83 Camden County opposes the establishment of military outlying landing fields (OLFs).</p>	<b>Continuing</b>	
<p>P.84 The county supports local, state, and federal efforts to minimize the adverse impact of man-made hazards within its borders. Camden County will utilize its development controls and will rely on state and federal agencies with jurisdiction to minimize the impact of man-made hazards.</p>	<b>Continuing</b>	
<p>P.85 In an effort to improve health conditions, Camden County supports the following water and sewer policies:</p>	<b>Continuing</b>	<ul style="list-style-type: none"> <li>• Initiated project to provide sewer service to schools &amp; a small</li> </ul>

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
<ul style="list-style-type: none"> <li>– Camden County supports the extension of central water service into all areas of the county shown on the future land suitability analysis map as suitable for development, including the construction of lines to and through conservation areas to serve development which meets all applicable state and federal regulations.</li> <li>– The county is aware that inappropriate land uses near well fields increase the possibility of well contamination. Land uses near groundwater sources are regulated by the North Carolina Division of Environmental Management through NCAC Subchapter 2L and Subchapter 2C. Camden County recognizes the importance of protecting potable water supplies, and therefore supports the enforcement of these regulations.</li> <li>– Camden County supports all efforts to secure available state and federal funding for the construction and/or expansion of public and private water/sewer systems.</li> <li>– Camden County supports the construction of water systems with adequate line sizes to ensure adequate water pressure and fire protection.</li> <li>– Camden County will continue to provide water services to county residents and will continue the process of studying the role of county government in providing sewage treatment facilities for rapidly growing areas of the county, including the construction of lines to and through conservation areas to serve development which meets all applicable state and federal regulations. The county will secure federal and state grants, when feasible, to help carry out this policy.</li> </ul>	<p><b>Continuing</b></p> <p><b>Continuing</b></p> <p><b>Continuing Activity</b></p> <p><b>Continuing</b></p>	<ul style="list-style-type: none"> <li>service area, utilizing funds from the county, Clean Water Management Trust Fund, Rural conservation &amp; Development council, and CDBG program</li> <li>• <b>Completed</b> study of new well sites, &amp; has purchased 5 new sites</li> <li>• <i>Planning Board proposed amendment to water connection regulations to require all new subdivisions to have adequate water capacity &amp; pressure to provide fire protection</i></li> <li>• Initiated project to provide sewer service to schools &amp; a small service area, utilizing funds from the county, Clean Water Management Trust Fund, Rural conservation &amp; Development council, and CDBG program</li> <li>• Prepared engineering plans &amp; applied for funding to expand water treatment plant</li> <li>• Working to establish a joint water agreement with South Mills Water Assoc.</li> <li>• Purchased 5 well sites to expand capacity</li> </ul>
<p><b>Implementing Actions - General Health and Human Services Needs:</b></p> <p>1.70 The county will investigate, with the Institute of Government, the use of impact fees as a way of making new development pay for the services demanded.</p> <p>1.71 The county will seek educational grants to subsidize continuing education at nearby colleges and universities and support community education programs.</p> <p>1.72 Camden County officials are aware that a clean community projects a positive image for industry, new businesses, and visitors to the area and will continue to support the efforts of the Clean County Department. Complementing and supporting the primary goal of reducing litter and preserving and protecting natural resources, the Committee will address other community issues to include, but not be limited to, those listed below:</p> <ul style="list-style-type: none"> <li>– The Clean County Department staff will work with schools, business and industry, civic clubs, governments, and the media to provide comprehensive involvement of the community in the Keep America Beautiful System.</li> <li>– The Department and staff will continue to educate the public regarding alternatives to land filling solid waste, with an educational focus on recycling and the problems and damages to the environment caused by illegal dumping.</li> <li>– The county will continue assisting with beautification of county container sites. Clean-up work at container sites will continue with the availability of court assigned community service workers.</li> </ul> <p>1.73 Floodplain regulation is a concern in Camden County. To accomplish protection of public health and service needs, Camden County will:</p> <ul style="list-style-type: none"> <li>– Continue to enforce the flood hazard reduction provisions of the Camden County Land Development Ordinances.</li> <li>– Prohibit the installation of underground storage tanks in the 100-year floodplain.</li> <li>– Zone for open space, recreational, agricultural, or other low-intensity uses within the floodplain.</li> <li>– Prohibit the development of any industry within the 100-year floodplain that may pose a risk to public health and safety. Such industries may include but not be limited to: chemical refining and processing, petroleum refining and processing, hazardous material processing, or storage facilities.</li> </ul> <p>1.74 To effectively manage Camden County's investment in existing and proposed community facilities and services, the county will:</p>	<p><b>Fiscal Year 2006-2007.</b></p> <p><b>Continuing.</b></p> <p><b>Continuing.</b></p> <p><b>Continuing</b></p>	<ul style="list-style-type: none"> <li>• Submitted Amicus brief for Durham's impact fee appeal</li> <li>• Adopted an Adequate Public Facilities Ordinance that includes voluntary mitigation of impacts</li> <li>• Increased code enforcement efforts to eliminate dilapidated abandoned structures and automobiles</li> <li>• Adopted new NC flood plain maps &amp; federal regulations October 2004.</li> <li>• Adopt 5 year CIP Annually</li> </ul>

## CAMDEN COUNTY LAND USE PLAN IMPLEMENTATION STATUS REPORT

*Italicized Text – Actions conflicting with plan*

POLICIES AND IMPLEMENTATION ACTIONS	SCHEDULED	ACTIONS
<ul style="list-style-type: none"> <li>- Develop a specific capital improvements plan (CIP) with emphasis placed on services and facilities which affect growth and development (see implementing action 1.34 on page 151.</li> <li>- Provide the Camden County Board of Education with location information on all residential development.</li> <li>- In concert with the Camden County Board of Education, develop a plan for the protection of future school sites.</li> </ul>	<p><i>Fiscal Year 2006-2007</i></p> <p><i>Continuing.</i></p> <p><i>Fiscal Year 2006-2007.</i></p>	<ul style="list-style-type: none"> <li>• Adopted Capital Improvement Plan June 2006 with annual update for 2007</li> <li>• Provided as part of the APFO implementation</li> </ul>
<p>1.75 Camden County will provide sufficient emergency services to all residents. The county will implement the following:</p> <ul style="list-style-type: none"> <li>- Require that all necessary infrastructure firelighting capability/capacity be provided in new subdivisions and developments.</li> <li>- Continue to maintain an effective signage and addressing system for all streets, roads, and highways.</li> </ul>	<p><i>Continuing</i></p>	<ul style="list-style-type: none"> <li>• <i>Planning board recommended amending UDO to require new subdivisions to provide adequate fire flow capacity &amp; pressure. County commission rejected amendment</i></li> <li>• Planning/GIS provides addresses for all new development</li> <li>• Landfill proposal eliminated through state legislation</li> </ul>
<p>1.76 Camden County will adopt a management plan for the proposed Camden County Landfill. That plan will address the associated land use issues identified on page 132.</p>	<p><i>Continuing.</i></p> <p><i>FY2006-2007.</i></p>	<ul style="list-style-type: none"> <li>• Scattered Site Housing Program 2002, 2005</li> </ul>
<p><b>Implementing Actions - Funding Options:</b></p> <p>1.77 Camden County will continue to support state and federal programs that are deemed necessary, cost-effective, and within the administrative and fiscal capabilities of Camden County. . These include:</p> <ul style="list-style-type: none"> <li>- Community Development Block Grant Program</li> <li>- Area Agency on Aging</li> <li>- Emergency Medical Services</li> <li>- JTPA Work Program</li> <li>- Farmer's Home House Preservation Program</li> <li>- Coastal Area Management Act, including shoreline access funds</li> <li>- Small Business Association</li> <li>- Economic Development Administration Funds</li> <li>- Farmer's Home Administration – Federal Grant Program</li> <li>- Federal Emergency Management Program</li> <li>- Aid to Families with Dependent Children</li> <li>- MEDICAID</li> <li>- Day Care</li> <li>- Crisis Intervention</li> </ul>	<p><i>Continuing</i></p>	<ul style="list-style-type: none"> <li>• Shiloh Landing Project</li> <li>• Proposed Treasure Point 4 H club project</li> </ul>
<p>1.78 Camden County will selectively support state and federal programs related to Camden County. The county, through its boards, commissions, and committees, will monitor state and federal programs and regulations. It will use opportunities as they are presented to voice support for or to disagree with programs and regulations that are proposed by state and federal agencies.</p>	<p><i>Continuing</i></p>	<ul style="list-style-type: none"> <li>• Support for annual request to provide funds to maintain Dismal Swamp Canal</li> </ul>
<p>1.79 Camden County officials will continue to work with the Army Corps of Engineers and any other state and federal agencies to ensure continued dredging and maintenance of channels and rivers as needed to keep these facilities open to navigation.</p>	<p><i>Continuing.</i></p>	<ul style="list-style-type: none"> <li>• Support for annual request to provide funds to maintain Dismal Swamp Canal</li> </ul>



## COUNTY OF CURRITUCK

Department of Planning  
Post Office Box 70  
Currituck, North Carolina 27929-0070  
Telephone (252) 232-6029 / Fax (252) 232-3026

June 1, 2009

Ms. Charlan Owens  
NCDENR – Division of Coastal Management  
1367 U.S. 17 South  
Elizabeth City, NC 27909

RE: Currituck County 2006 CAMA Land Use Plan Update

Dear Ms. Owens:

Per the CAMA Local Planning and Management Grant guidelines Currituck County is respectfully submitting our two year Land Use Plan implementation status report. In addition to the general information included in this cover letter, a matrix of individual action items and their completion status is attached.

To date several local planning efforts have been undertaken or programmed to occur in order to successfully implement the Plan. One item of particular significance is the rewrite of the current Unified Development Ordinance, which is scheduled to begin in July of 2009. This process will likely take several years to complete; however, it will result in the successful completion of many of the action plan items included in the Land Use Plan. The rewrite process should result in a development ordinance that is more consistent with each of the Plan's management topics.

Another recent undertaking is the establishment of a more diverse long range planning program. Planning staff is completing the county's first small area plan for the Maple area. Small area plans are typically more focused thus allowing the county to better address the long term needs of specific geographic areas. While not expressly set forth in the Land Use Plan, the idea of expanding long range planning efforts will allow the county to remain responsive to localized demographic or economic fluctuations.

There are several collaborative projects underway that will serve to implement many of the Plan's action items. To better protect against natural and man-made hazards and promote water quality, the creation of a comprehensive stormwater manual is moving forward. This process includes working with East Carolina University to model the county's sub-watersheds. Another recent collaborative effort is a consortium of local and state government officials, university based researchers, and local members of the development community that are working together to promote sustainable development. The effort is known as Currituck Goes Green and focuses on a variety of green initiatives, many of which produce outcomes consistent with the goals of the Land Use Plan

During the past two years the county has made reasonable progress in implementing the Land Use Plan. Many of the action items include detailed planning processes or changes to the

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COASTAL MANAGEMENT  
Elizabeth City

Unified Development Ordinance. While these projects have been slow to begin, they are underway and moving forward. Some of the action items, such as the establishment of Transfer of Development Rights (TDR's), require local legislation from the general assembly for which the county has submitted but has not received approval.

Since the adoption of the Land Use Plan in 2007, the sluggish economy has caused unforeseen land use issues to arise. The Plan was predicated on rapid growth rates, which occurred throughout the previous decade; however, the soft real estate market has provided some relief in the rapid expansion of county services. Considering the desirable geographic location of Currituck County on the coast, it is anticipated growth rates will begin to increase again. To this end, the county is taking advantage of the real estate slow down to program future infrastructure carrying capacity.

While there are many existing ordinances and policies such as conditional zoning and conservation subdivision design that are consistent with the Land Use Plan, the overall structure of the Unified Development Ordinance is not ideal for holistic implementation of the Plan's action items. Considering the short time frame the Land Use Plan has been in place (approximately two years), many of the short term goals have been accomplished. However, the scheduled rewrite of the zoning and subdivision ordinances and commitment to long-range planning will be most effective in achieving the vision set forth in the Land Use Plan. As progress is made on these efforts, both county officials and the general public continue to become more familiar and comfortable with the Plan and its policy objectives.

Should you have any questions or concerns, please feel free to contact me at your earliest convenience.

Regards,



Ben E. Woody, AICP  
Planning Director

Cc: Mr. Dan Scanlon

Enclosure

**Currituck County  
2006 Land Use Plan**

<b>1. Actions Concerning Public Access</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action PA-1: Develop a plan for public access to the ocean and sound, including opportunity sites for regional, local and neighborhood access facilities.	PA1, PA2, PA3, PA4, PA8, PA10	Priority	4 to 6 years	County Commissioners, County Planning Board	Not complete.
Action PA-2: Establish a developer fee in lieu of land dedication for park and recreation facilities, including funding for the acquisition and improvement of public access facilities to the sound and ocean.	PA1, PA2	Priority	4 to 6 years	County Manager	Parks and Recreation master planning process is underway. Fee in lieu of option is being studied.
Action PA-3: Amend the Currituck County Unified Development Ordinance to provide incentives to development proposals that reserve a strip of land for public access along the water's edge.	PA1, PA2	Priority	4 to 6 years	County Commissioners, County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action PA-4: Establish financial mechanisms by which non-resident visitors to the County might fund their fair share of the cost of acquiring and improving public access facilities to the sound and ocean.	PA1, PA2	Low priority	Greater than 6 years	County Manager	Not complete.
Action PA-5: Open water marinas often "consume" large areas of public trust surface waters and can interfere with the rights of navigation for small sailing vessels and other water users. Amend the Currituck County Unified Development Ordinance to provide incentives for constructing non-wetland, upland marinas as opposed to open water marinas.	PA6	Low priority	Greater than 6 years	County Commissioners, Currituck Planning Board	County staff has encouraged upland marinas through conditional zoning. An incentive based approach will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action PA-6: The County shall continue to require major residential subdivisions that abut public trust waters to provide public access to those waters. Access for the general public is preferred.	PA1, PA2, PA9, PA10	High priority	On-Going	County Commissioners, County Planning Board	Ongoing. This is a requirement of the Unified Development Ordinance.
Action PA-7: The County shall actively pursue the elimination/removal of any structure that, due to erosion and subsequent damage, interferes with access to and movement on the public trust beaches of Currituck County.	PA9, PA10	High priority	1 to 3 Years	County Commissioners	Not Complete. An inventory needs to occur prior to initiating removal of any structures.
<b>2. Actions Concerning Environmentally Sensitive Areas</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action ES-1: Conduct an examination of existing zoning districts and permitted land uses to eliminate potential threats to environmentally sensitive areas.	ES 1, ES3, ES5, ES8	Priority	4 to 6 years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action ES-2: Currituck County will continue to support CAMA requirements concerning the preservation of open space buffers along estuarine shorelines. Further, consider adopting buffering standards greater than those required by CAMA.	ES4	Priority	4 to 6 years	County Planning Board	Not complete; however, the conditional zoning process is used to increase buffers along estuarine shoreline for new developments.
Action ES-3: Explore the development of a wetlands mitigation bank, whether public or private, for the purpose of allowing desirable economic development to take place while conserving the total inventory of wetlands in Currituck County.	ES1, ES2, ES3	Low priority	Greater than 6 years	County Commissioners, Planning Board and USACE	Not complete.
Action ES-4: The County shall consider amending the UDO to provide a higher level of protection for maritime forests and significant natural sand dunes as these features form the image of Currituck Outer Banks Beaches.	ES7	Low priority	Greater than 6 years	County Commissioners, Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action ES-5: The County shall not support actions to commercialize the public beach rather permitting only clustered commercial development in Corolla and prohibiting commercial development in the four wheel drive area.	OB1, OB2, OB5	Low priority	Greater than 6 years	County Commissioners, Planning Board	Ongoing.
<b>3. Actions Concerning Agricultural and Rural Area Preservation</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action AG-1: Have the Currituck County Planning Department, in its review of development proposals, refer to Soil Conservation Service mapping of prime agricultural soils in making determinations as to highly productive farmland.	AG1, AG2	Priority	4 to 6 years	Farmland Preservation Board, County Planning Department	Ongoing.

**Currituck County  
2006 Land Use Plan**

Action AG-2: Involve the Farmland Preservation Board in the review of sketch plans for major residential subdivisions for the purpose of preserving prime agricultural land.	AG1, AG2	Priority	4 to 6 years	Farmland Preservation Board, County Planning Department	Complete.
Action AG-3: Amend the Currituck County Unified Development Ordinance to allow open space, dedicated as part of a development proposal or set aside in a conservation easement, to be transferred and used for economic activity (e.g. <i>compatible</i> timber management or farming), so long as the restriction or easement preventing future development remains permanent, properly monitored, and lawfully recorded.	AG1, AG2	High priority	1 to 3 Years	County Planning Board, County Commissioners	Complete.
Action AG-4: The County, in cooperation with the Farmland Preservation Board, shall explore the merits of and opportunities for implementing voluntary mechanisms for property owners to preserve their farmland. Included among such mechanisms shall be a program for the transfer of development rights.	AG1, AG2, AG5	Priority	4 to 6 years	County Commissioners, Farmland Pres Board	Ongoing. Local legislation for TDR's has been submitted to the general assembly twice, but has died in committee both times.
<b>4. Actions Concerning Housing and Neighborhood Development</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action HN-1: Continue the initiative to amend the Currituck County Unified Development Ordinance to create a new multi-family zoning district or overlay, to be applied only in locations served by centralized water and sewer, adequate road infrastructure and convenient to services.	HN1, HN3, HN5	High priority	1 to 3 years	County Planning Board	Completed. Multifamily overlay was adopted and is available for use.
Action HN-2: The County recognizes that, as the baby boom generation ages into retirement, there will be growing demand for accessory housing that offers independence for senior citizens while still providing a measure of supervision and security. Therefore, amend the Unified Development Ordinance to allow, in specified locations, separate living quarters accessory to a principal residential structure. (To be allowed only in designated zoning districts and locations, after public input, and as may be consistent with the County's Adequate Public Facilities Ordinance.)	HN5, HN6	Low priority	Greater than 6 years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action HN-3: Explore possible requirements for a certain percentage of compatibly designed affordable homes to be set aside within major new subdivisions on the Mainland.	HN5	Low priority	Greater than 6 years	County Planning Board	A text amendment has been proposed and is under consideration by the Board of Commissioners.
Action HN-4: To curtail the rental abuses associated with large numbers of peak season employees piling into single family homes, and to reduce unnecessary traffic congestion on NC 12, explore requirements for businesses on the Outer Banks to provide compatibly designed affordable housing for their employees in suitable quarters built above or attached to the place of business.	HN5	Priority	4 to 6 years	County Planning Board	Not complete.
Action HN-5: Establish local nuisance law standards concerning the proper removal and disposal of old manufactured housing units prior to the issuance of a permit for the placement or construction of a new residence or other structure on the same site.	HN10	Priority	4 to 6 years	County Commissioners	Not complete.
<b>5. Actions Concerning Commercial Development</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action CD-1: In evaluating rezoning requests for commercial development, employ policies that: •Encourage the clustering, rather than stripping, of commercial uses •Encourage commercial uses at intersections, rather than in strips •Do not create spot zoning situations	CD1, CD2, CD3, CD4	Low priority	Greater than 6 years	County Planning Department	Currently implementing these policies as part of the staff recommendation for rezoning requests. The establishment of conditional zoning in 2007 has helped to avoid spot zoning situations.
Action CD-2: Amend the Currituck County Unified Development Ordinance to establish regulatory standards for: •Low profile pole mounted signs, monument style signs and appropriate lighting •Connections between adjoining parking lots •Improved landscaping requirements •Prohibitions against pre-fab and metal building facades	CD7, CD8, CD9	Priority	4 to 6 years	County Planning Board	Revisions to the Parking and Landscaping ordinances to improve connectivity and landscaping are underway. Architectural requirements will be integrated into the comprehensive update of the Unified Development Ordinance.

**Currituck County  
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Action CD-3: Consider amending the UDO to prevent any PUD from redesignating open space or residential areas to any commercial district after initial sketch plan approval.	CD5	Priority	4 to 6 years	County Planning Board	Not complete.
<b>6. Actions Concerning Industrial Development</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action ID-1: Amend the Currituck County Unified Development Ordinance to establish regulatory standards for certain aspects of mining operations, sludge disposal sites and similar activities not adequately addressed by state laws.(e.g. truck traffic, noise levels, exterior lighting levels, hours of operation, visual impacts, water management reclamation and reuse following closure of the site, etc.)	ID4, ID8	Low priority	Greater than 6 years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action ID-2: Currently, mining operations (e.g. borrow pits, one acre or less) are permitted by right in all zoning districts in the County. To provide for an improved measure of control over these operations, amend the Currituck County Unified Development Ordinance to limit minor mining operations and other similar activities to the agricultural district by right, and in other districts only by special use permit.	ID4, ID8	Priority	4 to 6 years	County Planning Board	Not complete.
Action ID-3: Amend the Currituck County Unified Development Ordinance to require warehousing, storage and distribution facilities to provide a vegetated buffer strip along property boundaries facing a major public road or residential development.	ID5	High priority	1 to 3 Years	County Planning Board	Revisions to the Landscaping ordinance are underway and provide for additional buffering.
<b>7. Actions Concerning Transportation</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action TR-1: The County shall continue to be an active participant in lobbying efforts for planned roadway improvements to US 158, NC 168, NC 34, and NC12.	TR1, TR3, TR4, TR10, TR15	High priority	On Going	County Commissioners	It is anticipated Currituck County will undergo a thoroughfare plan when adequate State budgetary funds are available to NCDOT.
Action TR-2: Conduct a community involvement based process to evaluate proposals for improved access to and movement up and down the Currituck Outer Banks. Identify the pros and cons of the proposed mid-county bridge, improvements to NC 12, enhanced ferry service, or a combination of all three.	TR1, TR4, TR5, TR13, TR14	High priority	On Going	County Commissioners	The Board of Commissioners has directed planning staff to program a small area planning effort for the mid-county bridge in their 2009-2010 annual work plan.
Action TR-3: Establish a Task Force to look at the broad implications of a mid county bridge and its potential impacts, such as growth in the RO2 COBRA zone, beach access and other infrastructure needs of increased numbers of day visitors, changes in county services such as law enforcement, economic impacts on the Mainland and the Outer Banks, etc. The findings of such a task force should be made available well in advance of the construction of the bridge.	TR13, TR14	Priority	4 to 6 years	County Commissioners	The Board of Commissioners has directed planning staff to program a small area planning effort for the mid-county bridge in their 2009-2010 annual work plan.
Action TR-4: Continue enforcing restrictions on curb cuts and driveway access to major state-maintained roads including, specifically, US 158, NC 168, NC 34 and NC 12.	TR2, TR3, TR4, TR5, TR6	High priority	On-Going	County Planning Board	Ongoing.
Action TR-5: Amend the Currituck County Unified Development Ordinance to establish a special highway corridor overlay district for the US 158/ NC 168 highway corridor. The overlay district would include standards for façade materials (i.e. no metal buildings) signage, landscaping, parking lot connections and other factors to help preserve the appearance and function of this critical transportation artery.	TR4, TR5, TR6, TR14	High priority	1 to 3 Years	County Planning Board	The Board of Commissioners has directed planning staff to program a planning effort for the US 158/NC 168 highway corridor in their 2009-2010 annual work plan.
Action TR-6: Revisit the 1994 US Highway 158 and NC Highway 168 Corridor Plan to determine those appearance and functional recommendations that remain appropriate for implementation (e.g. landscaping, signage, driveway cuts, lighting, etc.).	TR4, TR5, TR6, TR14	High priority	1 to 3 Years	County Planning Board	Not complete.
Action TR-7: Adopt the Draft NCDOT Thoroughfare Plan (1999) or an updated version of the Plan.	TR2, TR3, TR4, TR10, TR13, TR15	High priority	1 to 3 Years	County Commissioners, NCDOT	It is anticipated Currituck County will undergo a thoroughfare plan when adequate State budgetary funds are available to NCDOT.
Action TR-8: The County shall continue to encourage street connectivity between similar land uses.	TR7, TR8	High priority	On-Going	County Planning Board	Ongoing.

**Currituck County  
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Action TR-9: The County shall actively pursue grants and exactions for the installation of bike paths, sidewalks and multi-use paths once a plan for these improvements has been adopted.	TR9, TR10	Priority	4 to 6 years	County Commissioners, NCDOT	A system of multi-use paths is being planning for the Corolla area. Phase 1 includes a 1.06 mile path from Heritage Park to the Currituck Coastal Reserve property.
<b>8. Actions Concerning Water and Sewer Service</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action WS-1: Continue with on-going study to determine if Currituck County can become more independent from outside sources of potable water (i.e. Camden County) by creating sufficient water treatment capacity and obtaining the necessary discharge permits for disposing of brine.	WS1	High priority	On-Going	County Commissioners	Complete.
Action WS-2: Establish an education program for the proper maintenance of septic tanks. Include a financial incentive, whereby the County arranges for a discounted pump-out service for septic tank owners who participate.	WS6	Low priority	Greater than 6 years	County Commissioners	Not complete.
Action WS-3: Amend the Currituck County Unified Development Ordinance to require that package sewage treatment plants to be located and designed so as not to adversely impact nearby existing and proposed developments. Encourage such facilities to be located away from water bodies and exterior property lines if possible.	WS7, WS8	Low priority	Greater than 6 years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action WS-4: Prohibit any new wastewater treatment plant from locating in any Area of Environmental Concern (AEC) as designated by CAMA.	WS3, WS5, WS8	High priority	1 to 3 Years	County Planning Board	The conditional zoning process is used to ensure wastewater treatment facilities are not located within the AEC.
Action WS-6: The County shall scrutinize the use and reliability of engineered septic systems (e.g. peat systems) in locations that would otherwise not be suitable for conventional septic systems. The County shall report its findings to the State.	ES1, HN1, WS6, WS7, WQ1	Priority	4 to 6 years	County Planning Department	Not complete.
<b>9. Actions Concerning School Facilities</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action SF-1: Form an interdepartmental project team whose purpose is to fully implement County objectives for growth management and adequate public facilities as applicable to schools and parks. Bring together top school administrators, planning department personnel, and the parks department, among others, to prepare a plan of action for review by the School Board and County Commissioners.	SF1	Priority	4 to 6 years	County Commissioners, County School Board	Parks and Recreation master planning process is underway. Joint facilities planning will be considered.
Action SF-2: Continue to pursue a "School Impact Fee" to address the capital cost associated with school construction.	SF1	High priority	On-Going	County Commissioners, County School Board	Not complete.
<b>10. Actions Concerning Parks and Recreation</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action PR-1: Commission a master parks and recreation plan to identify park and recreation needs, suggest park and recreation additions and improvements, set forth cost estimates, and propose the means of financing.	PR1, PR2, PR5	Priority	4 to 6 years	County Commissioners, Parks Department	Parks and Recreation master planning process is underway.
Action PR-2: Set forth, as a goal for the County, the establishment of a system of district parks, serving districts as identified in the master parks and recreation plan.	PR1	Low priority	Greater than 6 years	County Commissioners, Parks Department	Parks and Recreation master planning process is underway.
Action PR-3: Implement a fee in lieu of land dedication, to be applied to new developments, for the purpose of generating revenues for the development of park assets and additional public access opportunities in Currituck County. Consider placing such revenues in reserve accounts, tied to the designated districts within which the fees were generated.	PR6, PR1, PR5	Priority	4 to 6 years	County Commissioners, Parks Department, Planning Board	Parks and Recreation master planning process is underway. Fee in lieu of option is being studied.
Action PR-4: Form an interdepartmental project team whose mission is to orchestrate the full utilization of (1) the County's school properties for recreational use when not being employed for school purposes and (2) the County's park and recreation assets for school use. Bring together school facility managers and parks department personnel, among others, to prepare a plan of action for review by the School Board and County Commissioners.	PR3	Low priority	Greater than 6 years	County Commissioners, County School Board	Parks and Recreation master planning process is underway. Joint facilities planning will be considered.
<b>11. Actions Concerning Solid Waste Management</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>

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Action SW-1: Continue to monitor the flow of waste into the County's transfer station and landfill. Periodically adjust the rates that the County charges to accept solid waste, including dumping fees for construction and demolition (C&D) materials. Ensure that the County's rates are on a par with other rates in the region.	SW1, SW6	High priority	On-Going	County Commissioners	Ongoing.
Action SW-2: Pursue the development of a solid waste management program where recyclable materials are, in fact, recycled.	SW2, SW3, SW4, SW7	Low priority	Greater than 6 years	County Commissioners	Completed.
Action SW-3: Require waste management companies operating in Currituck County to accept gasoline.	SW2, SW4	Priority	4 to 6 years	County Commissioners	Not complete.
Action SW-4: Implement a program to encourage property managers of rental houses to educate renters of their responsibilities (e.g. not parking in street, keeping trash off the beach, having an adequate number of waste receptacles for the volume of waste generated, etc.	SW2, SW4	Low priority	Greater than 6 years	County Commissioners	Not complete.
Action SW-5: Make waste drop off at the County's waste collection and recycling centers more convenient by placing ramps in front of waste containers or lowering the containers into pits.	SW7	Priority	4 to 6 years	County Commissioners	Not complete.
<b>12. Actions Concerning Planning and Paying for Infrastructure and Services</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action PP-1: Continue the initiative for a legally defensible, rational process by which new residential units may be allocated to major subdivisions in a manner consistent with adequate public facilities (e.g. schools, parks, etc.)	PP2	High priority	On-Going	County Planning Director	Implementation of Adequate Public Facilities Ordinance is ongoing. Allocation formula was administratively revised in 2009.
Action PP-2: Conduct a study of the fiscal impacts of rental properties on the financial balance sheet of the County. Identify how seasonal demand for services affects the cost of capital facilities, equipment and certain year round personnel. Determine how these costs match up with the tax revenues coming back to the County from seasonal properties and their occupants.	PP3	Low priority	Greater than 6 years	County Manager as directed by the County Commissioners	Not complete.
Action PP-3: The County shall explore the merits of and opportunities for financial tools for recovering infrastructure and service costs related to new growth and development. (e.g. impact fees, land transfer tax, upzoning fee, user fees, etc.)	PP3	Priority	4 to 6 years	County Manager as directed by the County Commissioners	Not complete.
<b>13. Actions Concerning Natural Hazard Areas</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action NH-1: Form an interagency task force whose purpose is to develop a plan for the RO-2 COBRA zone to address growth issues likely to come about as a result of the proposed mid-county bridge. Bring together personnel from the US Fish and Wildlife Service, the US Army Corps of Engineers, the State Division of Coastal Management, the Nature Conservancy, Currituck County, as well as area property owners, to prepare the plan.	NH1, NH2, NH3, NH4	Priority	4 to 6 years	County Commissioners to initiate the task force	The Board of Commissioners has directed planning staff to program a small area planning effort for the mid-county bridge in their 2009-2010 annual work plan.
Action NH-2: Require real estate agents to disclose problems of building in hazardous locations, such as along the oceanfront. Require similar disclosures on subdivision plats and publicize erosion rates, floodprone areas, etc.	NH1, NH2,	Low priority	Greater than 6 years	County Planning Board	Not complete.
Action NH-3: Continue to monitor and implement appropriate sections of the April 2004 Currituck County Hazard Mitigation Plan.	NH4	High priority	On-Going	County Manager as directed by the County Commissioners	Many of the "Action Activities" in the Hazard Mitigation Plan have been completed. There are a few actions that we need to continue working on.
Action NH-4: Develop a "Shoreline/Sand Management Plan" as storm hazard mitigation tool.	NH1, NH2, NH4, NH7	Low priority	Greater than 6 years	County Manager as directed by the County Commissioners	Not complete.
Action NH-5: Expand the Currituck County Mitigation Plan to include a Post Storm Reconstruction Plan.	NH1, NH2, NH3, NH4	Low priority	Greater than 6 years	County Manager as directed by the County Commissioners	This will be included in the Plan Revision for 2010.

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Action NH-6: To improve the County's "Community Rating System, amend the UDO to require a minimum of one (1) foot of "freeboard" above the minimum NFIP base flood elevations as shown on the most recent Flood Insurance Rate Maps.	NH1, NH2, NH5	Priority	4 to 6 years	County Planning Board, County Commissioners	Not complete.
<b>14. Actions Concerning Water Quality</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action WQ- 1: Facilitate the establishment of a new water quality monitoring program to focus on likely areas of pollution, such as near sewage treatment plants, land application areas for sewage effluent and septage, concentrations of septic tanks, and stormwater outfalls leading from developed areas.	WQ 1, WQ3, WQ4	Low priority	Greater than 6 years	County Commissioners	Not complete.
Action WQ-2: Petition the State for a reexamination of water quality designations (e.g. SA, SB, SC) in Currituck Sound, to have those designations elevated if possible.	WQ2	High priority	1 to 3 Years	County Commissioners	Not complete.
Action WQ-3: Continue to implement the recently adopted amendment to the Currituck County Unified Development Ordinance requiring an engineer's certification that new development will not cause flooding on adjacent properties.	WQ3, WQ4	High priority	On-Going	County Planning Department	Ongoing.
Action WQ-4: Amend the Currituck County Unified Development Ordinance to require limits on stormwater runoff that are more strict than those required by the State Division of Water Quality. (DWQ requires that only the first 1" of rain be retained on site.)	WQ3, WQ4	Priority	4 to 6 years	County Planning Board	Complete.
Action WQ-5: Prepare a countywide storm water management plan, including sub-area district plans to address problems in particular watersheds or sub-area drainage basins of the county.	WQ8	High priority	1 to 3 Years	County Engineer, as directed by the County Commissioners	Process to create a stormwater management manual is underway. East Carolina University is assisting with sub-watershed modeling.
Action WQ-6: Work with other government entities and nonprofit groups to identify parcels of land that should be considered for protection or restoration to preserve water quality.	WQ8	High	1 to 3	County Engineer, as directed by the County Manager	Complete. Collaboration with Coastal Land Trust and Coastal Federation to produce the Currituck County Water Quality Enhancement Study.
Action WQ-7: Amend the UDO to provide incentives for buffers and setbacks for development adjacent to public trust waters.	WQ3, WQ4, WQ5, WQ6	Priority	4 to 6 years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action WQ-8: Consider amending the UDO to incorporate "Low Impact Development" (LID) concepts for all new development in the County. LID concepts focus especially on minimizing impervious surface areas, preserving natural vegetative ground covers, absorbing stormwater runoff into the ground rather than collecting and piping it elsewhere, and ultimately cutting down on stormwater runoff into the estuary.	WQ3, WQ4, WQ5, WQ6, WQ7	Low priority	Greater than 6 years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
<b>15. Actions Concerning Economic Development</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action ED-1: Finalize the Economic Development Plan for Currituck County and begin implementation.	ED2, ED3, ED4	Priority	4 to 6 years	County Econ Develop Director, Econ Develop Advisory Board, Planning Director	Complete.
Action ED-2: Amend the Currituck County Unified Development Ordinance to create an overlay district to accommodate significant entertainment-oriented developments.	ED1, ED2, ED3	High priority	1 to 3 Years	County Planning Board, Economic Development Commission	Not complete.
Action ED-3: Develop a certified industrial site program to include: •Identification of suitable sites for certification as "primary" or "secondary" sites •Zoning actions to protect suitable industrial sites •Utilities extension policies and capital improvements targeted to suitable industrial sites	ED2	Low priority	Greater than 6 years	County Manager, Economic Development Commission, and Planning Director	Not complete.
<b>16. Actions Concerning Community Appearance</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>

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Action CA-1: Amend the Currituck County Unified Development Ordinance to establish a special highway corridor overlay district for the US 158/ NC 168 highway corridor. The overlay district would include standards for driveway cuts, signage, landscaping, parking lot connections and other factors to help preserve the appearance and function of this critical transportation artery.	CA1, CA2	High priority	1 to 3 Years	County Planning Board	The Board of Commissioners has directed planning staff to program a planning effort for the US 158/NC 168 highway corridor in their 2009-2010 annual work plan.
Action CA-2: Amend the Currituck County Unified Development Ordinance to affirm prohibitions against off-site signs and businesses sharing the same lot (2 principal uses not allowed on same lot.).	CA1, CA5	Low priority	Greater than 6 years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action CA-3: Amend the Currituck County Unified Development Ordinance to clarify standards for on-site and off-site signage.	CA4	Priority	4 to 6 years	County Planning Board	Not complete.
Action CA-4: Currituck County will continue to enforce the Junked Car Ordinance as developed under the State model for such local laws.	CA9	High priority	On-Going	County Planning Department	Ongoing.
Action CA-5: Do not rezone property to either Light or Heavy Manufacturing if it fronts on either US 158 or NC 168.	CA1, CA5,	Priority	4 to 6 years	County Planning Board, County Commissioners	Ongoing.
<b>17. Actions Concerning Historic Preservation</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action HP-1: Commission a state or foundation sponsored inventory and assessment of historic structures and sites in Currituck County.	HP1, HP2, HP3, HP4, HP5, HP6	Priority	4 to 6 years	County Commissioners	Complete.
Action HP-2: Appoint a task force made up of representatives of non-profit groups, private organizations, and interested citizens for the purpose of preserving and promoting the architectural and cultural heritage of Currituck County and its various "communities" e.g. Aydlett, Snowden, Gibbs Woods, etc.).	HP1, HP3, HP7	Low priority	Greater than 6 years	County Commissioners	Not complete.
Action HP-3: Develop the areas around the Old Courthouse and in Corolla Village as historic districts or "community character districts", with consideration given to tying together the various amenities associated with these unique locations.	HP1, HP2, HP3, HP5, HP6, HP7	High priority	1 to 3 Years	County Commissioners	Not complete.
<b>18. Actions Concerning Public Safety</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action PS-1: Conduct a study of the need for additional public safety substations (i.e. fire and rescue, law enforcement) for strategic service areas of the County.	PS1	Priority	4 to 6	County Manager, and Public Safety Service Providers	Not complete. Need a public safety building with training facilities for law enforcement, fire, EMS, emergency management and communications.
<b>19. Special Actions Concerning the Mainland Area</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action ML-1: Explore the feasibility of establishing a program allowing for the purchase or transfer of development rights as a means of promoting open space preservation in Currituck County, particularly in designated areas of the Mainland.	ML1	High priority	1 to 3 Years	County Planning Board	Ongoing. Local legislation for TDR's has been submitted to the general assembly twice, but has died in committee both times.
Action ML-2: Enhance development standards for Class A manufactured homes, in terms of both their location and design (aesthetic) standards, and with an eye toward preserving open space and farmland.	ML4	Low priority	Greater than 6 years	County Planning Board	Not complete.
<b>20. Special Actions Concerning the Outer Banks</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action OB-1: Amend the Currituck County UDO to address the real impacts of large "single family" homes. Employ lot coverage, floor area ratios, house massing, fire suppression issues, number of bedrooms and baths, and other factors to properly control the location, construction and use of these structures.	OB4, OB5	High priority	1 to 3 Years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.

**Currituck County  
2006 Land Use Plan**

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COASTAL MANAGEMENT  
Elizabeth City

Action OB-2: Amend the Currituck County Unified Development Ordinance to create a new zoning district or zoning overlay district and related controls explicitly for large houses. Houses with more than 8 bedrooms would be required to locate in areas properly zoned for the new district.	OB4, OB5	High priority	1 to 3 Years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
Action OB-3: Amend the Currituck County Unified Development Ordinance to implement a zoning overlay district to preserve the historic character of Corolla Village.	OB6	High priority	1 to 3 Years	County Planning Board	Not complete.
Action OB-4: Continue to enforce the public nuisance ordinance concerning the condemnation and removal of buildings that, due to shoreline erosion, have become located in the public trust area of the beach.	OB8	High priority	On-Going	County Planning Board	Not Complete. An inventory needs to occur prior to initiating removal of any structures.
Action OB-5: Monitor the level of traffic volume driving on the beach by season, day of week, time of day, etc. Explore ordinance changes or a permit system for beach vehicular traffic to protect public health and safety.	OB8	Priority	4 to 6 years	County Planning Board	Not complete.
Action OB-6: Amend the County's UDO to affirm that only residential uses are permitted in the non-PUD areas of the RO1 district.	OB2	High priority	1 to 3 Years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
<b>21. Special Actions Concerning Knotts Island</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action KI-1: Conduct a community needs assessment to evaluate public facility and service needs in the Knotts Island area, to include, for example, fire service, communications, library, and recreation.	KI3	Priority	4 to 6 years	County Planning Department	Not complete.
Action KI-2: Establish a stormwater management service district to address stormwater runoff and chronic flooding problems on Knotts Island.	KI2	Priority	4 to 6 years	County Manager/County	Not complete.
Action KI-3: Amend the Currituck County Unified Development Ordinance to create a new zoning district or zoning overlay district regulating the placement of new manufactured homes (i.e. mobile homes) on Knotts Island.	KI5	Low priority	Greater than 6 years	County Planning Board	This will be integrated into the comprehensive update of the Unified Development Ordinance, which will begin in July 2009.
<b>22. Actions Concerning Plan Distribution and Follow Up</b>	<b>Policy Foundation</b>	<b>Priority</b>	<b>Time</b>	<b>Who Leads</b>	<b>Status/ Completion Date</b>
Action DF- 1: Members of appropriate Boards and Commissions of Currituck County, as well as all Department Heads and other appropriate staff, will be given copies of the Land Use Plan.	General	ASAP after adoption and printing.	NA	County Manager	Complete.
Action DF-2: Copies of the Land Use Plan will be placed in visible locations at the County Library, and other County offices frequented by the public. Such copies shall be available for inspection, and for purchase.	General	ASAP after adoption and printing.	NA	County Manager	Complete.
Action DF-3: Copies of the Land Use Plan shall be delivered to members of the news media for their information and reference. Delivery will be done in conjunction with an information session on the purpose and uses of the Plan.	General	ASAP after adoption and printing.	NA	County Planning Director	Complete.
Action DF-4: County staff will employ the policies of the Land Use Plan in evaluating development proposals and will quote such policies in drafting staff recommendations to the County Planning Board and County Commissioners.	General	ASAP after adoption.	NA	County Planning Director and Planning Staff	Ongoing.
Action DF-5: Appoint an implementation oversight group to meet semi-annually to review progress on various actions set forth in the land use plan. Involve a combination of "implementers" and citizens in the group.	General	At the time of adoption	NA	County Commissioners and various implementing agencies	Not complete.
Action DF-6: Prepare an annual report (one to two page memo) to the Board of County Commissioners summarizing actions taken to implement the Land Use Plan during the previous year.	General	1 year after plan adoption	NA	County Manager with input from Oversight Group	Complete.



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COASTAL MANAGEMENT  
Elizabeth City

TOWN OF DUCK, NORTH CAROLINA

June 3, 2009

Charlan Owens, AICP  
DCM District Planner – Northeast District  
1367 U.S. 17 South  
Elizabeth City, NC 27909

RE: Town of Duck CAMA Core Land Use Plan Implementation Status Report

Dear Charlan:

As required by CAMA Local Planning and Management Grant guidelines (Subchapter 7L), we are pleased to provide the enclosed CAMA Land Use Plan Implementation Status Report. The report is based on the Action Plan which is included in Chapter X of the Town's adopted Land Use Plan. The Town provided CAMA with the last Status Report in March of 2007. The enclosed report includes the items noted in our last Status Report as well as the actions that have been taken since that time. The new or updated items are identified with red text.

The Town remains focused on implementation of the action items detailed in the Land Use Plan. Notable items that have been accomplished since we provided you with the last report include:

- The Town has adopted an ordinance for beach and dune management. This ordinance is designed to protect the structural integrity of dunes, to limit removal or destruction of dune vegetation, and to promote safety on the public beach.
- The Town has completed Phases I and II of the Municipal Property Master Plan. The Town Park now consists of a Town Green, gazebo, picnic shelter, walking trails, children's playground, and a soundside boardwalk and kayak launch.

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- This Town has begun Phase III of the Master Plan. At the current time we are in the process of constructing an amphitheater in the maritime forest section of the park.
- The Town has developed a variety of activities in the park including a Summer Concert Series, exercise classes, theater performances, and other events. Planning for the Town Municipal building and the remainder of the soundside boardwalk is ongoing. We intend to apply for a CAMA Major Permit for the remaining sections of the boardwalk this summer.
- The Town has adopted regulations to protect and promote the planting of native or locally adaptive trees and vegetation.
- The Town has adopted an Ocean and Sound Overlay zoning district to regulate activities on the beach, along the soundfront, and in nearshore waters.

The Town has actively taken steps to complete or address most all action items included in the Land Use Plan. We have not had any unforeseen land use issues arise since certification of the CAMA land use plan and the Town's existing land use and development ordinances are consistent with current CAMA land use plan policies. We hope through this Implementation Status Report we have illustrated the numerous actions the Town has taken to achieve desired development patterns and appearance as well as to preserve the natural features that are articulated in the Town's Vision Statement.

The implementation report will be included in the packets of CRC members during their upcoming June meeting. We are available at your convenience to answer questions or to discuss any of the information in this report. The Town will present this report to the Town Council at the June 3, 2009 meeting. We will post this report on our Town website [www.townofduck.com](http://www.townofduck.com), and will make it available in Town offices for review.

Please let me know if you have any questions, need any additional information, or if you have comments on the enclosed prior to the CRC meeting.

Sincerely,

Andrew Garman, AICP, CZO  
Director of Community Development

Enclosure

**DUCK, NORTH CAROLINA  
CAMA CORE LAND USE PLAN ACTION ITEM  
IMPLEMENTATION STATUS REPORT – JUNE 3, 2009**

ACTION ITEMS	ACTION PLAN						
	(Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)						
	2004	2005	2006	2007	2008	2009	
<b>Action Item 1.</b> Develop, adopt, and implement sound and ocean zoning overlays.							
<b>Action Item 2.</b> Develop, adopt, and implement village commercial development zoning options.	Ordinance 04-05 Adopted 6/2/04.				Ordinance 06-05 Streamlining VCDO procedures adopted 6/7/06.		Four properties have been completely redeveloped using the Village Commercial Development Zoning Option; one additional restaurant expanded using VCDO.
<b>Action Item 3.</b> Develop, adopt, and implement commercial development/building design guidelines and standards.	Ordinance 04-25 Adopted 12/1/04.						As of 6/1/09, four commercial properties have been developed subject to the Town commercial development guidelines.

ACTION ITEMS	ACTION PLAN (Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)					
	2004	2005	2006	2007	2008	2009
<b>Action Item 4.</b> Develop, adopt, and implement tree and vegetation protection ordinance.			Referred to Planning Board by Town Council on 3/15/06. Ordinance drafted and reviewed by PB beginning August 2006.	Ordinance 07-05 Tree and Vegetation and Preservation and Planting adopted 6/6/07 (applies to all properties).	Vegetation ordinance refined 3/5/08 – Ordinance 08-01.	
<b>Action Item 5.</b> Develop, adopt, and implement property grading and filling regulations.	Fill moratorium adopted 9/15/04.	Fill moratorium extended 2/2/05. Ordinance 05-06 adopted 5/4/05.		Ordinance 07-13 adopted 10/5/07 – Amendment to fill regulations.		
<b>Action Item 6.</b> Develop, adopt, and implement capital improvements plan (CIP).		Adopted first CIP FY2006 on 6/15/05.	CIP for FY 2007 adopted 6/7/06.	CIP for FY 2008 adopted 6/6/07.	CIP for FY 2009 adopted 6/13/08.	CIP for FY 2010 adopted 6/3/09 (tentative).

ACTION ITEMS	ACTION PLAN (Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)					
	2004	2005	2006	2007	2008	2009
<p><b>Action Item 7.</b> Acquisition of property and/or acceptance of easements on an as needed basis to meet public objectives.</p>	*	*	<p>Obtained easement and funding for two segments of Soundfront walkway through conditional use permit process. 7/14/06 Purchased half acre at 1202 Duck Road for Town Hall building with tie-in to municipal park.</p>	*	*	<p>Town has developed draft easement agreements for all properties adjacent to soundfront walkway based on proposed alignment; coordination with property owners during Summer 2009.</p>
<p><b>Action Item 8.</b> Seek state assistance to prepare shoreline access plan.</p>						<p>No formal plan; Town focus is Soundfront walkway; assistance provided by DCM through permitting and grants.</p>

ACTION ITEMS	ACTION PLAN (Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)					
	2004	2005	2006	2007	2008	2009
<p><b>Action Item 9.</b> Develop and implement a municipal property master plan.</p>	<p>Consultant and Municipal Property Master Plan Committee finalize plan for 10.33 acre site on December 2004.</p>	<p>January-February 2005 Council selects design option and hires consultant to prepare site plans.  Property rezoned to Conservation – Public Recreation.</p>	<p>Site plans for full project submitted to CAMA for review/approval. Phase I of project, not in areas of environmental concern, are completed to include entrance, playground, and parking/access for future kayak launch.  Town acquires additional ½ acre adjacent to municipal property for Town Hall and community meeting space.</p>	<p>Phase II of site plan bidding underway.  Architects drafting plan for community meeting space; charette conducted 2/07.  <b>7/7/07 Town holds 1st Annual Town of Duck Jazz Festival.</b></p>	<p><b>May 1, 2008 Town holds ribbon cutting on Phase II of Municipal property; includes Soundfront walkway adjacent to park as well as picnic shelter and gazebo.</b>  <b>Municipal Property Master Plan Committee and consultant finalize plans for Amphitheater; 12/17/08 Town Council agreement on concept for Town Hall facility.</b></p>	<p><b>5/6/09 Town awards contract for Amphitheater construction.</b></p>

ACTION ITEMS	ACTION PLAN (Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)					
	2004	2005	2006	2007	2008	
<b>Action Item 10.</b> Continue community outreach and public participation programs.	Established and regularly maintain public outreach email list. Issue community newsletter quarterly.	Hired Public Relations Coordinator and began radio spots on town activities. Began Community Improvement Grant Program. Began participation in cable TV spots.	Web site updated w/meeting/activity information.	<ul style="list-style-type: none"> <li>- Town establishes: Email subscriber list.</li> <li>- Town Brochure to all property owners.</li> <li>- Crime Prevention Seminars.</li> <li>- Community Appearance and Holiday Awards Program.</li> <li>- Summer Event Series at Town Park to include Outdoor Summer Concert Series.</li> </ul>	<ul style="list-style-type: none"> <li>- Town adds RSS feeds, business subscribers list, events hotline; Town website is completely redesigned; Town adds to Summer Event Series</li> <li>- Children's Story Time, Lost Colony Productions, and Exercise Classes.</li> </ul>	<ul style="list-style-type: none"> <li>- Town adds News Blog and Twitter;</li> <li>- Town expands Summer Event Series to include Author Series and expanded exercise classes;</li> <li>- Town develops information magnet for vacation rental and residential properties.</li> </ul>
<b>Action Item 11.</b> Develop program to support/encourage business alliance formation.	Established list of businesses for mailing notices and information. Conducted door to door visits to encourage participation of businesses in community affairs.	Worked with Duck Community Business Alliance to establish Automated External Defibrillator program to make AEDs available in shopping areas.	Joined Duck Community Business Alliance and local Chamber of Commerce and actively participate in alliance projects.	<ul style="list-style-type: none"> <li>- Town Staff participation in annual Duck Community Business Alliance (DCBA) meeting; Town receives annual Jazz Festival Sponsorship from DCBA.</li> </ul>	<ul style="list-style-type: none"> <li>- Dare and Currituck Chamber of Commerce begin to distribute Town generated information to members.</li> </ul>	

ACTION ITEMS	ACTION PLAN (Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)				
	2004	2005	2006	2007	2008
<b>Action Item 12.</b> Develop programs to interact with/through Civic groups.	Prepared email notification list of homeowner association groups for outreach.	Joined Duck Community Business Alliance.	Town Staff provides speakers for several community association meetings 3-4 times per year. Notices of events in rental homes distributed to HOAs.	Town distributes annual informational brochure to property owners and subdivisions.	Town receives award from Dare County Arts Council for local gov't. Town staff member appointed to serve on Dare County Arts Council.
	<b>Action Item 13.</b> Participate in multi-jurisdictional beach management planning.	Work with adjacent jurisdictions to provide ocean and emergency rescue services and conduct Emergency Operation Command activities.	Staff & elected officials researched and stayed informed and involved in local initiatives for beach management.	Through CAMA minor permitting process, staff has worked with and supported efforts by CAMA concerning beach renourishment and maintenance.	

ACTION ITEMS	ACTION PLAN (Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)					
	2004	2005	2006	2007	2008	
<b>Action Item 14.</b> Participate in multi-jurisdictional regional transportation planning.		Staff support for Outer Banks Transportation Task Force and its subcommittees.		<p>March 7, 2007 Town Council adopts Resolution #07-02 Requesting Support from NCDOT to Develop a Comprehensive Transportation Plan covering Dare County and its six municipalities; Town becomes a member of the Albemarle RPO.</p>	<p>Town participates in NC Turnpike Authority Public Hearing process to review various Mid-Currituck Bridge alternatives; Town provides written comments on its preferred alternative and the community impacts associated with widening of NC 12 through Duck.</p>	<p>Town adopts CIP with project funding for Village Pedestrian Transportation Study (tentative).</p>
<b>Action Item 15.</b> Develop a Town-based computer mapping program.		Acquired ArcView software and base mapping files.	Created custom mapping for streets, lots, subdivisions and utilized aerial photographs.	Integrating planning department's PC based mapping with handheld devices and public safety mapping.	Expansion of GIS software licensing to other Town computers; in-house training provided to additional users; expanded role of GIS in Town planning activities.	
<b>Action Item 16.</b> Codify Town ordinances.		American Legal Publishing hired to codify ordinances.	Town ordinances officially codified on 10/17/07 – Ordinance 07-16.			

ACTION ITEMS	ACTION PLAN (Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)					
	2004	2005	2006	2007	2008	2009
<b>Action Item 17.</b> Conduct annual Town Council retreat.		Retreat Held 1/19/05.	Retreat Held 1/18/06.	Two-Day Retreat Held 1/24-1/25/07.	Two-Day Retreat Held 1/16-1/17/08.	Two-Day Retreat Held 2/18-1/19/09.
<b>Action Item 18.</b> Develop a stormwater management plan.		Ordinance 05-06 adopted 5/4/05. Study of NC 12 Flooding.	Cooperation with adjacent locality and NCDOT to review/design/fund improvements to manage storm water on primary state road through Town.	Storm water improvements scheduled for NC 12...final engineering underway.	Final engineering for NC 12/Tuckahoe Stormwater project completed; project advertised for construction bids; construction to begin Fall 2009.	Town continues to fund CIP projects to address additional stormwater issues on NC 12; Town requires on-site stormwater management for commercial development through conditional use permit process.
<b>Action Item 19.</b> Develop (in-house) CAMA permitting capability.			Ordinance 06-03 5/3/06 establishes Local Minor Permitting Program. Local permit officer designated and trained Two additional personnel trained. Town assumes full responsibility for program 7/1/07.			As of 6/1/09, Town LPO's have issued. - 117 minor permits - 55 Exemptions - 6 violations All Planning personnel are trained CAMA LPOs.

ACTION ITEMS	ACTION PLAN (Shaded areas represent action timeframe depicted in CAMA Core Land Use Plan – Red text indicates item completed since last status report)					
	2004	2005	2006	2007	2008	2009
<p><b>Action Item 20.</b> Examine potential for an interconnected Duck Trail along the west side of NC 12 and along the Currituck Sound shore line.</p>			<p>Discussion with Town engineering consultants of potential for west side trail segments 9/20/06.</p>	<p>Constructing on municipal property first segment of soundfront boardwalk, partially funded by DCM grants.</p>	<p>Ribbon cutting held on 5/1/08 for first segment of soundfront boardwalk; conceptual alignment for remaining boardwalk segments completed.</p>	<p>Town is preparing CAMA Major Permit application for additional boardwalk segments; Town has prepared draft easement agreements for signature by all adjacent soundfront property owners.</p>
<p><b>Action Item 21.</b> Prepare land use plan implementation status report.</p>				<p>1<sup>st</sup> Implementation Status Report presented to CAMA in April of 2007.</p>		<p>Draft submitted 3/3/09 to CAMA.</p>

Notes:

\* As needed.

Red text indicates new activities completed since submittal of last CAMA Land Use Plan Implementation Status Report



JUN - 2 2009  
COASTAL MANAGEMENT  
Elizabeth City

June 2, 2009

Charlan Owens, AICP  
District Planner  
NCDENR - Division of Coastal Management  
1367 U. S. 17 South  
Elizabeth City, NC 27909

RE: Town of Manteo's 2007 CAMA  
Land Use Plan Status Report

Dear Ms. Owens:

Since the adoption of the Town of Manteo's 2007 CAMA Land Use plan, it has been used as a guiding document for both planning and budgetary decisions. The Town has worked very hard to implement the key action items set forth by the plan. There are a number of areas that the Town has been very successful in and there are areas that the Town is working very hard to complete.

The following information is broken down into the management topics identified by the plan and follows the outline below.

1. All local, state, federal, and joint actions that have been undertaken successfully to implement the certified CAMA land use plan;
2. Any actions that have been delayed and reasons for the delay;
3. Any unforeseen land use issues that have arisen since certification of the CAMA land use plan;
4. Consistency of existing land use and development ordinances with current CAMA land use plan policies; and
5. Current policies that create desired land use patterns and protection of natural systems.

#### **Public Access**

1. The Town has worked on applying for grant funding for a number of the action items identified in the Public Access management topic. Unfortunately some of that funding was not received. The Town is working on a partnership to acquire some property identified in Action Item 4. The Town also continues to do regular maintenance to the existing public access facilities.
2. The lack of grant funding has inhibited maintenance on the boardwalk facilities identified in Action Item 1. Until recently other items have taken priority in Planning Board

Meetings. At the May Planning Board the walking trails item was discussed and appears to be something that will be focused upon in the 2009-2010 fiscal year. Action Item 3 has been put on hold pending possible development of a near-by county site.

3. Other than a lack of funding there have been no unforeseen issues in this management topic.
4. The Land Use Plan was developed with existing ordinances in mind.
5. The town has ordinances in place requiring public access to any commercially developed properties on the waterfront

#### **Land Use Compatibility**

1. The Town has used a number of the action items identified in this management topic in reviewing development and rewriting ordinances.
2. Because of the slow down in development the Tool and Priorities list identified in Action Items 11 and 12 respectively have not been developed.
3. The Town of Manteo's Zoning Ordinance was rewritten to allow for smaller setbacks in the B-2 Zoning District. As a result of this amendment the Land Use Plan had to be amended to reflect these changes.
4. The Land Use Plan was developed with existing ordinances in mind and has been amended to reflect updates in the ordinances.
5. The Town's ordinances currently support and enhance the action items under the Land Use Compatibility Management Topic.

#### **Infrastructure Carrying Capacity**

1. With the assistance of the Town's Engineer, the Town developed a spreadsheet that tracks the existing permitted gallon per day flows for the waste water treatment plant to complete Action Item 16. The Town also recently completed a review of the water distribution system in accordance with Action Item 22.
2. Because of the slow down in development there has been action on Items 14, 15, & 17-20.
3. There have been no unforeseen land use issues that have arisen since the certification of the Land Use Plan in the Infrastructure Carrying Capacity Management Topic.
4. The Land Use Plan was developed with existing ordinances in mind.
5. The Town's ordinances currently support and enhance the action items under the Infrastructure Carrying Capacity Topic.

#### **Natural Hazards**

1. In compliance with Action Item 27, the Town continues to participate in the NFIP. The town also inspects and makes any necessary repairs to 10% of the waste water collection system.
2. Action Items 23, 24, & 26 have not had any action since the adoption of the plan.
3. There have been no unforeseen land use issues that have arisen since the certification of the Land Use Plan in the Natural Hazards Management Topic.
4. The Land Use Plan was developed with existing ordinances in mind.
5. The Town's ordinances currently support and enhance the action items under the Natural Hazards Management Topic.

### **Water Quality**

1. The Town has undertaken a lot of the Action Items in the Water Quality Management Topic. The town has provided workshops and resource information in an effort to meet Action Items 29 and 35. The Town has also acquired the Buck's Seafood Property as called for in Action Item 30. After initiating contact with property owners along a ditch system in Manteo, the Town did not pursue Action Item 31 due to lack of public interest. In compliance with the Town's NPDES Permit for the WWTP the Town conducts regular sampling of Shallowbag Bay.
2. Action Items 32, 33, 36 & 37 have not had any action.
3. There have been no unforeseen land use issues that have arisen since the certification of the Land Use Plan in the Water Quality Management Topic.
4. The Land Use Plan was developed with existing ordinances in mind.
5. The Town's ordinances currently support and enhance the action items under the Water Quality Management Topic.

### **Local Areas of Concern**

1. Following the adoption of the Land Use Plan, the Town took a very strong stand on the Historic Preservation as identified in Action Item 40. The Town adopted an ordinance identifying the district, providing an outline for development and appointing a review committee for development in the district. The Town also followed through with Action Item 44, by signing a Franchise Agreement to start a subscription type curbside recycling program. Since January 2009 the Town has diverted approximately 13 tons of recyclable goods.
2. Action Items 41-43, 45 & 46 have not had any action. This topics have been discussed by the Planning Board at recent meetings and staff anticipates some action in the near future.
3. There have been no unforeseen land use issues that have arisen since the certification of the Land Use Plan in the Local Areas of Concern Management Topic.
4. The Land Use Plan was developed with existing ordinances in mind.
5. The Town's ordinances currently support and enhance the action items under the Local Areas of Concern Management Topic.

I have also included a spreadsheet outline each Action Item and the associate information. Please let me know if you have any questions about the above information or the spreadsheet. I look forward to seeing you at the June 24 meeting in Greenville.

Sincerely,



Erin Trebisacci,  
Town Planner

Town of Manteo 2007 CAMA Land Use Plan Update

Management Topic		Implementation Status Matrix		
Town Scale Action Item Number*	Action Item	Proposed Implementation Date	Current Status	
<b>Public Access (PA)</b>				
PA1	Boardwalk Areas	Ongoing	Boardwalk in the new Marshes Light Development has been completed. Ongoing maintenance and repairs have taken place at existing boardwalk. Grant funding was applied for to replace deteriorating deck surfaces but it was not awarded to the Town.	
PA 2	Public Docks and Boat Launch Access	Ongoing	Town has not experienced an increase in demand, but additional picnic areas have been added to boat ramp and routine maintenance takes place as weather and traffic allow	
PA 3	Parks	Ongoing	no action	
PA 4	Davis Property	When Available	Town has received grant funding and is working on closing documents to acquire ownership of	
PA 5	Walking Routes	FY 2007-2008	this property no action	
<b>Land Use Compatibility</b>				
LUC 7	Village Business District (B-1)		no change, no action	
LUC 8	Everyday Town Center Commercial on Virginia Dare Main Street (B-2 subzone 1)	2007	no change, no action	
LUC 9	Virginia Dare Corridor Commercial (B-2 subzone 2)	2007	ordinance was amended to decrease front yard setbacks from 50 to 15 feet. LUP was also amended to reflect this change	
LUC 10	County Services and Tourist-oriented Commercial (B-3)	2007	no change, no action	
LUC 11	Development Evaluation Tool	2008	no action	
LUC 12	Development Priorities	2008	no action	
LUC 13	LID Measures	Ongoing	continued education and implementation of stormwater ordinance	
<b>Infrastructure Carrying Capacity</b>				
ICC 14	Urban Growth Boundary	2007	no action	
ICC 15	Growth Targets	2007, ongoing	no action	
ICC 16	Growth Capacity	2007	completed spread sheet to track permitted GPD flows in 2007	
ICC 17-20	Prioritizing and Locating Future Growth Vacant Parcels	Ongoing	no action	
ICC 17	Downtown Infill Development of County Administration Buildings	Ongoing	no action	
ICC 18	Chesley Mall Redevelopment (B-2 subzone 1)	2007	no action	
ICC 19	Virginia Dare Corridor Commercial (B-2 subzone 2)	2007	no action	
ICC 20	Building Code Revisions	Ongoing	no action	
ICC 21	Water Loss Investigation	2008, ongoing	While the town is supportive of these types of water conservation techniques there have been no laws or ordinances past to require their use	
ICC 22	Flood and Storage Capacity Needs	FY 2007-2008	Town completed a study with the North Carolina Rural Water Association in early 2009. Several leaks were identified and are being fixed as time and funding allows.	
<b>Natural Hazards</b>				
NH 23	Future Sea Level Rise Areas	Ongoing	no action	
NH 24	Infiltration Study	Ongoing	no action	
NH 25	Green Building Materials for FEMA	2006-2007	Town conducts ongoing annual inspection and maintenance of approximately 10% of system.	
NH 26	NFIP Participation	Ongoing	no action	
NH 27	B-1 Stormwater Treatment	Ongoing	Town continues to participate in NFIP.	
<b>Water Quality</b>				
WQ 29	Rain Gardens and Buck's Seafood Property	2008	Town encourages the use of cisterns and rain barrels for the B-1 district	
WQ 30		Ongoing	Property has been acquired and the rain garden has been designed. Town is currently awaiting funding for this project.	



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June 3, 2009

JUN - 3 2009  
COASTAL MANAGEMENT  
Elizabeth City

Charlan Owens, AICP, District Planner  
NCDENR - Division of Coastal Management  
1367 US 17 South  
Elizabeth City, NC 27909

RE: Implementation Status Report, Kitty Hawk CAMA Land Use Plan

Dear Ms. Owens:

The Town of Kitty Hawk is pleased to present the attached Implementation Status Report on the Town's adopted CAMA Land Use Plan, certified on June 17, 2005. Per your instructions, the status report has been organized around the following five elements:

- 1) All local, state, federal, and joint actions that have been undertaken successfully to implement the certified CAMA land use plan;
- 2) Any actions that have been delayed and reasons for the delay;
- 3) Any unforeseen land use issues that have arisen since certification of the CAMA land use plan;
- 4) Consistency of existing land use and development ordinances with current CAMA land use plan policies; and
- 5) Current policies that create desired land use patterns and protection of natural systems.

Information under each element has been further organized into the Plan's five management topics and additional local areas of concern found in Chapter IX. The last portion of the status report offers updates on the status of the items listed in the Land Use Plan's Action Plan (Chapter X).

You are welcome to contact me with any questions regarding the status report.

Sincerely,

A handwritten signature in cursive script that reads "Joseph H. Heard".

Joseph H. Heard, AICP  
Director of Planning & Inspections

Attachment: Implementation Status Report, Kitty Hawk Land Use Plan

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101 Veterans Memorial Drive  
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## CAMA LAND USE PLAN TOWN OF KITTY HAWK

JUN - 3 2009  
COASTAL MANAGEMENT  
Elizabeth City

### IMPLEMENTATION STATUS REPORT

#### **I. All local, state, federal, and joint actions that have been undertaken successfully to implement its certified CAMA land use plan**

##### **Management Topics**

Public Access – strategies for maximizing community access to beaches and public trust areas.

1. Acquired ownership of 29 oceanfront properties no longer suitable for building.
2. Established seven (7) new beach access points north of Kitty Hawk Road.
3. Constructed a new paved parking area and shower adjoining the public beach access at Lillian Street.
4. Completed improvements to on-street, parallel parking spaces near the public beach access points at Balchen, Hawk, Wilkens, Bleriot, Luke, Bennett, Maynard, and Fonck streets.
5. Completed significant improvements to the paved parking area serving the public beach access at Byrd Street.
6. Improved beach access walkway at Byrd Street.
7. Completed the Wright Brothers Multi-Use Path, a public walking/bicycle trail with interpretive signs, stretching over 2,000 feet along Kitty Hawk Bay.
8. Completed the first phase of Sandy Run Park, a public park featuring a canoe/kayak launch and walkways that provide public viewing access to natural areas and several public trust waterways.
9. Entered into an agreement with the Roanoke Island Commission regarding the development of a public park with canoe/kayak facilities on a property located along the Currituck Sound just north of the Wright Brothers Memorial Bridge.
10. Coordinated with Dare County on improvements to the parking area for the public boat ramp located off of Bob Perry Road.
11. Added information about public access locations on the Town of Kitty Hawk website.
12. Participated in the Dare County Shoreline Management Commission to oversee and advocate for the preservation and restoration of shorelines.

Land Use Compatibility – management of land use and development in a way that minimizes its primary and secondary impacts on natural and man-made resources.

1. Studied and amended Town development standards in keeping with the stated goal of maintaining a relatively low density, residential scale of development throughout most of the Town.
2. Compatibility with the CAMA Land Use Plan was evaluated and referenced during the review of every development project, rezoning, and text amendment considered by the Town.
3. Conducted a detailed analysis of filling and grading activities in consideration of appropriate standards for such activities in the future.
4. Established a land disturbance permit regulating grading and stormwater issues on lots smaller than those requiring a State stormwater permit.
5. Adopted revised stormwater management standards to minimize the impacts of commercial and other higher intensity development on the surrounding environment.
6. Adopted revised standards for subdivision development to minimize impacts on the natural environment.
7. Studied and developed a draft ordinance permitting wind turbines and other wind energy facilities as renewable energy sources.
8. Constructed a new Town Firehouse in a historic architectural style containing many features of low impact development, including permeable paving, rainwater recycling system, and wetlands for stormwater filtration.
9. Conducted numerous public education efforts via the Town website, Town newsletter, mailings, and public forums on a variety of environmental topics including dune management, marsh restoration, low impact development techniques, flood damage prevention, and similar topics.

Infrastructure Carrying Capacity – strategies to ensure that infrastructure is available to support anticipated and planned development and that it is managed to protect areas of environmental concern and other fragile areas.

1. Coordinated with local and State agencies on the review and approval of proposed development projects to ensure that infrastructure standards are met and capacity is not exceeded.
2. Adopted a ten-year Solid Waste Management Plan to ensure that waste management needs are met in the future. This plan includes policies on enhancing the Town's recycling efforts.
3. Engaged in an annual planning process to prioritize road repair and maintenance needs paid for by the Town and through Powell Bill funds.
4. Partnered with State and local funding sources on the construction of over 1.6 miles of new multi-use paths.
5. Partnered with NCDOT on the design and funding of two additional multi-use paths scheduled for construction in 2009.
6. Participated in various subcommittees of the Outer Banks Transportation Task Force.

Natural and Man Made Hazards – policies to reduce the community’s vulnerability to natural hazards.

1. Adopted updated flood maps and a flood damage prevention ordinance in September, 2006 meeting all requirements of State and federal agencies.
2. Adopted an updated Hazard Mitigation Plan in 2005.
3. Reviewed and adopted an Emergency Preparedness Plan on an annual basis.
4. Continued policies and regulations that limit the scale of development in hazard prone areas.
5. Established a land disturbance permit regulating grading and stormwater issues on lots smaller than those requiring a State stormwater permit.
6. Adopted revised stormwater management standards to minimize the impacts of commercial and other higher intensity development on the surrounding environment.
7. Constructed stormwater management improvements along Byrd Street, Lindbergh Avenue and in the Kitty Hawk Landing neighborhood.
8. Raised the roadway elevations of Tateway Road and Ascension Drive to minimize the impacts of flooding.
9. Established a program with NCDOT environmental engineers to monitor the shoreline erosion along Moor Shore Road.
10. Completed preliminary studies, design, and engineering of a shoreline stabilization/marsh restoration project along Kitty Hawk Bay, much of which was funded by DCM Coastal NPS/Local Planning & Management and Clean Water Management Trust Fund grants. (NOTE: This project has not been constructed due to difficulty in obtaining riparian easements from property owners abutting the marsh).
11. Obtained funding through FEMA and State agencies to reconstruct the primary dune, providing further protection for N.C. Highway 12 and numerous private residences.
12. Offered educational brochures, newsletter/website articles, and programs to property owners on topics such as water quality, low impact development, flood damage prevention, and dune stabilization.
13. Conducted a dune planting project with Town employees and volunteers to stabilize the primary dune in Kitty Hawk.
14. Partnered with the Dare County Shoreline Management Commission on the installation of sand fencing and dune planting along the entire primary oceanfront dune.
15. Posted “Keep Off” and “dune care” signs along the primary dune.

Water Quality – land use and development policies and strategies to protect quality waters and to restore quality in waters that are non-supporting.

1. Conducted a series of three (3) public workshops on water quality.
2. Offered additional educational programs and information on rain gardens and other low impact development practices.
3. Constructed a rain garden as a pilot project highlighting local best management practices.

4. Completed preliminary studies, design, and engineering of a shoreline stabilization/marsh restoration project along Kitty Hawk Bay. This project incorporated several features capturing and treating runoff before it enters the bay. (NOTE: This project has not been constructed due to difficulty in obtaining riparian easements from property owners abutting the marsh).

Local Areas of Concern:

Separate topics identified as Local Areas of Concern are intended to incorporate specific issues, concerns, and opportunities identified by the Town of Kitty Hawk, including:

- Atlantic Ocean Shoreline
  - Beach Driving
  - Beach Nourishment and Dune Stabilization
  - Commercial Development
  - Community Appearance
  - Currituck Sound Shoreline, Kitty Hawk Bay, and Albemarle Sound
  - Development Design Standards
  - Federal Properties and Programs
  - Intergovernmental Relations
  - Parking and Loading/Off-loading Areas
  - Public Safety
  - Redevelopment
  - Residential Development
  - Septic Tank Use
  - Sexually Oriented Businesses
  - Solid Waste Management
  - Storm Water Management
  - Tourism
  - Transportation
  - Uses of and Activities In and On Ocean and Sound Waters
1. Expanded the Town's extraterritorial jurisdiction one mile into Kitty Hawk Bay and Albemarle Sound to limit undesirable development and activities.
  2. Entered into mutual aid agreements with other communities to provide services in emergency situations.
  3. Initiated meetings among town managers and town planners on the Outer Banks to share ideas and improve communication between the communities.
  4. Participated in a Joint Information Center during emergency situations.
  5. Adopted the National Incident Management System (NIMS) for dealing with emergency situations.

## **II. Any actions that have been delayed and reasons for the delay**

1. Establishment of additional beach access points toward the southern end of Kitty Hawk has been delayed due to the unwillingness of private property owners to sell oceanfront property for this purpose.
2. The second phase of the Sandy Run Park boardwalk has been deferred due to a lack of matching funds for the project at this time.
3. A shoreline stabilization/marsh restoration project along Kitty Hawk Bay has not been constructed due to difficulty in obtaining riparian easements from property owners abutting the marsh.
4. Development of a soundfront public park in partnership with the Roanoke Island Commission has been on hold until the Town and RIC resolve issues concerning the permitted uses and long-term maintenance of the park.
5. Potential expansion of the Kitty Hawk Woods Coastal Reserve has been pending funding approval from State and non-profit grant sources.

## **III. Any unforeseen land use issues that have arisen since certification of the CAMA land use plan**

1. A development proposal to construct the oceanfront Hilton Garden Inn resulted in a review and amendment of the Town's development standards relating to projects of this scale in the Beach Hotel zoning district.
2. Revision of the flood insurance rate maps and amended standards in the flood damage prevention ordinance have led to some confusion for local property owners and challenges in defining/redefining appropriate development standards in the areas affected by the changes.

## **IV. Consistency of existing land use and development ordinances with current CAMA land use plan policies**

1. The Town of Kitty Hawk has closely followed the goals, policies, and objectives of the adopted CAMA Land Use Plan. As mentioned previously, compatibility with the land use plan has been evaluated during the review of every development project, rezoning, and text amendment considered by the Town. Many of the current Town ordinances were adopted in an effort to support the goals, policies, and objectives found in the CAMA Land Use Plan. These ordinances help preserve the Town's relatively low density residential character, limit development's impact on the environment, and minimize damage to public and private investment during storms.

## V. Current policies that create desired land use patterns and protection of natural systems

1. Reference to the Future Land Use Map and other policies regarding development patterns have provided the Town of Kitty Hawk with guidelines for siting development in appropriate areas. The actual development pattern of the Town is very similar to the recommendations of the plan.
2. Several policies relating to the safety of new development and the protection of private investment were used to support the Town's recent adoption of updated flood maps, a flood damage prevention ordinance, and stormwater management standards.
3. Policies relating to the protection of natural resources and water quality have been the guiding principles behind the Town's adoption and enforcement of requirements for stormwater management, grading, and other land disturbing activities.
4. Emphasis placed on the preservation of Kitty Hawk's village atmosphere has led to the adoption of development standards that reflect the relatively modestly scaled, low density residential character of the Town.
5. Policies regarding the protection of sound waters support the Town's establishment of extraterritorial jurisdiction in Kitty Hawk Bay and the Albemarle Sound to limit undesirable and harmful activities in these waters.

### ACTION PLAN AND SCHEDULE

1. Update the capital improvements plan (CIP).

**Initiation:** 2004

**Completion:** Updated on an Annual Basis

The Town of Kitty Hawk has annually updated its capital improvements plan (CIP), most recently adopting a five-year CIP on June 1, 2009.

2. Seek State funding assistance to develop a shoreline access plan.

**Initiation:** 2005

**Completion:** 2006

The Kitty Hawk Recreation Committee completed a study identifying existing beach access points, publicly owned properties along the oceanfront, and opportunities for new beach accesses in Kitty Hawk in 2006. As this task has been completed, no funding has been sought for a more comprehensive shoreline access plan.

3. Develop a parks, trails, and recreational facilities master plan.

**Initiation:** 2005

**Completion: 2006**

The Kitty Hawk Recreation Committee developed a recreation master plan that was reviewed by the Planning Board and adopted by Kitty Hawk Town Council in August, 2007.

4. Seek State funding assistance to develop a corridor study and plan for the NC 12 corridor and the ocean front to include identification of: needs and opportunities; areas that may be targeted for improvement(s); and, improvement(s) options and alternatives. The study should also examine beach re-nourishment and preservation issues and options.

**Initiation: 2005**

**Completion: 2006**

It is unlikely that any action will be taken toward this objective in the near future.

5. Seek State funding and technical; assistance to develop a corridor study and plan to address land use compatibility issues along U.S. 158 Bypass to include: residential and commercial building and development design guidelines and standards; parcel inter-connectivity and reverse frontage developments; and general strategies to improve vehicular and pedestrian movement and visual aesthetics and reduce land use conflicts.

**Initiation: 2005**

**Completion: 2006**

The Town of Kitty Hawk has adopted standards for interconnectivity between lots. However, it is unlikely that any additional action will be taken toward these objectives in the near future.

6. Continue citizen participation in the Town planning process.

**Initiation: On-going**

**Completion: On-going**

The Town of Kitty Hawk has offered public education programs and sought considerable public input in a variety of ways (day/evening sessions, mailouts, website/Internet surveys, etc.) when evaluating significant public projects, stormwater management projects, and amendments to development standards.

7. Update *1999-2000 Storm Water Management Study*.

**Initiation:** 2004

**Completion:** 2005

In late-2004, engineering firm Albemarle & Associates completed an updated stormwater management report and recommendations for implementation. Engineering firm Rivers & Associates prepared site specific storm drainage evaluations and cost estimates in March, 2005. The Town has funded stormwater drainage improvement projects annually since that date.



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Beverly Eaves Perdue  
Governor

James H. Gregson  
Director

Dee Freeman  
Secretary

**CRC-09-22**

June 11, 2009

**MEMORANDUM**

**TO:** Coastal Resources Commission  
**FROM:** Tancred Miller  
**SUBJECT:** Sea Level Rise Initiatives

Following the Commission and Advisory Council naming sea level rise as one of their priority issues, the Commission has taken several actions, and many of you have been involved in various initiatives within the state. Staff has recognized that the myriad initiatives may be complementary, but for the most part are isolated and uncoordinated.

Staff has developed a proposed plan of action that serves not only our anticipated needs, but also seeks to coordinate and leverage other efforts around the state, and to inspire action by other stakeholders. The plan consists of six defined steps. Staff welcomes any input from the Commission about the individual components or the overall plan.

**Part 1: Scoping Survey** (Target Date: Spring-Summer 2009)

The Division is preparing a survey of stakeholder groups on the issue of sea level rise in North Carolina. The interviews will identify perceptions of risk, and what stakeholders believe should be done and by whom. Similar, but geographically or subject-limited surveys are being done by the Albemarle-Pamlico National Estuary Program and UNC-Wilmington. Their findings will be used to help evaluate public perceptions.

**Part 2: Science Forum** (Target Date: January 2010)

The Division is working with DENR on co-hosting a sea level rise forum in January 2010, subject to funding authorization. The forum is intended to display the best available science on current and projected sea level rise for North Carolina, which will help form the scientific basis for policy and management decisions. All scientists and researchers investigating sea level rise in the state will be invited to present their work. The target audience will include legislators, state and local policy makers and resource managers, elected officials, emergency managers, planners, infrastructure interests (transportation, utilities, etc), conservationists, private sector, and other interested parties. In addition to displaying their research, presenters will be asked to answer the following question:

***How much relative sea level rise should North Carolina prepare for by 2100?***

### **Part 3: Policy Summit & Policy Development** (Target Date: Summer 2010)

The Division proposes to follow the science forum with an all-stakeholder sea level rise summit meeting in the summer of 2010. Data and conclusions from the science forum will form the foundation for this policy discussion. The forum will have several defined objectives:

1. Conduct scoping for a CRC policy for addressing sea level rise
2. Gather stakeholder recommendations on potential response measures
3. Conduct scoping for a proposal for Executive Branch action
4. Establish a communications clearinghouse for sea level rise information

A written and codified CRC policy on sea level rise response will form a solid basis for appropriate changes to the NC Coastal Management Program, including amendments to use standards, regulations and land use planning guidelines. This is a necessary step before the Division will be able to offer clear and consistent assistance to local governments, partner agencies, and other stakeholders.

### **Part 4: Recommendations to Executive Branch** (Target Date: Fall 2010)

The Coastal Resources Commission's planning for sea level rise impacts will be inclusive and draw from as wide a stakeholder base as possible, but the CRC's planning alone is not sufficient for the state's preparedness. Using the input and recommendations gained via its own policymaking process, the Coastal Management Program will prepare a report to the NC Executive Branch to recommend actions that can be take to direct and assist other agencies.

### **Part 5: Amendments to Coastal Management Program Regulations & Land Use Planning Guidelines** (Target Date: Ongoing)

After adopting a policy on preparing for sea level rise, the NC Coastal Management Program will be better able to target programmatic changes to account for this particular hazard. Specifically, the Program can revise the 7B Land Use Planning Guidelines to help local governments incorporate specific policies, mitigation and adaptation tools. The Program can also assess its other regulations and use standards for possible amendment.

### **Part 6: Coordination with State Agencies & Local Government Planning Efforts** (Target Date: Ongoing)

The NC Coastal Management Program will continue to work with local governments and partner agencies to provide support and advice. As a logical node agency for sea level rise response planning, the Division expects to serve as a source of technical information and expertise, and as a clearinghouse for information and resources. The Division will work through established channels such as Land Use Planning consultations, interagency meetings and working groups (e.g. the Coastal Habitat Protection Plan Steering Committee), as well as any new arrangements that may be established.



North Carolina Department of Environment and Natural Resources  
**Division of Coastal Management**

Beverly Eaves Perdue, Governor

**James H. Gregson, Director**

Dee Freeman, Secretary

June 12, 2009

**MEMORANDUM**

**TO:** Coastal Resources Advisory Council  
**FROM:** Dara Royal  
**SUBJECT:** June 2009 CRC Meeting

Greetings all.

You should all have received Jim Gregson's June 5<sup>th</sup> email in which he said that DCM has requested approval for a one-day June CRC meeting in Beaufort, but that reimbursements for CRAC members would not be available. As of today's date DCM has not received approval, but has prepared an agenda so that the meeting can occur if approval is granted. The CRAC will not be having a meeting this month, but are free and welcome to attend the CRC meeting at their (or their appointing bodies') expense.

Please review the CRC agenda and meeting materials. If you have any comments or concerns you can express them directly to the Commission or to DCM staff, or to me and I will convey them to the appropriate recipients. You will find as usual that there are items on the Commission's agenda that are of direct relevance or interest to us, so I urge you to review the materials and make every effort to represent the interests of your appointing bodies and convey the information to them.

There are two land use plan certification requests and three amendment requests on the agenda. Since we will not be meeting the CRC will hear these directly. Any CRAC members present will be welcome to participate in the discussion, but as usual the Commission has the sole authority to vote on certifications.

Our next regularly scheduled meeting is the fourth week of August. It is impossible to say at this time whether or how we will be able to meet, but please be assured that every effort is being made to include the Advisory Council in meeting plans. We will have a lot on our agenda when next we meet.

Please travel safely if you decide to come, and if so I will see you there. As always, I am available and happy to speak with all of you about any concerns you may have. Long live our beaches.

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North Carolina Department of Environment and Natural Resources  
**Division of Coastal Management**

Beverly Eaves Perdue, Governor

**James H. Gregson, Director**

Dee Freeman, Secretary

June 12, 2009

**MEMORANDUM**

**TO:** CRC & Interested Parties  
**FROM:** Tancred Miller  
**SUBJECT:** Rulemaking Update

Listed below are all of the Commission's rules that are currently in the rulemaking process. Complete drafts of rules scheduled for public hearing will be available on the DCM website.

1. 15A NCAC 7B.0901 CAMA Land Use Plan Amendments  
**Status:** Comment period open.  
 The purpose of the proposed amendments is to clarify that the public noticing and hearing requirements for land use plan amendments are meant to be the same as for initial plan adoptions described in 7B.0702. The rule goes to public hearing on June 16<sup>th</sup> and the public comment period ends July 31<sup>st</sup>.
2. 15A NCAC 7H.0205 Coastal Wetlands (Marsh Alteration)  
**Status:** Comment period open.  
 The purpose of the proposed amendments is to begin regulating certain types of marsh alteration, primarily mowing and burning. The rule goes back to public hearing on June 16<sup>th</sup> and the public comment period ends July 31<sup>st</sup>.
3. 15A NCAC 7H.0208 Estuarine System Use Standards (Docks & Piers provisions)  
**Status:** Approved for public hearing.  
 The CRC approved this rule for public hearing in July 2008, following a satisfactory report on the MFC's new definition of SAV habitat and the interagency coordination agreement that has been developed between DCM and the Division of Marine Fisheries. The CRC approved the docks and piers provisions in to be sent to public hearing.
4. 15A NCAC 7H.0306 General Use Standards for Ocean Hazard Areas (Setbacks)  
**Status:** Pending review by the NC General Assembly.  
 The amendments to 7H.0306 tie oceanfront setbacks to the size of the structure, not the use. The revisions include graduated setback factors for buildings greater than 5,000 square feet, and do not allow for oceanward cantilevering. A disapproval bill was filed in the General Assembly but failed to make crossover. The rule will become effective on the day that the General Assembly adjourns.

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5. 15A NCAC 7H.0308 Specific Use Standards for Ocean Hazard Areas  
**Status:** Review by Rules Review Commission on June 18<sup>th</sup>.  
Changes lengthen the duration and number of times that sandbags can be used in inlet hazard areas when a community is pursuing inlet relocation, and allow sandbags to be placed more than 20 feet from the structure being protected if the Director finds that it is justified. The rule is on the RRC's June agenda. If approved by the RRC it will become effective on July 1<sup>st</sup>.
6. 15A NCAC 7H.0309 Use Standards for Ocean Hazard Areas: Exceptions  
**Status:** Comment period open.  
The CRC approved draft changes in March to make the development limitations in this rule conform with pending changes to 7H.0306, and approved additional changes to the pier house section in May 2008 to allow construction and expansion of pier houses oceanward of the setback. The rule goes to public hearing on June 16<sup>th</sup> and the public comment period ends July 31<sup>st</sup>.
7. 15A NCAC 7H.0310 Use Standards for Inlet Hazard Areas  
**Status:** Scheduled for discussion in June 2009.  
The CRC has seen the new inlet hazard area delineations prepared by its Science Panel on Coastal Hazards and had further discussion in July and November 2008. Staff will present additional policy recommendations to the CRC at the June meeting.
8. 15A NCAC 7H.1100 GP for Construction of Bulkheads & Placement of Riprap  
**Status:** Review by Rules Review Commission on June 18<sup>th</sup>.  
Proposed changes to these rules result from the CHPP recommendation that the CRC encourage alternatives to vertical stabilization structures on estuarine shorelines. If approved by the RRC they will become effective on July 1<sup>st</sup> except for the fee increase rule, 7H.1103, which remains subject to review by the Joint Legislative Commission on Governmental Operations (Gov Ops).
9. 15A NCAC 7H.1200 GP for Construction of Piers, Docks & Boat Houses  
**Status:** Review by Rules Review Commission on June 18<sup>th</sup>.  
The CRC approved these rules for public hearing in July 2007, conditional on review and approval of the MFC's new definition of SAV habitat and permitting coordination with DCM. The rules have been through public hearing and final language was adopted by the Commission in April. If approved by the RRC they will become effective on July 1<sup>st</sup>.



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY  
INSTALLATIONS AND ENVIRONMENT  
REGIONAL ENVIRONMENTAL AND GOVERNMENTAL  
AFFAIRS-SOUTHERN  
101 MARIETTA STREET, NW, SUITE 3120  
ATLANTA, GA 30303-2711

April 16, 2009

Mr. Mike Lopazanski  
Coastal & Ocean Policy Manager, NC Division of Coastal Management  
NC Department of Environment and Natural Resources  
400 Commerce Avenue  
Morehead City, NC 28557

Dear Mr. Lopazanski:

I am the Department of Defense (DoD) Regional Environmental Coordinator for the states within EPA Region 4 and represent the military services on multiservice environmental issues within those states. On behalf of all of the military services, I first wish to convey our appreciation to North Carolina for its staunch support for the DoD. We believe that our cooperative relationship is essential to the success of the DoD and its ability to effectively train our war fighters. As the DoD REC, I am forwarding comments provided from all of the services on the draft report, *Developing a Management Strategy for North Carolina's Coastal Ocean*, scheduled for presentation and discussion at the 29-30 April 2009 NC Coastal Commission Meeting. We appreciate your willingness to receive and transmit our comments to the Commission in their pre-meeting documentation package. In addition, we would appreciate your consideration and inclusion of our comments as you prepare recommendations for the Commission.

The State of North Carolina's military installations face numerous challenges to meet mission requirements and sustain the environment. Our ranges, sea space, undersea space, airspace, and frequency spectrum requirements are all vital to the successful training of our service members. While each installation within North Carolina faces compatible land use and other environmental challenges, the near shore and off shore areas of North Carolina are particularly important. These areas provide vital DoD military readiness training areas which are, in some cases, the only areas along the eastern coast of the US where perishable battle skills can be practiced, and technical readiness qualifications can be achieved before units deploy into harm's way. While the military services support the development of alternative energy resources, we must emphasize the need to sustain these military readiness activities. We, therefore, support efforts to ensure that the coastal ocean policy promotes compatible development, while at the same time avoiding any direct or cumulative impacts, which degrade military capabilities. I have included the DoD policy for proposed wind farm locations as an example of our desire to cooperatively support alternative energy projects.

For example, near shore or off shore development can cause interference to surface ships and amphibious ships, as well as to underwater military training operations (such as mine detection and demolition). Onslow Bay, extending out several nautical miles, is absolutely critical to Navy/Marine Corps amphibious training exercises. These exercises must be done in conjunction with the amphibious beach and the live fire impact areas at Camp Lejeune. The NC coasts are the only areas available on the east coast to carry out these types of Navy/Marine Corps amphibious training exercises.

In its current form, the draft report contains only two references to military interests. We believe the ultimate strategy for managing North Carolina's coastal ocean development should reflect additional consideration for the potential impacts to military activities. Although, the current North Carolina code already requires special consideration of land use changes proposed in the vicinity of a military base (N.C. Gen. Stat. Sec. 153A-323 (2008)), we are concerned that this provision may not be broad enough to apply to proposed ocean uses or to those areas near military airspace.

We offer the following general and document specific comments to the draft policy, in light of these concerns and the potential negative impacts to military activities within the coastal counties and ocean areas of North Carolina:

1. **Military Review and Concurrence of Projects.** Similar to the rule proposed by the Mineral Management Service for establishing a program to manage energy projects on the Outer Continental Shelf, the final NC Ocean Policy Report should require applicants for projects to provide detailed analysis of the potential impacts to military activities affected by proposed activities. The policy should incorporate a requirement to institutionalize a review process that includes the DoD (i.e., an interdisciplinary NEPA-like review/permit). Project proposals could be sent for review and approval (optimally) or comment (minimally) to the DoD REC and the NC DoD Commanders Council. This would not be a new requirement, since the N.C. Gen. Stat. Sec. 153A-323 (2008) sets forth a model requiring notice to the military service, the opportunity for the military service to comment and the requirement for due consideration of any comment or analysis submitted by the military service. The management strategy could call for adopting this model for statutes and implementing regulations controlling coastal ocean development, or recommend establishing a new mechanism for achieving this end.
2. **Review of and coordination with military threatened and endangered (T&E) management plans.** Heightened training restrictions due to increased threatened and endangered (T&E) species emphasis could be catastrophic for the DoD. The wildlife and plant species found along the NC coasts are diverse and often threatened. The final NC Ocean Policy Report should note that any off shore developments that negatively impact marine mammals, T&E species and species at risk could cause implementation of additional protective restrictions and increase the environmental burdens on both the military and commercial ventures. The worst case scenario for the military would be for these restrictions to further restrict training capabilities. The final NC Ocean Policy Report should prohibit projects which increase these protective measures and reduce training flexibilities.
3. **Airspace Coordination.** Require any construction or alteration exceeding 200 ft above ground or sea level to provide an analysis of findings associated with the coordination of any proposed structures of concern to the Federal Aviation Administration (FAA) and military services. The analysis should use the preliminary project screening tool located at: <https://www.oceaaa.faa.gov/oceaaa/external/gisTools/gisAction.jsp?action=showLongRangeRadarToolForm>

4. Page 15: Development of a Coastal Vulnerability Index (CVI) – definition of CVI "might" need expansion to acknowledge and evaluate impact to military mission sustainability issues and concerns (e.g., airspace requirements; low-level military training routes; troop maneuvers; drop zones; water-based maneuvers; impacts to electronic media; microwave towers; and early coordination required with the appropriate FAA and regional military POCs on proposals for alternative energy projects - wind turbines, etc. which could "potentially" interfere with military operations).

5. Page 24: 1st Paragraph; Last Sentence: "Furthermore, applications or uses characterized by a more mobile or transient characteristic, such as shipping lanes and military air space, must be avoided." Change the sentence to read, "Furthermore, applications or uses characterized by a more mobile or transient characteristic, such as shipping lanes and military sea space, undersea space and air space, must be avoided."

6. Page 41-42: The last sentence under "Lease and Easements for Alternative Energy Projects" states: "although an individual wind turbine may occupy only a small portion of State-owned submerged lands and a small portion of the water column, the total project will occupy a large area of State-owned submerged lands, many segments of the water column, and the turbines will intrude several hundred feet into the airspace..." We would recommend adding a new footnote # 147 (then shifting other footnotes down a one digit accordingly). The new footnote # 147 (for the bottom of page 42) could state:

The Federal Code of Regulations (CFR) Title 14 Part 77.13 states that any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA:

- any construction or alteration exceeding 200 ft above ground level.
- any construction or alteration: within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 ft; within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft; within 5,000 ft of a public use heliport which exceeds a 25:1 surface.
- any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards, when requested by the FAA
- any construction or alteration located on a public use airport or heliport regardless of height or location.

7. Page 43: Designate all military facilities within the state as Key facilities. Last paragraph Second sentence: "...Those two subsections are §113A-120(a)(5) regarding public trust waters and (7) regarding key facilities. Subsections §113A-120(a)(8) regarding inconsistency with land use plans, (9) regarding practicable alternatives and (10) regarding cumulative effects may play a role in a particular project. However, only (a)(5) and (7) would have direct application to all proposals to site facilities in public waters and (7) simply incorporates by reference the limitations set forth in (1) through (6)." Military installations are likely NOT considered "key facilities" within NC per se - based on the definition provided. Military installations should be designated as key facilities since they "tend to induce development and urbanization of more

than local impact". Designation of installations as key facilities will provide additional requirements for scrutiny prior to project approval.

8. Page 48: Add an additional Recommendation. The recommended addition is as follows: Proponents of any "Ocean-based Alternative Energy" project proposals need: (1) to provide early notification and coordination to military commanders (and their key environmental and operational staff); (2) the military service Regional Environmental Coordinators (REC's) listed below; and (3) to coordinate with the FAA IF when any of the review criteria of the Federal Code of Regulations (CFR) Title 14 Part 77.13 apply (NOTE: listed above as a proposed document footnote).

We thank you for the opportunity to comment on the draft report. We will continue to monitor developments and would appreciate the opportunity to provide additional comments as the report is finalized. We would also like to attend the Commission meeting on 29, 30 April 2009 and hope that this can be arranged.

We welcome the opportunity to meet with you in person or telephonically, to discuss this letter. I look forward to working with you to continue the mutually beneficial relationship between the DoD and North Carolina. If you have questions or comments regarding contents of this letter, please email Mr. Marshall Williams at [marshall.williams@us.army.mil](mailto:marshall.williams@us.army.mil) or call him at 404-545-6599 and he will provide you assistance. I can be contacted at [susan.p.gibson@us.army.mil](mailto:susan.p.gibson@us.army.mil) or 404-524-5061x277.

Sincerely,



Susan P. Gibson  
DoD Regional Environmental Coordinator  
Region 4

Enclosure

CC:  
Tom Sims  
Scott Brewer  
Christine Porter



OFFICE OF THE SECRETARY OF DEFENSE

1480 DEFENSE PENTAGON  
WASHINGTON DC 20301-1480

DOD  
POLICY BOARD  
ON FEDERAL AVIATION

JAN 29 2007

SUBJECT: Department of Defense (DoD) Policy on Proposed Wind Farm Locations

The DoD does not oppose the development of wind farms and other sources of renewable energy that do not adversely impact military readiness or training of U.S. Armed Forces. DoD will continue to work with the Federal Aviation Administration (FAA) and other regulatory agencies as necessary, to evaluate each wind farm proposal on a case-by-case basis. Where our assessment of a particular project suggests potential adverse impacts to military or other national security operations, we will raise those concerns with the appropriate regulatory authority in order to mitigate or prevent the adverse affects of that project through appropriate technologies and techniques. We will continue to work with the FAA and others to achieve mutually satisfactory wind farm project solutions.

Gerald F. Pease, Jr.  
Executive Director