The State Government Ethics Act mandates that at the beginning of any meeting the Chair remind all the members of their duty to avoid conflicts of interest and inquire as to whether any member knows of any conflict of interest or potential conflict with respect to matters to come before the Commission. If any member knows of a conflict of interest or potential conflict, please state so at this time.

Wednesday, May 14th

9:30 COASTAL RESOURCES ADVISORY COUNCIL MEETING (Atlantic/Hatteras/Pamlico Room)

10:30 COMMISSION CALL TO ORDER* (Atlantic/Hatteras/Pamlico Room) Frank Gorham, Chair
  • Roll Call

10:40 VARIANCES
  • CXA – 10 Corp. - (CRC-VR-14-05) New Hanover County, ¼ width rule Christine Goebel
  • Grier - (CRC-VR-14-07) Kure Beach, Oceanfront setback Amanda Little
  • Edwards - (CRC-VR-14-08) Onslow County 30’ buffer Christine Goebel

12:30 LUNCH

1:45 CRC Business
  • Approval of February 26-27, 2014 Meeting Minutes Braxton Davis
  • Executive Secretary’s Report
  • Chairman’s Comments Frank Gorham
  • Amendments to CRC Internal Operating Procedures (CRC-14-13) Mary Lucasse

2:00 ACTION ITEMS
  Beach Management
  • Static Line Exceptions Process Mary Lucasse
  • Static Line Exception Reauthorization – Town of Wrightsville Beach (CRC-14-11) Matt Slagel, Christine Goebel
  • Static Line Exception Reauthorization – Town of Carolina Beach (CRC-14-12) Matt Slagel, Christine Goebel

2:30 Inlet Management Study
  • Summary of Regional Inlet Management Meetings (CRC-14-10) Matt Slagel
  • Preliminary Findings
  • Commission Discussion

5:00 Public Hearings Frank Gorham, Chair
  • 15A NCAC 7H .2600 General Permit for Mitigation & InLieu Fee Projects

5:15 PUBLIC INPUT AND COMMENT

5:30 Presentation of Eure Gardner Award to Melvin Shepard Frank Gorham, Bob Emory

RECESS

5:45 Welcome & Reception
  • Sponsored by Town of Emerald Isle (Atlantic/Hatteras/Pamlico Room) Eddie Barber, Mayor
Thursday, May 15th

9:00 COMMISSION CALL TO ORDER* (Atlantic/Hatteras/Pamlico Room)  Frank Gorham, Chair
  • Roll Call
  • Chairman’s Comments
  • CRAC Report

9:15 CRC Science Panel
  • Role, Studies and Vacancies (CRC-14-14)  Mike Lopazanski
  • Commission Discussion

10:15 Sea Level Rise Study Update
  • H819 Requirements, Science Panel Involvement, Timeframe (CRC-14-15)  Tancred Miller
  • Commission Discussion

11:15 PUBLIC INPUT AND COMMENT

11:30 ACTION ITEMS
  CRC Rule Development
  • Adopt 15A NCAC 7H .0312 Technical Standards for Beach Fill Projects  Matt Slagel
  • Adopt 15A NCAC 7H .1204 & .1205 General Permit for the Construction of Piers and Docking Facilities In Estuarine and Public Trust Waters and Ocean Hazard Areas  Mike Lopazanski
  • Adopt 15A NCAC 7H .1305 General Permit to Construct Boat Ramps Along Estuarine and Public Trust Shorelines and Into Estuarine and Public Trust Waters  Tancred Miller
  • 15A NCAC 7K .0208 Single Family Residence Exemption – Adjacent Property Owner Notification (CRC-14-16)  David Moye
  • 15A NCAC 7H .1500 GP for Excavation of Upland Basins – Excavation and Bulkheads (CRC-14-17)  David Moye

12:15 LUNCH

1:30 OLD/NEW BUSINESS  Frank Gorham, Chair
  • Raleigh Legislative Forum
  • Economic Value of the Coast

2:00 Closed Session
  • Ongoing Litigation Related to CAMA

3:00 ADJOURN

Executive Order 34 mandates that in transacting Commission business, each person appointed by the governor shall act always in the best interest of the public without regard for his or her financial interests. To this end, each appointee must recuse himself or herself from voting on any matter on which the appointee has a financial interest. Commissioners having a question about a conflict of interest or potential conflict should consult with the Chairman or legal counsel.

* Times indicated are only for guidance. The Commission will proceed through the agenda until completed.

N.C. Division of Coastal Management
www.nccoastalmanagement.net
Next Meeting: July 30-31, 2014; Location TBD
TO: Coastal Resources Commission
FROM: Christine A. Goebel
Assistant Attorney General
DATE: April 30, 2014 (for the May 14-15, 2014 CRC Meeting)
RE: Variance Request by CXA-10 Corporation (Watermark Marina) (14-05)

Petitioner owns an existing marina in New Hanover County, along River Road south of the City of Wilmington on the Cape Fear River that was originally constructed by a prior owner in 2005-06, pursuant to CAMA Major Permit No. 66-01. In June 2013, Petitioner sought a major modification of its CAMA major permit seeking to extend to the existing forklift pier which would add approximately 1,031 feet to the pier length. On December 2, 2013, DCM denied Petitioner’s application based on the proposal’s inconsistency with the Commission’s 1/4 width rule at 7H.0208(b)(6)(G)(iii) and the “rate to deep water” rule at 7H.0208(b)(H). Petitioner now seeks a variance to allow the proposed pier extension as proposed.

The following additional information is attached to this memorandum:

Attachment A: Relevant Rules
Attachment B: Stipulated Facts
Attachment C: Petitioner's Position and Staff's Responses to Criteria
Attachment D: Petitioner's Variance Request Materials
Attachment E: Stipulated Exhibits

cc: William A. Raney, Jr., Counsel for Petitioner, electronically
Ken Vafier, CAMA LPO, New Hanover County, electronically
Mary Lucasse, CRC Counsel, electronically
RELEVANT STATUTES OR RULES

15A NCAC 7H.0203    Management Objective of the Estuarine and Ocean System

It 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. Furthermore, it is the objective of the Coastal Resources Commission to protect present common-law and statutory public rights of access to the lands and waters of the coastal area.

15A NCAC 7H.0208    Coastal Shorelines

***

(b) Specific Use Standards

(G) Pier and docking facility length shall be limited by:

(i) not extending beyond the established pier or docking facility length along the same shoreline for similar use; (This restriction does not apply to piers 100 feet or less in length unless necessary to avoid unreasonable interference with navigation or other uses of the waters by the public);

(ii) not extending into the channel portion of the water body; and

(iii) not extending more than one-fourth the width of a natural water body, or human made canal or basin. Measurements to determine widths of the water body, canals or basins shall be made from the waterward edge of any coastal wetland vegetation that borders the water body. The one-fourth length limitation does not apply in areas where the U.S. Army Corps of Engineers, or a local government in consultation with the Corps of Engineers, has established an official pier-head line. The one-fourth length limitation shall not apply when the proposed pier is located between longer piers or docking facilities within 200 feet of the applicant's property. However, the proposed pier or docking facility shall not be longer than the pier head line established by the adjacent piers or docking facilities, nor longer than one-third the width of the water body.

(H) Piers or docking facilities longer than 400 feet shall be permitted only if the proposed length gives access to deeper water at a rate of at least 1 foot each 100 foot increment of length longer than 400 feet, or, if the additional length is necessary to span some obstruction to navigation. Measurements to determine lengths shall be made from the waterward edge of any coastal wetland vegetation that borders the water body;
STIPULATED FACTS

1. The Petitioner, CXA-10 Corporation, is a Texas corporation authorized to do business in North Carolina.

2. The Petitioner is the owner of property located at 4114 River Road, Wilmington, North Carolina (the Site). The Site is located about 4.7 miles south of the Cape Fear Memorial Bridge at Wilmington. It was purchased at a foreclosure sale, as shown on a Trustee's Deed recorded May 7, 2010.

3. The property consists of 12.14 acres of upland and 20.47 acres of marsh on the east bank of the Cape Fear River. At the Site, the waters of the Cape Fear River are designated as a Primary Nursery Area (PNA) and as SC waters by the Environmental Management Commission, and are closed to the harvest of shellfish.

4. The property is the location of an existing dry storage marina, a yacht club building, trailer and vehicle sheds, and a pier for launching boats by means of a forklift (launch pier).

5. A CAMA Major Permit Application was submitted on June 2, 2000 by Barnards Creek, LLC for a clubhouse, dry stack storage facility, a launch pier, floating docks and related on-shore development.

6. After the filing of the original application in June, 2000, it was determined that the proposed end of the launch pier and the floating docks were located in water that was too shallow to launch and operate boats during most of the tidal cycle.

7. A hydrographic survey was performed by Hanover Design Services, P.A., a registered land surveyor, in 2000 in an attempt to identify a location for the launch pier that had adequate water depth. A copy of this survey is attached.

8. Prior to the issuance of Permit 66-01 the plans for the pier were changed to relocate and extend the pier so that the depth at the end of the launch pier would be 3.46' at mean low water according to the Hanover Design Services hydrographic survey.

9. Prior to the issuance of Permit 66-01, then-DCM Assistant Director Charles Jones visited the site by boat to inspect the water depth at the new proposed location for the launch pier.

10. CAMA Major Permit 66-01 was issued on May 29, 2001 for the facility with a revision to the original plans that changed the location, length and orientation of the launch pier and the floating docks.
11. Permit 66-01 contained a condition stating "In accordance with commitments made by the
permittee, if water depths at the launch dock is of insufficient depth to allow for launch and/or
recovery operations to take place without disturbing the adjacent shallow bottom habitat,
launch and recovery operations shall be suspended until such time as the water depth increases
to an adequate level."

12. The Permit was renewed on December 3, 2004. On June 30, 2005, the property was purchased
by Watermark Marina of Wilmington, LLC and the Permit was transferred to Watermark in
July 2005 following the change in ownership.

13. Most of the development authorized by Permit 66-01 was constructed in late 2005 and early
2006, including the launch pier, floating docks and upland development.

14. A survey by a registered land surveyor from McKim & Creed in 2010, a copy of which is
attached, showed the floating docks being located between 0' and -1' mean low water.

15. The Marina has never become a fully operational dry storage marina facility. In the major
modification narrative, the Petitioner noted that at that time, only 20 of 430 dry storage spaces
were in use. Petitioner contends that this is due to shallow water at the launch pier, launching
and retrieving is limited to two hours on either side of high tide.

16. The Permit was again renewed by Watermark Marina of Wilmington, LLC on March 28, 2007.

17. On May 4, 2010, CXA-5 Corporation purchased the Site and Marina through a foreclosure
sale, after Watermark Marina of Wilmington, LLC’s deed of trust was foreclosed on.

18. Effective July 2, 2012, the Texas Corporations CXA-1 Corporation and CXA-5 Corporation
merged to become CXA-10 Corporation. Accordingly, the Marina changed ownership from
CXA-5 Corporation to CXA-10 Corporation (Petitioner). On October 16, 2012, the Permit
was transferred to CXA-10 Corporation.

19. On June 13, 2013, a scoping meeting was held for the proposed major modification to Permit
66-01.

20. On August 20, 2013, the Petitioner applied for a major modification to Permit 66-01 to add an
extension on to the existing launch pier. The proposed modification included development of
additional forklift launch and retrieval pier approximately 1,031 feet by 23.5 feet, development
of an irregularly-shaped platform area and transient floating docks.
21. The development proposed in the major modification application is within the Public Trust and Estuarine Waters Areas of Environmental Concern (AECs). A CAMA permit (or major modification) is required by 113A-118 for the development proposed within these AECs.

22. The proposed pier extension would add 51,973 square feet (1.19 acres) of public trust area usurpation to the 7,180 square feet of the public trust area usurpation from the existing forklift pier, for a total of approximately 59,153 square feet (1.36 acres) of public trust area usurpation.

23. As part of the CAMA major permit review process, notice was given to the public through on-site posting and notice in the local newspaper. Notice was also sent to the adjacent riparian owners. DCM received no comments or objections in response.

24. Also as part of the CAMA major permit review process, copies of the major modification application and the Field Report were sent to federal and state review agencies. DCM’s fisheries resource staff, DEH’s (now DMF’s) Shellfish Sanitation Section, and the Wildlife Resources Commission each had no comment on this project. The federal agencies had no objection but proposed conditions. A copy of the Field Report and the federal response are attached.

25. On December 2, 2013, DCM denied Petitioner’s major modification application, as the proposed development would be inconsistent with the Commission’s Rules at 15A NCAC 7H .2028(b)(6)(G)(iii) (the ¼ Width Rule) and .0208(b)(H) (rate to deeper water rule). Staff’s denial letter stated that “8) The proposed forklift launch pier and pedestrian pier extension longer than 400 feet would gain deeper water at a rate of less than .5 feet per 100 foot increment.” A copy of the denial letter is attached.

26. CRC Rule 15A NCAC 7H.0208(b)(6)(G)(iii) provides that pier length shall be limited by "not extending more than 1/4th the width of a natural water body... measurements to determine widths of the water body, canals or basins shall be made from the waterward edge of any coastal wetland vegetation which borders the water body...".

27. CRC Rule 15A NCAC 7H.0208(b)(6)(H) states the pier length shall be limited by: "Piers or docking facilities longer than 400' shall be permitted only if the proposed length gives access to deeper water at a rate of at least 1' each 100' increment of length longer than 400', or, if the additional length is necessary to span some obstruction to navigation. Measurements to determine lengths shall be made from the waterward edge of any coastal wetland vegetation that borders the water body;".

28. The application seeks to extend the pier to the -6' mean low water depth so that the existing pier and the proposed pier will extend a total distance of 1,424' into the body of water.
29. The distance across the water body at the location of the proposed launch pier is 2,686' from marsh to marsh.

30. The federally maintained Cape Fear River channel is over 4,000' west of the site. The proposed modification would not encroach into the US Army Corps of Engineers navigation channel setback. One large undeveloped spoil disposal island directly across from the site is known as Island 13, which was used as a mitigation site for impacts to PNA by the Wilmington Harbor Deepening Project.

31. The presence of Island 13 creates a back channel, on which the permitted development is sited, separated from the main navigation channel, the Cape Fear River, by Island 13. In the absence of Island 13, the width of the water body (Cape Fear River) at the project location is approximately 6,750'.

32. The proposed launch pier would extend about 53% across the width of the back channel.

33. The back channel has extensive shallow water mud flats extending from the east shoreline of the River and a less extensive mud flat on the western shoreline of Island 13. A copy of the 2010 McKim & Creed survey is attached.

34. The deepest water within the back channel is about 7-8' deep at mean low water and, in the vicinity of the proposed launch pier, is about 230-350' wide. The outer end of the proposed launch pier would be about 60' landward of the channel portion of the back channel. A copy of the 2010 McKim & Creed survey is attached.

35. At the project location the distance from the marsh at the Petitioner's property to the edge of the 7-8' channel is approximately 1,504'. The distance from the marsh at Island 13 to the edge of the 7-8' channel is approximately 900'. The 7-8' channel is approximately 280' wide at this location. A copy of the 2010 McKim & Creed survey is attached.

36. Extending the launch pier into deeper water will decrease the likelihood that the bottom of the water body will be disturbed by boat hulls and propellers.

37. The closest pier to the north of the project is an industrial off-loading conveyor system for bulk gypsum coming by ship. The conveyor pier extends approximately 1,565' beyond the edge of the marsh at a location where the width of the River from marsh to marsh is approximately 3,048'. The conveyor pier was built before the 1/4 Width rule was in effect.
38. Barnards Creek divides the applicant's property from the next property to the south which is owned by NNP IV, Cape Fear River LLC (NNP). NNP is in the process of developing a 1,375 acre tract with 15,132' of shoreline on the Cape Fear River, which was permitted for 112 wet slips and 84 dry stack slips. NNP has been issued a CAMA Permit and a variance from the 1/4th Width Rule allowing NNP to construct a wetslip marina and forklift launch pier that extends 540' of the 1800' back channel which is 30% of the width of the back channel, and the wet-slip marina at 450' of the 1500' back channel which is also 30% of the width of the back channel. The NNP piers and docks would extend to about the -5 - 6' depth at mean low water.

39. The width of the back channel from the waterward edges of the Coastal Wetlands (as rule 7H. 0208(b)(6)(G)(iii) requires for water-body measurement) at the NNP marina site is approximately 1,500-1,800'. The water width at the Watermark proposed pier site, from marsh to marsh, is approximately 2,686'. The difference in width between the Watermark site and the NNP site is due to the indentation in the east bank of the Cape Fear River at the Watermark site.
Petitioner and Staff Positions

I. Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? If so, the petitioner must identify the hardships.

Petitioner’s Position: Yes.

The restriction on pier length imposed by CAMA Rules causes an unnecessary hardship to the Petitioner because it prevents the Petitioner from launching and retrieving boats at its dry storage marina facility for much of the tidal cycle. The hardship is unnecessary because the lengthening of the pier will not result in unreasonably restricting navigation or interfering with other public uses of the public trust waters. The body of water in which the extended pier is proposed to be located has physical constraints that limit its use for navigation and other public uses. The shoreline ownership, use, zoning and configuration all join to limit a proliferation of structures in the back channel thereby effectively leaving most of the water body open for public use. In addition, the area within the ¼th distance from the shoreline is classified as primary nursery area (PNA) so that the Petitioner does not have the option of dredging to solve the water depth problem.

Staff’s Position: No.

Strict application of the Commission’s “¼ width rule” and the “rate to deep water” rule will not cause Petitioner unnecessary hardships. The purpose of these rules is to limit pier length, to limit the public trust area usurped by such structures, and to protect the safe navigation of public trust waters. Petitioner seeks to extend the forklift pier beyond the ¼ width limit imposed by the Commission’s rules, and beyond the 1/3 width imposed in special circumstances by the Commission’s rules. Petitioner seeks to build to a length 53% across the waterbody in order to reach a depth of -6 feet NLWL. As proposed, the forklift pier will usurp approximately 59,153 square feet of this public trust waterbody. Additionally, at this site, the bottom slope and proposed design of the extension fail to meet the 1’ of depth per 100’ length standard within the Commission’s rules. Staff believes that since this site was always marginal for a marina due to its location in a PNA where new dredging is prohibited and the existing shallow depths, combined with the likely siltation that has occurred since development of the existing structure, any hardships which may result from the strict application of the Commission’s rules limiting pier length are not unnecessary.
II. Do such hardships result from conditions peculiar to the petitioner's property, such as location, size, or topography of the property? Explain.

**Petitioner's Position:** Yes.

The Petitioner's property lies along an indented portion of the shoreline of the Cape Fear River. The shoreline of the Cape Fear River for a considerable distance north and south of the Petitioner's property is sparsely developed with piers and docks. The water within the indented portion of the shoreline is all very shallow. The property lies along a back channel of the Cape Fear River that is separated from the shipping channel of the River by a spoil island controlled by the Corps of Engineers known as Island 13. Island 13 was created from material dredged from the ship channel and has been mostly converted from upland area to wetlands by the Corps of Engineers to mitigate for the adverse environmental effects of the expansion of the ship channel. The deepest water in the back channel lies near Island 13. To reach water deep enough at all tidal cycles to launch and retrieve boats at this dry storage facility is necessary to build the launch and retrieve pier long enough to reach the deeper water near the Island 13 side of the back channel. There is unlikely to be any development on Island 13. The proposed extension of the pier extends about 53% of the way across the back channel but the deepest part of the back channel is still located well beyond the end of the proposed extended pier. The total width of the Cape Fear River at this location is approximately 6,755' measured from marsh to marsh. Without the artificial spoil island the proposed pier would extend only about 21% of the distance across the River.

**Staff's Position:** Yes.

Staff agrees that certain conditions exist that are peculiar to the Petitioner's property and which may cause Petitioner's hardships. Specifically, Staff agrees that the site's location across from Island 13, which is used by the U.S. Army Corps of Engineers for spoil deposition, makes it unlikely that there will be future pier development that would further impact navigation. Staff believes the Site's location across from Island 13 makes future navigation problems less likely because of the unlikely chance of development on Island 13, and so Staff agrees that any hardships which might exist, result from the location of Petitioner's property.

In making this recommendation, Staff notes that other conditions of this property noted by the Petitioner are not peculiar, including the "very shallow water", the possible siltation at the site after initial construction, and the indentation along this shoreline.
III. Do the hardships result from the actions taken by the Petitioner? Explain.

**Petitioner's Position:** No.

The hardships are due to the location of the property on a shoreline with an indentation. The area of indentation consists of very shallow water. The shallow water extends beyond 1/4th the width of the entire body of water. The Petitioner is not the original owner who developed the property for a dry storage marina. The original developer and its successors had information from a professional land surveyor showing water depths at the end of the existing launch pier being at about 3.46' at mean low water. That depth would be marginally adequate for most types of boats at all stages of the tidal cycle. A CAMA permit was issued based on this information. It was only after the launch pier was constructed that the pier owner realized that the area at the end of the launch pier and beyond had either quickly become shallower by deposition of sediment or that the original water depth information was inaccurate. The hardship of inadequate water depth was not the result of actions taken by the Petitioner.

**Staff's Position:** Yes.

The shallow site conditions, the likely siltation after development, and the designation of the area as a PNA and associated regulatory limitations on dredging were all known in 2001 at the time of permitting, in 2005-06 at the time of construction, in 2010 when Petitioner’s sister-company purchased the site through a foreclosure sale, and continue today. In purchasing the property in 2010 through the foreclosure process, and during the process of transferring the CAMA permit into the applicant’s name, the limitations of this site and of the Commission’s long-standing limits on pier length were or should have been known to the Petitioner and its sister company. As such, Staff believes that any hardships now faced by Petitioner are a result of its proposal to extend the pier well beyond the 1/4 width limitation in order to try and overcome these long-standing site conditions, and to go as far as -6' depth in order to now utilize the forklift launch during all portions of the tidal cycle. While Petitioner is seeking to resolve the problem of possible siltation and shallow water by reaching deep water in order to limit possible PNA damage, the fact that it must extend over half the width of the waterbody to do so is excessive and creates any hardship faced by Petitioner.
IV. Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Petitioners’s Position: Yes.

Consistent with spirit, purpose and intent of rules.
The purpose of the Pier ¼ Width Rule, 7H.0208(b)(6)(G)(iii) is to protect public water for use by the public by limiting the area of water that is occupied by private structures to 1/4th of the width of the body of water thereby leaving the middle ½ of a body of water unobstructed. The purpose of Rule 7H.0208(b)(6)(H) is to avoid extremely long piers in wide bodies of water when the water depth increases very slowly. Piers along such shorelines and across wide areas of shallow waters could remove substantial public trust areas from public use. The Petitioners proposed launch pier will serve a need for public access to the waters along this stretch of the River. The current shallow depth of the water in the location of Petitioner’s property reduces its usefulness for public uses such as navigation or fishing. The variance will help protect the viability of the primary nursery area by avoiding disturbance of shallow water that would inevitably result if the current pier were to be used for launching boats. Even though the depth gained by the extension of the pier is less than 1’ per 100’ of extra length, the number of people gaining access to the waters of the River by use of the proposed facility justifies the unusually long pier. The unusually long pier in this location will not create a significant encumbrance of the public trust waters from possible cumulative effects of multiple piers because the extensive shorelines both north and south of the proposed pier are committed to industrial or commercial uses rather than a proliferation of private piers.

Secure the public safety and welfare.
The extension of the pier will avoid navigation hazards that would exist with the use of the existing shorter pier that ends in shallow water. Users of the existing facility could become stranded if they tried to return to the facility when the tidal cycle resulted in water depth that was too shallow to reach the pier. This could result in strandings for extended periods of time. The extended pier would also alert mariners unfamiliar with this area to the existence of a large expanse of shallow water adjacent to the east bank of the River in this location.

Preserve substantial justice.
Granting the variance will allow the Petitioner to utilize a significant existing onshore facility for its intended purpose. Honest mistakes by both the developers of the property and the Division of Coastal Management resulted in permitting a substantial dry storage marina that is of little practical use. Granting the variance will also help protect primary nursery area from adverse impacts resulting from utilization of the pier in its current location.
Staff's Position: No.

Petitioner's proposed pier extension will not be consistent with the spirit, purpose and intent of the rules, standards and orders issued by the Commission. The rules which Petitioner seeks a variance from are the ¼ width rule and the "rate to deep water" rule. That is the spirit of the rules staff evaluates these criteria on. The Commission amended its pier length rule in 1998 to change the one-third standard to a one-fourth width requirement with certain exceptions (none of which apply in this case) to preserve traditional navigation by assuring that the middle one-half of any water body remained available for public use, and to limit overall pier size any one pier can inhabit within a public trust waterbody such as the Cape Fear River. In this case, an exception to the ¼ width rule may be within the spirit of the rules to some degree in order to reduce the likelihood of impacts to shallow water PNA and allow more use by Petitioner. However, Petitioners propose expanding their pier to reach a depth to -6' in order to use the facility for the whole tidal cycle. The extra distance needed to reach -6' requires extending the pier to 53% of the width of the waterbody (2,686) and results in the usurpation of approximately 59,153 square feet of pier area within the public trust area of the Cape Fear River. Staff feels that both rules from which Petitioner is seeking a variance are reasonable regulations of riparian rights, and to grant such significant variances to them would not be within the spirit, purpose and intent of the Commission's rules regulating pier length.

Staff further contends that public safety and welfare will be preserved by not allowing such a large amount of the public trust area of the Cape Fear River be taken up by a large pier extension proposal and specifically, allowing it to extend 53% of the waterbody width.

Staff further contends that the granting of this variance by the Commission would not preserve substantial justice. Petitioner knew or should have known the limitations on its property in 2010 at the time the marina was purchased through foreclosure. To allow Petitioner to extend out 53% across this waterbody where others are held to ¼ or 1/3 widths, and to depths of six feet when the original applicant believed that depths of 3.46 were adequate for operation of a drystack marina, would not preserve substantial justice, as there is no fairness in changing the rules later in the game for one marina but not all marinas located in PNAs along this river and along the coast.
ATTACHMENT D

Petitioner's Petition
(without proposed attachments which are also included in the stipulated exhibits or draft facts)
March 12, 2014

VIA U.S. MAIL

Mr. Braxton C. Davis, Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

VIA E-MAIL

Braxton.Davis@ncdenr.gov

Re: Variance Petition – CXA-10 Corporation, New Hanover County

Dear Mr. Davis:

Enclosed is a CAMA Variance Request Form regarding the above-referenced project. Please schedule this variance for the May, 2014 meeting of the Coastal Resources Commission.

I am enclosing copies of documents to support some of the proposed stipulated facts. These need not be included in the materials provided to the CRC.

Thank you for your attention to this matter.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.

WAR:ktw (Enc.)
WAR:ENVIRONR06-125-C04

cc: Ms. Christy Goebel (via U.S. mail and e-mail)
CAMA VARIANCE REQUEST FORM

PETITIONER'S NAME        CXA-10 Corporation

COUNTY WHERE THE DEVELOPMENT IS PROPOSED New Hanover

Pursuant to N.C.G.S. § 113A-120.1 and 15A N.C.A.C. 07J.0700 et seq., the above named Petitioner hereby applies to the Coastal Resources Commission (CRC) for a variance.

VARIANCE HEARING PROCEDURES

A variance petition will be considered by the CRC at a regularly scheduled meeting, heard in chronological order based upon the date of receipt of a complete petition. 15A N.C.A.C. 07J.0701(e). A complete variance petition, as described below, must be received by the Division of Coastal Management (DCM) a minimum of six (6) weeks in advance of the first day of a regularly scheduled CRC meeting to be eligible for consideration by the CRC at that meeting. 15A N.C.A.C. 07J.0701(e). The final set of stipulated facts must be agreed to at least four (4) weeks prior to the first day of a regularly scheduled meeting. 15A N.C.A.C. 07J.0701(c). The dates of CRC meetings can be found at DCM's website: www.nccoastalmanagement.net

If there are controverted facts that are significant in determining the propriety of a variance, or if the Commission determines that more facts are necessary, the facts will be determined in an administrative hearing. 15A N.C.A.C. 07J.0701(b).

VARIANCE CRITERIA

The petitioner has the burden of convincing the CRC that it meets the following criteria:

(a) Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? Explain the hardships.

(b) Do such hardships result from conditions peculiar to the petitioner's property such as the location, size, or topography of the property? Explain.

(c) Do the hardships result from actions taken by the petitioner? Explain.

(d) Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Please make your written arguments that Petitioner meets these criteria on a separate piece of paper. The Commission notes that there are some opinions of the State Bar which indicate that non-attorneys may not represent others at quasi-judicial proceedings such as a variance hearing before the Commission. These opinions note that the practice of professionals, such as engineers, surveyors or
contractors, representing others in quasi-judicial proceedings through written or oral argument, may be considered the practice of law. Before you proceed with this variance request, you may wish to seek the advice of counsel before having a non-lawyer represent your interests through preparation of this Petition.

For this variance request to be complete, the petitioner must provide the information listed below. The undersigned petitioner verifies that this variance request is complete and includes:

- [ ] The name and location of the development as identified on the permit application;
- [ ] A copy of the permit decision for the development in question;
- [ ] A copy of the deed to the property on which the proposed development would be located;
- [C-1&2] A complete description of the proposed development including a site plan;
- [D] A stipulation that the proposed development is inconsistent with the rule at issue;
- [E] Proof that notice was sent to adjacent owners and objectors, as required by 15A N.C.A.C. 07J .0701(c)(7);
- [ ] Proof that a variance was sought from the local government per 15A N.C.A.C. 07J .0701(a), if applicable;
- [F] Petitioner’s written reasons and arguments about why the Petitioner meets the four variance criteria, listed above;
- [G] A draft set of proposed stipulated facts and stipulated exhibits. Please make these verifiable facts free from argument. Arguments or characterizations about the facts should be included in the written responses to the four variance criteria instead of being included in the facts.
- [✓] This form completed, dated, and signed by the Petitioner or Petitioner’s Attorney.
Due to the above information and pursuant to statute, the undersigned hereby requests a variance.

W. A. Raney, Jr.
Printed Name of Petitioner or Attorney

PO Box 1049
Wilmington, NC 28402-1049
Mailing Address

3-12-14
Date

waraney@bellsouth.net
Email address of Petitioner or Attorney

(910) 762-7475
Telephone Number of Petitioner or Attorney

(910) 762-7557
Fax Number of Petitioner or Attorney

DELIVERY OF THIS HEARING REQUEST

This variance petition must be received by the Division of Coastal Management at least six (6) weeks before the first day of the regularly scheduled Commission meeting at which it is heard. A copy of this request must also be sent to the Attorney General's Office, Environmental Division. 15A N.C.A.C. 07J.0701(e).

Contact Information for DCM:

By mail, express mail or hand delivery:
Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

By Fax:
(252) 247-3330

By Email:
Check DCM website for the email address of the current DCM Director
www.nccoastalmanagement.net

Contact Information for Attorney General’s Office:

By mail:
Environmental Division
9001 Mail Service Center
Raleigh, NC 27699-9001

By express mail:
Environmental Division
114 W. Edenton Street
Raleigh, NC 27603

By Fax:
(919) 716-6767

Revised: February 2011
Prepared by and Return to:
Ward and Smith, P.A.
Attn: Michael P. Flanagan
PO Box 8088
Greenville, NC  27835

Tax Parcel No. R0700-002-005-000 and R0700-002-009-000
Revenue stamps: $12,400.00

The Property Conveyed By This Deed Is Not the Grantor's Primary Residence

STATE OF NORTH CAROLINA
COUNTY OF NEW HANOVER

TRUSTEE’S DEED

THIS DEED, made and entered into this the 4th day of May, 2010 by and
between WASLAW, LLC, acting as Substitute Trustee as hereinafter stated, of Post Office Box
867, New Bern, Craven County, North Carolina 28563, party of the first part; and CXA-5
CORPORATION, a North Carolina corporation, party of the second part (whether one or more),
whose address is 6000 Legacy Drive, Plano, Texas 75024;

WITNESSETH:

WHEREAS, Watermark Marina of Wilmington LLC executed to The Title
Company of North Carolina, Trustee for Beal Bank Nevada (Successor to Bankfirst), upon the
lands hereinafter described, a Deed of Trust dated June 23, 2006 and recorded in Book 5049, at
Page 2058, in the office of the Register of Deeds of the above-captioned county; and,

WHEREAS, by instrument dated August 12, 2008, recorded in Book 5340, at
Page 2124, in the office of the Register of Deeds of the above-captioned county, the party of the
first part was substituted as Trustee of said Deed of Trust in the place and stead of the original
Trustee; and,
WHEREAS, the indebtedness secured by said Deed of Trust being overdue and unpaid and the Holder of said indebtedness having called upon said Substitute Trustee to foreclose said Deed of Trust; and,

WHEREAS, said Substitute Trustee having given notice of the commencement of foreclosure of said Deed of Trust to those persons entitled to same according to the provisions of Article 2A of Chapter 45 of the General Statutes of the State of North Carolina, and a hearing having been held before the Clerk of Superior Court of the above-captioned county, and said Clerk having authorized, ordered, and directed that said Substitute Trustee could proceed under said Deed of Trust to give notice of and to conduct a foreclosure sale, all of which appears of record in File No. 08-SP-1066 in the office of the Clerk of Superior Court of the above-captioned county, North Carolina; and,

WHEREAS, the said Substitute Trustee after due advertisement as required by law and the terms of said Deed of Trust offered said land and premises for sale at the Courthouse door in Wilmington in the above-captioned county, North Carolina, to the highest bidder for cash on March 22, 2010, when and where Beal Bank Nevada became the last and highest bidder for said premises at the price of Six Million Two Hundred Thousand and No/100 Dollars ($6,200,000.00); and,

WHEREAS, a report of said sale was duly made to the Court and the same has not been raised, upset, or increased as provided by law and said purchase price has been paid as in said Deed of Trust prescribed.

WHEREAS, Beal Bank Nevada assigned its bid to CXA-5 CORPORATION by Assignment of Bid dated April 27, 2010, which Assignment of Bid was filed in the office of the Clerk of Superior Court of the above-captioned county.
NOW, THEREFORE, for and in consideration of the premises and the sum of Six Million Two Hundred Thousand and No/100 Dollars ($6,200,000.00), the party of the first part has bargained and sold and by these presents does bargain, sell, and convey unto the said party of the second part, said party's successors and assigns, the following premises, to wit:

That certain tract of land being in New Hanover County, North Carolina, and being more fully described as follows:

Being all of a 40.45 acre tract as shown on a map of recombination for Watermark Marina of Wilmington as shown on plat recorded in Map Book 48, Page 331, New Hanover County Registry.

This conveyance is made together with all easements benefiting the aforesaid property, including, but not being limited to, the "60' Access Easement" located north of the northern line of Tract C as said line is extended westwardly 60 feet, depicted on the map entitled "Map of Recombination Watermark Marina of Wilmington", said map being recorded in Map Book 48, Page 331 in the office of the Register of Deeds of New Hanover County.

This conveyance is made subject to the rights of others in and to the non-exclusive use of the "60' Access Easement" located north of the northern line of Tract C, as said line is extended westwardly 60 feet, depicted on the map entitled "Map of Recombination of Watermark Marina of Wilmington" recorded in Map Book 48, Page 331 in the office of the Register of Deeds of New Hanover County, including, but not being limited to the non-exclusive easement rights of Watermark Marina of Wilmington, LLC in said non-exclusive easement (and including only that portion of said easement which is located north of the northern line of Tract C as said line is extended westwardly 60 feet) appurtenant to the property described by the deed recorded in Book 4929, Page 1235 in the office of the Register of Deeds of New Hanover County, which easement rights are and shall be non-exclusive and shall be used in common with all of the owners of other property benefited.
by said easement including, but not being limited to, the property depicted as "40.45 AC +/-" shown on the map entitled "Map of Recombination Watermark Marina of Wilmington" recorded in Map Book 48, Page 331 in the office of the Register of Deeds of New Hanover County.

Together with all additional rights, title, and interest of Grantor conveyed and described in the Deed of Trust recorded in Book 5049 at Page 2058 in the office of the Register of Deeds of New Hanover County.

The above-described property is conveyed subject to all taxes, special and homeowners' association assessments, any liens or encumbrances of record against the above described property, and unrecorded mechanics' and materialmen's liens, which are prior to the Deed of Trust recorded in Book 5049, at Page 2058, and any recorded releases from the Deed of Trust recorded in Book 5049, at Page 2058 in the office of the Register of Deeds.

The above-described property is conveyed "AS IS, WHERE IS, AND WITH ALL FAULTS." No representations or warranties relating to the title or any physical, environmental, health or safety conditions existing in, on, at or relating to the above-described property are made and any and all responsibilities and liabilities arising out of or in any way relating to any such condition expressly are disclaimed.

TO HAVE AND TO HOLD, the said premises, together with all privileges and appurtenances thereunto belonging unto the said party of the second part, said party's successors and assigns, in as full and ample a manner as the party of the first part is empowered to convey the same.
IN WITNESS WHEREOF, the said party of the first part caused this instrument to be executed in such form so as to be binding this the day and year first above written.

WASLAW, LLC, Substitute Trustee

By

Michael P. Flanagan, Authorized Representative

STATE OF NORTH CAROLINA
COUNTY OF PITT

I certify that the following person personally appeared before me this day, acknowledging to me that he/she signed the foregoing document for the purpose stated therein, in the capacity indicated therein: Michael P. Flanagan, Authorized Representative.

Date 5/4/10

Signature of Notary Public

Norreene S. Furness
Notary's Printed or Typed Name

My commission expires: August 23, 2013
CAMA VARIANCE PETITION
CXA-10 CORPORATION
STIPULATION

Petitioner, CXA-10 Corporation, through its attorney, W. A. Raney, Jr., stipulates that the proposed development that is the subject of the variance petition is inconsistent with Coastal Resources Commission Rules 15A NCAC 7H.0208(b)(6)(G)(iii) and 15 NCAC 7H.0208(b)(6)(H).
March 12, 2014

CERTIFIED MAIL-RETURN RECEIPT REQUESTED
7012 2210 0001 2435 4082

Emmitt C. Stovall Irrevocable Trust
c/o Coleman Commercial PR
1508 Military Cutoff Road, 304
Wilmington, NC 28403

Dear Property Owner:

This is to notify you that CXA-10 Corporation is applying for a variance from the North Carolina Coastal Resources Commission for extension of the existing launch pier at Watermark Marina for an additional 1,424 feet into the Cape Fear River. A copy of the site plan depicting the extension is enclosed. The variance is projected to be heard at the May 14-15, 2014 meeting of the Coastal Resources Commission.

If you wish to receive further information regarding the variance you may contact me. If you wish to make comments on the variance you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Ext., Wilmington, North Carolina 28405. You may also contact CAMA Field Representative Robb Mairs directly at (910) 796-7215.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.

WAR:dc
Enclosure
WAR:ENVIRONR06-125-C01
March 12, 2014

CERTIFIED MAIL-RETURN RECEIPT REQUESTED
7012 0470 0001 6116 0185

City of Wilmington
c/o Engineering Division
PO Box 1810
Wilmington, NC 28402

Dear Property Owner:

This is to notify you that CXA-10 Corporation is applying for a variance from the North Carolina Coastal Resources Commission for extension of the existing launch pier at Watermark Marina for an additional 1,424 feet into the Cape Fear River. A copy of the site plan depicting the extension is enclosed. The variance is projected to be heard at the May 14-15, 2014 meeting of the Coastal Resources Commission.

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Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.

WAR:de
Enclosure
WAR:ENVIRONR06-125-C02
March 12, 2014

CERTIFIED MAIL-RETURN RECEIPT REQUESTED
7009 1680 0000 3437 8356

Nnp IV Cape Fear River, LLC
13777 Ballantyne Corporate Place, Suite 550
Charlotte, NC 28277

Dear Property Owner:

This is to notify you that CXA-10 Corporation is applying for a variance from the North Carolina Coastal Resources Commission for extension of the existing launch pier at Watermark Marina for an additional 1,424 feet into the Cape Fear River. A copy of the site plan depicting the extension is enclosed. The variance is projected to be heard at the May 14-15, 2014 meeting of the Coastal Resources Commission.

If you wish to receive further information regarding the variance you may contact me. If you wish to make comments on the variance you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Ext., Wilmington, North Carolina 28405. You may also contact CAMA Field Representative Robb Mairs directly at (910) 796-7215.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.

WAR:dc
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<td>A. Signature</td>
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<td>Print your name and address on the reverse so that we can return the card to you.</td>
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<td>Attach this card to the back of the mailpiece, or on the front if space permits.</td>
<td>□ Addressee</td>
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<td>B. Received by (Printed Name)</td>
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<tr>
<td>EMMITT C. STOVALL IRREVOCABLE TRUST</td>
<td>C. Date of Delivery</td>
</tr>
<tr>
<td>c/o Coleman Commercial PR</td>
<td>D. Is delivery address different from Item 1?</td>
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<tr>
<td>1508 Military Cutoff Road, 304 Wilmington, NC 28403</td>
<td>□ Yes</td>
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<td>2. Article Number</td>
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<tr>
<td>13777 Ballantyne Corporate Place, Suite 550</td>
<td>D. Is delivery address different from Item 1?</td>
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<tr>
<td>Charlotte, NC 28277</td>
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<td>CITY OF WILMINGTON</td>
<td>C. Date of Delivery</td>
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<td>c/o Engineering Division</td>
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<td>□ Yes</td>
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<tr>
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| 4. Restricted Delivery? (Extra Fee) | □ Yes |
PETITIONER'S POSITION
ON
VARIANCE CRITERIA

(1) Will unnecessary hardships result from strict application of the rules, standards, or orders?

Petitioner's position: Yes.

Petitioner's argument: The restriction on pier length imposed by CAMA Rules causes an unnecessary hardship to the Petitioner because it prevents the Petitioner from launching and retrieving boats at its dry storage marina facility for much of the tidal cycle. The hardship is unnecessary because the lengthening of the pier will not result in unreasonably restricting navigation or interfering with other public uses of the public trust waters. The body of water in which the extended pier is proposed to be located has physical constraints that limit its use for navigation and other public uses. The shoreline ownership, use, zoning and configuration all join to limit a proliferation of structures in the back channel thereby effectively leaving most of the water body open for public use. In addition, the area within the 1/4th distance from the shoreline is classified as primary nursery area (PNA) so that the Petitioner does not have the option of dredging to solve the water depth problem.

(2) Do such hardships result from conditions peculiar to Petitioner's property such as the location, size, or topography of the property?

Petitioner's position: Yes.

Petitioner's argument: The Petitioner's property lies along an indented portion of the shoreline of the Cape Fear River. The shoreline of the Cape Fear River for a considerable distance north and south of the Petitioner's property is sparsely developed with piers and docks. The water within the indented portion of the shoreline is all very shallow. The property lies along a back channel of the Cape Fear River that is separated from the shipping channel of the River by a spoil island controlled by the Corps of Engineers known as Island 13. Island 13 was created from material dredged from the ship channel and has been mostly converted from upland area to wetlands by the Corps of Engineers to mitigate for the adverse environmental effects of the expansion of the ship channel. The deepest water in the back channel lies near Island 13. To reach water deep enough at all tidal cycles to launch and retrieve boats at this dry storage facility is necessary to build the launch and retrieve pier long enough to reach the deeper water near the Island 13 side of the back channel. There is unlikely to be any development on Island 13. The proposed extension of the pier extends about 53% of the way across the back channel but the deepest part of the back channel is still located well beyond the end of the proposed extended pier. The total width of the Cape Fear River at this location is approximately 6,755' measured from marsh to marsh. Without the artificial spoil island the proposed pier would extend only about 21% of the distance across the River.
(3) Do the hardships result from actions taken by the Petitioner?

Petitioner's position: No.

Petitioner's argument: The hardships are due to the location of the property or a shoreline with an indentation. The area of indentation consists of very shallow water. The shallow water extends beyond 1/4th the width of the entire body of water. The Petitioner is not the original owner who developed the property for a dry storage marina. The original developer and its successors had information from a professional land surveyor showing water depths at the end of the existing launch pier being at about 3.46' at mean low water. That depth would be marginally adequate for most types of boats at all stages of the tidal cycle. A CAMA permit was issued based on this information. It was only after the launch pier was constructed that the pier owner realized that the area at the end of the launch pier and beyond had either quickly become shallower by deposition of sediment or that the original water depth information was inaccurate. The hardship of inadequate water depth was not the result of actions taken by the Petitioner.

(4) Will the variance requested by the Petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice?

Petitioner's position: Yes.

Petitioner's argument:

- Consistent with the spirit, purpose and intent of rules.

The purpose of the Pier 1/4 Width Rule, 7H.0208(b)(6)(G)(iii) is to protect public water for use by the public by limiting the area of water that is occupied by private structures to 1/4th of the width of the body of water thereby leaving the middle 1/2 of a body of water unobstructed. The purpose of Rule 7H.0208(b)(6)(H) is to avoid extremely long piers in wide bodies of water when the water depth increases very slowly. Piers along such shorelines and across wide areas of shallow waters could remove substantial public trust areas from public use. The Petitioners proposed launch pier will serve a need for public access to the waters along this stretch of the River. The current shallow depth of the water in the location of Petitioner's property reduces its usefulness for public uses such as navigation or fishing. The variance will help protect the viability of the primary nursery area by avoiding disturbance of shallow water that would inevitably result if the current pier were to be used for launching boats. Even though the depth gained by the extension of the pier is less than 1' per 100' of extra length, the number of people gaining access to the waters of the River by use of the proposed facility justifies the unusually long pier. The unusually long pier in this location will not create a significant encumbrance of the public trust waters from possible cumulative effects of multiple piers because the
extensive shorelines both north and south of the proposed pier are committed to industrial or commercial uses rather than a proliferation of private piers.

- Secure the public safety and welfare.

The extension of the pier will avoid navigation hazards that would exist with the use of the existing shorter pier that ends in shallow water. Users of the existing facility could become stranded if they tried to return to the facility when the tidal cycle resulted in water depth that was too shallow to reach the pier. This could result in strandings for extended periods of time. The extended pier would also alert mariners unfamiliar with this area to the existence of a large expanse of shallow water adjacent to the east bank of the River in this location.

- Preserve substantial justice.

Granting the variance will allow the Petitioner to utilize a significant existing onshore facility for its intended purpose. Honest mistakes by both the developers of the property and the Division of Coastal Management resulted in permitting a substantial dry storage marina that is of little practical use. Granting the variance will also help protect primary nursery area from adverse impacts resulting from utilization of the pier in its current location.
ATTACHMENT E

STIPULATED EXHIBITS:

a. 2000 hydrological survey
b. CAMA Major Permit No. 66-01 issued 5/29/01
c. 2010 McKim & Creed Survey
d. August 2013 major modification application with drawings
e. DCM’s field report for the 2013 modification request
f. Response from the federal review agencies
g. 12/2/13 denial letter
h. powerpoint of site photographs
STATE OF NORTH CAROLINA
Department of Environment and Natural Resources
and
Coastal Resources Commission

Permit

for

X Major Development in an Area of Environmental Concern
pursuant to NCGS 113A-118

Excavation and/or filling pursuant to NCGS 113-229

Issued to Barnards Creek, LLC, PO Box 1083, Wilmington, NC 28402

Authorizing development in New Hanover County at Barnards Creek and Cape Fear River, off SR 1100, as requested in the permittee's application dated 5/31/00, including attached workplan drawings, 2 dated received 4/25/01 and 2 dated May, 2000.

This permit, issued on May 29, 2001, is subject to compliance with the application (where consistent with the permit), all applicable regulations, special conditions and notes set forth below. Any violation of these terms may be subject to fines, imprisonment or civil action; or may cause the permit to be null and void.

Dry Stack Marina Facility

1) Prior to the occupancy of any new slips authorized under this permit, a marine pumpout sewage disposal facility will be installed and operable, and maintained for the life of the authorized facility.

2) The facility will display a sign showing the location of the on-site pumpout facility, including other appropriate waste disposal information, at the entrance and exit from the main pier.

3) No sewage, whether treated or untreated, shall be discharged at any time from any boats using the dry stack marina facility. Any sewage discharge at the dry stack marina facility shall be considered a violation of this permit for which the permittee is responsible. This prohibition shall be applied and enforced throughout the entire existence of the permitted facility.

(See attached sheets for Additional Conditions)

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. An appeal requires resolution prior to work initiation or continuance as the case may be.

This permit must be accessible on-site to Department personnel when the project is inspected for compliance.

Any maintenance work or project modification not covered hereunder requires further Division approval.

All work must cease when the permit expires on December 31, 2004

In issuing this permit, the State of North Carolina agrees that your project is consistent with the North Carolina Coastal Management Program.

This permit and its conditions are hereby accepted.

Signature of Permittee

Signed by the authority of the Secretary of DENR and the Chairman of the Coastal Resources Commission.
ADDITIONAL CONDITIONS

4) In accordance with commitments made by the permittee, if the water depth at the launch dock is of insufficient depth to allow for launch and/or recovery operations to take place without disturbing the adjacent shallow bottom habitat, launch and recovery operations shall be suspended until such time as the water depth increases to an adequate level.

5) The authorized project is located within a primary nursery area (PNA). Therefore, in accordance with T15A:07H.0208 of the Rules of the Coastal Resources Commission, no new dredging or excavation within the PNA shall be permitted. Dredging in any manner, including “kicking” with boat propellers, is strictly prohibited. This prohibition shall be applied and enforced throughout the entire existence of the permitted structure.

6) This permit authorizes only the docks, piers, and other structures and uses located in or over the water that are expressly and specifically set forth in the permit application. No other structure, whether floating or stationary, may become a permanent part of this dry stack marina facility without permit modification. No non-water dependent uses of structures may be conducted on, in or over public trust waters without permit modification.

7) The over-night occupancy of any vessels at the authorized facility is not authorized.

8) No attempt will be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the authorized work.

9) The authorized structure and associated activity must not cause an unacceptable interference with navigation.

10) The permittee will maintain the authorized work in good condition and in conformance with the terms and conditions of this permit. The permittee is not relieved of this requirement if he abandons the permitted activity without having it transferred to a third party.

11) This permit does not authorize the interference with any existing or proposed Federal project, and the permittee will not be entitled to compensation for damage to the authorized structure or work, or injury which may be caused from existing or future operations undertaken by the United States in the public interest.

12) The permittee understands and agrees that, if future operations by the United States requires the removal, relocation, or other alteration of the structure or work authorized by this permit, or if in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove relocate or alter the structural work or obstructions caused thereby, without expense to the United States or the state of North Carolina. No claim shall be made against the United States or the state of North Carolina on account of any such removal or alteration.

It is possible that the authorized structure may be damaged by wavewash from passing vessels. The issuance of this permit does not relieve the permittee from taking all proper steps to ensure the integrity of the permitted structure and the safety of moored boats. The permittee shall not hold the United States liable for any such damage.
ADDITIONAL CONDITIONS

13) The permittee must install and maintain at his expense any signal lights or signals prescribed by the U.S. Coast Guard, through regulation or otherwise, on the authorized facilities. At a minimum, permanent reflectors should be attached to the structure in order to make it more visible during hours of darkness or inclement weather.

14) The facility has been designed and permitted as a dry-stack facility. This permit does not authorize any tie pilings or permanent open-water moorings.

NOTE: It is strongly recommended that the permittee exercise all available precautions in the day-to-day operation of the facility to prevent facility waste from entering the adjacent waters. Such discharge, either directly or indirectly, to adjacent waters could contravene state water quality standards, thereby violating state law.

Easement

15) Prior to construction of any new boat slips or other docking facilities under this permit, the permittee must apply for and receive an Easement from the Department of Administration’s State Property Office as required under N.C.G.S. 146-12(e).

Cultural Resource Protection

16) If the permittee discovers any previously unknown historic or archaeological remains while accomplishing the authorized work, he will immediately notify the District Engineer, Wilmington Branch, U.S. Army Corps of Engineers at (910) 251-4511, who will initiate the required State and Federal coordination.

Stormwater Management

17) The Division of Water Quality approved this project under stormwater management rules of the Environmental Management Commission on 4/4/00 ( Permit No. SW8 000408). Any violation of the permit approved by the DWQ will be considered a violation of this CAMA permit.

Sedimentation and Erosion Control

NOTE: An Erosion and Sedimentation Control Plan will be required for this project. This plan must be filed at least thirty (30) days prior to the beginning of any land disturbing activity. Submit this plan to the Department of Environment and Natural Resources, Land Quality Section, 127 Cardinal Drive Extension, Wilmington, NC 28405.

18) All disturbed areas will be properly graded and provided a ground cover sufficient to restrain erosion within 30 working days of project completion.
ADDITIONAL CONDITIONS

General

19) The authorized channel markers must be marked and installed in accordance with all requirements of the U.S. Coast Guard and/or N.C. Wildlife Resources Commission.

20) In keeping with NCAC 7H.0209(d)(3), no non-water dependent development may take place within 30 feet of the mean high water line. The authorized docks, the outflow pipe structure and the emergency spillway structure are all considered water dependent, and as such may be constructed within the buffer area. However, the stormwater retention pond is not considered water dependent. Therefore, no portion of the stormwater retention pond, or any land disturbing activities associated with its construction, may be located closer than 30 feet from the mean high water line at the time of construction. The permittee shall provide the Division of Coastal Management with modified plats depicting the revised stormwater pond location and design.

21) Should the requirements of Condition No. 17 of this Permit necessitate a revision of the Stormwater Management Permit previously authorized by the Division of Water Quality, the revised stormwater permit must be received and a copy provided to the Division of Coastal Management prior to the initiation of any land disturbing activities.

22) In accordance with commitments made by the permittee in the permit application, the permittee shall mitigate the impacts to all wetlands filled as a result of construction of this project by purchasing credits from the NC Wetlands Restoration Program. The mitigation effort must equal a minimum mitigation to impact ration of 2:1.

23) No excavated or fill material will be placed at any time in any vegetated wetlands, marsh or surrounding waters outside of the alignment of the fill area indicated on the workplan drawing(s).

NOTE: This permit does not eliminate the need to obtain any additional permits, approvals or authorizations that may be required.

NOTE: The permittee and/or his contractor is urged to meet with a representative of the Division prior to project initiation.

NOTE: The N.C. Division of Water Quality has authorized the proposed project under General Water Quality Certification No. 3274 (DWQ Project No. 001055), which was issued on 9/15/00.

NOTE: The U.S. Army Corps of Engineers has assigned the proposed project COE Action Id. No. 200001574.

NOTE: The permittee is encouraged to contact the New Hanover County Mosquito Control Office at (910) 252-2505 to discuss mosquito control measures.
August 20, 2013

Robb Mairs
Division of Coastal Management
127 Cardinal Drive Extension
Wilmington, N.C. 28405-3845

Re: Watermark Marina, New Hanover County
Major Modification to CAMA Permit #66-01

Robb,
On behalf of CXA-10 Corporation please find the enclosed application and supporting materials for a
Major Modification request to CAMA Major Permit #66-01. This Major Modification is proposed to
extend the existing launch and retrieval pier at Watermark Marina in order to provide for adequate
water depths for operations throughout the tidal range. For purposes of review and permit processing,
please find the attached information:

1. Project Narrative
2. Form DCM MP-1
3. Form DCM MP-4
4. Permit drawings, Sheets 1-7
5. Permit Fee check in the amount of $400.00
6. Signed Agent Authorization
7. Adjacent Riparian Notification Letters (Copy)
8. Deed and Merger Agreement between CXA-5 Corporation and CXA-10 Corporation (Copy)

We have mailed adjacent riparian notification letters via certified mail. The certified mail receipts will be
forwarded to you as soon as we receive them. Thank you for your assistance with this project, please
contact me if you have any questions or would like to schedule an on-site meeting at any point during
the review process.

Sincerely,

Jenny Sheridan
Environmental Scientist

Enclosures
CC: Lewis Zwick, CXA-10 Corporation
Project Narrative
Major Modification to CAMA Permit # 66-01
Watermark Marina
New Hanover County, North Carolina
CXA-10 Corporation, Applicant
August 20, 2013

Introduction
This Major Modification is proposed to extend the existing launch and retrieval pier at Watermark Marina in order to provide for adequate water depths for operations throughout the tidal range. Watermark Marina features a dry storage facility for boaters with forklift transport to and from the Cape Fear River. Currently, water depths are inadequate for navigation at the end of the launching pier during a significant portion of the tidal cycle. This condition limits boating access to the river to higher tide stages and produces a major inconvenience to dry storage space holders and day customers arriving with trailered boats for launch. This impact to operations severely limits the ability to market the dry slips and to reach the marina’s full potential in serving as an access point to the river.

Existing Conditions
Waters of the Cape Fear River in the vicinity of Watermark Marina are classified as SC by the NC Division of Water Quality (DWQ). SC waters are tidal salt waters with “best usage” described as “aquatic life propagation and survival, fishing, wildlife and secondary recreation”. The NC Division of Marine Fisheries (DMF) has classified the marshes and bottom areas in this location as Primary Nursery Area (PNA). DMF defines Primary Nursery Areas as “those areas in the estuarine system where initial post-larval development takes place. These areas are usually located in the uppermost sections of a system where populations are uniformly very early juveniles.”

The federally maintained Cape Fear River channel is approximately 4790 feet southwest of the outer edge of the marsh at the existing launch pier. Several small islands created from dredge disposal activities associated with river channel maintenance exist between the federally maintained navigation channel and the Watermark Marina shoreline. The primary island known as Island 13 was used as a mitigation site for impacts to PNA by the Wilmington Harbor deepening project. Approximately 30 upland acres of the dredged material disposal site were excavated and graded to wetland and tidal elevations then planted with marsh plant species. The presence of these small islands creates an “inner” or back channel, offshore of the marina launch pier, separated from the main navigation channel of the Cape Fear River by the disposal islands. The ~540’ marina launch pier is located within a 1025 foot deep shoreline indentation representing a peculiar topographic disadvantage in accessing this back channel in light of existing pier length rules. Water
depths within this shoreline indentation are very shallow. The latest hydrographic survey
indicates water depths of less than 1’ mbl at the end of the existing launching pier.

**Proposed Project**
In order to provide adequate water depths for the launch and retrieval of clientele boats at
lower stages of the tidal cycle, the applicant proposes to construct an extension of the
existing launch pier in a northwesterly direction out to the -6’ mbl contour of the subject
back channel. The outer edge of the structure will be ~1,424’ from the outer edge of the
marsh. While remaining out of the deeper portion of the channel for purposes of
navigation safety, the position of the extended pier will facilitate a continuous ability to
serve the boating public accessing the river while minimizing any potential for
disturbance of sensitive PNA bottom. The end of the proposed pier extension will feature
two floating docks in a “T” alignment extending parallel to the channel in opposite
directions. This orientation along the channel minimizes the broadside exposure of the
single file floating dock pilings to the ebb and flow currents and aids boat maneuvering
while docking. The floating docks will be used as temporary tie-up locations for boaters
leaving and returning to the facility. Hinged ramps will provide access from the elevated
pier to the floating docks. No additional fueling dispensers will be installed. The divided
pedestrian/cart boardwalk will also be extended to the end of the launch pier for safe
separation from the forklift travel lane.

There is a 10,000 gallon above ground fuel storage tank located on uplands adjacent to
the forklift pier. A fuel dispenser with an emergency shut-off valve is located on the
existing forklift platform. The fuel dispenser and tank are currently not operational. It is
the marina’s policy to allow no overboard discharge of waste. There is a holding tank
pumpout station currently located on the southern-most temporary tie-up dock which will
continue to service the marina facility.

**Navigation**
As stated, the existing launch pier is sited on a back channel of the river separated by
small islands from the main channel of the river. The back channel joins the main run of
the river approximately 4,000’ southwest and 5,500’ northwest of the pier site. The next
significant structure in the water to the north is beyond the point where the back channel
joins the main river channel. This structure is an industrial offloading conveyor system
for bulk gypsum arriving by ship. The structure extends approximately 1,565’ beyond the
outer edge of the marsh, or over half the width of the river which is approximately 3,048’
wide in that location.

Virtually all of the river traffic between Wilmington and the Atlantic Intracoastal
Waterway and the mouth of the Cape Fear at the Atlantic Ocean utilizes the main
shipping channel. The primary navigation usage of the subject back channel is associated
with boat launching and retrieval from Watermark Marina and an unknown amount of
occasional fishermen and pleasure boaters that have local knowledge of navigable areas
outside of the shipping channel. The navigation aid pilings at Watermark Marina serve to
guide launched boats to the deeper water of the back channel over 1,100’ offshore before
turning north or south. As discussed, the outer limit of the proposed launch pier extension
is 1,424' offshore. The total width of the water body at this location (marsh to marsh) is 2,686'.

In general, the current Division of Coastal Management (DCM) rules limit the length of docks and piers such that they not extend beyond any established pier length, not extend into the channel portion of the water body and not extend more than ¼ the width of the water body.

There is no established pier length for this area of shoreline on the river. The nearest pier to the south is approximately 3.13 miles from the subject launch pier site. The nearest pier to the north is the 1,565'-long conveyor system structure approximately 1.1 miles from the marina site.

The “channel” portion of the water body is interpreted as the deepest (most navigable) part of the water body cross section. Water depths across the back channel near the launch pier site reach to more than -8' MLW. If the -7' MLW contour is used to define the channel portion of the water body, the edge will be located more than 60' beyond the end of the extended launch pier. The total width of the -7' MLW or deeper channel portion of the water body ranges from approximately 230' to 350' wide in this location.

One of the primary justifications for the ¼ width of the water body pier and dock limitation is to preserve a significant portion of the water body for public navigation purposes. The ¼ rule assumes piers could extend to the full ¼ distance from opposite shorelines. However, in this instance, the opposite shoreline as described above is made up of small islands having been created and controlled by the Corps of Engineers and not subject to development. Therefore, there is no likelihood that a pier will ever extend from the opposing shoreline. The total width of the water body (outer marsh edge to outer marsh edge) in this location is 2,686'. With the proposed launch pier extension, a 1,262' width of open water containing the deepest section of the water body will remain for navigation. The applicant will install reflectors on the pilings of the floating docks and fixed pier for increased visibility during low light conditions and adhere to any additional navigational requirements as may be imposed by the Coast Guard.

**Project History**

CAMA Major Permit #66-01 was issued to Barnards Creek, LLC in 2001 for the construction of an elevated pier, walkway and two finger docks. The permit was renewed on December 3, 2004. The permit was transferred to Watermark Marina of Wilmington, LLC on July 12, 2005. A Minor Modification to CAMA Major Permit #66-01 was issued on August 22, 2005 and October 23, 2006. The permit was renewed on March 28, 2007 and transferred to CXA-5 Corporation on August 9, 2010. On October 16, 2012 the permit was transferred from CXA-5 Corporation to CXA-10 Corporation (current applicant).

The waterward limit of the existing structure falls short of the ¼ waterbody limit of the subject back channel. Watermark Marina has transferred ownership/management a number of times since the initial construction of the existing forklift pier and floating
docks. While there is no definitive answer, it is assumed that the original applicant/owner did not maximize the full extent of the ¼ waterbody distance at the time of permitting due to the costs associated with construction of the heavy-plank wharf pier which may have represented a financial limitation.

The existing dry storage facility has a total capacity of 430 dry slips. There are currently 20 dry slips being utilized on the property. The low percentage of dry slips currently in use in comparison to the maximum capacity of the facility reflects the limited potential of the facility and results in an economic hardship for the current owner.

A scoping meeting was held on June 13, 2013 to discuss the project modifications. The project as proposed is consistent with the local zoning. A Special Use Permit will not be required for the proposed modification. A 112 slip community residential marina and commercial dry storage facility with a capacity of 80 dry slips were permitted to the south of Watermark Marina in 2007.

As previously mentioned, the applicant proposes to construct an extension of the existing launch pier in a northwesterly direction out to the -6' mllw contour of the subject back channel. Staff from LMG completed a NCDENR-WiRO file review of six dry storage facilities in New Hanover and Brunswick County on June 27, 2013 as a means of comparison of permitted water depths for similar facilities. Water depth information obtained during file review includes the following:

<table>
<thead>
<tr>
<th>Marina</th>
<th>Permitted Water Depth</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masonboro Yacht Club and Marina</td>
<td>-6' to -8' MLW</td>
<td>New Hanover</td>
</tr>
<tr>
<td>Inlet Watch</td>
<td>-5' to -8' MLW</td>
<td>New Hanover</td>
</tr>
<tr>
<td>Bradley Creek Marina</td>
<td>-5' MLW</td>
<td>New Hanover</td>
</tr>
<tr>
<td>Atlantic Marine</td>
<td>-6' MLW</td>
<td>New Hanover</td>
</tr>
<tr>
<td>Wilmington Marine Center</td>
<td>-8' MLW</td>
<td>New Hanover</td>
</tr>
<tr>
<td>Southport Marina</td>
<td>-6' MLW</td>
<td>Brunswick</td>
</tr>
</tbody>
</table>

A review of the files for these dry storage facilities indicates that a requested depth of -6' mllw for boat forklift launch and retrieval operations is consistent with the permitted facilities in this region.
1. Primary Applicant/ Landowner Information

<table>
<thead>
<tr>
<th>Business Name</th>
<th>Project Name (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXA-10 Corporation</td>
<td>Watermark Marina</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicant 1: First Name</th>
<th>MI</th>
<th>Last Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lewis</td>
<td></td>
<td>Zwick</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicant 2: First Name</th>
<th>MI</th>
<th>Last Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If additional applicants, please attach an additional page(s) with names listed.

<table>
<thead>
<tr>
<th>Mailing Address</th>
<th>PO Box</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000 Legacy Drive</td>
<td>NA</td>
<td>Plano</td>
<td>TX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ZIP</th>
<th>Country</th>
<th>Phone No.</th>
<th>FAX No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>75024</td>
<td>USA</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Street Address (if different from above)</th>
<th>City</th>
<th>State</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:smorrison@lmgroup.net">smorrison@lmgroup.net</a></td>
</tr>
</tbody>
</table>

2. Agent/Contractor Information

<table>
<thead>
<tr>
<th>Business Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Management Group, Inc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agent/ Contractor 1: First Name</th>
<th>MI</th>
<th>Last Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve</td>
<td></td>
<td>Morrison</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agent/ Contractor 2: First Name</th>
<th>MI</th>
<th>Last Name</th>
</tr>
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<tr>
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<tr>
<th>Mailing Address</th>
<th>PO Box</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>3805 Wrightsville Avenue, Suite 15</td>
<td>NA</td>
<td>Wilmington</td>
<td>NC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ZIP</th>
<th>Phone No. 1</th>
<th>FAX No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>28403</td>
<td>910-452-0001</td>
<td>910 452 0060</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Street Address (if different from above)</th>
<th>City</th>
<th>State</th>
<th>ZIP</th>
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<tbody>
<tr>
<td><a href="mailto:smorrison@lmgroup.net">smorrison@lmgroup.net</a></td>
</tr>
</tbody>
</table>
### 3. Project Location

<table>
<thead>
<tr>
<th>County (can be multiple)</th>
<th>Street Address</th>
<th>City</th>
<th>Zip</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Hanover</td>
<td>4114 River Road</td>
<td>Wilmington</td>
<td>28412</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subdivision Name</th>
<th>City</th>
<th>Zip</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>Wilmington</td>
<td>28412</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone No.</th>
<th>Lot No. (s) (if many, attach additional page with list)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA - ext.</td>
<td>NA,</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>a. In which NC river basin is the project located?</th>
<th>b. Name of body of water nearest to proposed project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Fear</td>
<td>Cape Fear River</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c. Is the water body identified in (b) above, natural or manmade?</th>
<th>d. Name the closest major water body to the proposed project site.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Natural ☐ Manmade ☐ Unknown</td>
<td>Cape Fear River</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>e. Is proposed work within city limits or planning jurisdiction?</th>
<th>f. If applicable, list the planning jurisdiction or city limit the proposed work falls within.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Yes ☐ No</td>
<td>City of Wilmington</td>
</tr>
</tbody>
</table>

### 4. Site Description

<table>
<thead>
<tr>
<th>a. Total length of shoreline on the tract (ft.)</th>
<th>b. Size of entire tract (sq.ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,093 linear ft</td>
<td>1,760,252.56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c. Size of individual lot(s)</th>
<th>d. Approximate elevation of tract above NHW (normal high water) or NWL (normal water level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA, (If many lot sizes, please attach additional page with a list)</td>
<td>0' - 10' ☑ NHW or ☐ NWL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>e. Vegetation on tract</th>
<th>f. Man-made features and uses now on tract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt marsh vegetation, native trees and shrubs, ornamental landscaping.</td>
<td>Watermark Marina presently features a dry storage facility for boat and vehicular storage, forklift and pedestrian access piers, temporary floating docks and a clubhouse with a swimming pool. There is a 10,000 gallon above-ground, double walled fuel tank located on uplands adjacent to the forklift pier and a fuel dispenser located on the existing forklift landing, however, fuel service is currently not operational.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>g. Identify and describe the existing land uses adjacent to the proposed project site.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnards Creek is located to the south of Watermark Marina, commercial/industrial properties are located to the north and properties to the east of River Road are residential.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>h. How does local government zone the tract?</th>
<th>i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-2 Industrial District</td>
<td>☑ Yes ☐ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>j. Is the proposed activity part of an urban waterfront redevelopment proposal?</th>
<th>k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes ☐ No</td>
<td>☑ Yes ☐ No ☐ NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes ☐ No ☐ NA</td>
</tr>
</tbody>
</table>

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<Form continues on next page>
m. (i) Are there wetlands on the site?  
   Yes ☐  No ☐

(ii) Are there coastal wetlands on the site?  
   Yes ☐  No ☐

(iii) If yes to either (i) or (ii) above, has a delineation been conducted?  
      Yes ☐  No ☐
      (Attach documentation, if available)

n. Describe existing wastewater treatment facilities.  
   Cape Fear Public Utility Authority

c. Describe existing drinking water supply source.  
   Cape Fear Public Utility Authority

d. Describe existing storm water management or treatment systems.  
   Existing Stormwater Retention Basin

5. Activities and Impacts

a. Will the project be for commercial, public, or private use?  
   ☑ Commercial  ☐ Public/Government  ☐ Private/Community

b. Give a brief description of purpose, use, and daily operations of the project when complete.  
   The purpose of the proposed project is to extend the existing forklift/pedestrian pier out to deeper water depths and add additional temporary side-to-dockage.

c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored.  
   Standard marine construction methods and equipment will be used for the construction of the forklift pier, pedestrian access pier and floating docks.

d. List all development activities you propose.  
   Extension of a previously permitted forklift pier and pedestrian access pier, construction of associated temporary side-to-dockage.

e. Are the proposed activities maintenance of an existing project, new work, or both?  
   New work

f. What is the approximate total disturbed land area resulting from the proposed project?  
   The modification request proposes no change to the disturbed land area.  
   ☐ SqFt  ☐ Acres

g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?  
   Yes ☐  No ☐  NA ☒

h. Describe location and type of existing and proposed discharges to waters of the state.  
   No new discharges are proposed with this application.

i. Will wastewater or stormwater be discharged into a wetland?  
   Yes ☐  No ☐  NA ☒

If yes, will this discharged water be of the same salinity as the receiving water?  
   Yes ☐  No ☐  NA ☒

j. Is there any mitigation proposed?  
   If yes, attach a mitigation proposal.  
   Yes ☐  No ☐  NA ☒
6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

a. A project narrative.

b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.

c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.

d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.

e. The appropriate application fee. Check or money order made payable to DENR.

f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

Name Stovall Emmet C Irrevocable Trust c/o Coleman Commercial PR
Address 1508 Military Cutoff Road 304 Wilmington, NC 28403
Phone No. NA

Name City Of Wilmington c/o Engineering Division
Address PO Box 1610 Wilmington, NC 28402
Phone No. NA

Name NNP II Cape Fear River LLC
Address 13777 Ballantyne Corporate Place Suite 550, Charlotte, NC 28277
Phone No. NA


g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

CAMA Major Permit #56-01
SW8000408

h. Signed consultant or agent authorization form, if applicable.

i. Wetland delineation, if necessary.

j. A signed AEC hazard notice for projects in oceanfront and inlet areas. (Must be signed by property owner)

k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

7. Certification and Permission to Enter on Land

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 8/20/15
Print Name STEVE MORRISON (AGENT)
Signature

Please indicate application attachments pertaining to your proposed project.

☐ DCM MP-2 Excavation and Fill Information
☐ DCM MP-3 Upland Development
☐ DCM MP-4 Structures Information
☐ DCM MP-5 Bridges and Culverts

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1. DOCKING FACILITY/MARINA CHARACTERISTICS

a. (i) Is the docking facility/marina:
   ☑ Commercial ☐ Public/Government ☐ Private/Community

b. (i) Will the facility be open to the general public?
   ☐ Yes ☑ No

c. (i) Dock(s) and/or pier(s)
   (ii) Number 4
   (iii) Length see MP-4 attachment
   (iv) Width see MP-4 attachment
   (v) Floating ☑ Yes ☐ No

Note: Roofed areas are calculated from dripline dimensions.

d. (i) Are Finger Piers included? ☐ Yes ☑ No
   If yes:
   (ii) Number ______
   (iii) Length ______
   (iv) Width ______
   (v) Floating ☐ Yes ☑ No

e. (i) Are Platforms included? ☑ Yes ☐ No
   If yes:
   (ii) Number 2
   (iii) Length see MP-4 attachment
   (iv) Width see MP-4 attachment
   (v) Floating ☑ Yes ☐ No

f. (i) Are Boatlifts included? ☐ Yes ☑ No
   If yes:
   (ii) Number ______
   (iii) Length ______
   (iv) Width ______

h. Check all the types of services to be provided.
   ☐ Full service, including travel lift and/or rail, repair or maintenance service
   ☐ Dockage, fuel, and marine supplies
   ☑ Dockage ("wet slips") only, number of slips: 720 ft temporary
   ☑ Dry storage; number of boats: no change proposed to existing permit
   ☐ Boat ramp(s); number of boat ramps: ______
   ☑ Other; please describe:
     720 linear ft temp dockage existing

i. Describe the typical boats to be served (e.g., open runabout, charter boats, sail boats, mixed types).
   mixed types

k. Typical boat length: up to 40'

l. (i) Will the facility be open to the general public?
m. (i) Will the facility have tie pilings?
   ☐ Yes ☒ No
   (ii) If yes number of tie pilings:
      NA

2. DOCKING FACILITY/MARINA OPERATIONS

a. Check each of the following sanitary facilities that will be included in the proposed project.
   ☒ Office Toilets
   ☒ Toilets for patrons; Number: >2; Location: clubhouse - existing
   ☒ Showers
   ☒ Boatholding tank pumpout; Give type and location: located on existing floating docks - authorized in CAMA Major Permit 66-01

b. Describe treatment type and disposal location for all sanitary wastewater.
   community sewer

c. Describe the disposal of solid waste, fish offal and trash.
   trash bins and dumpsters at various locations

d. How will overboard discharge of sewage from boats be controlled?
   no overboard discharge policy

e. (i) Give the location and number of "No Sewage Discharge" signs proposed.
      1 - on proposed pedestrian pier

   (ii) Give the location and number of "Pumpout Available" signs proposed.
      1 - on proposed pedestrian pier

f. Describe the special design, if applicable, for containing industrial type pollutants, such as paint, sandblasting waste and petroleum products.
   no maintenance activities, emergency shut-off valve for fuel on forklift platform

g. Where will residue from vessel maintenance be disposed of?
   no maintenance activities

h. Give the number of channel markers and "No Wake" signs proposed.
   8 channel markers existing, no additional proposed

i. Give the location of fuel-handling facilities, and describe the safety measures planned to protect area water quality.
   Above-ground storage tank adjacent to forklift pier, fuel dispenser on existing forklift platform with emergency shut-off valve

j. What will be the marina policy on overnight and live-aboard dockage?
   no overnight and no live-aboard allowed

k. Describe design measures that promote boat basin flushing?
   NA
1. If this project is an expansion of an existing marina, what types of services are currently provided? Existing services are fueling, holding tank pumpout and dry stack launch and retrieval

m. Is the marina/docking facility proposed within a primary or secondary nursery area? ☒ Yes ☐ No

n. Is the marina/docking facility proposed within or adjacent to any shellfish harvesting area? ☐ Yes ☒ No

o. Is the marina/docking facility proposed within or adjacent to coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
   - CW _____ SAV _____ SB _____
   - WL _____ ☒ None

p. Is the proposed marina/docking facility located within or within close proximity to any shellfish leases? ☐ Yes ☒ No
   If yes, give the name and address of the leaseholder(s), and give the proximity to the lease.

3. **BOATHOUSE** (including covered lifts) ☒ This section not applicable
   a. (i) Is the boathouse structure(s):
      - ☐ Commercial ☐ Public/Government ☐ Private/Community
   (ii) Number ______
   (iii) Length ______
   (iv) Width ______
   Note: Roofed areas are calculated from dripline dimensions.

4. **GROIN** (e.g., wood, sheetpile, etc. If a rock groin, use MP-2, Excavation and Fill.) ☒ This section not applicable
   a. (i) Number ______
      (ii) Length ______
      (iii) Width ______

5. **BREAKWATER** (e.g., wood, sheetpile, etc.) ☒ This section not applicable
   a. Length ______
   b. Average distance from NHW, NWL, or wetlands ______
   c. Maximum distance beyond NHW, NWL or wetlands ______

6. **MOORING PILINGS and BUOYS** ☒ This section not applicable
   a. Is the structure(s):
      - ☐ Commercial ☐ Public/Government ☐ Private/Community
   b. Number ______
   c. Distance to be placed beyond shoreline ______
      Note: This should be measured from marsh edge, if present.
   d. Description of buoy (color, inscription, size, anchor, etc.)

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revised: 12/27/06
7. GENERAL

a. Proximity of structure(s) to adjacent riparian property lines greater than 15'

Note: For buoy or mooring piling, use arc of swing including length of vessel.

c. Width of water body ~2,686'

e. (i) Will navigational aids be required as a result of the project? ☒Yes ☐No ☐NA

(ii) If yes, explain what type and how they will be implemented.
Voluntary - Reflectors on floating dock pilings

8. OTHER ☒This section not applicable

a. Give complete description:

Date
8/30/13

Watermark Marina
Project Name
CXA-10 Corporation
Applicant Name
Applicant Signature

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Watermark Marina
MP-4 Attachment

1. Docking Facility/Marina Characteristics

c. Dock(s) and/or Pier(s)

<table>
<thead>
<tr>
<th></th>
<th>Length (ft)</th>
<th>Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pier 1</td>
<td>1,186</td>
<td>13</td>
</tr>
<tr>
<td>Pier 2</td>
<td>1,031</td>
<td>23.5</td>
</tr>
<tr>
<td>Dock 1</td>
<td>180</td>
<td>10</td>
</tr>
<tr>
<td>Dock 2</td>
<td>180</td>
<td>10</td>
</tr>
</tbody>
</table>

   fixed pedestrian pier
   fixed forklift pier

   floating


  
e. Platforms

<table>
<thead>
<tr>
<th></th>
<th>Length (ft)</th>
<th>Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform 1</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Platform 2</td>
<td>71.3 to 44.1</td>
<td>35.5 to 61.3</td>
</tr>
</tbody>
</table>

   irregular shape

See Sheet 2 for labeling.
DIVISION OF COASTAL MANAGEMENT
FIELD INVESTIGATION REPORT

1. APPLICANT'S NAME: CXA-10 Corporation c/o Lewis Zwick
   PROJECT NAME: Watermark Marina Major Modification State Permit No. 66-01

2. LOCATION OF PROJECT SITE: 4114 River Road, adjacent to the Cape Fear River, Wilmington, in New Hanover County.
   State Plane Coordinates - X: 2319995  Y: 151025  Rover File – O-082813A
   Lat: 34°09'37.04149"N  Long: 77°56'32.14349"W

3. INVESTIGATION TYPE: CAMA

4. INVESTIGATIVE PROCEDURE: Dates of Site Visit – 08/26/2013
   Was Applicant Present – No

5. PROCESSING PROCEDURE: Application Received – 08/22/2013 (completed)
   Office – Wilmington

6. SITE DESCRIPTION:
   (A) Local Land Use Plan - Wilmington/New Hanover County
   Land Classification From LUP – Conservation, Limited Transition
   (B) AEC(s) Involved: PT, EW
   (C) Water Dependent: Yes
   (D) Intended Use: Commercial
   (E) Wastewater Treatment: Existing – Municipal (CFPUA) Planned – N/A
   (F) Type of Structures: Existing – Dry-stack building, storage buildings, timber-bridge, clubhouse, parking areas, stormwater pond, above ground storage fuel tank, forklift pier, pedestrian access pier, platform, floating docks and channel markers.
   Planned – Proposed new forklift pier, platform and transient floating docks
   (G) Estimated Annual Rate of Erosion: N/A
   Source - N/A

7. HABITAT DESCRIPTION:

<table>
<thead>
<tr>
<th>AREA</th>
<th>[AREA]</th>
<th>DREDGED</th>
<th>FILLED</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Vegetated Wetlands -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(B) Non-Vegetated Wetlands – Open Water</td>
<td></td>
<td></td>
<td></td>
<td>51,973 sq. ft. (incorporated)</td>
</tr>
<tr>
<td>(C) Other – High Ground</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(D) Total Area Disturbed:</td>
<td>51,973 sq. ft. (1.19 acres)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(E) Primary Nursery Area:</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(F) Water Classification:</td>
<td>SC Open</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. PROJECT SUMMARY: The applicant proposes to construct an extension of an existing forklift launch and retrieval pier with transient floating docks associated with an existing dry-stack marina facility into deeper water of the Cape Fear River.
The original application of State Permit No. 66-01 in April 2001 indicated existing water depth of -3.112' @ "low water" in the location of the proposed forklift launch area. Based on historical aerial photography review, the 2000 aerial photograph depicts shallow water depths in the project area. This application indicates that based on the latest hydrographic survey conducted in 2010 the existing water depth in the location of the existing launch and retrieval pier is <-1.0' relative to mean low water (MLW). The federally maintained Cape Fear River channel in the vicinity of the existing launch and retrieval pier is approximately 4,790' southwest of the outer edge of marsh at the existing launch and retrieval pier (See Sheet 1, 2, 5, 6 and 7 of 7 and Project Narrative).

PROPOSED PROJECT:

The applicant proposes to construct an extension of an existing forklift launch and retrieval pier with transient floating docks associated with an existing dry-stack marina facility into deeper water of the Cape Fear River. A new irregular shaped fixed platform with dimensions ranging from approximately 44' to 77' in length by 36' to 61' in width would be constructed and located on the northern side of the existing forklift launch and retrieval platform. A new forklift pier measuring approximately 1,031' in length by 23.5' in width along with a new pedestrian access pier, measuring approximately 1,186' in length by 13' in width would extend side-by-side to each other towards the west into the Cape Fear River. These piers would terminate onto a fixed platform, measuring approximately 66' in length by 66' in width. Access ramps would lead onto two (2) floating docks, each measuring approximately 180' in length by 10' in width, which would extend towards the northern and southern side of the fixed platform. These floating docks would run parallel to the channel and shoreline creating a "T-head" configuration. According to the application package, the proposed extension would locate the terminal end of the new fixed forklift launch and retrieval pier and floating docks to the -6'@MLW contour in the back channel between Island 13 and the existing launch and retrieval pier. Approximately 720 linear feet (potentially 29 wet slips) of side-to-dockage would be associated with proposed forklift marina facility, which the application states would be for temporary tie up only. The floating docks associated with the existing launch and retrieval pier currently could potentially provide up 29 side-to-dockage. The application states that the proposed new extension would provide adequate water depths for the launch and retrieval of clientele vessels at lower stages of the tidal cycle, which is currently not practical at the existing facility. The application also states that only 20 of the 430 slips within the dry-stack marina building are currently being utilized (See Sheets 1 through 7 of 7 and Project Narrative).

The application does not propose additional high ground development in this modification request to State Permit No. 66-01. Please find below, a list of previous authorizations received to date includes: NC Division of Water Resources – Stormwater Permit #SW8000408 US Army Corp of Engineers – Action ID SAW-2000-01574.

10. ANTICIPATED IMPACTS:

The proposed extension of the existing launch and retrieval pier would incorporate an additional approximately 51,973 sq. ft. of Estuarine Waters and Public Trust Areas. The structures would not encroach into the adjacent 15' riparian corridor setback requirement. The proposed facility would extend approximately 1,424' into a waterbody measuring approximately 2,686' across. The proposed structures would extend approximately 1/2 the distance of the adjacent waterbody, exceeding the 1/4 distance rule of the waterbody. Based on provided water depths the extension would only gain -6'@MLW for the proposed total distance of 1,424' into the adjacent waterbody. The proposed structures would not encroach into the USACE navigation channel setback. Minor turbidity increases should be expected during the construction process.

Submitted by: Robb L. Mairs Date: 09/03/2013 Office: Wilmington
9. SITE DESCRIPTION:

The project is located on the east bank of the Cape Fear River, on the west side of River Road (SR 1100), approximately 2 miles south of the N.C. State Ports Authority (NCSPA), in Wilmington, New Hanover County. To locate the project location, travel west on Shipyard Blvd. until you reach the entrance to the NCSPA. Turn left onto River Road and travel approximately 2.3 miles south until you reach the property of interest, which will be located on the right hand side. The property is bounded by Barnards Creek to the south, and the Cape Fear River to the west. The property is locally zoned industry and is bordered to the north by this type of existing land-use. The 11.9 acre tract is roughly triangular, with approximately 1,000’ of frontage on the river. Its eastern property line is approximately 200’ off River Road, but includes an easement, 200’ in length by 50’ in width to provide access from River Road. The property varies in depth from 600’ (south side) to 1,200’ (north side). The property ranges in elevation from 0’ to +10’ above normal high water (NHW). Historically, the tract had been used as a sand borrow pit, removing much of the natural elevation of the site. After exhausting the sand in the upper layers of the soil, the property was apparently used as a dump site and was littered with old tires and other refuse.

Existing structures on the property currently consists of a full service 430 slip dry-stack marina building, storage units, timber bridge, marina clubhouse, parking areas, stormwater pond. 10,000 gallons above ground storage fuel tank with fuel dispensers, forklift pier with a pedestrian access pier, fixed platform, floating docks, a marine pump-out facility and channel markers. State Permit No. 66-01 was originally issued to a previous property owner (Barnards Creek, LLC) on May 29, 2001 for the commercial dry-stack marina facility on the property. State Permit No. 66-01 was transferred to Watermark Marina of Wilmington on July 12, 2005 and was modified on August 22, 2005 and again on October 23, 2006. State Permit No. 66-01 was renewed on March 28, 2007 and was due to expire on December 31, 2008. State Permit No. 66-01 was transferred to CXA-5 Corporation on August 9, 2010. State Permit No. 66-01 was then transferred CXA-10 Corporation (current owner and applicant) on October 16, 2012. State Permit No. 66-01 is due to expire on December 31, 2013, which was subject to extension by the Session Law 2009-406, and as amended by Session Law 2010-177, the Permit Extension Act.

High ground vegetation at the site consists of Live Oak, Laurel Oak, Magnolia, Pine, Cypress and Cedar trees. Understory vegetation consists of Red Cedar, Wax Myrtle and Marsh Elder. The tract exhibits borders of coastal wetlands along the river (west) and the adjacent Barnards Creek (south). These tidal wetlands are predominantly Giant Cordgrass (Spartina cynosoroides), Smooth Cordgrass (Spartina alterniflora), Sawgrass (Cladium, spp.), Cat-tail (Typha, spp) and Bulrush (Scirpus, spp.). Non-tidal wetlands on the site appear to be §404 type wetlands regulated by the U.S. Army Corps of Engineers (USACE). These areas include a narrow hardwood wetland drain which appears to run through an access easement on the east side of the property and connects to Barnards Creek.

The waters of the Cape Fear River (in the vicinity of the project) are classified SC, by the N.C. Division of Water Resources. The area is designated as a Primary Nursery Area (PNA), by the N.C. Division of Marine Fisheries and these waters are CLOSED to the harvesting of shellfish. The Wilmington-New Hanover County Land Use Plan 2006 Update classifies the area as Conservation.

It should be noted that the island directly across from the project site is known as Island 13, which was used as a mitigation site for impacts to PNA by the Wilmington Harbor deepening project. The distance between the project site and Island 13 is approximately 2,686’ across. The waterward limits of the authorized facility under State Permit No. 66-01 were limited to the ¼ distance rule, which is approximately 672’. However, the application indicates that the existing facility currently extends only approximately 540’ into the waterbody, which is approximately 132’ landward of the ¼ distance rule.
Regulatory Division

Action ID No. SAW-2000-01574

Mr. Doug Huggett
Division of Coastal Management
North Carolina Department of
Environment and Natural Resources
400 Commerce Avenue
Morehead City, North Carolina 28557-3421

Dear Mr. Huggett:

Reference the application of CXA-10 Corporation to construct an extension of an existing forklift launch and retrieval pier with transient floating docks, adjacent to the Cape Fear River, at Watermark Marina located at 4114 River Road, in Wilmington, New Hanover County, North Carolina.

The Federal agencies have completed review of the proposal as presented by the application and your field investigation report.

We recommend that the following conditions be included in the State authorization:

1. All work authorized by this permit must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.

2. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal, relocation, or alteration. The permittee shall notify NOAA/NATIONAL OCEAN SERVICE Chief Source Data Unit N CS261, 1315 E West HWY- RM 7316, Silver Spring, MD 20910-3282 at least two weeks prior to beginning work and upon completion of work.
3. Approval of the structure is based on determinations that there would be no obstruction to navigation. The structure may be damaged by wave wash from passing vessels. Issuance of this permit should not be construed, as relieving the permittee of taking proper steps to insure the structure and moored boats will not be damaged by wave wash.

4. Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.

5. Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.

6. Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used.

7. All mechanized equipment will be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the permittee shall immediately report it to the N.C. Division of Water Quality at (919) 733-5083, Ext. 526 or (800) 662-7956 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

8. The authorized structure and associated activity must not interfere with the public’s right to free navigation on all navigable waters of the United States. No attempt will be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the authorized work for reason other than safety.

9. The permittee must install and maintain, at his expense, any signal lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on authorized facilities. For further information, the permittee should contact the U.S. Coast Guard Marine Safety Office at (910) 772-2191.
10. If the permittee discovers any previously unknown historic or archeological remains while accomplishing the authorized work, he will immediately notify the Wilmington District Engineer who will initiate the required coordination procedures.

11. The permittee shall advise the Corps in writing at least two weeks prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

12. Approval of the structure was based on determinations that there would be no obstruction to navigation. Under conditions existing in the Atlantic Intracoastal Waterway (AIWW), a possibility exists that the structure may be damaged by wave wash from passing vessels. Unreasonable slowing down of vessel traffic cannot be required because it would tend to nullify the navigational benefits on which the AIWW was justified. Issuance of this permit should not be construed, as relieving the permittee of taking proper steps to insure the structure and moored boats will not be damaged by wave wash normally to be expected in the AIWW.

13. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project.

14. The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

15. The activity will be conducted in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Increases such that the turbidity in the waterbody is 50 NTU's or less in all rivers not designated as trout waters by the North Carolina Division of Environmental Management (NCDEM), 25 NTU's or less in all saltwater classes and in all lakes and reservoirs, and 10 NTU's or less in trout waters, are not considered significant.

16. The permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.
17. Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the permittee's discovery of the violation.

18. No portion of any structure will be located within 80 feet of the near bottom edge federally maintained navigation channel or federal setback to the channel. An as built survey of the authorized structure will be provided to our office for review of navigation concerns.

Questions or comments may be addressed to Mr. Dave Timpy, Wilmington Field Office, Regulatory Division, telephone (910) 251-4634.

Sincerely,

[Signature]

David L. Timpy, Project Manager
Wilmington Regulatory Field Office

Copies Furnished (w/o enclosure):

Ms. Karen Higgins
Division of Water Quality
North Carolina Department of
    Environment and Natural Resources
1650 Mail Service Center
Raleigh, North Carolina 27699-1650

Mr. Pete Benjamin
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Fritz Rhode
National Marine Fisheries Service
Habitat Conservation Service
Pivers Island
Beaufort, North Carolina 28516

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CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

CXA-10 Corporation  
c/o Lewis Zwick  
6000 Legacy Drive  
Plano, TX 75024

Dear Mr. Zwick:

This letter is in response to your application for a Major Modification to Permit No. 66-01 under the Coastal Area Management Act (CAMA), in which authorization was requested to construct an extension of an existing forklift launch and retrieval pier adjacent to the Cape Fear River, in New Hanover County. Processing of the application, which was received as complete by the Division of Coastal Management’s Wilmington Office on August 22, 2013 is now complete. Based on the state’s review, the Division of Coastal Management has made the following findings:

1) The proposed project is a Major Modification to CAMA Major Permit No. 66-01. Permit No. 66-01 was originally issued on May 29, 2001 and has undergone several transfers, modifications and renewals. The permit was transferred to the current owner CXA-10 Corporation on October 16, 2012. The permit authorized the construction of the commercial dry-stack marina facility with an associated forklift launch pier and pedestrian pier. The original piers were permitted to extend to one-fourth the width of the waterbody.

2) The application indicates, that based on the latest hydrographic survey conducted in 2010, the water depth in the location of the existing forklift launch and retrieval pier is -1.0’ mean low water.

3) The subject property is located adjacent to the Cape Fear River and is located within a Primary Nursery Area (PNA), as designated by the North Carolina Marine Fisheries Commission.

4) Although the applicant did not propose any excavation, 15A NCAC07H.0208(b)(1) of the Coastal Resources Commission rules require excavation of new navigation channels, canals, and boat basins to be aligned or located so as to avoid Primary Nursery Areas.

5) The proposed project would extend the previously authorized forklift launch pier and pedestrian pier to a total distance of approximately 1,450 feet into the Cape Fear River.
6) The proposed forklift launch pier and pedestrian pier would locate the terminal end of the facility in -6.0' mean low water.

7) The proposed forklift launch pier and pedestrian pier would exceed the one-quarter width of the natural waterbody by approximately 775 feet.

8) The proposed forklift launch pier and pedestrian pier extension longer than 400 feet would gain deeper water at a rate of less than .5 feet per 100 foot increment.

9) Based upon the above referenced findings, the Division has determined that the proposed project is inconsistent with the following Rule of the Coastal Resources Commission:

   a) 15A NCAC 07H.0208(b)(6)(G)(iii), which states that pier length shall be limited by: “not extending more than one-fourth the width of a natural water body, or human-made canal or basin. Measurements to determine widths of the waterbody, canals or basins shall be made from the waterward edge of any coastal wetland vegetation which borders the water body…”

   b) 15ANCAC 07H.0208(b)(H), which state the pier length shall be limited by: “Piers or docking facilities longer than 400 feet shall be permitted only if the proposed length gives access to deeper water at a rate of at least 1 foot each 100 foot increment of length longer than 400 feet, or, if the additional length is necessary to span some obstruction to navigation. Measurements to determine lengths shall be made from the waterward edge of any coastal wetland vegetation that borders the water body;”

Given the preceding findings, it is necessary that your request for issuance of a CAMA Major Permit under the Coastal Area Management Act be denied. This denial is made pursuant to N.C.G.S. 113A-120(a)(8) which requires denial for projects inconsistent with the state guidelines for Areas of Environmental Concern or local land use plans.

If you wish to appeal this denial, you are entitled to a hearing. The hearing will involve appearing before an Administrative Law Judge who listens to evidence and arguments of both parties before making a final decision on the appeal. Your request for a hearing must be in the form of a written petition, complying with the requirements of §150B of the General Statutes of North Carolina, and must be filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714, within twenty (20) days from the date of this letter. A copy of this petition should be filed with this office.
Also, you are advised that as long as this state permit denial stands, your project must be deemed inconsistent with the N.C. Coastal Management Program, thereby precluding the issuance of federal permits for this project. The Federal Coastal Zone Management Act (CZMA) gives you the right to appeal this finding to the U.S. Secretary of Commerce within thirty days of receipt of this letter. Your appeal must be on the grounds that the proposed activity is (1) consistent with the objectives or purposes of the CZMA, or (2) is necessary in the interest of national security, and thus, may be federally approved.

Members of my staff are available to assist you should you desire to modify your proposal in the future. If you have any questions concerning this matter, please contact Mr. Doug Huggett at (252) 808-2808, extension 212.

Sincerely,

Braxton C. Davis
Director

cc: Colonel Steven A. Baker – U.S. Army Corps of Engineers, Wilmington, NC
    David Kennedy, Director – OCRM/NOAA, Silver Spring, MD
CXA-10 CORPORATION

Watermark Marina
4114 River Road, Wilmington
New Hanover County

Variance Request
May 14, 2014
CXA-10
Watermark Marina Property
4114 River Road, Wilmington, New Hanover County, N.C.
Island 13

Back Channel of the Cape Fear River

2,686 feet across

1/2 distance

1/3 distance

1/4 distance

Barnards Creek

River Road
View of Project Site Existing Upland Development and Forklift Access Pier Facing Northeast
Photo: NC DCM Photography dated 8.26.13
View of Project Site Existing Forklift Launch and Retrieval Area and Floating Docks Facing West
Photo: NC DCM Photography dated 8.26.13
TO: The Coastal Resources Commission
FROM: Amanda P. Little, Assistant Attorney General
DATE: April 30, 2014 (for the May 14-15, 2014 CRC Meeting)
RE: Variance Request by Terry B. and Nancy K. Grier

Petitioners own an oceanfront residence located at 430 North Fort Fisher Boulevard in Kure Beach, North Carolina. Petitioners propose to enclose their existing 195 square foot covered porch to convert it into interior heated space. On March 11, 2014, the Town of Kure Beach Local Permit Officer (LPO) denied Petitioners’ CAMA minor permit application for the proposed development because the addition of 195 square feet of total floor area is inconsistent with the Commission’s rules in that a portion of it is proposed oceanward of the applicable 60-foot setback and it adds heated space to a non-conforming structure. Petitioners seek a variance from the Commission’s ocean hazard setback rules in order to add 195 square feet of total floor area onto their existing residence, as proposed in their permit application.

The following information is attached to this memorandum:

Attachment A: Relevant Rules
Attachment B: Stipulated Facts
Attachment C: Petitioners’ Positions and Staff’s Responses to Criteria
Attachment D: Stipulated Exhibits
Attachment E: Petitioners’ Variance Request Materials

cc: William A. Raney Jr., Counsel for Petitioners, electronically
Mary Lucasse, CRC Counsel, electronically
John J. Batson, Town of Kure Beach LPO, electronically
Debbie Wilson, DCM Wilmington District Manager, electronically
Robb Mairs, DCM Field Representative, electronically
RELEVANT RULES

15A NCAC 07H .0303 Management Objective of Ocean Hazard Areas

(a) The CRC recognizes that absolute safety from the destructive forces indigenous to the Atlantic shoreline is an impossibility for development located adjacent to the coast. The loss of life and property to these forces, however, can be greatly reduced by the proper location and design of structures and by care taken in prevention of damage to natural protective features particularly primary and frontal dunes. Therefore, it is the CRC’s objective to provide management policies and standards for ocean hazard areas that serve to eliminate unreasonable danger to life and property and achieve a balance between the financial, safety, and social factors that are involved in hazard area development.

(b) The purpose of these Rules shall be to further the goals set out in G.S. 113A-102(b), with particular attention to minimizing losses to life and property resulting from storms and long-term erosion, preventing encroachment of permanent structures on public beach areas, preserving the natural ecological conditions of the barrier dune and beach systems, and reducing the public costs of inappropriately sited development. Furthermore, it is the objective of the Coastal Resources Commission to protect present common-law and statutory public rights of access to and use of the lands and waters of the coastal area.

15A NCAC 7H .0305 General Identification and Description of Landforms.

(a) This Section describes natural and man-made features that are found within the ocean hazard area of environmental concern.

(6) Static Vegetation Line. In areas within the boundaries of a large-scale beach fill project, the vegetation line that existed within one year prior to the onset of initial project construction shall be defined as the static vegetation line. A static vegetation line shall be established in coordination with the Division of Coastal Management using on-ground observation and survey or aerial imagery for all areas of oceanfront that undergo a large-scale beach fill project. Once a static vegetation line is established, and after the onset of project construction, this line shall be used as the reference point for measuring oceanfront setbacks in all locations where it is landward of the vegetation line. In all locations where the vegetation line as defined in this Rule is landward of the static vegetation line, the vegetation line shall be used as the reference point for measuring oceanfront setbacks. A static vegetation line shall not be established where a static
vegetation line is already in place, including those established by the Division of Coastal Management prior to the effective date of this Rule. A record of all static vegetation lines, including those established by the Division of Coastal Management prior to the effective date of this Rule, shall be maintained by the Division of Coastal Management for determining development standards as set forth in Rule .0306 of this Section.

15A NCAC 7H .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) The ocean hazard setback for development is measured in a landward direction from the vegetation line, the static vegetation line or the measurement line, whichever is applicable. The setback distance is determined by both the size of development and the shoreline erosion rate as defined in 15A NCAC 07H .0304. Development size is defined by total floor area for structures and buildings or total area of footprint for development other than structures and buildings. Total floor area includes the following:

(A) The total square footage of heated or air-conditioned living space;

(B) The total square footage of parking elevated above ground level;

and

(C) The total square footage of non-heated or non-air-conditioned areas elevated above ground level, excluding attic space that is not designed to be load-bearing.

Decks, roof-covered porches and walkways are not included in the total floor area unless they are enclosed with material other than screen mesh or are being converted into an enclosed space with material other than screen mesh.

(2) With the exception of those types of development defined in 15A NCAC 07H .0309, no development, including any portion of a building or structure, shall extend oceanward of the ocean hazard setback distance. This includes roof overhangs and elevated structural components that are cantilevered, knee braced, or otherwise extended beyond the support of pilings or footings. The ocean hazard setback is established based on the following criteria:
(A) A building or other structure less than 5,000 square feet requires a minimum setback of 60 feet or 30 times the shoreline erosion rate, whichever is greater;

(6) Structural additions or increases in the footprint or total floor area of a building or structure represent expansions to the total floor area and shall meet the setback requirements established in this Rule and 15A NCAC 07H .0309(a). 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.
STIPULATED FACTS

1. Petitioners Terry and Nancy Grier ("Petitioners") are the owners of an oceanfront residence located at 430 North Fort Fisher Boulevard, Kure Beach, NC (the "property"). The property is also known as Lot 7 of Kure Dunes. Petitioners purchased the property in May 2011.

2. Aerial and site photographs are attached as stipulated exhibits which depict the property, Petitioner's residence and the surrounding area.

3. The property is located within the Ocean Erodible Area of Environmental Concern (AEC), and N.C.G.S. § 113A-118 requires that a CAMA permit be obtained before any development takes place in an AEC on the property.

4. Currently, there is an existing two-story piling-supported 5-bedroom residence with 4,146 square feet total floor area, a concrete driveway, and a ground level wood deck located on the property.

5. 15A NCAC 7H .0306(a)(2)(A) provides that a building or structure less than 5,000 square feet of total floor area requires a minimum setback of 60 feet or 30 times the shoreline erosion rate, whichever is greater.

6. The property currently has an annual long-term average ocean erosion rate of 2-feet per year so the required erosion setback for this property is 60 feet.

7. The portion of Kure Beach where the property is located is within the bounds of a Corps of Engineers large-scale beach nourishment project. Therefore, based on 15A NCAC 07H .0305(a)(6) and (9) and 07H .0306(a), the static vegetation line is the applicable line from which to measure the 60-foot ocean hazard setback (the "setback") on the property.

8. For areas within the boundaries of a large-scale beach fill project, 15A NCAC 07H .0305(a)(6) provides that the vegetation line that existed within one year prior to the onset of the initial project construction shall be defined as the static vegetation line. The static vegetation line shall be used at the reference point for measuring oceanfront setbacks in all locations where it is landward of the vegetation line.

9. While the applicable setback for development on this property is 60-feet landward of the static vegetation line, the "actual" first line of stable natural vegetation currently on the property is located approximately 91 feet oceanward of the outer edge of the existing residence's oceanfront deck.
10. While Kure Beach has a Corps of Engineers large-scale beach fill project, the Town has neither applied for nor received a static line exception per 15A NCAC 07H. 1200 et seq. However, the proposed development would not meet the static line exception rules as it already exceeds that exception’s 2,500 square foot of total floor area maximum. See 15A NCAC 07H .0306(a)(8).

11. The existing 4,146 square foot residence on the property was constructed in accordance with CAMA Minor Permit No. 99-002H issued by the Town of Kure Beach Local Permit Officer ("LPO") on April 15, 1999. A copy of the CAMA permit is attached.

12. On or about February 21, 2014, Petitioners, through their agent Michael Kersting, applied for a CAMA minor permit from the Town of Kure Beach’s CAMA LPO proposing to enclose a 195 square foot covered porch to convert it to interior heated space ("proposed development"). A copy of the application materials is attached.

13. Petitioners’ proposed development consists of enclosing an existing lower-level covered porch located on the south side of the residence underneath existing heated floor area of the residence’s upper-level. The proposed development will add 195 square feet of interior heated space to the existing living room of the residence which currently measures 184 square feet. Even though the proposed development will be built entirely under the existing roofline and does not increase the footprint of the residence, it does increase the total floor area of the residence as defined by 15A NCAC 7H .306(a) since August 12, 2009.

14. Petitioners submitted, as part of their variance request, an affidavit from their realtor, Joyce Barnwell, along with records from the Multiple Listing Service of the Wilmington Regional Association of Realtors regarding the size of living rooms of other five bedroom oceanfront and non-oceanfront residences in Kure Beach listed for sale, pending sale, or sold between July 26, 2013 and January 22, 2014. See Attachment E.

15. The CAMA LPO for the Town of Kure Beach received no objections or comments regarding the Petitioner’s application for the proposed development from the public or adjacent riparian owners during the public comment period.

16. 15A NCAC 07H .0306(a)(6) provides that structural additions or increases in the footprint or total floor area of a building or structure represent expansions to the total floor area and shall meet the setback requirements established in this rule and 15A NCAC 07H .0309(a).

17. Of the 195 square feet of the proposed development, 64 square feet is located oceanward of the setback line and 131 square feet is located landward of the setback line.

18. On March 11, 2014, the CAMA LPO for the Town of Kure Beach denied Petitioners’ CAMA minor permit application for proposed development in that the addition of 195 square feet of total floor area was inconsistent with the Commission’s rules because a portion of it was
proposed oceanward of the applicable 60-foot setback and it added heated space to a non-conforming structure. A copy of the denial notice is attached.

19. On March 27, 2014, Petitioners filed this variance petition, a copy of which is attached, seeking a variance of the Commission’s ocean hazard setback rules in order to add 195 square feet of total floor area onto their existing residence.
Petitioners and Staff Positions

I. Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? Explain the hardships.

Petitioners’ Position: Yes.

The application of the rules will cause unnecessary hardship to the Petitioners. Strict application of the rules will prevent the Petitioners from remodeling and enlarging the living and dining space in their home to make it more functional and consistent with similarly located structures in Kure Beach. The remodeling will also help to avoid possible weatherproofing issues that exist with the current construction. These hardships are unnecessary because the development is consistent with the spirit, purpose, and intent of the rules as set forth in variance criteria #4 set forth below.

Staff’s Position: Yes.

Staff agrees that strict application of the rules in this case will cause the Petitioners an unnecessary hardship. Petitioners’ proposed development consists of enclosing a lower-level covered porch, a portion of which is located oceanward of the ocean erosion setback. One of the management objectives of the Ocean Hazard AEC provided in 15A NCAC 7H .0303(b) is “minimizing losses to life and property.” Even though Petitioners’ proposed development is adding heated space to a non-conforming residence, Staff believes it will only have a de minimus impact, if any, on the objective of protecting life and property along the oceanfront since it is essentially only moving existing wall(s) entirely within the existing footprint and roofline of the residence.

II. Do such hardships result from conditions peculiar to the petitioner’s property, such as location, size, or topography of the property? Explain.

Petitioners’ Position: Yes.

The Petitioners’ property consists of the lot and the house located thereon which existed at the time they purchased their property. While the lot is similar to other lots in the vicinity, the existing structure is peculiar in that it has an unusually small living room and dining area for the number of bedrooms in the house. The house also has a substantial area under the roof, but outside the heated space. The oceanfront lot is within an area that has been periodically nourished with sand from a Corps of Engineers hurricane protection project. The house has unusual girders supporting the oceanfront decks that extend through the wall and present a weatherproofing issue. The weatherproofing issue will be cured by the proposed development. The actual first line of stable natural vegetation is located about 91 feet from the seawardmost structural components of the house and about 97 feet from the seawardmost proposed enclosed area.
Staff’s Position: No.

Staff disagrees with Petitioners that there is any specific location, size or topographical condition that is peculiar to their property. Furthermore, Staff notes that this is not a unique situation because along the North Carolina coast there are numerous houses with covered porches which are encompassed within the house’s structural footprint (as opposed to appurtenant structures) and have the ocean erosion setback line fall somewhere within that footprint.

III.  Do the hardships result from the actions taken by the Petitioner? Explain.

Petitioners’ Position: No.

The hardships result from the unusually small living area in the original design of the house and from erosion after the house was built. The static line for setback measurement purposes resulted from a government-sponsored large scale beach fill project.

Staff’s Position: Yes.

Staff disagrees that Petitioners’ hardship is not due to actions taken by them because they purchased the property with the existing non-conforming residence in 2011. The rules prohibiting an increase to the total floor area oceanward of the ocean erosion setback were in effect long before the purchase date. Therefore, Staff believes that Petitioners’ hardship is a direct result of their actions.

IV.  Will the variance requested by the Petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Petitioners’ Position: Yes.

(1) Be consistent with the spirit, purpose and intent of the rules, standards or orders issued by the Commission?

The ocean hazard areas of environmental concern are “natural hazard areas along the Atlantic Ocean shoreline where, because of their special vulnerability to erosion or other adverse effects of sand, wind, and water, uncontrolled or incompatible development could unreasonably endanger life or property.” 15A NCAC 07H.0301. The management objective for Ocean Hazard Areas is “to provide management policies and standards for ocean hazard areas that serve to eliminate unreasonable danger to life and property and achieve a balance between the financial, safety, and social factors that are involved in hazard area development.” 15A NCAC 07H.0303(a). The purpose of these rules “shall be to further the goals set out in G.S. 113A-102(b), with particular attention to
minimizing loss to life and property resulting from storms and long-term erosion, preventing encroachment of permanent structures on the public beach, preserving natural ecological conditions of the barrier dune and beach system, and reducing the public costs of inappropriately sited development.” 15A NCAC 07H.0303(b). Because the proposed remodeling will be wholly located under the existing roof of the existing structure, there will be no adverse impact on the purpose of the rule as set for the in 07H.0303(b). Ocean hazard setbacks are greater for larger structures, but even with the increase in heated area under Petitioners’ proposal, the Petitioners’ home will be well under the 5,000 square foot size that would trigger a greater setback. Most of the new enclosed space will meet the current setback measured from the static line. All of the new enclosed space would meet the setback from the current actual first line of stable natural vegetation. All of the proposed new development would have met the setbacks applicable when the house was built in 1999-2000. The principal reason for having increased setbacks for structures greater than 5,000 square feet is the feasibility of moving a structure to a new location if a structure is threatened by erosion. The enlargement of heated spaced under the existing roof would have no effect on the relocation of the structure since all of the new development would be under the existing roof.

(2) Secure the public safety and welfare?

The proposed development will have no effect, positive or negative, on public safety or welfare because it will be simply an enclosure of a portion of an existing structure.

(3) Preserve substantial justice?

This development will allow the parties to make reasonable use of their property without having an adverse impact on other property owners, the public, or the environment.

Staff’s Position: Yes.

The spirit, purpose, and intent of Rule 15A NCAC 7H.0306(a) is “to protect life and property.” This is the underlying reason for the CRC adopting erosion setback requirements, including the static line requirements in Ocean Hazard AECs. Staff believes that Petitioners’ proposed development does comply with the spirit, purpose, and intent of this rule primarily because the proposed development is only an expansion of structural living space entirely within the existing footprint and roofline and is consistent with the purpose of the CRC’s Ocean Hazard rules to avoid and minimize damage to life and property. Staff agrees that public safety and substantial justice will be preserved because the proposed development will only cause a negligible impact, if any, on the objective of protecting life and property along the oceanfront while allowing Petitioners to make reasonable use of their property.
Attachment D

Stipulated Exhibits

1. CAMA Minor Permit No. 99-002H issued by the Town of Kure Beach LPO on April 15, 1999.

2. Petitioners’ CAMA Minor Permit application for proposed development.


4. Powerpoint presentation (9 slides including title slide), dated May 14, 2014.
MINOR DEVELOPMENT PERMIT

as authorized by the State of North Carolina, Department of Natural Resources and Community Development and the Coastal Resources Commission for development in an area of environmental concern pursuant to Section 113A-118 of the General Statutes, "Coastal Area Management."

Issued to Jane Chisholm and Howard Malette Poole

Issuing authority: Kure Beach, N.C. 430 Fort Fisher Blvd. N.

as requested in the permittee's application dated March 19, 1999

This permit, issued on April 19, 1999, is subject to compliance with the application and site drawing (where consistent with the permit), all applicable regulations and special conditions and notes set forth below. Any violation of these terms may subject the permittee to a fine, imprisonment or civil action; or may cause the permit to be null and void.

CONDITIONS:
1. All proposed development and associated construction must be done in accordance with the permitted work plan drawing(s) submitted on March 19, 1999.
2. All construction must conform to the N.C. Building Code requirements and all other local, State and Federal regulations.
3. Any change or changes in the plans for development, construction, or land use activities will require a re-evaluation and modification of this permit.
4. The structure must be located entirely off of the frontal dune, and if a primary dune is present, behind the crest of the primary dune.
5. Dune disturbances will be allowed only to the extent necessary for development and if the dune's protective value is not weakened or reduced. Disturbed areas will be immediately stabilized.
6. All disturbed areas shall be vegetatively planted and mulched within 30 days of construction completion.
7. Any structure shall be relocated or dismantled when it becomes imminently threatened by changes in shoreline configuration. The structure(s) shall be relocated or dismantled within 2 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 2 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

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. From the date of an appeal, any work conducted under this permit must cease until the appeal is resolved.

This permit must be on the project site and accessible to the permit officer when the project is inspected for compliance.

Any maintenance work or project modifications not covered under this permit require further written permit approval.

All work must cease when this permit expires on December 31, 2001.

In issuing this permit it is agreed that this project is consistent with the local Land Use Plan and all applicable ordinances.

This permit may not be transferred to another party without the written approval of the Office of Coastal Management.

[Signature]
Local Permit Officer (signature)

[Signature]
William A. Hanna, Jr.
name

P.O. Box 3
address

Kure Beach, NC 28449
Permittee (signature required if special conditions above apply to permit)
as authorized by the State of North Carolina, Department of Natural Resources and Community Development and the Coastal Resources Commission for development in an area of environmental concern pursuant to Section 113A-118 of the General Statutes, "Coastal Area Management."

Issued to Jane Chisholm and Howard Malette Poole

authorizing development in Kure Beach, N. C., at 430 Fort Fisher Blvd. N., as requested in the permittee's application dated March 19, 1999.

This permit, issued on April 15, 1999, is subject to compliance with the application and site drawing (where consistent with the permit), all applicable regulations and special conditions and notes set forth below. Any violation of these terms may subject permittee to a fine, imprisonment or civil action; or may cause the permit to be null and void.

CONDITIONS CONT'D:

7. CONT: the permit holder's right to seek authorization of temporary protective measures allowed under Rule .0308 (a)(2) of this section.

8. Pursuant to 15 NCAC, Subchapter 7J, .0406(b), this permit may not be assigned, transferred, or otherwise disposed of to a third party.

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. From the date of an appeal, any work conducted under this permit must cease until the appeal is resolved.

This permit must be on the project site and accessible to the permit officer when the project is inspected for compliance.

Any maintenance work or project modifications not covered under this permit require further written permit approval.

All work must cease when this permit expires on December 31, 2001.

In issuing this permit it is agreed that this project is consistent with the local Land Use Plan and all applicable ordinances.

This permit may not be transferred to another party without the written approval of the Office of Coastal Management.
RECEIVED
APR 09 1999
DIVISION OF COASTAL MANAGEMENT

H. MALETTE POOLE & JANE ANN CHISHOLM
LOT 7 PHASE 1 KURE DUNES
SCALE: 1" = 20'

NOTES:
1. SEPTIC TANK
   NOT REQUIRED—TOWN WATER AND SEWER
2. 8 X 8 PILINGS ARE TO BE DRIVEN 16'-0" BELOW GRADE
3. EXISTING LANDSCAPING IS MINIMAL
   SITE WILL BE LANDSCAPED WITH NATIVE PLANTS AFTER CONSTRUCTION
4. LOT IS LOCATED IN ZONES C & V-14 (ELEV. 14)
   FIRM COMMUNITY PANEL
   #370170 0002 C
   DATED: APRIL 2, 1988
SITE DRAWING/APPLICATION CHECKLIST

Please make sure your site drawing includes the following information required for a CAMA minor development permit. The Local Permit Office will help you, if requested.

PHYSICAL DIMENSIONS

- Label roads
- Label highways rights-of-ways
- Label local setback lines
- Label any and all structures and driveways currently existing on property
- Label adjacent waterbody

PHYSICAL CHARACTERISTICS

- Draw and label normal high water line (contact LPO for assistance)
- Draw location of on-site wastewater system

If you will be working in the ocean hazard area:
- Draw and label drop lines (include spot elevations)
- Identify and locate first line of stable vegetation (contacts LPO for assistance)
- Draw and label erosion setback line (contact LPO for assistance)
- Draw and label topographical features (optional)

If you will be working in a coastal shoreline area:
- Show roof overhang as a dotted line around the structure
- Draw and label landward limit of AEC
- Draw and label all wetland lines (contact LPO for assistance)
- Draw and label the 20-foot buffer line

DEVELOPMENT PLANS

- Draw and label all proposed structures
- Draw and label areas that will be disturbed and/or landscaped
- Note size of piling and depth to be placed in ground
- Draw and label all areas to be paved or graveled
- Show all areas to be disturbed
- Show landscaping

NOTE TO APPLICANT

Have you:
- completed all blanks and/or indicated if not applicable?
- notified and listed adjacent property owners?
- included your site drawing?
- signed and dated the application?
- enclosed the $100.00 fee?
- completed an AEC Hazard Notice, if necessary? (Must be signed by the property owner)

APPLICATION FOR
CAMA MINOR DEVELOPMENT PERMIT

In 1974, the North Carolina General Assembly passed the Coastal Area Management Act (CAMA) and set the stage for guiding development in fragile and productive areas that border the state's sounds and oceanfront. Along with requiring special care by those who build and develop, the General Assembly directed the Coastal Resources Commission (CRC) to implement clear regulations that minimize the burden on the applicant.

This application for a minor development permit under CAMA is part of the Commission's effort to meet the spirit and intent of the General Assembly. It has been designed to be straightforward and require no more time or effort than necessary from the applicant. Please go over this folder with the Local Permit Officer (LPO) for the locality in which you plan to build to be certain you understand what information he or she needs before you apply.

Under CAMA regulations, the minor permit is to be issued within 25 days once a complete application is in hand. Often less time is needed if the project is simple. The process generally takes about 18 days. You can speed the approval process by making certain that your application is complete and signed, that your drawing meets the specifications given inside and that your application fee is attached.

Other permits are sometimes required for development in the coastal area. While these are not CAMA-related, we urge you to check with the Local Permit Officer to determine which of these you may need. A list is included on page two of this folder.

We appreciate your cooperation with the North Carolina Coastal Management Program and your willingness to build in a way that protects the resources of our beautiful and productive coast.

Coastal Resources Commission
Division of Coastal Management

Rec'd by __________________________

MAR 05

Town of Kure Beach
Inspections Department

DCM Form EK052-2010/Revised April 2010
GENERAL INFORMATION

LAND OWNER
Name: Terry & Nancy Oyster
Address: 430 N Fort Fisher Blvd
City: Kure Beach
State: NC
Zip: 28449
Phone: 715-628-5005
Email: nancykgrier@gmail.com

AUTHORIZED AGENT
Name: Michael Ross Kersting
Address: PO Box 12403
City: Wilmington
State: NC
Zip: 28406
Phone: 910.794.7380
Email: michael@kerstingarchitecture.com

LOCATION OF PROJECT: (Address, street name and/or directions to site. If not oceanfront, what is the name of the adjacent waterbody.) 430 N Fort Fisher Blvd

DESCRIPTION OF PROJECT: (List all proposed construction and land disturbances.) Renu Add. to single fam res.

SIZE OF LOT/PARCEL: 8911 square feet 2 acres

PROPOSED USE: Residential ☑ (Single-family ☐ Multi-family ☐) Commercial/Industrial ☐ Other ☐

COMPLETE EITHER (1) OR (2) BELOW (Contact your Local Permit Officer if you are not sure which AEC applies to your property):

(1) OCEAN HAZARD AEC: TOTAL FLOOR AREA OF PROPOSED STRUCTURE: 4604 square feet (includes air conditioned living space, parking elevated above ground level, non-conditioned space elevated above ground level but excluding non-load-bearing attic space)

(2) COASTAL SHORELINE AEC: SIZE OF BUILDING FOOTPRINT AND OTHER IMPERVIOUS OR BUILT UPON SURFACES: 3180 square feet (includes the area of the roof, the line of all buildings, driveways, covered decks, concrete or masonry patios, etc. that are within the applicable AEC. Attach your calculations with the project drawings.)

STATE STORMWATER MANAGEMENT PERMIT: Is the project located in an area subject to a State Stormwater Management Permit issued by the NC Division of Water Quality? YES ☑ NO ☐

If yes, list the total built upon area/impervious surface allowed for your lot or parcel: square feet.

OTHER PERMITS MAY BE REQUIRED: The activity you are planning may require permits other than the CAMA minor development permit, including, but not limited to: Drinking Water Well, Septic Tank (or other sanitary waste treatment system), Building, Electrical, Plumbing, Heating and Air Conditioning, Insulation and Energy Conservation, FIA Certification, Sand Dune, Sediment Control, Subdivision Approval, Mobile Home Park Approval, Highway Connection, and others. Check with your Local Permit Officer for more information.

STATEMENT OF OWNERSHIP:
I, the undersigned, an applicant for a CAMA minor development permit, being either the owner of property in an AEC or a person authorized to act as an agent for purposes of applying for a CAMA minor development permit, certify that the person listed as landowner on this application has a significant interest in the real property described therein. This interest can be described as: (check one)

☑ an owner or record title, Title is vested in Terry & Nancy Oyster, see Deed Book 4689 page 767, in the New Hanover County Registry of Deeds.

☑ an owner by virtue of inheritance. Applicant is an heir to the estate of ____________________________;

☑ other interest, such as written contract or lease, expiate below or use a separate sheet & attach to this application.

NOTIFICATION OF ADJACENT PROPERTY OWNERS:
I furthermore certify that the following persons are owners of properties adjoining this property. I affirm that I have given ACTUAL NOTICE to each of them concerning my intent to develop this property and to apply for a CAMA permit:

(Name) (Address)
1. Emma Trust Roof 434 N Fort Fisher Blvd
2. Kure Dunes HOA 426 N Fort Fisher Blvd

ACKNOWLEDGMENTS:
I, the undersigned, acknowledge that the land owner is aware that the proposed development is planned for an area which may be susceptible to erosion and/or flooding. I acknowledge that the Local Permit Officer has explained to me the particular hazard problems associated with this lot. This explanation was accompanied by recommendations concerning stabilization and floodproofing techniques.

I furthermore certify that I am authorized to grant, and do in fact grant, permission to Division of Coastal Management staff, the Local Permit Officer and their agents to enter on the aforementioned lands in connection with evaluating information related to this permit application.

This the Twenty First day of February, 2014

Landowner or person authorized to act as harbor agent for purpose of filing a CAMA permit application

This application includes: general information (this form), a site drawing as described on the back of this application, the ownership statement, the Ocean Hazard AEC Notice where necessary, a check for $100.00 made payable to the locality, and any information as may be provided orally by the applicant. The details of the application as described by these sources are incorporated without reference to any permit which may be issued. Deviation from these details will constitute a violation of any permit. Any person developing in an AEC without permit is subject to civil, criminal and administrative actions.
OTHER PERMITS MAY BE REQUIRED: The activity you are planning may require permits other than the CAMA minor development permit, including, but not limited to: Drinking Water Well, Septic Tank (or other sanitary waste treatment system), Building, Electrical, Plumbing, Heating and Air Conditioning, Insulation and Energy Conservation, FIA Certification, Sand Dune, Sediment Control, Subdivision Approval, Mobile Home Park Approval, Highway Connection, and others. Check with your Local Permit Officer for more information.

STATEMENT OF OWNERSHIP:
I, the undersigned, an applicant for a CAMA minor development permit, being either the owner of property in an ABC or a person authorized to act as an agent for purposes of applying for a CAMA minor development permit, certify that the person listed as landowner on this application has a significant interest in the real property described therein. This interest can be described as: (check one)

☐ an owner or record title, Title is vested in Terry & Nancy Grier, see Deed Book 2215 page 298 in the New Hanover County Registry of Deeds.

☐ an owner by virtue of inheritance. Applicant is an heir to the estate of ___________________________; probable was in __________________________ County.

☐ if other interest, such as written contract or lease, explain below or use a separate sheet & attach to this application.

NOTIFICATION OF ADJACENT PROPERTY OWNERS:
I furthermore certify that the following persons are owners of properties adjoing this property. I affirm that I have given ACTUAL NOTICE to each of them concerning my intent to develop this property and to apply for a CAMA permit.

(Name) (Address)
(1) Kurc Dunes Home Owners Assoc 622 Anchor Way K B
(2) Emma Trust Roof 821 Lockwood Dr. Cary 27511
(3)
(4)

ACKNOWLEDGEMENTS:
I, the undersigned, acknowledge that the land owner is aware that the proposed development is planned for an area which may be susceptible to erosion and/or flooding. I acknowledge that the Local Permit Officer has explained to me the particular hazard problems associated with this lot. This explanation was accompanied by recommendations concerning stabilization and floodproofing techniques.

I furthermore certify that I am authorized to grant, and do in fact grant, permission to Division of Coastal Management staff, the Local Permit Officer and their agents to enter on the aforementioned lands in connection with evaluating information related to this permit application.

This the __ day of __, 2014

Landowner or person authorized to act as his/her agent for purpose of filing a CAMA permit application

This application includes: general information (this form), a site drawing as described on the back of this application, the ownership statement, the Ocean Hazard AEC Notice where necessary, a check for $100.00 made payable to the locality, and any information as may be provided orally by the applicant. The details of the application as described by these sources are incorporated without reference in any permit which may be issued. Deviation from these details will constitute a violation of any permit. Any person developing in an ABC without permit is subject to civil, criminal and administrative action.
AEC HAZARD NOTICE

Project Is In An:  X Ocean Erodeile Area    ___ High Hazard Flood Area    ___ Inlet Hazard Area

Property Owner:  Terry & Nancy Grier

Property Address:  430 Ft. Fisher Blvd. N

Date Lot Was Platted:  5-29-13

This notice is intended to make you, the applicant, aware of the special risks and conditions associated with development in this area, which is subject to natural hazards such as storms, erosion and currents. The rules of the Coastal Resources Commission require that you receive an AEC Hazard Notice and acknowledge that notice in writing before a permit for development can be issued.

The Commission's rules on building standards, oceanfront setbacks and dune alterations are designed to minimize, but not eliminate, property loss from hazards. 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. Permits issued in the Ocean Hazard Area of Environmental Concern include the condition that structures be relocated or dismantled if they become imminently threatened by changes in shoreline configuration. The structure(s) must be relocated or dismantled within two (2) years of becoming imminently threatened, and in any case upon its collapse or subsidence.

The best available information, as accepted by the Coastal Resources Commission, indicates that the annual long-term average ocean erosion rate for the area where your property is located is 2 feet per year.

The rate was established by careful analysis of aerial photographs of the coastline taken over the past 50 years.

Studies also indicate that the shoreline could move as much as 300 feet landward in a major storm.

The flood waters in a major storm are predicted to be about 14 feet deep in this area.

Preferred oceanfront protection measures are beach nourishment and relocation of threatened structures. Hard erosion coastal structures such as bulkheads, seawalls, revetments, groins, jetties and breakwaters are prohibited. Temporary sand bags may be authorized under certain conditions.

The applicant must acknowledge this information and requirements by signing this notice in the space below. Without the proper signature, the application will not be complete.

SPECIAL NOTE: This hazard notice is required for development in areas subject to sudden and massive storms and erosion. Permit issued for development in this area expire on December 31 of the third year following the year in which the permit was issued. Shortly before work begins on the project site, the Local Permit Officer must be contacted to determine the vegetation line and setback distance at your site. If the property has seen little change since the time of permit issuance, and the proposed development can still meet the setback requirement, the LPO will inform you that you may begin work. Substantial progress on the project must be made within 60 days of this setback determination, or the setback must be remeasured. Also, the occurrence of a major shoreline change as the result of a storm within the 60-day period will necessitate remeasurement of the setback. It is important that you check with the LPO before the permit expires for official approval to continue the work after the permit has expired. Generally, if foundation pilings have been placed and substantial progress is continuing, permit renewal can be authorized. It is unlawful to continue work after permit expiration.

For more information, contact:

John Batson
Local Permit Officer

517 Setters Ln

Kure Beach, NC 28449

Phone Number: 910-458-6535

Revised 2/07
AGENT AUTHORIZATION FORM

Date: ____________________

Name of Property Owner Applying for Permit: 
Terry & Nancy Grier

Name of Authorized Agent for this project: 
Michael Ross Kosting

Owner’s Mailing Address:
430 Ft. Fisher Blvd N
Kure Beach, NC 28449

Agent’s Mailing Address:
PO Box 12403
Wilmington, NC 28405

Phone Number (910) 628-5605

Phone Number (910) 794-7930

I certify that I have authorized the agent listed above to act on my behalf, for the purpose of applying for and obtaining all CAMA Permits necessary to install or construct the following (activity):
Renov./Add. to single family residence

For my property located at 430 Ft. Fisher Blvd N.

This certification is valid thru (date) ____________________

Terry & Nancy Grier 2/26/14

Property Owner Signature Date

127 Cardinal Drive Ed., Wilmington, NC 28405
Phone: (910) 796-7215 FAX: (910) 395-3964 Internet: www.nccoastalmanagement.net

North Carolina
Naturally
03/11/14

Terry and Nancy Grier
430 North Fort Fisher Blvd
Kure Beach, NC 28449

RE: DENIAL OF CAMA MINOR DEVELOPMENT PERMIT
APPLICATION NUMBER- 14-004
PROJECT ADDRESS- 430 North Fort Fisher Blvd.

Dear Mr. and Mrs. Grier:

After reviewing your application in conjunction with the development standards required by the Coastal Area Management Act (CAMA) and our locally adopted Land Use Plan and Ordinances, it is my determination that no permit may be granted for the project which you have proposed.

This decision is based on my findings that your request violates NCGS 113A-120(a)(8) which requires that all applications be denied which are inconsistent with CAMA guidelines. You have applied to enclose an additional 190 square feet of heated space within the CAMA 60’ setback which is inconsistent with 15 NCAC 7H .0309, which states: permitted types of development seaward of the oceanfront setback requirements. Adding more heated space to an already nonconforming structure is not a permissible development seaward of the oceanfront setback.

Should you wish to appeal my decision to the Coastal Resource Commission or request a variance from that group, please contact me so I can provide you with the proper forms and any other information you may require. The Division of Coastal Management in Raleigh must receive appeal notices within twenty (20) days of the date of this letter in order to be considered.

Respectfully yours,

John J. Batson, LPO
Kure Beach, NC

cc: Robb Mairs, Field Rep., Wilmington Office
View of Adjacent Properties Facing South
Photo: NC DCM Photography dated February 2014
Approximate 60 foot setback from Static Vegetation Line

Proposed Expansion Location

View of Project Site Facing North
Photo: NC DCM Photography dated February 2014
Attachment E

Petitioners’ Variance Request Materials
March 27, 2014

VIA U.S. MAIL:

Mr. Braxton C. Davis, Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

VIA E-MAIL:

Braxton.Davis@ncdenr.gov

Re: Variance Petition – Terry and Nancy Grier, New Hanover County

Dear Mr. Davis:

Enclosed is a CAMA Variance Request Form regarding the above-referenced project. Please schedule this variance for the May, 2014 meeting of the Coastal Resources Commission.

The MLS information and spreadsheet are included as support for proposed facts.

Thank you for your attention to this matter.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.

cc: Ms. Christy Goebel (via U.S. mail and e-mail)
Pursuant to N.C.G.S. § 113A-120.1 and 15A N.C.A.C. 07J .0700 et seq., the above named Petitioner hereby applies to the Coastal Resources Commission (CRC) for a variance.

VARIANCE HEARING PROCEDURES

A variance petition will be considered by the CRC at a regularly scheduled meeting, heard in chronological order based upon the date of receipt of a complete petition. 15A N.C.A.C. 07J .0701(e). A complete variance petition, as described below, must be received by the Division of Coastal Management (DCM) a minimum of six (6) weeks in advance of the first day of a regularly scheduled CRC meeting to be eligible for consideration by the CRC at that meeting. 15A N.C.A.C. 07J .0701(e). The final set of stipulated facts must be agreed to at least four (4) weeks prior to the first day of a regularly scheduled meeting. 15A N.C.A.C. 07J .0701(e). The dates of CRC meetings can be found at DCM’s website: www.nccoastalmanagement.net.

If there are controverted facts that are significant in determining the propriety of a variance, or if the Commission determines that more facts are necessary, the facts will be determined in an administrative hearing. 15A N.C.A.C. 07J .0701(b).

VARIANCE CRITERIA

The petitioner has the burden of convincing the CRC that it meets the following criteria:

(a) Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? Explain the hardships.

(b) Do such hardships result from conditions peculiar to the petitioner's property such as the location, size, or topography of the property? Explain.

(c) Do the hardships result from actions taken by the petitioner? Explain.

(d) Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Please make your written arguments that Petitioner meets these criteria on a separate piece of paper. The Commission notes that there are some opinions of the State Bar which indicate that non-attorneys may not represent others at quasi-judicial proceedings such as a variance hearing before the
Commission. These opinions note that the practice of professionals, such as engineers, surveyors or contractors, representing others in quasi-judicial proceedings through written or oral argument, may be considered the practice of law. Before you proceed with this variance request, you may wish to seek the advice of counsel before having a non-lawyer represent your interests through preparation of this Petition.

For this variance request to be complete, the petitioner must provide the information listed below. The undersigned petitioner verifies that this variance request is complete and includes:

- X The name and location of the development as identified on the permit application;
- Ex. A A copy of the permit decision for the development in question;
- Ex. B A copy of the deed to the property on which the proposed development would be located;
- Ex. C A complete description of the proposed development including a site plan;
- Ex. D A stipulation that the proposed development is inconsistent with the rule at issue;
- Ex. E Proof that notice was sent to adjacent owners and objectors, as required by 15A N.C.A.C. 07J .0701(c)(7);
- N/A Proof that a variance was sought from the local government per 15A N.C.A.C. 07J .0701(a), if applicable;
- Ex. F Petitioner’s written reasons and arguments about why the Petitioner meets the four variance criteria, listed above;
- Ex. G A draft set of proposed stipulated facts and stipulated exhibits. Please make these verifiable facts free from argument. Arguments or characterizations about the facts should be included in the written responses to the four variance criteria instead of being included in the facts.
- X This form completed, dated, and signed by the Petitioner or Petitioner’s Attorney.
Due to the above information and pursuant to statute, the undersigned hereby requests a variance.

W. A. Raney, Jr.
Printed Name of Petitioner or Attorney

P.O. Box 1049
Mailing Address

Wilmington, NC 28402
City State Zip

March 27, 2014
Date

waraney@bellsouth.net
Email address of Petitioner or Attorney

(910) 762-7475
Telephone Number of Petitioner or Attorney

(910) 762-7557
Fax Number of Petitioner or Attorney

DELIBERATION OF THIS HEARING REQUEST

This variance petition must be received by the Division of Coastal Management at least six (6) weeks before the first day of the regularly scheduled Commission meeting at which it is heard. A copy of this request must also be sent to the Attorney General's Office, Environmental Division. 15A N.C.A.C. 07J .0701(e).

Contact Information for DCM:

By mail, express mail or hand delivery:
Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

By Fax:
(252) 247-3330

By Email:
Check DCM website for the email address of the current DCM Director www.nccoastalmanagement.net

Contact Information for Attorney General's Office:

By mail:
Environmental Division
9001 Mail Service Center
Raleigh, NC 27699-9001

By express mail:
Environmental Division
114 W. Edenton Street
Raleigh, NC 27603

By Fax:
(919) 716-6767

Revised: February 2011
03/11/14

Terry and Nancy Grier
430 North Fort Fisher Blvd
Kure Beach, NC 28449

RE: DENIAL OF CAMA MINOR DEVELOPMENT PERMIT
APPLICATION NUMBER: 14-004
PROJECT ADDRESS: 430 North Fort Fisher Blvd.

Dear Mr. and Mrs. Grier:

After reviewing your application in conjunction with the development standards required by the Coastal Area Management Act (CAMA) and our locally adopted Land Use Plan and Ordinances, it is my determination that no permit may be granted for the project which you have proposed.

This decision is based on my findings that your request violates NCGS 113A-120(a)(8) which requires that all applications be denied which are inconsistent with CAMA guidelines. You have applied to enclose an additional 190 square feet of heated space within the CAMA 60' setback which is inconsistent with 15 NCAC 7H .0309, which states: permitted types of development seaward of the oceanfront setback requirements. Adding more heated space to an already nonconforming structure is not a permissible development seaward of the oceanfront setback.

Should you wish to appeal my decision to the Coastal Resource Commission or request a variance from that group, please contact me so I can provide you with the proper forms and any other information you may require. The Division of Coastal Management in Raleigh must receive appeal notices within twenty (20) days of the date of this letter in order to be considered.

Respectfully yours,

John J. Batson, LPO
Kure Beach, NC

cc: Robb Mairs, Field Rep., Wilmington Office
NORTH CAROLINA GENERAL WARRANTY DEED

Excise Tax: $1,452.00

Parcel Identifier No. 09209-0002-006-000 Verified by New Hanover County on the ___ day of ___ 2011

Mail after recording/return to ___

This instrument prepared by W. Dan Bell, P. O. Box 136, Kure Beach, NC 28449

Brief description for the index Lot 7, Kure Dunes, Phase I

THIS DEED made this ___ day of ___ 2011, by and between

GRANTOR

Howard Malette Poole and wife
Jane Ann Chisholm
421 John S. Mosley Dr.
Wilmington, NC 28412

GRANTEE

TERRY B. GRIER and wife,
NANCY K. GRIER
A/K/A Terry Brooks Grier
1400 McKinney St
Houston, TX 77010

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors and assigns, and shall include singular, plural, masculine, feminine, or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, that certain lot or parcel of land situated in New Hanover County, North Carolina, and more particularly described as follows:

BEING all of Lot 7 of Kure Dunes, Phase I, which map or plat is recorded in Map Book 29 at Page 126 in the Office of the Register of Deeds of New Hanover County, North Carolina, said property being more particularly described on said map or plat.

Together with all right, title, and interest of the Grantor in and to any and all land lying between the eastern line of the above described lot and the high water mark of the Atlantic Ocean.
The property hereinafter described was acquired by Grantor by instrument recorded in Book 5193, page 2661.

The property hereinafter described is the Grantor's primary residence.

A map showing the above-described property is recorded in Map Book 23, Page 78.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, except for the exceptions stated.

Title to the property hereinafter described is subject to the following exceptions:

Rights of way and easements of record, if any, zoning and/or subdivision ordinances and regulations; restrictive covenants of record, if any, and ad valorem taxes for the year 2011 and subsequent years.

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as the day and year first above written.

Howard Malette Poole

Jane Ann Chisholm

State of North Carolina – County of New Hanover
I, the undersigned Notary Public of the County and State aforesaid, certify that Howard Malette Poole and Jane Ann Chisholm personally appeared before me this day and acknowledge the due execution of the foregoing instrument for the purposes therein expressed. Witness my hand and Notarial seal this ___ day of ___ , 2011.

Notary Public
Printed Name of Notary: W. Dew Bell
My Commission Expires: 10-22-11

The foregoing Certificate(s) of ____________________________ is/are certified to be correct.
This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

Register of Deeds

By: ___________________________________________ Deputy/Assistant – Register of Deeds
The proposed development consists of remodeling of the living/dining room of an oceanfront single family residence in Kure Beach. The remodeling consists of enlarging the living room and dining area by a total of 195 square feet by moving the oceanfront wall and side walls toward the water as shown on the plans. The newly enclosed area will all be located under the existing roof. Of the 195 square feet of enclosed area, 64 square feet will be seaward of the 60-foot CAMA setback line. Of the 195 square feet of enclosed area, 72 square feet will be under an existing enclosed and heated area. The purpose of the remodeling is to enlarge the abnormally small living/dining area to be consistent with the overall size and occupancy of the residence and with the size of living/dining areas in other similarly located residences in Kure Beach.
EXHIBIT D

CAMA Variance Petition
Terry and Nancy Grier

Petitioners, Terry and Nancy Grier, through their Attorney, W. A. Raney, Jr., stipulate that the proposed development that is the subject of the Variance Petition is inconsistent with Coastal Resources Commission Rule 15A NCAC 7H.0306(a).

WESSELL & RANEY, L.L.P.

By: W. A. Raney, Jr.
Attorney for Petitioner
107-B N. 2nd Street
P.O. Box 1049
Wilmington, NC 28402-1049
910-762-7475
NC Bar No. 5805
March 27, 2014

CERTIFIED MAIL-RETURN RECEIPT REQUESTED
7012 2210 0001 2435 4105

Kure Dunes HOA
426 N. Fort Fisher Boulevard
Kure Beach, NC 28449

Re: Variance Request by Terry and Nancy Grier
430 N. Fort Fisher Boulevard, Kure Beach, NC

Dear Property Owner:

This is to notify you that Terry and Nancy Grier are applying for a variance from the North Carolina Coastal Resources Commission to permit the enclosure of 195 square feet of area under the existing roof on the ocean side of their house at 430 N. Fort Fisher Boulevard in Kure Beach. A copy of the site plan is enclosed. The variance is projected to be heard at the May 14, 15, 2014, meeting of the Coastal Resources Commission. If you wish to receive further information concerning the variance, you may contact me. If you wish to make comments on the variance, you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Extension, Wilmington, North Carolina, 28405-3845. You may also contact a Division of Coastal Management representative at (910) 796-7215.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.
Attorney for Terry and Nancy Grier

WAR:ktw
Enclosure
WAR:ENVIRONR13-085-C03
March 27, 2014

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

7012 2210 0001 2435 4099

Emma Trust Roof
434 N. Fort Fisher Boulevard
Kure Beach, NC 28449

Re: Variance Request by Terry and Nancy Grier
430 N. Fort Fisher Boulevard, Kure Beach, NC

Dear Property Owner:

This is to notify you that Terry and Nancy Grier are applying for a variance from the North Carolina Coastal Resources Commission to permit the enclosure of 195 square feet of area under the existing roof on the ocean side of their house at 430 N. Fort Fisher Boulevard in Kure Beach. A copy of the site plan is enclosed. The variance is projected to be heard at the May 14, 15, 2014, meeting of the Coastal Resources Commission. If you wish to receive further information concerning the variance, you may contact me. If you wish to make comments on the variance, you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Extension, Wilmington, North Carolina, 28405-3845. You may also contact a Division of Coastal Management representative at (910) 796-7215.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.
Attorney for Terry and Nancy Grier
EXHIBIT F

Petitioners' Position on Variance Criteria

(1) Will unnecessary hardships result from strict application of the rules, standards, or orders?

Petitioners' position: Yes.

Petitioners' argument: The application of the rules will cause unnecessary hardship to the Petitioners. Strict application of the rules will prevent the Petitioners from remodeling and enlarging the living and dining space in their home to make it more functional and consistent with similarly located structures in Kure Beach. The remodeling will also help to avoid possible weatherproofing issues that exist with the current construction. These hardships are unnecessary because the development is consistent with the spirit, purpose, and intent of the rules as set forth in variance criteria #4 set forth below.

(2) Do such hardships result from conditions peculiar to Petitioners' property such as the location, size, or topography of the property?

Petitioners' position: Yes.

Petitioners' argument: The Petitioners' property consists of the lot and the house located thereon which existed at the time they purchased their property. While the lot is similar to other lots in the vicinity, the existing structure is peculiar in that it has an unusually small living room and dining area for the number of bedrooms in the house. The house also has a substantial area under the roof, but outside the heated space. The oceanfront lot is within an area that has been periodically nourished with sand from a Corps of Engineers hurricane protection project. The house has unusual girders supporting the oceanfront decks that extend through the wall and present a weatherproofing issue. The weatherproofing issue will be cured by the proposed development. The actual first line of stable natural vegetation is located about 91 feet from the seawardmost structural components of the house and about 97 feet from the seawardmost proposed enclosed area.

(3) Do the hardships result from actions taken by the Petitioners?

Petitioners' position: No.

Petitioners' argument: The hardships result from the unusually small living area in the original design of the house and from erosion after the house was built. The static line for setback measurement purposes resulted from a government-sponsored large scale beach fill project.
Will the variance requested by the Petitioners (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice?

Petitioners' position: Yes.

Petitioners' argument:

- **Consistent with the spirit, purpose and intent of rules.**

  The ocean hazard areas of environmental concern are "natural hazard areas along the Atlantic Ocean shoreline where, because of their special vulnerability to erosion or other adverse effects of sand, wind, and water, uncontrolled or incompatible development could unreasonably endanger life or property." 15A NCAC 07H.0301. The management objective for Ocean Hazard Areas is "to provide management policies and standards for ocean hazard areas that serve to eliminate unreasonable danger to life and property and achieve a balance between the financial, safety, and social factors that are involved in hazard area development." 15A NCAC 07H.0303(a). The purpose of these rules "shall be to further the goals set out in G.S. 113A-102(b), with particular attention to minimizing loss to life and property resulting from storms and long-term erosion, preventing encroachment of permanent structures on the public beach, preserving natural ecological conditions of the barrier dune and beach system, and reducing the public costs of inappropriately sited development." 15A NCAC 07H.0303(b). Because the proposed remodeling will be wholly located under the existing roof of the existing structure, there will be no adverse impact on the purpose of the rule as set forth in 07H.0303(b). Ocean hazard setbacks are greater for larger structures, but even with the increase in heated area under Petitioners' proposal, the Petitioners' home will be well under the 5,000 square foot size that would trigger a greater setback. Most of the new enclosed space will meet the current setback measured from the static line. All of the new enclosed space would meet the setback from the current actual first line of stable natural vegetation. All of the proposed new development would have met the setbacks applicable when the house was built in 1999-2000. The principal reason for having increased setbacks for structures greater than 5,000 square feet is the feasibility of moving a structure to a new location if a structure is threatened by erosion. The enlargement of the heated space under the existing roof would have no effect on the relocation of the structure since all of the new development would be under the existing roof.

- **Secure the public safety and welfare.**

  The proposed development will have no effect, positive or negative, on public safety or welfare because it will be simply an enclosure of a portion of an existing structure.

- **Preserve substantial justice.**

  This development will allow the parties to make reasonable use of their property without having an adverse impact on other property owners, the public, or the environment.
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AVERAGE Near Beach

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**Active Listings**

**Remarks:**
- 677 S Fort Fisher Blvd is a stunning oceanfront home with swank furnishings, full length windows, and a wrap-around deck that offers panoramic views of the ocean and the beach. The home features 6 bedrooms, 7 bathrooms, and a private pool with a hot tub. The open floor plan is perfect for entertaining and includes a large kitchen with stainless steel appliances and a breakfast bar. The master suite has a private balcony and ensuite bathroom. This home is perfect for a family vacation or a permanent home.

- 205 S Fort Fisher Blvd is a beautiful oceanfront home with 3 bedrooms, 2 bathrooms, and a private pool. The home features a new roof, new windows, and a beautiful deck with ocean views. The master suite has a private balcony and ensuite bathroom. This home is perfect for a family looking for a vacation home.

- 1043 S Fort Fisher Blvd is a beautiful oceanfront home with 3 bedrooms, 2 bathrooms, and a private pool. The home features a wrap-around deck with ocean views and a beautiful kitchen with stainless steel appliances. The master suite has a private balcony and ensuite bathroom. This home is perfect for a family looking for a vacation home.

- 911 S Fort Fisher Blvd is a beautiful oceanfront home with 3 bedrooms, 2 bathrooms, and a private pool. The home features a new roof, new windows, and a beautiful deck with ocean views. The master suite has a private balcony and ensuite bathroom. This home is perfect for a family looking for a vacation home.

**Presented By:** Joyce M Barnwell Lic. #41859 / Intracoastal Realty Corp Lic. #18639

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U.S. Patent 6,510,045

**Presented By:** Joyce M Barnwell Lic. #41859 / Intracoastal Realty Corp Lic. #18639

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U.S. Patent 6,510,045

http://wrar.rapmls.com/scripts/mrgrqspi.dll

1/22/2014
# Sold Listings

## Property 1
- **Type:** Single Family
- **Rooms:** 11
- **Bedrooms:** 6
- **Full Baths:** 3
- **Half Baths:** 0
- **Garage:** 2
- **Fireplaces:** 3
- **Flooring:** Carpet, Ceramic Tile, Laminate, Vinyl
- **Extras:** Blinds, Cable Available, Ceiling Fans, Dish Paned Windows, Deck
- **Remarks:** LRV
- **Address:** 893 S Fort Fisher Blvd, Kure Beach, NC 28449-9
- **MLS #:** 485189
- **Sold Price:** $1,295,000
- **% of Sold Price:** 92%
- **Sold $ PSF:** 106.93
- **Sold Date:** 09/05/13
- **Orig Price:** $1,607,000
- **% of Orig Price:** 84%

## Property 2
- **Type:** Single Family
- **Rooms:** 10
- **Bedrooms:** 7
- **Full Baths:** 6
- **Half Baths:** 1
- **Garage:** 2
- **Fireplaces:** 1
- **Flooring:** Ceramic Tile, Wood
- **Extras:** Built-in Shelves, Ceiling Fans, Deck, Elevator, Garage Openers/Cuts, Gas Logs, Kitchen Island, Porch
- **Remarks:** LRV
- **Address:** 605 S Ft Fisher Blvd, Kure Beach, NC 28449
- **MLS #:** 476259
- **Sold Price:** $1,217,000
- **% of Sold Price:** 94%
- **Sold $ PSF:** 230.63
- **Sold Date:** 03/08/13
- **Orig Price:** $1,250,000
- **% of Orig Price:** 94%

## Property 3
- **Type:** Single Family
- **Rooms:** 15
- **Bedrooms:** 9
- **Full Baths:** 6
- **Half Baths:** 2
- **Garage:** 2
- **Fireplaces:** 1
- **Flooring:** Ceramic Tile, Wood, Electric
- **Remarks:** LRV
- **Address:** 217 S Ft Fisher Blvd, Kure Beach, NC 28449-0
- **MLS #:** 485237
- **Sold Price:** $1,800,000
- **% of Sold Price:** 100%
- **Sold $ PSF:** 213.14
- **Sold Date:** 04/08/13
- **Orig Price:** $1,800,000
- **% of Orig Price:** 100%

---

*Presented By: Joyce M Barnwell Lic: 64180 / Intracoastal Realty Corp Lic.*

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U.S. Patent 6,910,046

http://wrar.rapmls.com/scripts/mgrqispid.dll
## Market Conditions (Cumulative) Detailed Report

**County:** New Hanover  
**City:** Kure Beach  
**Statuses:** Active, Active

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*The total number of all Comparable Active Listings is based on listings that were On Market for all or part of one of the specified time periods above.*

**Notes:**
- All listings are sorted according to the user defined sort, and may not display in the order used to determine the median values.
- Listings are 'disqualified' from the median value calculations when their Selling, Expiration, or Inactive Date is more than 360 days from the current date, or when they have a sold price or sold price of zero dollars.
- If your MLS uses SPMCP (Sales Price % Original Price), then the Sales Price / List Price calculations will be calculated using the original list price.

---

http://wrar.rapms.com/scripts/mgrqispl.dll  
1/22/2014
Active Listings

Property Type: Single Family

**766 Stoop Points Ln**
Kure Beach, NC 28589-4224
MLS#: 497043
Listing Price: $550,000
$ PSF: 168.09
Orig. Price: $550,000

- **Year Built:** 1983
- **Bedrooms:** 5
- **Full Baths:** 3
- **Half Baths:** 1
- **Garage:** 2
- **Fireplaces:** 1
- **Cooling:** Central Air, Electric
- **Exterior:** Brick Veneer, Cedar Siding
- **Flooring:** Carpet, Ceramic Tile, Wood
- **Extras:** Dbl Pane Windows, Deck, Enclosed Porch, Foyer, Garage Openers/Turns, Landscape sprinkler system, Patio, Porch, Screened Porch, Window Tretments
- **Remarks:** Well maintained 5 Bedroom with 3200 + square foot home in Kure Beach (no flood zone) used entirely as a 2nd home by the owner. Just a short walk to the beach with neighborhood amenities including beach parking with restroom, 2 pools, 2 tennis courts and small fitness center.

Property Type: Single Family

**810 Cuffer Cl**
Kure Beach, NC 28589-4851
MLS#: 492684
Listing Price: $465,000
$ PSF: 174.73
Orig. Price: $465,000

- **Year Built:** 1994
- **Bedrooms:** 5
- **Full Baths:** 3
- **Half Baths:** 0
- **Garage:** 3
- **Fireplaces:** 2
- **Cooling:** Electric
- **Exterior:** Fiber Cement Board
- **Flooring:** Carpet, Ceramic Tile, Vinyl, Wood
- **Extras:** Garage Openers/Chls, Laundry Room, Patio, Porch, Water Softener
- **Remarks:** Presented for sale is an immaculately maintained five bedroom beach house in the desirable neighborhood of Kure Beach Village. Kure Beach Village is a amenity rich neighborhood with private beach access, oceanfront gazebos and two pools. This house has plenty of space and storage with the additional benefit of access to the third garage from the rear of Bluff Road. The floor plan is open and perfect for entertaining large groups of friends and family. The great room is open to the dining room. The kitchen features granite counters, ceramic tile floors and plenty of cabinetry. The spacious master suite has a large walk in closet and master bath with double vanities and shower. There are two more bedrooms, full bath as well as a sunroom on the main living floor. The ground floor has two bedrooms, full bath, lots of storage and a laundry room.

Property Type: Single Family

**110 Seaward Cl**
Kure Beach, NC 28589-4823
MLS#: 493661
Listing Price: $475,000
$ PSF: 170.82
Orig. Price: $490,000

- **Year Built:** 2004
- **Bedrooms:** 9
- **Full Baths:** 3
- **Half Baths:** 1
- **Garage:**
- **Fireplaces:**
- **Cooling:** Central Air, Electric
- **Exterior:** Vinyl, Vinyl Shutters
- **Flooring:** Carpet, Ceramic Tile, Laminate
- **Extras:** Blinds, Cable Available, Ceiling Fans, Dbl Pans Windows, Deck, Kitchen Island, Mud Room, Pantry, Porch
- **Remarks:** You won't be disappointed – its move-in ready – all that's missing is you! Enjoy the open floor plan perfect for entertaining. Relax with a glass of wine on one of the multiple custom decks with ocean views. Cook up a storm in the expansive kitchen with Stainless Steel appliances. You are steps from the neighbor beach access, The Pottery Barn chic 5 bedrooms and 3.5 baths will be comfortable for both your family and potential renters. Extra storage for bikes and surfboards in the built-in storage room system. Never run out of ice for your lemonade or your cooler with your own commercial ice maker.

Property Type: Single Family

**602 Leeward Cl**
Kure Beach, NC 28589-4825
MLS#: 492639
Listing Price: $550,000
$ PSF: 141.00
Orig. Price: $726,000

- **Year Built:** 1994
- **Bedrooms:** 10
- **Full Baths:** 4
- **Half Baths:** 0
- **Garage:**
- **Fireplaces:**
- **Cooling:** Central Air, Electric
- **Exterior:** Fiber Cement Board
- **Flooring:** Carpet, Ceramic Tile, Wood
- **Extras:** Blinds, Cable Available, Ceiling Fans, Deck, Elevator, Garden Tub, Hurricane Shields, Kitchen Island, Landscape Sprinkler System, Laundry Room, Pantry, Security System
- **Remarks:** Beautiful 5 BR, 4 1/2 BA home located on a corner lot in Kure By The Sea. Large deck extends the width and length of the home. Custom weather shields were installed so that entertaining outside could continue throughout the entire season. Ground floor consists of a two car garage with a separate room for a freezer and refrigerator. Two large bedrooms, bath and laundry room and entrance to the elevator complete the ground floor. Second floor consists of a large kitchen, dining, family, additional bedroom, separate bath and a second master with its own private bath. Third floor consists of a spacious master bedroom, bonus living area and large office area and master bath with additional laundry area. Great views from the decks on each level. Kure By The Sea community has its own private gazebo and parking. You will not want to miss this great opportunity. Some of the photos are of the lot next door which can be purchased separately.

---

Presented By: Joyce McFarland, Realtor | Intracoastal Realty Corp
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U.S. Patent 8,610,045

http://wrar.rapmls.com/scripts/mgreqspi.dll
1/22/2014
Active Listings

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<td>Fireplaces: 1</td>
<td>Assessed: 175,000</td>
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<tr>
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<td>Floor: 1</td>
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<td>Bedrooms: 5</td>
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<td>Half Bath: 0</td>
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<td>Half Bath: 0</td>
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<td>Attached Garage: 2</td>
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<td>Assessed: 175,000</td>
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</table>

185 Myrtlewood St
Kure Beach, NC 28449

333 N 3rd Ave
Kure Beach, NC 28449-3753

253 Seawatch Way
Kure Beach, NC 28449

Presented By: Joyce M Barnwell Lic: 84160 / Intracoastal Realty Corp
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Sold Listings

Property Type: Single Family  
Rooms: 5  
Bedrooms: 5  
Full Baths: 4  
Half Baths: 0

Year Built: 2001  
Acres: 0.1400  
HSqFt: 2500  
Carport:

Attached Garage: 2  
Fireplaces: 1  
Assoc $: 31.25

Flooring: Central Forced Air, Electric  
Exterior: Vinyl Siding

Remarks: Presented for sale is this in-town cul-de-sac, well-kept beach home in desirable Kure Dunes. With magnificent ocean views from the 3rd floor, this home is steps from the beach and nestled amongst the live oaks. Storage abunds in this 5 bedroom 4 full bath 2500 square foot beach home. Nearly 600 square feet of deckiing to enjoy your pristine beach community setting. Full mother in law suite on ground level. No carpet anywhere. Glimmering hardwoods and ceramic tile with mosaic inlays. Custom painted and decks stailed in 2013. Pre-listing home inspection in hand. Kure Dunes offers a large community pool, clubhouse with baths, dated covenanet gazeebo with baths, shower and parking for only $375/year. NOT in a Flood Zone. Private backyard setting with fencing and mature live oaks. Outdoor shower with hot and cold. Low maintenance vinyl siding. Won't last long in this market. Priced to sell. Call for an appointment today.

Property Type: Single Family  
Rooms: 5  
Bedrooms: 5  
Full Baths: 4  
Half Baths: 1

Year Built: 2013  
Acres: 0.1280  
HSqFt: 3228  
Carport:

Garage: 1  
Fireplaces: 1  
Assoc $: 100.00

Flooring: Central Forced Air, Electric

Exterior: 

Remarks: New Home in Kure Beach.

Property Type: Single Family  
Rooms: 9  
Bedrooms: 5  
Full Baths: 4  
Half Baths: 0

Year Built: 2003  
Acres: 0.1100  
HSqFt: 3343  
Carport:

Attached Garage: 2  
Fireplaces: 1  
Assoc $: 62.50

Flooring: Carpet, Ceramic Tile, Wood

Exterior: 

Remarks: Beach home in Seawatch! There are wrap-around porches on two levels, and a large front deck offering amazing views and ocean breezes – great for entertaining. In total there are 5 bedroom and full 4 baths (5th bedroom has full closet). Large living area with French doors. Game room too! Lots of hardwoods, the easy flowing floorplan, and tons of natural light make this home feel great! Many extras including a gas fireplace, headboard, crown molding, central vac, dual hot water heaters, sprinkler system, and two finished garages. Elevator shaft for future use if desired. Rear patio with grilling area and outdoor shower. Anderson windows and metal insert doors. Your own private beach access for owners and guests only is across the street. The community pool, playground and tennis courts are also just a short walk away! Call for special information and to schedule a showing on this property! Would make a great beach, and/or rental property! Life at the beach!

Property Type: Single Family  
Rooms: 8  
Bedrooms: 5  
Full Baths: 3  
Half Baths: 1

Year Built: 2003  
Acres: 0.1500  
HSqFt: 2780  
Carport:

Attached Garage: 2  
Fireplaces: 1  
Assoc $: 62.50

Flooring: Central Forced Air, Electric

Exterior: Cedar Siding

Flooring: Carpet, Wood

Exterior: 

Remarks: Beautiful home with 5 bedrooms, 3.5 baths with a 2 car garage in Seawatch. This home features an open floor plan with the living room, dining room, kitchen, and breakfast room all combined. There are wood floors, ceiling fans, recessed lighting, and nice large windows that allow a nice natural light to shine. Kitchen has a large eat-in center island with a built-in range, numerous cabinets for storage, and a pantry. The Master Suite is located on the main floor and has private access to the deck, a two-sink vanity, walk-in tiled shower. Three bedrooms are located on the 2nd floor. One has private access to the third floor deck. The fifth bedroom is on the 1st floor. The underside of the home has been very well kept and could be used as extra space for relaxing. Decks are located at the side and back of the home, and have fantastic views. This home has a lot to offer! it's located in Seawatch, which provides owners a pool, clubhouse, tennis, beach access and a Tiki Bar!

Presented By: Joyce M. Barnwell Lic: 84180 / Intracoastal Realty Corp Lic: 9208030

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<table>
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<tr>
<th>Property Type: Single Family</th>
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<tr>
<td>Year Built: 2005</td>
<td>0.1500</td>
<td>5830</td>
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<tr>
<td>Sold Price: $550,000</td>
<td>2% of Sold Price: 97%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sold $ PSF: 170.67</td>
<td>Sold Date: 03/14/13</td>
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<tr>
<td>City Price: $290,000</td>
<td>% of City Price: 89%</td>
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</table>

*Remarks:** This beautifully decorated 5 bedroom and 1 half bath home offers a open Living & dining room w/ large windows for lots of light, and an abundance of deck & outdoor living space. The private stone patio in the back of the house that provides solitude and a lush garden setting to enjoy cook outs, entertaining guests, or just relaxing.

*Rebate to the large open Master bedroom and bathroom with cedar lined closet & private decks when you are ready to relax. Guest rooms are spread out to offer everyone privacy. We also have a 20 KW Generator & 2 100 gal. propane tanks for extra comfort.Homesealley System The exclusive community of Seawatch offers private beach access w/ bathrooms cabana & Tiki Bar, community pool, tennis courts, clubhouse and many community activities. Too many updates and upgrades to list. Come see this meticulously maintained home. It is like new and ready for you to make it your new home. vacation home or great vacation rental investment property.

<table>
<thead>
<tr>
<th>Property Type: Single Family</th>
<th>Rooms: 5</th>
<th>Bathrooms: 4</th>
<th>Full Baths: 3</th>
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<td>Year Built: 2005</td>
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<td>Sold Price: $580,000</td>
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<tr>
<td>Sold $ PSF: 193.10</td>
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<tr>
<td>City Price: $299,000</td>
<td>% of City Price: 84%</td>
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</table>

*Remarks:** Stunning beach home in the highly desirable neighborhood of Seawatch. 503 Seacliff Place provides ocean views, it's a short walk to the beach, and it resides on a cul-de-sac. The home is located outside the flood zone, and it has been rated by New Hanover County as "A Grade - Excellent Quality" construction. Inside will impress with its gourmet kitchen. There is an abundance of counter and cabinet space. Viking and Jenn Air appliances, dual dishwashers, a wine refrigerator, a warming drawer and more. An inviting floor plan maintains the kitchen, dining and living room into one large open area - great for entertaining! In total, there are 4 spacious bedrooms and 3 full baths. So many extras including a gas fireplace, entertainment center, central vac, outdoor audio system, a storm protection system, and the list goes on! An added benefit is that there is an elevator in place, so it makes accessing the entire home easy! Lots of additional details available, so please contact us today!
## Market Conditions (Cumulative) Detailed Report

**Printed On:** 01/22/2014 3:35 pm

**Search Criteria:** Property Type: Single Family  Include Property Subtype: Stick-Built/Modular  Due Diligence, Pending (7/25/2013 or after)  Sold (1/22/2013 or after)  Bedrooms 5.00 or more  County: New Hanover  City: Kure Beach  Statuses: Active, Active

### Inventory Analysis

<table>
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<tr>
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<th>Prior 7 - 12 Months</th>
<th>Prior 4 - 6 Months</th>
<th>Current 3 Months</th>
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<tbody>
<tr>
<td><strong>Total # of Comparable Sales (Settled)</strong></td>
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<td>2</td>
<td>1</td>
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<tr>
<td>Absorption Rate (Total Sales/Months)</td>
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<td>0.67</td>
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<td><strong>Total # of Comparable Active Listings</strong></td>
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<td>14</td>
<td>12</td>
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<td>Months of Housing Supply (Listings/Absorption Rate)</td>
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<td>20.80</td>
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<table>
<thead>
<tr>
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<th>Prior 7 - 12 Months</th>
<th>Prior 4 - 6 Months</th>
<th>Current 3 Months</th>
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<tr>
<td>Median Sale Price &amp; List Price, DOM</td>
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<td>847,287</td>
<td>425,000</td>
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<tr>
<td>Median Comparable Sale Price</td>
<td>554,500</td>
<td>550,000</td>
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<tr>
<td>Median Comparable Listings Days on Market</td>
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<td>Median Comparable List Price (All)</td>
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*The total number of all Comparable Active Listings is based on listings that were on Market for all or part of one of the specified time periods above.*

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<th>Listing#</th>
<th>Status</th>
<th>Address</th>
<th>BD</th>
<th>BA</th>
<th>SqFt</th>
<th>List Date</th>
<th>Sold Date</th>
<th>DOM</th>
<th>List Price</th>
<th>Sold Price</th>
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<td>600,000</td>
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### Notes:
- All listings are sorted according to the user-defined sort, and may not display in the order used to determine the median values.
- Time ranges are based on a 365-day year commonly called the "banking year."
- Listings are "disqualified" from the median value calculations when their Selling, Expiration, or Inactive Date is more than 360 days from the current date, or when they have a list or sold price of zero dollars.
- If your MLS uses SPN/AOP (Sales Price vs Original Price), then the Data Price/List Price calculations will be calculated using the original list price.

---

 Presented By: Joyce M. Barewell LLC 84808  Intracoastal Realty Corp.

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 U.S. Patent 6,519,048

TO: The Coastal Resources Commission
FROM: Christine A. Goebel, Assistant Attorney General
DATE: April 30, 2014 (for the May 14-15, 2014 CRC Meeting)
RE: Variance Request by Michael and Susan Edwards (14-08)

Petitioners own property adjacent to a man-made canal and the Atlantic Intracoastal Waterway near Sneads Ferry in Onslow County, North Carolina. In February 2014, Petitioners applied for a CAMA minor permit with the Onslow County CAMA LPO to construct a single family residence on this undeveloped lot. On March 10, 2014, the LPO denied Petitioners’ CAMA permit application as part of the proposed was located within the Commission’s 30-foot buffer. Petitioner has not yet sought a variance from the County’s setbacks as required by the Commission’s rules. Petitioner now seeks a variance from the 30-foot buffer rule to allow the impervious surfaces within the buffer area as proposed in its site-plan.

The following additional information is attached to this memorandum:

Attachment A: Relevant Rules
Attachment B: Stipulated Facts & List of Stipulated Exhibits
Attachment C: Petitioner's Positions and Staff’s Responses to Criteria
Attachment D: Petitioner’s Variance Request Materials
Attachment E: Stipulated Exhibits

cc(w/attachments): William A. Raney, Jr., Counsel for Petitioner, electronically
Mary L. Lucasse, CRC Counsel, electronically
Sue McMillian & Sam Rogers, Onslow Co. LPOs, electronically
15A NCAC 07H .0209 COASTAL SHORELINES

(a) Description. The Coastal Shorelines category includes estuarine shorelines and public trust shorelines. Estuarine shorelines AEC are those non-ocean shorelines extending from the normal high water level or normal water level along the estuarine waters, estuaries, sounds, bays, fresh and brackish waters, and public trust areas as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Environment and Natural Resources [described in Rule .0206(a) of this Section] for a distance of 75 feet landward. For those estuarine shorelines immediately contiguous to waters classified as Outstanding Resource Waters by the Environmental Management Commission, the estuarine shoreline AEC shall extend to 575 feet landward from the normal high water level or normal water level, unless the Coastal Resources Commission establishes the boundary at a greater or lesser extent following required public hearing(s) within the affected county or counties. Public trust shorelines AEC are those non-ocean shorelines immediately contiguous to public trust areas, as defined in Rule 07H .0207(a) of this Section, located inland of the dividing line between coastal fishing waters and inland fishing waters as set forth in that agreement and extending 30 feet landward of the normal high water level or normal water level.

(b) Significance. Development within coastal shorelines influences the quality of estuarine and ocean life and is subject to the damaging processes of shore front erosion and flooding. The coastal shorelines and wetlands contained within them serve as barriers against flood damage and control erosion between the estuary and the uplands. Coastal shorelines are the intersection of the upland and aquatic elements of the estuarine and ocean system, often integrating influences from both the land and the sea in wetland areas. Some of these wetlands are among the most productive natural environments of North Carolina and they support the functions of and habitat for many valuable commercial and sport fisheries of the coastal area. Many land-based activities influence the quality and productivity of estuarine waters. Some important features of the coastal shoreline include wetlands, flood plains, bluff shorelines, mud and sand flats, forested shorelines and other important habitat areas for fish and wildlife.

(c) Management Objective. The management objective is to ensure that shoreline development is compatible with the dynamic nature of coastal shorelines as well as the values and the management objectives of the estuarine and ocean system. Other objectives are to conserve and manage the important natural features of the estuarine and ocean system so as to safeguard and perpetuate their biological, social, aesthetic, and economic values; to coordinate and establish a management system capable of conserving and utilizing these shorelines so as to maximize their benefits to the estuarine and ocean system and the people of North Carolina.
(d) Use Standards. Acceptable uses shall be those consistent with the management objectives in Paragraph (c) of this Rule. These uses shall be limited to those types of development activities that will not be detrimental to the public trust rights and the biological and physical functions of the estuarine and ocean system. Every effort shall be made by the permit applicant to avoid, mitigate or reduce adverse impacts of development to estuarine and coastal systems through the planning and design of the development project. In every instance, the particular location, use, and design characteristics shall comply with the general use and specific use standards for coastal shorelines, and where applicable, the general use and specific use standards for coastal wetlands, estuarine waters, and public trust areas described in Rule .0208 of this Section. Development shall be compatible with the following standards:

(2) All development projects, proposals, and designs shall limit the construction of impervious surfaces and areas not allowing natural drainage to only so much as is necessary to adequately service the major purpose or use for which the lot is to be developed. Impervious surfaces shall not exceed 30 percent of the AEC area of the lot, unless the applicant can effectively demonstrate, through innovative design, that the protection provided by the design would be equal to or exceed the protection by the 30 percent limitation. Redevelopment of areas exceeding the 30 percent impervious surface limitation may be permitted if impervious areas are not increased and the applicant designs the project to comply with the intent of the rule to the maximum extent feasible.

(10) Within the Coastal Shorelines category (estuarine and public trust shoreline AECs), new development shall be located a distance of 30 feet landward of the normal water level or normal high water level, with the exception of the following (none of which apply here).
STIPULATED FACTS

1. The Petitioners purchased Lot 1, Block B in Chadwick Acres Subdivision in Onslow County near Sneads Ferry by deed recorded September 23, 2002 ("Lot"). The Lot is also known as 206 Singleton Street. The subdivision map for Chadwick Acres was recorded on March 25, 1985, a copy of which is attached. Ground-level and aerial images are in the attached powerpoint presentation.

2. The Petitioners' Lot is bounded on the south and southwest by the Intracoastal Waterway ("Waterway") and on the southwest and west by a canal ("Canal") that extends well beyond the Petitioners' lot to serve as water access for other lots in Chadwick Acres. At the Lot, the waters of the ICWW and the Canal are classified as SA waters by the Environmental Management Commission and are closed to the harvest of shellfish. The waters are classified as primary nursery area by the North Carolina Division of Marine Fisheries.

3. The Petitioners' Lot is also bounded to the northwest by the Mannings at 184 Singleton Street, and to the northeast by the Creeches. A diagram of ownership is attached. The Manning lot has a duplex on it and Unit A was owned by Hales at the time of application, and is now owned by Exner/Perez.

4. The Lot is located in the Estuarine Shoreline and Public Trust Shoreline Areas of Environmental Concern and so any proposed development requires a CAMA permit.

5. The Lot is subject to CRC setback rules applicable to coastal shorelines found in Rule 15A NCAC 7H.0209(d)(10) (The "30 Foot Buffer Rule"). The setback for development in the coastal shorelines rule is measured 30' landward from normal high water level. The 30' setback has some exceptions not applicable in this case, including the "small house" exception and the "small lot" exception described below.

6. The Lot is 9,543 square feet or 0.22 acres in size, and the dimensions of the Lot are shown on the site plan, a copy of which is attached. This lot is not a "small lot" as the Commission’s rules have defined that term in 15A NCAC 7H .0209(d)(10)(J) to be 5,000 or less square feet for lots with sewer (as County staff confirmed is available at the Lot).
7. There is a man-made boat basin cut into the Lot along the Canal side of the Lot. The boat basin is bulkheaded. The boat basin has existed in the Lot since at least 1993 based on aerial photography. The subdivision plat recorded in 1985 does not show a boat basin on the Lot.

8. Initially, the plans submitted indicated an understanding that the “front” of the lot was that which borders the Creech lot to the northeast, and mistakenly applied a 12’ front setback instead of the required 20’ front setback for this R-10 parcel, along with the 8’ side setbacks and the 15’ rear setback accordingly. A member of the County’s planning staff has now confirmed that the “front” of the lot is where the driveway is, adjacent to the Manning lot, and apply the 20’ front setback, the 8’ side setbacks and the 15’ rear setback accordingly. A copy of the relevant portion of the Onslow County Zoning Ordinance and confirmation from county planning staff are attached.

9. The normal high water level on the side of the boat basin furthest from the Canal is about 50' – 52' from the property line between the Lot and the Creech lot to the northeast. Applying a 30' setback from the normal high water level in the boat basin and an 8' side setback along the Creech line leaves about a 12' to 14' wide building envelope in which to build a residence adjacent to the boat basin.

10. On or about February 5, 2014, Petitioners applied for a CAMA minor permit for the construction of a home on the Lot from the Onslow County CAMA Local Permit Officer (“LPO”). A copy of the permit application materials is attached.

11. The proposed footprint of the house is 1,254 square feet (as measured at the roof drip line), according to a note on the site plan, attached.

12. The Petitioners and their designer, Coastal Designs, consulted with the LPO and were initially advised that they were entitled to use a 15' setback from normal high water level under an exception to the 30' setback found in 15A NCAC 7H.0209(d)(10)(I) known as the “Small House Exception”. The designer designed the currently proposed residence using a 15’ setback as depicted on the site plan as "15’ CAMA line", a copy of which is attached.
13. The Commission’s Small House Exception rule is found at 15A NCAC 7H .0209(d)(10)(I), and states:

(i) Where application of the buffer requirement would preclude placement of a residential structure with a footprint of 1,200 square feet or less on lots, parcels and tracts platted prior to June 1, 1999, development may be permitted within the buffer as required in Subparagraph (d)(10) of this Rule, providing the following criteria are met:

(ii) Development shall minimize the impacts to the buffer and reduce runoff by limiting land disturbance to only so much as is necessary to construct and provide access to the residence and to allow installation or connection of utilities such as water and sewer; and

(ii) The residential structure development shall be located a distance landward of the normal high water or normal water level equal to 20 percent of the greatest depth of the lot. Existing structures that encroach into the applicable buffer area may be replaced or repaired consistent with the criteria set out in Rules .0201 and .0211 in Subchapter 07J of this Chapter;

14. In this case, the Small House Exception does not apply as the proposed footprint of the house measured at the drip line is in excess of the 1,200 square feet allowed under the Small House Exception.

15. As part of the CAMA minor permit review process, notice of the proposed development was sent to the adjacent riparian owners, Manning and Creech. On March 3, 2014, Mr. Manning sent an objection letter to DCM Staff objecting to the proposed house as the Lot was too small for the proposed house, and because of concerns of stormwater runoff. A copy of this letter is attached.

16. The LPO issued a CAMA minor development permit for the proposed residence, but the Division of Coastal Management Staff advised the LPO and the Petitioners that the Lot did not qualify for the Small House Exception because the wrong measurement had been used to determine "the greatest depth of the lot." Under DCM's interpretation, the greatest depth of the Lot is the distance between the Waterway and the Manning property line, and would result in the application of a 29.99' setback (20% of 149.96') from the Normal High Water Level on both the Waterway and Canal sides of the Lot.
17. On March 7, 2014, Petitioners surrendered the permit and accepted the corrective permit denial decision from the LPO, in order to seek a variance from the 30’ setback requirement to allow construction of the residence as designed. The permit was surrendered on March 7, 2014, and a denial letter was issued by the LPO on the permit application on March 10, 2014, a copy of which are attached.

18. Though not required by the County or by the Commission’s rules, the Petitioners have not proposed any engineered stormwater system in connection with this development.

19. The Commission’s rules for variances at 15A NCAC 7J .0701 require “(a) Any person whose application for a CAMA major or minor development permit has been denied or issued with condition(s) that the person does not agree with may petition for a variance from the Commission by means of the procedure described in this Section. Before filing a petition for a variance from a rule of the Commission, the person must seek relief from local requirements restricting use of the property, and there must not be pending litigation between the petitioner and any other person which may make the request for a variance moot.”

20. Petitioners have not yet sought a variance from Onslow County’s applicable lot setbacks. Petitioners will argue that to do so in this particular case would be “illogical” and “a waste of time and money.”

21. Petitioner’s house designer, Dennis Mercer, has prepared a new site plan, a copy of which is attached, showing the actual side of the house at the 8’ side setback and the one foot wide roof overhang encroaching in to the side setback as allowed by Onslow County. At this location, a 14’ turning radius from the driveway into the garage can be maintained if the width of the available driveway is reduced by one foot. A 14’ turning radius is the minimum recommended by “Architectural Graphics Standards” published by the American Institute of Architects. A variance from Onslow County that would permit the house to be moved into the 8’ side setback would result in the loss of driveway width in order to maintain the recommended 14’ turning radius from the driveway into the garage, as noted in the attached letter from Mercer. The driveway is a shared access with other properties and the 20’ width permits vehicles to pass one another.
22. Without a variance from the County or the Commission, the current applicable setbacks would include 30’ buffers measured landward from the NHWL of the Waterway and the Canal, a 8’ side setback along the Creech line, and a 20’ front setback along the Manning line (the 30’ buffer is greater than both the 8’ side setback along the Canal and the 15’ rear setback along the Waterway, and so it controls the ultimate building envelope dimensions). This results in a building envelope of approximately 93’ long by approximately 14’ wide at the narrowest for that area near where the boat basin pushes the 30’ buffer inland.
I. Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? If so, the petitioner must identify the hardships.

Petitioner's Position: Yes.

Strict application of the Coastal Shoreline Buffer Rule will cause the Petitioners to be unable to build a house on their residential lot. The lot is bounded on one side by the Intracoastal Waterway (Waterway), on one side by a man-made canal side reduces the lot depth/width to about 50 feet at the only feasible building site. Local zoning requires a 12-foot setback from the property line of the adjoining lot. CAMA rules require a 30-foot setback from the normal high water line on the other side of the lot. This leaves a building envelope of only about 8-10 feet between the two setbacks. The CRC rules have an exception for situations where the 30-foot setback would not allow construction of a 1,200 square foot house. The exception reduces the 30-foot setback to a distance of 20% of the maximum lot depth. The exception provides no relief in this case because the lot depth measured from the Waterway is about 150 feet and this is regarded as the maximum depth by the Division of Coastal Management.

Staff’s Position: Yes.

Staff agrees that Petitioners will suffer an unnecessary hardship from strict application of the Commission’s 30-foot buffer rule to Petitioners’ property. Petitioners claim, and Staff agrees, that the application of the 30-foot buffer rule on Petitioner’s lot is negatively affected by the irregularly shaped shoreline and resulting location of Normal High Water due to the existing boat basin on the lot, in combination with the fact that the lot has water (and the application of the Buffer Rule) on two sides. The boat basin was developed before the buffer rule was enacted. This causes a narrow and irregularly shaped building envelope on Petitioner’s lot reduced in size.
II. Do such hardships result from conditions peculiar to the Petitioner's property, such as location, size, or topography of the property? Explain.

**Petitioner's Position:** Yes.

The Petitioners' property is bounded on two sides by water. The width of the lot from the canal to the adjoining lot varies from 75 feet to 80 feet. In the middle of the canal frontage is an old boat basin which extends about 36 feet along the canal and about 32 feet into the lot. This boat basin exists in the part of the lot that is the only feasible part of the lot on which to build when taking into account CAMA and local zoning setbacks.

**Staff's Position:** Yes.

Staff agrees that any hardships to the Petitioners result from conditions peculiar to the property, such as location, size or topography. As noted by Petitioner above, the existing boat basin, which was constructed before the Buffer Rule took effect, in combination with the fact that the lot has water on two sides and the resulting application of the Buffer Rule on two sides of the lot create the hardship of a long but narrow and irregularly shaped building envelope.

III. Do the hardships result from the actions taken by the Petitioner? Explain.

**Petitioner's Position:** No.

The hardship does not result from actions taken by the Petitioners. The lot was created by recordation of a subdivision map on March 25, 1985. The boat basin that cuts into the lot was excavated prior to 1994, at which time the Coastal Shoreline Buffer Rule had not yet been enacted. The Petitioners did not buy the lot until September, 2002.

**Staff's Position:** No.

Staff agrees that the existing boat basin that was constructed before Petitioners' purchase of the lot and before the adoption of the Buffer Rule, and so Petitioners came to the lot with the existing location of the boat basin and resulting Normal High Water and 30-foot buffer. If the basin did not exist, no variance would be needed from the Buffer Rule, but Staff also notes that filling in the existing manmade boat basin may also present problems, and so may not eliminate the hardship.
IV. Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Petitioner's Position: Yes.

Consistent with the spirit, purpose, and intent of rules.
The principal purposes of the Coastal Shoreline Buffer Rule are to reduce stormwater runoff from development that is located near coastal shorelines, to protect the ecological values of areas near shorelines, and to ensure that shoreline development is compatible with the dynamic nature of coastal shorelines. (see 15A NCAC 7H .0209(c).) Petitioners’ lot is bounded on two sides by water. All of the waterfront is bulkheaded, thereby reducing the risk of erosion. The CRC rules recognize that a balancing of economic and environmental interests requires an exception to allow a small house to be built on waterfront lots that were platted prior to enactment of the Coastal Shoreline Buffer Rule. The exception is found in 7H.0209(d)(10)(l) and provides for a reduction in the buffer to a distance equal to 20% of the greatest depth of the lot measured from the high water line. Because the lot has two depth measurements, one long depth from the Waterway and one shorter depth from the canal, DCM interprets the greatest depth to be the longer depth from the Waterway. Using the longer depth measurement results in no relief from the normal 30-foot setback and effectively makes the lot unbuildable for even a small house. The purpose of the small house exception is to allow a property owner with a lot created prior to the rule to make reasonable use of the lot by building a small house. A variance is appropriate because the spirit, purpose, and intent of the small house exception cannot be achieved when the maximum depth is measured from only one of the two waterfront shorelines.

Secure the public safety and welfare.
The variance proposed by the Petitioner will have no adverse effect on public safety and welfare.

Preserve substantial justice.
A variance will preserve substantial justice by allowing reasonable use of the lot that was created before the Coastal Shoreline Buffer Rule went into effect.
Staff's Position: Yes.

Staff agrees that the variance requested by Petitioners is consistent with the spirit, purpose, and intent of the Commission’s Buffer Rule, but suggests to the Commission that this could be better ensured if the Commission were to require an engineered stormwater management plan designed to collect the first 1.5 inches of rainfall for all impervious surfaces on the lot in order to safeguard the buffer ability of this Site. Accordingly, Staff agrees that a variance would be consistent with the spirit, purpose, and intent of the Commission’s buffer rule, and would further safeguard public welfare by providing those benefits to water quality through use of a stormwater management system. Finally, Staff does not disagree with Petitioner’s claims of substantial justice.

As requested by the Commission in the past for buffer variances, Staff includes the stormwater management-related conditions which have been placed on prior variances issued by the Commission below.

(1) The permittee shall obtain a stormwater management plan meeting the requirements of 15A NCAC 7H .0209(d)(10)(J)(iv), which requires that the first one and one-half inches of rainfall from all impervious surfaces on the lot shall be collected and contained on-site in accordance with the design standards for stormwater management for coastal counties as specified in 15A NCAC 02H .1005. The stormwater management system shall be designed and certified by an individual who meets applicable State occupational licensing requirements for the type of system proposed, and approved by the appropriate governmental authority during the permit application process.

(2) Prior to occupancy and use of the deck addition and the issuance of a final Certificate of Occupancy (CO) by the local permitting authority, the permittee shall provide a certification from the design professional that the stormwater system has been inspected and installed in accordance with this permit, the approved plans and specification and other supporting documentation.

(3) The permittee shall provide for the operation and maintenance necessary to insure that the engineered stormwater management system functions at optimum efficiency and within the design specifications for the life of the project.

(4) The permittee shall insure that the obligation for operation and maintenance of the stormwater management system becomes a permanent obligation of future property owners.
ATTACHMENT D

Petitioner’s Petition
(without proposed attachments which are also included in the stipulated exhibits or draft facts)
April 1, 2014

VIA U.S. MAIL

Mr. Braxton C. Davis, Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

VIA E-MAIL

Braxton.Davis@ncdenr.gov

Re: Variance Petition – Michael E. Edwards and Susan G. Edwards
Onslow County

Dear Mr. Davis:

Enclosed is a CAMA Variance Request Form regarding the above-referenced project. Please schedule this variance for the May, 2014 meeting of the Coastal Resources Commission.

Additionally, documents are included as support for the proposed facts.

Thank you for your attention to this matter.

Sincerely,

WESSELL & RANEY, L.L.P.

[Signature]

W. A. Raney, Jr.

cc: Ms. Christy Goebel (via U.S. mail and e-mail)
Pursuant to N.C.G.S. § 113A-120.1 and 15A N.C.A.C. 07J .0700 et seq., the above named Petitioner hereby applies to the Coastal Resources Commission (CRC) for a variance.

VARIANCE HEARING PROCEDURES

A variance petition will be considered by the CRC at a regularly scheduled meeting, heard in chronological order based upon the date of receipt of a complete petition. 15A N.C.A.C. 07J .0701(e). A complete variance petition, as described below, must be received by the Division of Coastal Management (DCM) a minimum of six (6) weeks in advance of the first day of a regularly scheduled CRC meeting to be eligible for consideration by the CRC at that meeting. 15A N.C.A.C. 07J .0701(e). The final set of stipulated facts must be agreed to at least four (4) weeks prior to the first day of a regularly scheduled meeting. 15A N.C.A.C. 07J .0701(e). The dates of CRC meetings can be found at DCM’s website: www.nccoastalmanagement.net

If there are controverted facts that are significant in determining the propriety of a variance, or if the Commission determines that more facts are necessary, the facts will be determined in an administrative hearing. 15A N.C.A.C. 07J .0701(b).

VARIANCE CRITERIA

The petitioner has the burden of convincing the CRC that it meets the following criteria:

(a) Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? Explain the hardships.

(b) Do such hardships result from conditions peculiar to the petitioner's property such as the location, size, or topography of the property? Explain.

(c) Do the hardships result from actions taken by the petitioner? Explain.

(d) Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Please make your written arguments that Petitioner meets these criteria on a separate piece of paper. The Commission notes that there are some opinions of the State Bar which indicate that non-attorneys may not represent others at quasi-judicial proceedings such as a variance hearing before the
**Commission. These opinions note that the practice of professionals, such as engineers, surveyors or contractors, representing others in quasi-judicial proceedings through written or oral argument, may be considered the practice of law. Before you proceed with this variance request, you may wish to seek the advice of counsel before having a non-lawyer represent your interests through preparation of this Petition.**

**For this variance request to be complete, the petitioner must provide the information listed below. The undersigned petitioner verifies that this variance request is complete and includes:**

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<tbody>
<tr>
<td><strong>X</strong></td>
<td>The name and location of the development as identified on the permit application;</td>
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<tr>
<td><strong>Ex. A</strong></td>
<td>A copy of the permit decision for the development in question;</td>
</tr>
<tr>
<td><strong>Ex. B</strong></td>
<td>A copy of the deed to the property on which the proposed development would be located;</td>
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<tr>
<td><strong>Ex. C</strong></td>
<td>A complete description of the proposed development including a site plan;</td>
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<tr>
<td><strong>Ex. D</strong></td>
<td>A stipulation that the proposed development is inconsistent with the rule at issue;</td>
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<td><strong>Ex. E</strong></td>
<td>Proof that notice was sent to adjacent owners and objectors, as required by 15A N.C.A.C. 07J 0701(c)(7);</td>
</tr>
<tr>
<td><strong>N/A</strong></td>
<td>Proof that a variance was sought from the local government per 15A N.C.A.C. 07J 0701(a), if applicable;</td>
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<tr>
<td><strong>Ex. F</strong></td>
<td>Petitioner’s written reasons and arguments about why the Petitioner meets the four variance criteria, listed above;</td>
</tr>
<tr>
<td><strong>Ex. G</strong></td>
<td>A draft set of proposed stipulated facts and stipulated exhibits. Please make these verifiable facts free from argument. Arguments or characterizations about the facts should be included in the written responses to the four variance criteria instead of being included in the facts.</td>
</tr>
<tr>
<td><strong>X</strong></td>
<td>This form completed, dated, and signed by the Petitioner or Petitioner’s Attorney.</td>
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Due to the above information and pursuant to statute, the undersigned hereby requests a variance.

Signature of Petitioner or Attorney

W. A. Raney, Jr.

Printed Name of Petitioner or Attorney

W. A. Raney, Jr.

Mailing Address

P.O. Box 1049

City

Wilmington

State

NC

Zip

28402

Telephone Number of Petitioner or Attorney

(910) 762-7475

Fax Number of Petitioner or Attorney

(910) 762-7557

Date

4-1-14

Email address of Petitioner or Attorney

waraney@bellsouth.net

DELIVERY OF THIS HEARING REQUEST

This variance petition must be received by the Division of Coastal Management at least six (6) weeks before the first day of the regularly scheduled Commission meeting at which it is heard. A copy of this request must also be sent to the Attorney General's Office, Environmental Division, 15A N.C.A.C. 07J.0701(e).

Contact Information for DCM:

By mail, express mail or hand delivery:
Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

By Fax:
(252) 247-3330

By Email:
Check DCM website for the email address of the current DCM Director
www.nccoastalmanagement.net

Contact Information for Attorney General's Office:

By mail:
Environmental Division
9001 Mail Service Center
Raleigh, NC 27699-9001

By express mail:
Environmental Division
114 W. Edenton Street
Raleigh, NC 27603

By Fax:
(919) 716-6767

Revised: February 2011
NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED made September 18, 2002, by and between

GRANTOR

WILLIAM C. HAYDEN AND WIFE, SHAWNA HAYDEN
1506 HARRING LN
WILLIAMSGROVE, NC 28543

GRANTEE

MICHAEL J. EDWARDS AND WIFE, SUSAN G. EDWARDS
169 RIVA TRACE DRIVE
CARY, NC 27513

Enter in appropriate block for each party: name, address, and, if appropriate, character of entity, e.g., corporation or partnership.

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neutral, as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain Lot 1 or parcel of land situated in the City of , STUMP SOUND Township, ONSLOW County, North Carolina and more particularly described as follows:

BEING ALL OF LOT 1, BLOCK B, AS SHOWN ON THAT CERTAIN PLAT ENTITLED, "CHADWICK ACRES SUBDIVISION, STUMP SOUND TOWNSHIP, ONSLOW COUNTY, NC", PREPARED BY WALTER M. REYNOLDS, III, AS RECORDED IN MAP BOOK 22 AT PAGE 235, ONSLOW COUNTY REGISTRY.

SUBJECT TO A DECLARATION OF CONDITIONS, RESERVATIONS AND RESTRICTIONS OF CRYSTAL COVE AS RECORDED IN BOOK 728 AT PAGE 779, AMENDED BY INSTRUMENTS RECORDED IN BOOK 728, PAGE 748, AND IN BOOK 924, PAGE 753, ALL IN THE ONSLOW COUNTY REGISTRY.

TOGETHER WITH THE RIGHTS OF INGRESS, EGRESS AND REGRESS OVER LOT 3 AS SHOWN ON MAP 22, PAGE 235, ONSLOW COUNTY REGISTRY.

THIS DOCUMENT PRESENTED TO
THE ONSLOW COUNTY TAX OFFICE
DATE: 9/23/2002

N. C. Bar Assoc. Form No. 3 © 1977
Printed by Agreement with the N.C. Bar Assoc.
Chicago Title Insurance Company
The property hereinafter described was acquired by Grantor by Instrument recorded in Book 1246, Page 166.

A map showing the above described property is recorded in MAP BOOK 22, PAGE 233.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in the simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whatsoever except for the exceptions hereinafter stated.

This to the property hereinafter described is subject to the following exceptions:

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, the day and year first above written.

[Signatures and seals]

(Corporate Name)  WILLIAM G. HAYDEN
By: SHANNA S. HAYDEN
President

ATTEST:

(SEAL)

SECRETARY (Corporate Seal)

(SEAL)

NORTH CAROLINA, New Hanover County, I, the undersigned, a Notary Public of the County and State aforesaid, certify that WILLIAM G. HAYDEN, SHANNA S. HAYDEN, Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official seal, this 10/02/1993.

My commission expires: 10/02/1993

(SEAL)

NORTH CAROLINA, Onslow County, I, the undersigned, a Notary Public of the County and State aforesaid, certify that personally came before me this day and acknowledged that he/she is Secretary of , a North Carolina corporation, and that by authority duly given and as the act of the corporation, the foregoing instrument was signed in its name by its President, sealed with its corporate seal and attested by him/her as its Secretary. Witness my hand and official seal, this 10/02/1993.

My commission expires: 10/02/1993

(SEAL)

The foregoing Certificate(s) of Frances C. Bobo have been certified to be correct. This Instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

[Signature]
REGISTER OF DEEDS FOR Onslow COUNTY

Deputy/Assistant-Register of Deeds

NOTE: THIS FORM CONTAINS REVISIONS WHICH ARE DIFFERENT FROM THE PROVISIONS OF THE OFFICIAL FORM PROMULGATED BY THE NORTH CAROLINA BAR ASSOCIATION AND SHOULD BE CAREFULLY REVIEWED PRIOR TO EXECUTION.
The applicants propose to build a single family residence on a lot in Chadwick Acres near Sneads Ferry in Onslow County, NC. The lot is bounded on one side by the Intracoastal Waterway (Waterway) and on one side by a man-made canal that provides water access to several lots in the Chadwick Acres Subdivision. The proposed house is elevated on pilings with two heated living floors of 20' x 55' for a total of 2,200 square feet of heated space. The eaves of the roof extend one foot beyond the exterior walls. The area covered by the roof drip line is 1,254 square feet. Pervious decking six feet wide is proposed along the canal side of the house. A pervious deck of 16' x 20' is proposed on the Waterway side of the house. A bulkheaded boat basin exists on the canal side of the lot. The site plan shows a portion of the boat basin to be filled, but filling of the boat basin is not part of the application that is the subject of this variance request. The site plan also shows a 15' CAMA setback based on the applicants' and the Local Permit Officer's original understanding of the applicable setbacks under the small house exception to the Coastal Shorelines Buffer Rule. The understanding was later deemed by the Division of Coastal Management to be an incorrect interpretation of the small house rule. A revised survey map was prepared showing the building area available using a 30' CAMA setback from normal high water level and the Onslow County zoning setbacks.
EXHIBIT D

Michael I. Edwards and Susan G. Edwards Variance Petition
Stipulation

Petitioners Michael I. Edwards and Susan G. Edwards, through their attorney, W. A. Raney, Jr., stipulate that the proposed development that is the subject of this Variance Petition is inconsistent with Coastal Resources Commission Rule 15A NCAC 7H.0209(d)(10).
March 31, 2014

CERTIFIED MAIL-RETURN RECEIPT REQUESTED
7012 2210 0001 2435 4112

Judith and James Hales
2469 NC Highway 39
Selma, NC 27576

Re: CAMA Variance Request by Michael and Susan Edwards

Dear Property Owner:

This is to notify you that Michael and Susan Edwards are applying for a variance from the North Carolina Coastal Resources Commission to allow construction of a single family residence on their lot at 206 Singleton Street, Sneads Ferry, North Carolina. A copy of the site plan is enclosed for your information. The variance is projected to be heard at the May 14-15, 2014, meeting of the Coastal Resources Commission. If you wish to receive further information concerning the variance, you may contact me. If you wish to make comments on the variance, you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Extension, Wilmington, North Carolina, 28405-3845. You may also contact a Division of Coastal Management representative at (910) 796-7215.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.
Attorney for Michael and Susan Edwards
March 31, 2014

CERTIFIED MAIL-RETURN RECEIPT REQUESTED
7012 2210 0001 2435 3658

Susan and Gregory Manning
238 Dickens Road
Broadway, NC 27505

Re: CAMA Variance Request by Michael and Susan Edwards

Dear Property Owner:

This is to notify you that Michael and Susan Edwards are applying for a variance from the North Carolina Coastal Resources Commission to allow construction of a single family residence on their lot at 206 Singleton Street, Sneads Ferry, North Carolina. A copy of the site plan is enclosed for your information. The variance is projected to be heard at the May 14-15, 2014, meeting of the Coastal Resources Commission. If you wish to receive further information concerning the variance, you may contact me. If you wish to make comments on the variance, you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Extension, Wilmington, North Carolina, 28405-3845. You may also contact a Division of Coastal Management representative at (910) 796-7215.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.
Attorney for Michael and Susan Edwards
March 31, 2014

CERTIFIED MAIL-RETURN RECEIPT REQUESTED
7012 2210 0001 2435 4129

Emily and Eddie Creech
5777 Farmstead Road
Bailey, NC 27807

Re: CAMA Variance Request by Michael and Susan Edwards

Dear Property Owner:

This is to notify you that Michael and Susan Edwards are applying for a variance from the North Carolina Coastal Resources Commission to allow construction of a single family residence on their lot at 206 Singleton Street, Sneads Ferry, North Carolina. A copy of the site plan is enclosed for your information. The variance is projected to be heard at the May 14-15, 2014, meeting of the Coastal Resources Commission. If you wish to receive further information concerning the variance, you may contact me. If you wish to make comments on the variance, you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Extension, Wilmington, North Carolina, 28405-3845. You may also contact a Division of Coastal Management representative at (910) 796-7215.

Sincerely,

WESSELL & RANEY, L.L.P.

/\W. A. Raney, Jr.\
Attorney for Michael and Susan Edwards
April 3, 2014

CERTIFIED MAIL RETURN RECEIPT REQUESTED
7012 2210 0001 2435 3696

Garrett J. Exner and Michele Perez
200A Singleton Street
Sneads Ferry, NC 28460

Re: CAMA Variance Request by Michael and Susan Edwards

Dear Property Owners:

This is to notify you that Michael and Susan Edwards are applying for a variance from the North Carolina Coastal Resources Commission to allow construction of a single family residence on their lot at 206 Singleton Street, Sneads Ferry, North Carolina. A copy of the site plan is enclosed for your information. The variance is projected to be heard at the May 14-15, 2014, meeting of the Coastal Resources Commission. If you wish to receive further information concerning the variance, you may contact me. If you wish to make comments on the variance, you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Extension, Wilmington, North Carolina, 28405-3845. You may also contact a Division of Coastal Management representative at (910) 796-7215.

Sincerely,

WESSELL & RANEY, L.L.P.

W. A. Raney, Jr.
Attorney for Michael and Susan Edwards
EXHIBIT F

Michael I. Edwards and Susan G. Edwards Variance Petition
Petitioners' Position on Variance Criteria

(1) Will unnecessary hardships result from strict application of the rules, standards, or orders?

Petitioners' position: Yes.

Petitioners' argument: Strict application of the Coastal Shoreline Buffer Rule will cause the Petitioners to be unable to build a house on their residential lot. The lot is bounded on one side by the Intracoastal Waterway (Waterway), on one side by a man-made canal, and on two sides by other residential lots. A boat basin in the middle of the lot on the canal side reduces the lot depth/width to about 50 feet at the only feasible building site. Local zoning requires a 12-foot setback from the property line of the adjoining lot. CAMA rules require a 30-foot setback from the normal high water line on the other side of the lot. This leaves a building envelope of only about 8-10 feet between the two setbacks. The CRC rules have an exception for situations where the 30-foot setback would not allow construction of a 1,200 square foot house. The exception reduces the 30-foot setback to a distance of 20% of the maximum lot depth. The exception provides no relief in this case because the lot depth measured from the Waterway is about 150 feet and this is regarded as the maximum depth by the Division of Coastal Management.

(2) Do such hardships result from conditions peculiar to Petitioners' property such as the location, size, or topography of the property?

Petitioners' position: Yes.

Petitioners' argument: The Petitioners' property is bounded on two sides by water. The width of the lot from the canal to the adjoining lot varies from 75 feet to 80 feet. In the middle of the canal frontage is an old boat basin which extends about 36 feet along the canal and about 32 feet into the lot. This boat basin exists in the part of the lot that is the only feasible part of the lot on which to build when taking into account CAMA and local zoning setbacks.

(3) Do the hardships result from actions taken by the Petitioners?

Petitioners' position: No.

Petitioners' argument: The hardship does not result from actions taken by the Petitioners. The lot was created by recordation of a subdivision map on March 25, 1985. The boat basin that cuts into the lot was excavated prior to 1994, at which time the Coastal Shoreline Buffer Rule had not yet been enacted. The Petitioners did not buy the lot until September, 2002.
(4) Will the variance requested by the Petitioners (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice?

Petitioners' position: Yes.

Petitioners' argument:

- **Consistent with the spirit, purpose, and intent of rules.**

  The principal purposes of the Coastal Shoreline Buffer Rule are to reduce stormwater runoff from development that is located near coastal shorelines, to protect the ecological values of areas near shorelines, and to ensure that shoreline development is compatible with the dynamic nature of coastal shorelines. (see 15A NCAC 7H.0209(c).) Petitioners' lot is bounded on two sides by water. All of the waterfront is bulkheaded, thereby reducing the risk of erosion. The CRC rules recognize that a balancing of economic and environmental interests requires an exception to allow a small house to be built on waterfront lots that were platted prior to enactment of the Coastal Shoreline Buffer Rule. The exception is found in 7H.0209(d)(10)(I) and provides for a reduction in the buffer to a distance equal to 20% of the greatest depth of the lot measured from the high water line. Because the lot has two depth measurements, one long depth from the Waterway and one shorter depth from the canal, DCM interprets the greatest depth to be the longer depth from the Waterway. Using the longer depth measurement results in no relief from the normal 30-foot setback and effectively makes the lot unbuildable for even a small house. The purpose of the small house exception is to allow a property owner with a lot created prior to the rule to make reasonable use of the lot by building a small house. A variance is appropriate because the spirit, purpose, and intent of the small house exception cannot be achieved when the maximum depth is measured from only one of the two waterfront shorelines.

- **Secure the public safety and welfare.**

  The variance proposed by the Petitioners will have no adverse effect on public safety and welfare.

- **Preserve substantial justice.**

  A variance will preserve substantial justice by allowing reasonable use of the lot that was created before the Coastal Shoreline Buffer Rule went into effect.
ATTACHMENT E

STIPULATED EXHIBITS:

a. relevant portion of local zoning ordinance
b. CAMA permit application with site plans and adj. owner letters
c. Manning objection letter
d. CAMA permit and Surrender letter
e. Denial letter
f. ownership diagram
g. letter from home builder re: movement of driveway with revised site plan
h. powerpoint of site photographs
ONSLOW COUNTY, NORTH CAROLINA

An Ordinance establishing zoning regulations in Onslow County, North Carolina, and providing for the administration, amendment, and enforcement of this Ordinance, and providing for and defining the duties and powers of a Board of Adjustment in accordance with the provisions of North Carolina General Statutes, Article 18, Chapter 153A, and for the repeal of all previous Zoning Ordinances.

The purpose of this Ordinance is to provide for the public health, safety and general welfare, encourage orderly development, protect the quality of the environment, and regulate the location and use of structures and land for commerce, industry and residences in accordance with a Comprehensive Land Use Plan.
safeguards, when made a part of the terms under which the variance is granted, shall be deemed a violation of this Ordinance, shall expose the violator to appropriate penalties as provided by law and ordinance, and allow the variance to be revoked by the Board of Adjustment.

5. Before making any finding in a specified case, the Board shall first determine that the proposed variance will not impair an adequate supply of light and air to adjacent property will not materially increase the public danger of fire and safety, nor impair the public health, safety, morals, or general welfare.

6. Under no circumstances shall the Board grant a variance to allow a use not otherwise permissible under the terms of this Ordinance in the district involved, or any use expressly or by implication prohibited by the terms of this Ordinance in said district.

7. Applications for variances shall include site plans prepared as required for special use permits (see Article XIII, Section 1309.1).

ARTICLE VI. GENERAL PROVISIONS

Section 601. Zoning Affects All Land and Every Building and Use
No building or land shall hereafter be used and no building or part thereof shall be erected, moved or altered except in conformity with the regulations herein specified for the district in which it is located.

Section 602. Applicability to Incorporated and Extraterritorial Areas
The provisions of the Ordinance are not applicable in the incorporated areas of Holly Ridge, Jacksonville, North Topsail Beach, Richlands, Surf City, Swansboro, or in the established extraterritorial jurisdictions of these municipalities.

Section 603. Street Access
No building shall be erected on a lot which does not abut a public street or private street, or have access to a public street or private street, by a written or otherwise enforceable easement or agreement, provided that in a business district or in a planned project in a residential district, a building may be erected adjoining a parking area or other dedicated open space which has access to a street used in common with other lots.

Section 604. Relationship of Building to Lot
Except in the case of a specially designed complex of institutional, residential, commercial, or industrial buildings in an appropriate zoning district and except as allowed pursuant to Section 910.2, every building hereafter erected, moved, repaired or structurally altered shall be located on a lot and in no case shall there be more than one (1) principal building on a lot, except that in the Rural Agricultural District two (2) permitted uses may exist on a zoning lot (parcel), providing that one (1) of the uses is a residential structure inhabited by the property owner or operator of the other use.

Section 605. Reduction of Lot and Yard Areas Prohibited
No yard or lot existing at the time of passage of this Ordinance shall be reduced in size or area below the minimum requirements set forth herein, except for street widening or the
construction of public utilities and sidewalks. Yards or lots created after the effective date of
this Ordinance shall meet the minimum requirements established by this Ordinance except for
Planned Residential Developments approved in the subdivision review process by the Onslow
County Planning Board.

ARTICLE VII. ESTABLISHMENT AND INTENT OF
DISTRICTS AND BOUNDARIES

Section 701. General Use Zoning Districts Established
For purposes of this Ordinance, the County of Onslow is hereby divided into zoning districts
with designations as listed below:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA</td>
<td>Rural Agricultural</td>
</tr>
<tr>
<td>R-90</td>
<td>Residential District</td>
</tr>
<tr>
<td>R-30M</td>
<td>Residential District</td>
</tr>
<tr>
<td>R-20</td>
<td>Residential District</td>
</tr>
<tr>
<td>R-15</td>
<td>Residential District</td>
</tr>
<tr>
<td>R-10</td>
<td>Multi-family District</td>
</tr>
<tr>
<td>R-8M</td>
<td>Mobile Home District</td>
</tr>
<tr>
<td>R-5</td>
<td>Multi-family District</td>
</tr>
<tr>
<td>HB</td>
<td>Highway Business District</td>
</tr>
<tr>
<td>CB</td>
<td>Community Business District</td>
</tr>
<tr>
<td>O-1</td>
<td>Office and Institutional District</td>
</tr>
<tr>
<td>H-IN</td>
<td>Heavy Industrial District</td>
</tr>
<tr>
<td>L-IN</td>
<td>Light Industrial District</td>
</tr>
<tr>
<td>CON</td>
<td>Conservation District</td>
</tr>
<tr>
<td>MR</td>
<td>Military Reservation District</td>
</tr>
</tbody>
</table>

Section 702. District Boundaries Shown on Zoning Map
The boundaries of the districts are shown and made a part of the map accompanying this
Ordinance, entitled “Zoning Map of Onslow County, North Carolina.” The Zoning Map and
all notations, references, and amendments thereto, and other information shown thereon are
hereby made part of this Ordinance the same as if such information set forth on the map were
fully described and set out herein. The Zoning Map is posted at the Onslow County Planning
Department and is available for inspection and review by the public.

Section 703. Rules Governing Interpretation of District Boundaries

703.1 Where uncertainty exists as to the boundaries of any of the aforesaid districts as shown
on the zoning map, the following rules shall apply:

A. Where such district boundaries are indicated as approximately following street or
highway lines, such lines shall be construed to be such boundaries;

B. Where district boundaries are so indicated that they approximately follow lot lines,
such lot lines shall be construed to be said boundaries;

703.2 Where district boundaries are so indicated that they are approximately parallel to the
centerline of streets or highways, or the rights-of-way of same, such district boundaries
shall be construed as being parallel thereto and at such distance there from as indicated on the zoning map;

703.3 In case any further uncertainty exists, the Zoning Administrator shall initially interpret the intent of the map as to location of such boundaries.

Section 704. **Intent of Zoning Districts**
Listed below is the intent of each zoning district. Each district was formulated using goals and recommendations from the Onslow County Land Use Plan and the Onslow County Citizens Comprehensive Plan. See Article XIX for the Table of Uses for permitted, special and special requirements uses for each district.

**704.1 RA Rural Agriculture**
The purpose of this district is to maintain a rural development pattern where low density single-family, multi-family, modular, on frame modular and manufactured homes are intermingled with agricultural uses. This district is also designed to protect rural areas from the intrusion of non-agricultural land uses that could create a nuisance, detract from the quality of life, and/or present a danger to the natural environment.

**704.2 R-90 Residential District**
The purpose of this district is to stabilize established and/or planned single-family residential neighborhoods by providing a place for low density stick-built homes, modular homes and recreational uses.

**704.3 R-30M Residential District**
The purpose of this district is to stabilize established and planned single-family residential neighborhoods by providing a place for low density stick-built homes, modular homes and recreational uses to be protected from undesirable future development and residential developments.

**704.4 R-20 Residential District**
The purpose of this district is to stabilize established and planned single-family residential neighborhoods by providing a place for low density stick-built homes, modular homes and recreational uses, to be protected from undesirable future development and residential developments.

**704.5 R-15 Residential District**
The purpose of this district is to stabilize established and planned single-family residential neighborhoods by providing a place for medium density stick-built and modular homes.

**704.6 R-10 Residential District**
The purpose of this district is to stabilize established and planned single-family and multi-family residential neighborhoods by providing a place for medium density stick-built and modular homes.
a. The lot shall have an area of at least one (1) acre.
b. Each structure or fence shall comply with setback requirements in this Ordinance.

ARTICLE X. DIMENSIONAL REQUIREMENTS

Section 1001. Dimensional Requirements Tables

1001.1. Residential and RA Zoning Districts (see Section 1002 for setback requirements for accessory structures)

<table>
<thead>
<tr>
<th>Zoning District</th>
<th>Minimum Lot Area (feet²)</th>
<th>Minimum Lot Width (feet)</th>
<th>Minimum Setbacks (feet) for Principal Structures</th>
<th>Maximum Density (dwelling units / acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA</td>
<td>20,000</td>
<td>60</td>
<td>Front: 25, Side: 8*, Rear: 15</td>
<td></td>
</tr>
<tr>
<td>R-90</td>
<td>90,000</td>
<td>60</td>
<td>Front: 25, Side: 8*, Rear: 15</td>
<td></td>
</tr>
<tr>
<td>R-30M</td>
<td>30,000</td>
<td>60</td>
<td>Front: 25, Side: 8*, Rear: 15</td>
<td></td>
</tr>
<tr>
<td>R-20</td>
<td>20,000</td>
<td>60</td>
<td>Front: 25, Side: 8*, Rear: 15</td>
<td></td>
</tr>
<tr>
<td>R-15</td>
<td>15,000</td>
<td>60</td>
<td>Front: 25, Side: 8*, Rear: 15</td>
<td></td>
</tr>
<tr>
<td>R-10</td>
<td>10,000</td>
<td>50</td>
<td>Front: 20, Side: 8*, Rear: 15</td>
<td></td>
</tr>
<tr>
<td>R-8M</td>
<td>8,000</td>
<td>50</td>
<td>Front: 20, Side: 8*, Rear: 15</td>
<td></td>
</tr>
<tr>
<td>R-5</td>
<td>5,000</td>
<td>50</td>
<td>Front: 20, Side: 8*, Rear: 15</td>
<td></td>
</tr>
</tbody>
</table>

* Minimum side setback is 20 feet for side(s) of corner lot abutting street.
GENERAL INFORMATION

LAND OWNER
Name: Michael Edwards
Address: 117 Callahan Tel
City: Garner State: NC Zip: 27529 Phone: [RECEIVED] DCM WILMINGTON, NC

AUTHORIZED AGENT
Name: Wellman's Construction
Address: P.O. Box 6
City: Nolly Ridge State: NC Zip: 28445 Phone: (919) 329-4351 Email: Angie.codorn@wellmanconstruction.com

LOCATION OF PROJECT: (Address, street name and/or directions to site. If not oceanfront, what is the name of the adjacent waterbody.)

DESCRIPTION OF PROJECT: (List all proposed construction and land disturbance.)

SIZE OF LOT/PARCEL: 4548.0 square feet 0.22 acres

PROPOSED USE: Residential [X] (Single-family [X] Multi-family [ ] Commercial/Industrial [ ] Other [ ]

COMPLETE EITHER (1) OR (2) BELOW (Contact your Local Permit Officer if you are not sure which AEC applies to your property):

(1) OCEAN HAZARD AECs: TOTAL FLOOR AREA OF PROPOSED STRUCTURE: [ ] square feet (includes air conditioned living space, parking elevated above ground level, non-conditioned space elevated above ground level but excluding non-load-bearing attic space)

(2) COASTAL SHORELINE AECs: SIZE OF BUILDING FOOTPRINT AND OTHER IMPERVIOUS OR BUILT UPON SURFACES: [ ] square feet (includes the area of the roof/drip line of all buildings, driveways, covered decks, concrete or masonry patios, etc. that are within the applicable AEC. Attach your calculations with the project drawing.)

STATE STORMWATER MANAGEMENT PERMIT: Is the project located in an area subject to a State Stormwater Management Permit issued by the NC Division of Water Quality?
YES [ ] NO [X]

If yes, list the total built upon area/impervious surface allowed for your lot or parcel: [ ] square feet

[RECEIVED] DCM WILMINGTON, NC

FEB 2 5 2014
OTHER PERMITS MAY BE REQUIRED: The activity you are planning may require permits other than the CAMA minor development permit, including, but not limited to: Drinking Water Well, Septic Tank (or other sanitary waste treatment system), Building, Electrical, Plumbing, Heating and Air Conditioning, Insulation and Energy Conservation, PIA Certification, Sand Dune, Sediment Control, Subdivision Approval, Mobile Home Park Approval, Highway Connection, and others. Check with your Local Permit Officer for more information.

STATEMENT OF OWNERSHIP:
I, the undersigned, an applicant for a CAMA minor development permit, being either the owner of property in an ABC or a person authorized to act as an agent for purposes of applying for a CAMA minor development permit, certify that the person listed as landowner on this application has a significant interest in the real property described therein. This interest can be described as: (check one)

☑ an owner or record title. Title is vested in Michael & Susan Edwards Deed Book 1900 page 1691 in the New Hanover County Registry of Deeds.

☑ an owner by virtue of Inheritance. Applicant is an heir to the estate of FEB 18 2014

☑ probate was in New Hanover County.

☑ if other interest, such as written contract or lease, explain below or use a separate sheet & attach to this application.

NOTIFICATION OF ADJACENT PROPERTY OWNERS:
I furthermore certify that the following persons are owners of properties adjoining this property. I affirm that I have given ACTUAL NOTICE to each of them concerning my intent to develop this property and to apply for a CAMA permit.

1. Gregory & Susan Monga 233 Dickens Rd Broadway NC 27505
2. Eddie & Emily Creech 5739 Farmstead Rd Bailey NC 27817

ACKNOWLEDGEMENTS:
I, the undersigned, acknowledge that the land owner is aware that the proposed development is planned for an area which may be susceptible to erosion and/or flooding. I acknowledge that the Local Permit Officer has explained to me the particular hazard problems associated with this lot. This explanation was accompanied by recommendations concerning stabilization and floodproofing techniques.

I furthermore certify that I am authorized to grant, and do in fact grant, permission to Division of Coastal Management staff, the Local Permit Officer and their agents to enter on the aforementioned lands in connection with evaluating information related to this permit application.

This the 5th day of Feb, 2014

[Signature]
Landowner or person authorized to act as his/her agent for purpose of filing a CAMA permit application.

[Signature]
FEB 25 2014
AGENT AUTHORIZATION FORM

Date: 02/05/14

Name of Property Owner Applying for Permit: Mike Edwards

Name of Authorized Agent for this project: Wellman's Construction

Owner's Mailing Address:
117 Callahan Trail
Garnet, NC 27529

Agent's Mailing Address:
P.O. Box 8
Holly Ridge, NC 28445

Phone Number: 919-800-5950

Phone Number: 910-329-4354

I certify that I have authorized the agent listed above to act on my behalf, for the purpose of applying for and obtaining all CAMA Permits necessary to install or construct the following activity:

SFR

For my property located at 206 Singleton St., Speeds Ferry, NC 28460

This certification is valid thru (date): 02/05/14

Property Owner Signature

Date: 02/05/14

RECEIVED
DCM WILMINGTON, NC
FEB 18 2014

RECEIVED
DCM WILMINGTON, NC
FEB 25 2014

127 Cardinal Drive East, Wilmington, NC 28405
Phone: 910-796-7218 FAX: 910-395-5084 Internet: www.nccoastalmanagement.net
An Equal Opportunity / Affirmative Action Employer
Dear Adjacent Property:

This letter is to inform you that I, Michael Edwards, have applied for a CAMA Minor Permit on my property at 206 Singleton St, in Pender County. As required by CAMA regulations, I have enclosed a copy of my permit application and project drawings as notification of my proposed project. No action is required from you or you may sign and return the enclosed objection form. If you have any questions or comments about my proposed project, please contact me at (910) 329-1356, or by mail at the address listed below. If you wish to file written comments or objections with the Topsail Beach CAMA Minor Permit Officer, you may submit them to:

Jason Dal, Field Representative
Local Permit Officer for Topsail Beach
NC DENR Div of Coastal Management
127 Cardinal Drive Extension
Wilmington, NC 28405
910-798-7221

Sincerely,

Michael Edwards
Property Owner
PO Box 8
Mailing Address
Holly Ridge NC 28445
City, State, Zip Code

RECEIVED
DCM WILMINGTON, NC
FEB 25 2014

RECEIVED
DCM WILMINGTON, NC
FEB 18 2014
Dear Adjacent Property:

This letter is to inform you that I, Michael Edwards, have applied for a CAMA Minor Permit on my property at 238 Dickens Rd., in PN/ON County. As required by CAMA regulations, I have enclosed a copy of my permit application and project drawing(s) as notification of my proposed project. No action is required from you or you may sign and return the enclosed no objection form. If you have any questions or comments about my proposed project, please contact me at (910) 329-4351, or by mail at the address listed below. If you wish to file written comments or objections with the Topsail Beach CAMA Minor Permit Officer, you may submit them to:

Sincerely,

Michael Edwards
Property Owner
PO Box 8
Mailing Address
Holly Ridge, NC 28445
City, State, Zip Code

Jason Dale, Field Representative
Local Permit Officer for Topsail Beach
NC DENR Div of Coastal Management
127 Cardinal Drive Extension
Wilmington, NC 28405
910-796-7221

RECEIVED
DCM WILMINGTON, NC
FEB 25 2014

ERCEIVED
DCM WILMINGTON, NC
FEB 18 2014
Proposed Site Plan

From an actual survey by John L. Pierce, P.L.S., 405 Johnston Blvd., Jacksonville, NC 28540
Entitled Preliminary Plot Plan, Dec. 19, 2011

NOTES:
1. This Lot Qualifies As A Small Home Extension In The C.A.M.A. Buffer, Because Of
   Flashed Door House (Footprint) Not Be Smaller Than 1,700 Sq. Ft. Proposed House
   Footprint To Be 1,400 Sq. Ft. Ground Area, 50% Of Proposed House.

2. This Lot Is LOCATED In A 100 Year Flood Zone Per FEMA Map 0344G-0284, Dated
   Nov. 1, 2006 And In V.E. Zone (New 325).

3. Total Improvements Area Has To Be 25% Of Lot(s) Of Total Area. Therefore 25% Of
   8,643.62 Sq. Ft. Lot = 2,161.90 Sq. Ft. Total. Therefore, House Improvement 1,264.50 Sq. Ft.
   Enclosure Improvement 1,337.01 Sq. Ft. = Total Imperial Area of 2,601.91 Sq. Ft.

4. ZONING: R-1
   Secluded Front 120/Lot Platted Per Zoning: Side R, Rear 10'

Living Areas:
- Ground Floor Unheated = 1,100.0 s.f.
- 1st Floor = 1,100.0 s.f.
- 2nd Floor = 1,100.0 s.f.
- Total Area Heated = 2,200.0 s.f.

COASTAL DESIGNS
Dennis K. Mercer, Designer
P.O. Box 373, Wrightsville Beach NC 28480
office: 910-509-3140 - fax: 910-509-5170
www.coastaldesigns.com

Custom Cottage
For: Michael Edwards & Family
405 Glasgow Rd., Cary, NC 27511
For: 206 Singleton St., Sneads Ferry, NC
SINGLETON STREET
- 40' R/W (PUBLIC) -

LOT 1
BLOCK B
CHADWICK ACRES SUBDIVISION
MB: 22, PG: 233, SL: C-101

LOT 2
BLOCK B
CHADWICK ACRES SUBDIVISION
MB: 22, PG: 233, SL: C-101

LOT 3
BLOCK B
CHADWICK ACRES SUBDIVISION
MB: 22, PG: 233, SL: C-101

NOTES:
1. THIS LOT IS LOCATED IN A 100 YEAR FLOOD ZONE PER FEMA MAP 376340-4285, DATED NOV. 3, 2003 AND IS IN ZONE VE (ELEV. 10).
2. TOTAL IMPERVIOUS AREA HAS TO BE 25% (OR LESS) OF TOTAL AREA.

REFERENCES:
MB: 22, PG: 233, SL: C-101

SURVEY MAP
206 SINGLETON STREET

LOT NO. 1
BLOCK B
SUBDIVISION: CHADWICK ACRES SUBDIVISION
STUMP SOUND, TOWNSHIP: ONSLOW, COUNTY, N.C.
PREPARED FOR: MIKE EDWARDS

JOHN L. PIERCE & ASSOCIATES, P.A. (C-1888)
405 JOHNSON BLVD., JACKSONVILLE, NC 28540
PHONE: (910)346-9800 FAX: (910)346-1210
DATE: MARCH 31, 2014 SCALE: 1" = 30’
JOB #: 2011-423

REV: 3/31/14 - SHOW BOUNDARY AREA
FILE NO. }
March 3, 2014

Jason,

I am responding to the application for a CAMA permit on the property adjacent to me in Sneads Ferry, NC. The property address is 206 Singleton St. and my property is 184 Singleton St. located adjacent and west of the proposed site. I have a few issues with the proposed plans to build on this site and these may be unfounded since I am not an architect, engineer or soil and water specialist.

First is the size of the lot appears just too small for anything that would meet code for setbacks and access. Any construction will basically fill the size of the lot with very minimal buffering to adjacent properties. A home of any size footprint will look and be very of place with the buffering between adjacent homes that is typical for this neighborhood. This will adversely affect the value of both joining properties and homes.

Second, I have concerns about water runoff in general and especially storm water issues related to set backs from the high water mark. I feel like there will not be a way to successfully contain and mitigate damage to adjacent properties over time due to normal water runoff. I feel certain that in the event of storm water rise there is no way with the size of the lot that overrun due to proximity of any construction to the high water mark will not affect and damage my property. As you have seen during inspection of the proposed construction site there has already been a significant amount of erosion and subsequent sea wall failure. A structure and its impact on water runoff will only serve to exacerbate an already existent problem with drainage.

I am all for people doing anything with their lots that is within code and CAMA regulations and also does not have adverse effects on the adjacent properties. My view is that a new construction on this site will cause consequences with drainage/water issues that detrimentally affect adjacent properties and I doubt that any building plans can meet both CAMA high water setbacks and drainage mandates in addition to local zoning/permitting.

Sincerely,

[Signature]

Gregory G. Manning

919-258-5213 Office
919 258 2674 Home

RECEIVED
DCM WILMINGTON, NC
MAR 06 2014
CAMA
MINOR DEVELOPMENT
PERMIT

as authorized by the State of North Carolina, Department of Environment, and Natural Resources and the Coastal Resources Commission for development
in an area of environment concern pursuant to Section 113A-118 of the
General Statutes, "Coastal Area Management"

issued to Michael Edwards authorizing development in the Estuarine Shoreline - (AEC) at 206 Singleton Street, in SNEADS FERRY, NC, as requested in the permittee's application, dated 17th day of February, 2014. This permit, issued on February 26, 2014, is subject to compliance with the application and site drawing (where consistent with the permit), all applicable regulations and special conditions and notes set forth below. Any violation of these terms may subject permittee to a fine, imprisonment or civil action, or may cause the permit to be null and void.

This permit authorizes: Construct a new house.

(1) All proposed development and associated construction must be done in accordance with the permitted work plat drawings(s) dated received on February 17, 2014.

(2) All construction must conform to the N.C. Building Code requirements and all other local, State and Federal regulations, applicable local ordinances and FEMA Flood Regulations.

(3) Any change or changes in the plans for development, construction, or land use activities will require a re-evaluation and modification of this permit.

(4) A copy of this permit shall be posted or available on site. Contact this office at 910-989-3065 for a final inspection at completion of work.

(Additional Permit Conditions on Page 2)

RECEIVED
DCM WILMINGTON, NC
FEB 26 2014

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. From the date of an appeal, any work conducted under this permit must cease until the appeal is resolved. This permit must be on the project site and accessible to the permit officer when the project is inspected for compliance. Any maintenance work or project modification not covered under this permit, require further written permit approval. All work must cease when this permit expires on:

February 26, 2017

In issuing this permit it is agreed that this project is consistent with the local Land Use Plan and all applicable ordinances. This permit may not be transferred to another party without the written approval of the Division of Coastal Management.

ONSLOW COUNTY
CAMA LOCAL PERMIT OFFICIAL
604 COLLEGE STREET
JACKSONVILLE, NC, 28540

PERMITTEE
(Signature required if conditions above apply to permit)
(5) Unless specifically allowed in 15A NCAC 07H. 0209(d)(10), and shown on the permitted plan drawing, all development/construction shall be located a distance of 30 feet landward of Normal High Water. No portion of the roof overhang shall encroach into the 30 ft. buffer.

(6) All unconsolidated material resulting from associated grading and landscaping shall be retained on site by effective sedimentation and erosion control measures. Prior to any land-disturbing activities, a barrier line of filter cloth must be installed between the land disturbing activity and the adjacent marsh or water areas, until such time as the area has been properly stabilized with a vegetative cover.

(7) Any proposed for grading within the 30' buffer from the Normal High Water must be contoured to prevent additional stormwater runoff to the adjacent marsh. This area shall be immediately vegetatively stabilized, and must remain in a vegetated state.

(8) All other disturbed areas shall be vegetatively stabilized (planted and mulched) within 14 days of construction completion.

RECEIVED
DCM WILMINGTON, NC
FEB 25 2014

SIGNATURE: [Signature]
PERMITTEE
DATE: 2/26/14
Surrender of CAMA Permit # LCP2014-00002

I, Michael Edwards, do hereby surrender the CAMA Permit #LCP2014-00002 dated 2/26/14 for 206 Singleton Street, Sneads Ferry NC in Onslow County.

With receipt of your withdrawal I will begin the process for a variance for the permit.

Thank you,

[Signature]

Mike Edwards
March 10, 2014

Mr. Michael Edwards
117 Callahan Trail
Garner NC 27529

RE: DENIAL OF CAMA MINOR DEVELOPMENT: APPLICATION NO# LCP2014-00002 FOR PROPERTY AT 206 SINGLETON STREET, SNEADS FERRY NC 28460

Dear Mr. Edwards:

After reviewing your application in conjunction with the development standards required by the Coastal Area Management Act (CAMA) and our locally adopted Land Use Plan and Ordinances, it is my determination that no permit may be granted for the project which you have proposed.

This decision is based on my findings that your request violates NCGS 113A-120(a) (8) which requires that all applications be denied which are inconsistent with CAMA guidelines. You have to build a single family home on the property, which is inconsistent with 15 NCAC 7H .209 (10) which states: "within the Coastal Shorelines category, new development shall be located a distance of thirty (30) feet landward of the normal water level or normal high water level." I have concluded that your request also violates NCGS 113A-120(a) (8), which requires that all applications be denied which are inconsistent with Onslow County's CAMA CORE Land Use Plan. On page 51, you will find that "under CAMA rules, all lands 75 feet leeward from the mean high tide are classified as estuarine shorelines and are subject to CAMA development regulations.

Should you wish to appeal my decision to the Coastal Resource Commission or request a variance from that group, please contact me so I can provide you with the proper forms and any other information you may require. The Division of Coastal Management in Raleigh must receive appeal notices within twenty (20) day of the date of this letter in order to be considered.

Respectfully yours,

Sue McLaughlin, LPO
Onslow County
604 College Street
Jacksonville NC 28540

Cc: Mr. Jason Dail, Wilmington District Office
COASTAL DESIGNS ... homes for coastal living

Dennis K. Mercer, Residential Home Designer
mail: PO Box 379 · Wrightsville Beach · NC · 28480-0379
office: 2030 Eastwood Rd., Suite 3, Wilmington, NC 28403
phone: 910-509-3140
email: designer@coastaldesigns.com

Date: April 28, 2014

Client: Michael Edwards
117 Callahan Trail, Garner, NC 27529
cell 919-800-9950
e-mail: mikefromsa@yahoo.com

Ref: Custom Cottage Plan, based on "Kure Two" derivative
To Be Built At: 206 Singleton St., Sneads Ferry, NC 28460
Lot 1, B, Chadwick Acres Subdivision, Onslow Co., NC

Mike,

In reviewing your Proposed Site Plan,
I would like to make the following recommendation:

By adjusting your dwelling to 8' from the north-eastern property line (having an 8' minimum "side" setback) and 34' from the north-western line (having a 20' minimum "front" setback), that would leave a 14' minimum turning radius but would reduce the driveway with in the 20' shared ingress-egress easement to 19' wide. A 14' turning radius, is recommended as a minimum by the American Institute of Architects' book "Architectural Graphic Standards", page 72, 2003 edition.

If the dwelling is moved closer than 8' from the north-eastern property line, the 14' turning radius can only be maintained by further reducing the width of the driveway.

If the dwelling were to be moved where the wall of the dwelling were directly on the 8' eastern setback line, the roof overhang would then be encroaching into the setback requirement, which IS allowed by local zoning codes in Onslow County, NC.

See attached Site Plan revised 4/28/14 for a graphic of this.

Thank You,

Dennis K. Mercer
Designer
Proposed Site Plan
From an actual survey by John A. Pierce, P.L.S., No. 405
Johnson Blvd., Jacksonville, NC 28540
Entitled Preliminary Plot Plan, Dec. 19, 2011

NOTES:
1. This Lot Qualifies As A Small House Exemption In The Zoning Rules Because Of Platted Items. House (Footprint) Has To Be Small Than 1,200 Sq. Ft. Proposed House Footprint To Be 1,100 Sq. Ft. Ground Area. With Proposed Impervious Area To Roof Drop Line Of 1,250 Sq. Ft.
2. This Lot Is Located In A 100-Year Flood Zone Per FEMA Map 70240-4226. Dated Nov. 3, 2009 And Is In VE Zone (Elev. 10)
3. Total Impervious Area Has To Be 25% (Or Less) Of Total Area. Therefore 50% Of 9,243.65 Sq. Ft. = 2,313.50 Sq. Ft. Total. Therefore, House Impervious 1,224 Sq. Ft. - Driveway Impervious 1,300 Sq. Ft. = Total Proposed Impervious Area Of 2,524.00 Sq. Ft.
4. ZONING: R-15
   Setback: Front 50' (Lot Platted Pre Zoning), Side 15', Rear 15'

Singleton Street (40' R/W) N 27° 54' 19" W - 108.86'

Living Areas:
Ground Floor Unheated = 1,100.0 s.f.
1st Floor = 1,100.0 s.f.
2nd Floor = 1,100.0 s.f.
Total Area Heated = 2,200.0 s.f.

Coastal Designs
Dennis K. Marcum, Designer
PO Box 1078, Wakefield, NC 28480
Office: 910-509-3140 - Fax: 910-509-8170
www.coastaldesigns.com

Custom Cottage
For: Michael Edwards & Family
405 Glasgow Rd., Cary, NC 27511
For: 206 Singleton St., Sneads Ferry, NC

This drawing is to be used only as a guide in constructing the plan. Only the plans, details, and specifications contained herein are intended to be binding. See the plans for final drawings and specifications. Custom Design Plans are designed to fit the individual needs of each family. The architect, the designer, and the engineer are not responsible for any changes or additions to the plans. Architectural plans and specifications are the property of Coastal Designs. Copyright © 2014 Coastal Designs, LLC.
VARIANCE REQUEST

for

Michael and Susan Edwards
206 Singleton Street,
Sneads Ferry, Onslow County

May 14, 2014
Michael and Susan Edwards Property – 206 Singleton Street, Sneads Ferry, Onslow County

Adjacent property owner Manning

Creech, adjacent property owner

© 2014 Google
Close up view of Michael and Susan Edwards property - 206 Singleton Street, Sneads Ferry, Onslow County
206 Singleton Street – Lot layout per Onslow County GIS - 2012

Property boundaries denoted by “green” line(s)

206 Singleton Street – Edwards property.

Creech property

Manning Property

Canal
View of Petitioner’s property (Edwards - 206 Singleton Street) - looking south from northern portion of property. Canal in back ground.

Photo taken by Onslow County Local Permit Officer (LPO)
View of Petitioner’s Property (Edwards - 206 Singleton Street) – looking east from west

Photo taken by Onslow County Local Permit Officer (LPO)
Manning Residence

Approximate location of existing bulkhead

Approximate Normal Water level

View of Petitioner’s Property (Edwards - 206 Singleton Street) – looking west from east

Photo taken by Onslow County Local Permit Officer (LPO)
View of Petitioner’s Property (Edwards - 206 Singleton Street) – looking north from south

Photo taken by Onslow County Local Permit Officer (LPO)
Present CRC Members
Frank Gorham, Chair
Renee Cahoon, Vice-Chair

Neal Andrew
Larry Baldwin
Suzanne Dorsey
Marc Hairston
Greg Lewis

Bill Naumann
Jamin Simmons
John Snipes
Lee Wynns

Present Attorney General’s Office Members
Mary Lucasse
Christine Goebel
Jill Weese

CALL TO ORDER/ROLL CALL
Frank Gorham called the meeting to order reminding the Commissioners of the need to state any conflicts due to Executive Order Number One and also the State Government Ethics Act. The State Government Ethics Act mandates that at the beginning of each meeting the Chair remind all members of their duty to avoid conflicts of interest and inquire as to whether any member knows of any conflict of interest or potential conflict with respect to matters to come before the Commission. If any member knows of a conflict of interest or a potential conflict of interest, please state so when the roll is called.

Angela Willis called the roll. Chairman Gorham stated he has no known conflicts, but is friends with William A. Raney, attorney for a variance petitioner on the agenda, and works with him on the Figure Eight HOA. Chairman Gorham further stated that he has worked extensively with Chris Gibson who is on the inlet management panel. Renee Cahoon stated she has a potential conflict with the NCDOT variance request and will not participate in the discussion or vote. Suzanne Dorsey stated she has a potential conflict with the Bald Head Island Limited variance request. Lee Wynns stated he owns property in Nags Head but does not believe it causes a conflict with the NCDOT variance request on the agenda. Bob Emory and Harry Simmons were absent. Chairman Gorham stated that at the time the meeting was scheduled, he was aware that Commissioners Emory and H. Simmons were going to be absent due to scheduling conflicts and their absences are excused. Based upon this roll call Chairman Gorham declared a quorum.

MINUTES
Bill Naumann made a motion to approve the minutes of the December 2013 CRC meeting. Larry Baldwin made a correction to the minutes to reflect his recusal in the Cape Fear River LLC variance request. Lee Wynns seconded the motion. The motion to approve the minutes as revised passed unanimously (Gorham, Andrew, Baldwin, Cahoon, Dorsey, Hairston, Lewis, Naumann, J. Simmons, Snipes, Wynns).
EXECUTIVE SECRETARY’S REPORT
Braxton Davis, DCM Director, gave the following report:

Good morning. We have passed around a memo that covers the Division of Coastal Management’s recent permitting, enforcement, rule development, planning and Coastal Reserve activities. We put together a summary memo for each meeting to provide a quick synopsis of various parts of the program – and in turn I do not try to provide a full account of our program activities during these Executive Secretary remarks. As you’ll see from this update, our permit numbers in the latter half of 2013 were holding steady in comparison with the last half of 2012. I will note that a number of procedural changes we’ve implemented over the past two years are continuing to pay dividends in terms of reduced permit processing times for CAMA Major Permits – we are now at an average of 75 days, which is down from about 86 day-average in 2011. While permit numbers are still relatively low, our staff are out in the field every day meeting with homeowners, realtors, consultants and others to evaluate potential development sites and to help make sure that projects already underway stay in compliance with the rules in order to reduce enforcement issues. You’ll also see that our Policy and Planning Section is continuing to move forward in implementing the NC Beach and Inlet Management Plan, or BIMP, which was developed in 2010 and lays out a series of recommendations for, among other things, regional approaches to beach and inlet projects. Right now staff is working closely with Bogue Banks to develop best practices that can be shared with other beach communities. We are also reviewing our CAMA land use planning program in partnership with the Business Alliance for a Sound Economy and the Coastal Federation through a series of regional workshops that we’ll discuss further at future commission meetings. We have recently announced 24 public access grant awards totaling $3.2M for the 2013 competition, and released a new call for proposals for fast-track projects for which – 950K should be available. The DCM Update is also a good reference to track the process of current rule changes under the APA. At this meeting we will continue to review a series of rule changes from last year that were developed to reduce unnecessary regulatory burdens, and we will also present a new set of proposals based on our 2013 year-end review. Finally, the Update provides an overview of the outstanding education, research, and extension programs within our Coastal Reserve program, and we hope you’ll let us know if you would like additional information on that part of our program.

We worked with the Executive Committee to develop today’s agenda, and I would just like to highlight a few items. First, I just wanted to let you know that we have more variances than usual. While the number of variances is not very predictable we usually do not anticipate more than a few at each meeting. We have a few briefing items for you for which no action will be needed at this meeting, including an orientation on the beachfront “Static Lines”/ “Static Line Exceptions” as well as the Science Panel, both of which will likely be on your next meeting agenda. We also have one fiscal analysis and three public hearings on the rule changes. I would also like to thank our two sets of panelists for joining us today. They have already been great to work with in pulling together today’s meeting and we look forward to getting your thoughts on our program as we continue working on beach and inlet management issues. The Division will be hosting a scoping workshop intended to address permitting aspects of beach and inlet projects in relation to the Endangered Species Act on March 19 in Beaufort. Finally, we are planning for the next Commission meeting to be held in Carteret County on May 14-15.
CHAIRMAN’S COMMENTS
Chairman Gorham stated this is a busy agenda and it is important not to exceed the time allotted for each agenda item. Chairman Gorham further stated that he would like to thank Renee, Lee and Jamin for sponsoring this meeting and would like to thank the DCM staff for all their work for the CRC. He also thanked Todd Miller and the Coastal Federation for meeting with several Commissioners and answering questions and providing input.

VARIANCE REQUESTS
Currituck County (CRC VR 13-05), Oceanfront Setback
Christine Goebel

Christine Goebel of the Attorney General’s Office represented Staff in this variance request. Ike McRee, Attorney for Currituck County was present and represented the Petitioner. Ms. Goebel stated, Petitioner owns and runs a water supply system consisting of several smaller water supply systems it purchased from a private water utility in 2011. Along with 22 active wells, the County purchased two existing but not fully developed deep wells located near the oceanfront in the area of Corolla near the Currituck Lighthouse. In February 2013, the County applied for a CAMA Major Permit to complete the two deep wells by installing a new well pump in each existing casing, installing a concrete pad and housing over the top of the well and connecting these wells to the existing system. On June 14, 2013, DCM denied the County’s application as it conflicted with the oceanfront erosion setback rules found in 15A NCAC 7H .0306. Petitioner seeks relief from this rule to allow the project as proposed. Ms. Goebel stated that Staff and Petitioner agree on all four statutory factors which must be met in order to grant the variance request. Ms. Goebel stated the strict application of the rules will cause the County an unnecessary hardship because the County needs the extra water capacity in this area and much of the work is complete. The hardships result from conditions peculiar to the property since the location of the wells was designed to take advantage of the best water source within the aquifer. DCM notes that the prior owner, a private utility, may have caused the hardship in this case by not seeking a CAMA permit before development in 2006 and these issues were inherited by the County and are not a result of the County’s actions. This variance would be within the spirit, purpose and intent of the setback rules and preserve substantial justice as these two wells are already mostly developed and minimal additional development is proposed within the setback area. The development is landward of the vegetation line and the primary dune.

Ike McRee, Currituck County Attorney, stated Petitioner and Staff have stipulated to the facts and agreed to the four factors. Mr. McRee stated that Currituck County had planned for development that occurred on the Currituck Outer Banks from the 1980’s until the early 2000’s, it had prepared and established a water supply and water supply treatment systems to address the need for growth and development that occurred in Corolla during that time. The prior owner, a private utility company, provided water service to two important areas within Corolla. That private utility was not able to provide the quality and quantity of water necessary to fulfill the needs of these communities. Much of the work on the two wells has been completed. The additional work required to put these wells into operation will be minimally invasive.

Renee Cahoon made a motion to accept Staff’s position that strict application of the applicable development rules, standards or orders issued by the Commission cause the petitioner unnecessary hardships. Larry Baldwin seconded the motion. The motion passed with ten votes in favor (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Wynns, J. Simmons, Snipes) and one opposed (Dorsey).
Bill Naumann made a motion to accept Staff’s position that hardships result from conditions peculiar to the property. Jamin Simmons seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Renee Cahoon made a motion to support Staff’s position that hardships do not result from actions taken by the petitioner. Larry Baldwin seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Renee Cahoon made a motion to support Staff’s position that the variance request 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 Naumann seconded the motion. The motion passed with ten votes in favor (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Wynns, J. Simmons, Snipes) and one opposed (Dorsey).

This variance request was granted.

COBA Ventures, LLC (CRC VR 13-07), New Hanover County, ¼ Width Rule
Jill Weese

Jill Weese of the Attorney General’s Office represented Staff in this variance request. Charles Busby, attorney for Petitioner, was present and represented COBA Ventures.

Ms. Weese reviewed the stipulated facts for this variance request which show that Petitioner owns a tract of land located at 4616 Serenity Point Road in Wilmington. Petitioner applied for a CAMA Major Permit for upland improvements and for construction of a community docking facility consisting of a pier, pier platform and eight boat slips with lifts. Major Permit #113-13 was issued for the proposed upland development and the community docking facility, however a condition was added to the permit (Condition #5) that states that no portion of the docking facility shall extend more than one quarter the width of the water body. 15A NCAC 7H .0208 requires that piers not exceed one-fourth of the width of the water body. Petitioner seeks relief from 7H .0208 and requests the pier be permitted to extend to 1/3 the width of the water body.

Ms. Weese stated that Staff and Petitioner agree on all four statutory criteria. Staff agrees that strict application of the rules will cause the Petitioner unnecessary hardship. This rule’s intent is to keep one half of any water body free of development that could interfere with navigation. In this case this development will not interfere with navigation. The hardship is peculiar due to the peninsula to the south which has forced the navigation route further out. The Petitioner did not cause this hardship and any hardship is a result of the peculiarity of the shoreline and the shallow water depth in this area.

Charles Busby, attorney for Petitioner, stated this has been a pleasant process for me and my client because of the assistance from the Attorney General’s office and DCM Staff. There are no disagreements with the facts.
Bill Naumann made a motion to support staff’s position that strict application of the development rules, standards or orders issued by the Commission will cause the petitioner unnecessary hardship. Lee Wynns seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Larry Baldwin made a motion to support staff’s position that hardships result from conditions peculiar to the property. Bill Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Bill Naumann made a motion to support staff’s position that the hardships do not result from actions taken by the petitioner. Renee Cahoon seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Renee Cahoon made a motion to support staff’s position that the variance request 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. Lee Wynns seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

This variance request was granted.

Taylor (CRC VR 14-01), Atlantic Beach, 15’ Riparian Setback
Christine Goebel

Christine Goebel of the Attorney General’s Office represented DCM staff. William (Jake) Taylor, Petitioner was present and represented himself in the variance request.

Ms. Goebel reviewed the stipulated facts which establish petitioner owns property in Atlantic Beach and is proposing to construct a pier with two boatlifts. On October 7, 2013, the adjacent riparian property owner submitted a letter of objection declining to waive the 15-foot riparian setback established by 15A NCAC 7H .0208. On December 18, 2013, Petitioner’s application was denied on the basis that the proposed development does not meet the minimum setback of 15 feet from the adjacent property owner’s area of riparian access. Petitioner seeks relief from the strict application of 7H .0208 to construct a pier with two boatlifts.

Ms. Goebel stated staff recommends the request for a variance be denied because Petitioner has failed to establish all four variance criteria which must be met in order to grant a variance. Staff believes that strict application of the 15-foot riparian setback does not cause an unnecessary hardship. The Petitioner knew his adjacent neighbor would decline to sign the waiver before he contracted to purchase this property and Petitioner can adequately use his 31.7 feet of riparian area. While it is a small area, it has an existing pier and he has about 16.7 feet that is outside of the neighbor’s setback area. There are options for use of this riparian area including other piers that stay out of the setback. Petitioner suggests that the limited amount of riparian shoreline (only 31.7 feet) is peculiar; however staff disagrees. This size is not unusual in this area. Staff would also note that the brother’s medical condition is not a peculiarity to the property. Petitioner has caused his
own hardship in this case by moving forward without the adjacent neighbor’s waiver and by designing a pier that is larger than allowed under the rules. The petitioner could have designed a pier that conformed to the rules. Instead, knowing the riparian neighbor would not waive the setback, Petitioner went forward with a design that didn’t take the setback into consideration. This variance request does not preserve substantial justice since Petitioner knew about this issue before purchasing the property and the requested development would interfere with the adjacent neighbor’s protected riparian corridor.

Petitioner presented his argument in favor of the variance stating the property was divided. There were three lots to begin with and we took one lot and divided it into two. By contract, Mr. Taylor had agreed to remove all encroachments by June 1. The existing boat lift encroaches about a foot and a half into the riparian setback. The existing boat lift has only about four feet of pier. My brother is blind and partially crippled and I need to be able to lead him out to it which is why I need the width. His only recreation is fishing. With strict application from criteria one, the only real option I have is to request a variance for the pier to be moved or to go with the maintenance criteria which requires only 50% of the pier or boat lift be replaced in a 12 month period. I have to remove all encroachments which would be more than 50%. It is a peculiar lot with only 31 feet. If you apply the 15 feet to both sides you don’t have anything left to work with. I would like to offer the Commission an alternative to allow me to move the pier over three feet and lessen the encroachment into the neighbor’s setback.

Greg Lewis made a motion to support Staff’s position that strict application of the rules would not cause the Petitioner unnecessary hardship. Bill Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Renee Cahoon made a motion to support Staff’s position that hardships do not result from conditions peculiar to the property. Greg Lewis seconded the motion. The motion passed with ten votes in favor (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Dorsey, Wynns, J. Simmons, Snipes) and one opposed (Gorham).

Bill Naumann made a motion to support Staff’s position that the hardships result from actions taken by the petitioner. Larry Baldwin seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Greg Lewis made a motion to support Staff’s position that the variance request will not be consistent 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. Jamin Simmons seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

This variance request was denied.

Town of Carolina Beach (CRC VR 14-02), Oceanfront Setback
Jill Weese
Jill Weese of the Attorney General’s Office represented staff. Charlotte Noel Fox was present and represented the Town of Carolina Beach. Ms. Weese stated the Town is requesting the variance because they have reached Phase 2 of a project dealing with the boardwalk in Carolina Beach. The Town is proposing to replace and extend the boardwalk, however their proposed replacement and expansion is inconsistent with the CRC’s rules since the entire structure is located oceanward of the Ocean Hazard 60-foot setback. The Town is seeking relief from 15A NCAC 7H .0306. Ms. Weese reviewed the stipulated facts of this variance request. There were no objections to the CAMA permit application, however once the variance process was started an objection was received from a citizen. The Carolina Beach boardwalk project is within the limits of the delineated Static Vegetation Line and based on on-site meetings and survey data from November 2013, the actual vegetation line is approximately 90 feet oceanward of the Static Vegetation Line. Staff and Petitioner are in agreement on all four statutory criteria which must be met in order to grant the variance. Staff agrees with Petitioner that strict application of the applicable rules cause the Petitioner unnecessary hardship. The CRC’s rules recognize the need to balance protecting the coast with the right of access to the public trust areas. There has been an existing boardwalk for many years, but this part of the beach is under the Static Line Exception designation. The hardships do result from conditions peculiar to the property due in part by the current location of the existing boardwalk which is on publically owned property. Staff strongly agrees with Carolina Beach that the width of the beach makes it consistent with the spirit, purpose and intent of the rules. There will also be increased access for visitors with disabilities because of the widened boardwalk and will secure public safety. The proposed boardwalk expansion will also likely enhance the community economically.

Charlotte Noel Fox, Town Attorney, stated I am here today with the Mayor, a Council Member and the Project Manager who can answer any questions about the modification and the proposed expansion to the boardwalk. This has been a seamless process and I would like to thank the staff for that. The Town is in agreement with Staff and the staff positions that the strict application creates a hardship not just for this applicant, but also for the public. This proposed expansion and improvement exists in the central business district which is a major area of economic development. It is also a primary means of access for the public to the public trust areas. We believe that the hardships result from peculiarity of the property and are not a result of actions taken by the Town.

Ms. Fox stated that there is not currently a boardwalk in front of Mr. Avarette’s property. He has a goat trail; his property is very low, is non-conforming, is in the central business district but was constructed a very long time ago. He can see dunes from his lower deck and has a second floor deck where he has a view of the ocean.

Frank Gorham asked what the Town’s position would be if the Commission approved the south side expansion, but not the north side. Ms. Fox stated that it would be a hardship to the 17 other property owners that are in the central business district that are in support of the boardwalk expansion in front of their properties. Mr. Avarette is stuck in between two hotels. Those business owners would think it is a hardship to them because they are in favor of the expansion.

John Snipes asked if there are any other residential property owners in the area of the proposed expansion. Ms. Fox answered, no. The Avarette cottage is a 1930’s cottage that is not consistent with the character of the properties around him. The Town has volunteered to work with Mr. Avarette on a number of things to address the concerns raised. For example, the boardwalk plans have been modified and moved farther out from the property line, the Town has removed benches from in front of his area and changed the lighting. The Town has offered at least three options to
connect the Avarette property to the boardwalk and make it convenient for his family. Mr. Avarette has been the only person along the entire boardwalk objecting to the proposed development.

Suzanne Dorsey asked if the boardwalk is considered a structure and if sand bags could be linked to this structure? Braxton Davis stated it would not be eligible for sandbags.

Larry Baldwin asked if all the properties along the extension of the boardwalk are all town property except Mr. Avarette. Ms. Fox replied that they are all private property owners but are not residential property owners. Mr. Avarette is the only residential property owner. There are 18 property owners total that will be affected by the northern expansion, but just one is residential. Commissioner Baldwin stated that he recognizes that this is public trust area mainly because of renourishment, how does that affect the property owner’s riparian rights? Ms. Fox stated the property owners are in favor of the construction of the boardwalk and the access areas in front of their property. Commissioner Baldwin stated this is a big wooden structure parallel to the coastline. As far as public safety and health, what will happen if we encourage this type of construction on the oceanfront? How will it affect the property owners inland if we get a big storm? It could become a hazard. Ms. Fox stated the Town would insure this like it would any other town structure. The project manager stated the boardwalk is designed to meet the building code and can withstand additional storms.

Chairman Gorham asked if the CRC does not grant the northern end could the Town provide access to the beach by having more walkways to the beach. The project manager stated the plan was to add one additional crossover and stated if they were not approved for the northern end then they would rebuild the existing structure. We have attempted in the northern extension to keep the design profile as low as possible. It would also provide a nice 800 foot extension for additional public access.

Renee Cahoon said the Town has spoken of providing security to the condominiums, are you proposing to provide security to Mr. Avarette as well? Ms. Fox said yes. The Project manager stated there were three options sent to Mr. Avarette and to provide secure, locked gates at his access. Commissioner Cahoon asked about the elevation of the boardwalk and asked if a handicap access could be provided. Ms. Fox said that is one of the options and the Town is willing to accommodate him.

Neal Andrew made a motion to support Staff’s position that strict application of the rules will cause the Petitioner unnecessary hardship. Marc Hairston seconded the motion. The motion passed with eight votes in favor (Andrew, Hairston, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes) and three opposed (Lewis, Baldwin, Naumann).

Neal Andrew made a motion to support Staff’s position that hardships result from conditions peculiar to the property. Marc Hairston seconded the motion. The motion passed with nine votes in favor (Andrew, Hairston, Lewis, Naumann, Cahoon, Dorsey, Wynns, J. Simmons, Snipes) and two opposed (Baldwin, Gorham).

Neal Andrew made a motion to support Staff’s position that hardships do not result from actions taken by the petitioner. Marc Hairston seconded the motion. The motion passed with seven votes in favor (Andrew, Hairston, Cahoon, Dorsey, Wynns, J. Simmons, Snipes) and four opposed (Lewis, Baldwin, Naumann, Gorham).
Neal Andrew made a motion to support Staff’s position that the variance request is 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. Marc Hairston seconded the motion. The motion failed with four votes in favor (Andrew, Hairston, Wynns, J. Simmons) and seven opposed (Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Snipes).

This variance request for the project in its entirety was denied.

Larry Baldwin stated he thinks it is a great project, especially on the existing boardwalk, but has big concerns with the north extension.

Frank Gorham asked if the CRC could make a motion to accept the expansion on the existing boardwalk. This would allow the expansion of the existing structure, but not going into adding the new structure on that end. We would approve the south end if we vote for this modification. Chairman Gorham asked the town if they got approval for the south end would they do it. Ms. Fox responded yes. Chairman Gorham stated that we would be taking the existing footprint of the existing boardwalk and allowing the Town to widen it and all the things proposed in that area within the existing length of the boardwalk and would not extend the boardwalk on the northern end.

At the request of the Chair, Mary Lucasse provided the legal opinion that the Commission could consider another motion that granted the variance request in part and denied the variance request in part.

Bill Naumann made a motion to grant the variance request in part and deny it in part by excluding the extension portion of the project. Renee Cahoon seconded the motion.

Renee Cahoon made a motion that the Commission find that that strict application of the rules would cause the petitioner unnecessary hardship. Greg Lewis seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Bill Naumann made a motion that the Commission find that hardships result from conditions peculiar to the property. Larry Baldwin seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Greg Lewis made a motion that the Commission find that hardships do not result from actions taken by Petitioner. Bill Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

John Snipes made a motion that the variance request be granted in part and denied in part and that the Commission find that the replacement of the existing boardwalk, but not the extension of the board walk, 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 Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).
Frank Gorham encouraged the Town to come back to the CRC if they can work something out with Mr. Avarette. Renee Cahoon stated she would like the Staff to provide an expedited variance hearing if the Town comes back to the CRC.

The variance request was granted in part and denied in part.

**Suzanne Dorsey recused herself from discussion and voting on this agenda item.**

Christine Goebel of the Attorney General’s Office represented staff in this variance request. William, A. Raney of Wessell and Raney was present and represented Petitioners.

Ms. Goebel stated the Petitioner is seeking a variance from the 30’ buffer rule to construct additional decks with stairs and a brick transition area within the 30’ buffer at the ferry terminal on Bald Head Island. The 30’ buffer generally prohibits development within 30’ of the normal water level or normal high water level on coastal shoreline AECs. The CRC’s rules allow for several exceptions including 200 square feet of decking and the purpose of the rule is to help protect water quality. Ms. Goebel reviewed the stipulated facts of this variance request and stated Staff and Petitioner agree on all four statutory criteria which must be met in order to grant the variance.

Mr. Raney stated Petitioner has no disagreement with what Staff has recommended in this variance request and would request that the CRC grant this variance.

Chairman Gorham asked Mr. Raney if the Petitioner would object to the CRC conditioning the variance subject to receiving the stormwater permit from DEMLR. Mr. Raney said they would agree with that.

**Renee Cahoon made a motion to support staff’s position that strict application of the applicable development rules will cause the petitioner unnecessary hardship. Larry Baldwin seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Wynns, J. Simmons, Snipes).**

**Bill Naumann made a motion to support staff’s position that hardships result from conditions peculiar to Petitioner’s property. Renee Cahoon seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Wynns, J. Simmons, Snipes).**

**Greg Lewis made a motion to support staff’s position that hardships do not result from actions taken by the petitioner. Bill Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Wynns, J. Simmons, Snipes).**

**John Snipes made a motion to support staff’s position that the variance request will be consistent with the spirit, purpose and intent of the rules; will secure the public safety and welfare; and preserve substantial justice. Renee Cahoon seconded the motion. The motion**
passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Wynns, J. Simmons, Snipes).

This variance request was granted and conditioned it to include the requirement of getting the stormwater permit from DEMLR.

NCDOT (CRC VR 14-03), Nags Head, Oceanfront Setback
Christine Goebel

**Renee Cahoon recused herself from discussion and voting on this agenda item.**

Christine Goebel of the Attorney General’s Office represented staff in this variance request. Thomas Henry, also of the Attorney General’s Office, was present and represented NC Department of Transportation on this variance request. NCDOT is seeking a variance from the oceanfront erosion setback in order to replace 65 feet of stormwater outfall in Nags Head. NCDOT is seeking relief from 15A NCAC 7H .0306. Ms. Goebel reviewed the stipulated facts of this variance request and stated staff and petitioner agree on all four statutory criteria that must be met in order to grant the variance.

Thomas Henry, counsel for Petitioner, stated the replacement of the outfall structure has been permitted. The 65 foot extension will allow this outfall to function as it was originally designed. The setback rules are designed to protect life and property and the 65 foot extension of the outfall will further that purpose by protecting the lives of the people that use NC12.

Bill Naumann made a motion to support staff’s position that strict application of the development rules would cause the petitioner unnecessary hardship. Larry Baldwin seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Greg Lewis made a motion to support staff’s position that hardships result from conditions peculiar to the property. Marc Hairson seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Greg Lewis made a motion to support staff’s position that hardships do not result from actions taken by the petitioner. Bill Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Greg Lewis made a motion to support staff’s position that 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 Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

This variance request was granted.
PUBLIC INPUT AND COMMENT
No public comments were received.

PRESENTATIONS
Coastal Resources Advisory Council, Background & Appointment Process (CRC 14-01)
Tancred Miller

Tancred Miller stated the CRAC was created by the General Assembly in 1974. The CRAC originally had 45 members appointed by each of the 20 coastal counties to represent the county. There were also members from coastal cities that the CRC appointed as well as state agency representatives. The CRAC was meant to be a communications link between the local governments and the CRC. Session Law 2013-360 vacated the membership of the CRAC effective July 31, 2013. The size was reduced to 20 members and all of the members are now appointed by the CRC. The term for Advisory Council members is two years.

The CRC sent an invitation for nominations to the local governments. The CRC Executive Committee met to discuss the nominees and look at their qualifications. The Executive Committee decided to recommend 10 individuals for consideration by the full CRC. The other 10 spots can be filled at a later date and the nominees that were not selected in this first 10 can still be considered to fill one of the other 10 spots. The Executive Committee recommends Kris Noble, Robert Outten, Ray Sturza, Jordan Hughes, Charles Jones, Greg “Rudi” Rudolph, Bill Morrison, Spencer Rogers, Debbie Smith, and Dave Weaver.

Renee Cahoon made a motion to accept the Executive Committee’s ten recommendations for appointment to the Coastal Resources Advisory Council. Jamin Simmons seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Renee Cahoon made a motion that Debbie Smith serve as Chair of the Advisory Council and Spencer Rogers and Rudi Rudolph would jointly serve as Vice-Chairs. Bill Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Bill Naumann made a motion to approve the Charge to the CRAC as drafted. Larry Baldwin seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Beach Nourishment, Static Line and Static Line Exceptions (CRC 14-02)
Matt Slagel

Matt Slagel stated oceanfront setbacks are measured from the first line of stable and natural vegetation, except in unvegetated beach areas or in areas that have received a large-scale beach nourishment project. If beach nourishment occurs, the vegetation line is surveyed before the nourishment project occurs and that establishes a static line. The static line is used for measuring the setback in areas that have been nourished with a large-scale project. After a nourishment project,
if a new vegetation line grows that is more seaward of the static line then the static line is still used as the measurement line for setbacks. If beachfill erodes to a point that the vegetation line is more landward than the static line then the more landward vegetation line is used for setbacks. The static line policy was codified by the CRC in 1996 recognizing that engineered beaches erode at least as fast if not faster than the pre-project beach, there is no assurance of future funding or beach compatible sediment for project maintenance, and that development that is tied to a vegetation line in an artificially forced system could locate buildings in a more vulnerable location. Prior to 2008, a large-scale beach nourishment project was defined as one that placed more than a total volume of 200,000 cubic yards of sand at an average ratio of more than 50 cubic yards of sand per linear foot of shoreline, or an Army Corps of Engineers hurricane protection project. To avoid a static line, municipalities had the ability to design projects under 200,000 cubic yards or under the 50 cubic yards per foot ratio. This created a disincentive for larger, less frequent projects. In 2008, the CRC altered the large-scale definition and increased the volume threshold from 200,000 cubic yards to 300,000 cubic yards.

There is also a static line exception. For communities with a demonstrated, long-term commitment to beach nourishment, the CRC created the static line exception to allow setbacks for small-scale development to be measured from either the natural vegetation line or the static line which made more lots developable. A community must wait five years after a large-scale project to apply to the CRC for the exception. An approved static line exception allows development to be measured from the vegetation line and not the static line if it meets the minimum setback of sixty feet or 30 times the erosion rate, if the total floor area of the structure is under 2,500 square feet, if the structure extends no further oceanward than the landward most adjacent building, and no swimming pools are allowed oceanward of the static line. For structures that are greater than 2,500 square feet, the setback is measured from the most landward line. If the structure is between 2,500 and 5,000 square feet then the setback is 60 feet or 30 times the erosion rate whichever is greater. If the structure is greater than 5,000 square feet then the setback is 120 feet or 60 times the erosion rate whichever is greater. In order for a community to get a static line exception they must wait five years after a large-scale beach nourishment project and then request the exception from the CRC. The request must show proof of compatible sediment and financial resources to pay for the project. Every five years after an exception has been approved, a progress report must be submitted to the CRC to re-evaluate the project. Carolina Beach, Wrightsville Beach, Ocean Isle Beach, and all of Bogue Banks currently have an approved static line exception. The five year progress reports for Carolina Beach and Wrightsville Beach are due by August 27, 2014. The CRC will likely see the progress reports from these two towns at its meeting in May.

Chairman Gorham stated that at Figure Eight we have done several beach renourishment projects. Because we are so opposed to being under the rule of the static line we have designed our projects to be less than 300,000 cubic yards. This has caused us to do projects more frequently than had there not been a rule. The intent of the static line is having some adverse consequences.

Chris Gibson, TI Coastal, stated the changes in the static line had a direct impact on Mason’s Inlet. That project was originally designed under the 50 yard per foot rule with a 10,000 foot long nourishment area. That project was designed to be done on a three year cycle and be approximately 500,000 cubic yards. After the first project, the following projects were held to 300,000 cubic yards and so we downsized the project. Likewise, with Topsail, the design was changed because of this rule.
Chairman Gorham asked staff to look at this rule and come up with some possible ways to address it for discussion at a future meeting.

**Inlet Management Strategy Development (CRC 14-03)**

**Mike Lopazanski**

Mike Lopazanski stated the CRC was directed to study the feasibility of the Cape Fear River AEC. The Commission decided that rather than focusing on creating a new AEC for one inlet, the CRC would look at all inlets and look at common issues with the management around inlets. There were several other legislative directives that required the CRC to look at inlet hazard areas and the feasibility of eliminating these areas. There was also a legislative directive to look at streamlining the permitting mechanisms associated with inlet dredging projects. The Regulatory Reform Act asked the CRC to look at all of its rules and reevaluate the merits of existing rules. In December the CRC decided to combine all of these efforts into a single, comprehensive inlet management study. Since the last meeting, staff has discussed with the Executive Committee how to put this together. We have come up with a list of topics to be included in this study. We will have regional hearings to solicit input from local governments and stakeholders about issues associated with inlets in their areas. We will be looking for a range of management options that can be built into the inlet management strategy and build on the recommendations that we received from Caswell and Bald Head Island during the Cape Fear River study. Written comments will be accepted until April 15 and summaries from the meetings and comments received will develop the preliminary findings and recommendations to the CRC for consideration. The legislature will be notified of our developments by the end of June. By the July CRC meeting we will have final draft findings and recommendations for the CRC to review. In the fall we will take these proposed rulemaking changes out for public comment and have a final report to the Governor and legislature by the end of the year.

**Staff Rules Review Recommendations (CRC 14-19)**

**David Moye**

David Moye stated that DCM staff conducted a comprehensive review of the CRC rules to find ways to improve the permitting process. This review was based on permit process and procedures, impacts on customer service, internal/external communications, regulatory overlaps and redundancies, ineffective, burdensome or otherwise unnecessary rules and procedures. The list of changes was then prioritized for presentation to the CRC. There were four specific items to bring to the CRC. The first was the streamlining of exemptions for single family residences (7K .0208). This exemption was made effective in 1984. This rule allows single family residences and land disturbing associated with them in the estuarine shoreline within a distance of at least 40 feet from the water to the 75 foot mark. When that exemption was written we only had the 75 foot estuarine shoreline, now we have the coastal shoreline rules which implemented a 30 foot area of environmental concern adjacent to public trust or inland waters. In the exemption it requires notification of adjacent property owners. If the neighbor refuses to sign then you can’t meet the requirement for the exemption and will be forced into the Minor Permit process. We would like to remove the signed statement requirement for the exemption for a single family residence. Also in the exemption is an expiration date of one year. We would like to change the expiration date to three years. All of these exemptions would expire on December 31 of the third year. This will keep it consistent with the Minor and Major Permit expired. Also in 7K .0208 is an exemption for an accessway to the water. If the structure was exempt then we will also allow a six foot wide access to the water. During some of the rule changes that have happened over the years there have been
things that have been exempted from the buffer portion of the shoreline. The exemption language was changed to pull in that reference (7K.0209). That reference is incorrect. 7K.0209 talks about exemptions for shore parallel boardwalks. This is an inconsistency that we would like to change. In addition to removing the incorrect reference, staff is proposing to come up with wording that allows not just wooden walkway access to the water but also other materials that can be used for access. The third change will require more discussion, but we would like to consider eliminating the beachfront high hazard AEC jurisdiction. The beachfront high hazard AEC is defined as the area subject to high velocity waters on a storm having a one percent chance of being equaled or exceeded in any one given year (the 100-year storm, the V-Zone on FEMA flood insurance maps). Eliminating this AEC does not eliminate the Ocean Erodible Area of Environmental Concern or the Inlet Hazard AEC. Within the High Hazard AEC jurisdiction there is an exemption in 7K.0213 that allows construction within in the beachfront high hazard AEC but it requires a site visit by DCM field staff or LPO. Staff's position is that this rule has not been updated since 2002 and before we can move forward we should reach out to local governments and the state's floodplain management program to determine if the CRC's rules are up to date and consistent with the state and local floodplain rules. We also need to see if there are any location specific credits that are gained through the National Flood Insurance Program as a result of the CRC rule. Are the local governments relying on the CRC rules, rather than through their own local ordinances, with respect to specific standards in 7K.0213? If the answer to all of these is no, then the elimination of this AEC would remove a significant number of properties from the permitting jurisdiction along the North Carolina coast. Those properties would still be required to comply with the NC Building Code and the Flood Damage Prevention Ordinances, but would not need an exemption from CAMA. This would reduce the regulatory burden without removing any of the environmental protections. The last proposed change would streamline the General Permit associated with upland boat basins (7H.1500). This allows maintenance excavation within a manmade canal or basin and new basins as long as they are constructed off of existing manmade systems. If you live on a canal system and you want to cut a boat slip into your yard you can use this General Permit. There are use standards associated with it. The General Permit for the excavation is $400.00 if it is over 100 cubic yards (if it is under 100 cubic yards then the fee is $200.00). After digging out the basin there are three exposed slopes that should be protected. If the property owner wants to put in a bulkhead then they have to pay for a General Permit for a bulkhead which carries a fee of $400.00. If they want to put a boathouse or a dock then they would pay an additional fee of $200.00 for that General Permit. Staff is proposing to be able to issue one permit for excavation then we would allow them to bulkhead as part of the permit. That would not allow them to go out into the existing canal system and bulkhead that part. Staff would like the CRC to consider capping the fees on a General Permit. This would reduce the incentive for violations or going through the Major Permit process.

Bill Naumann made a motion for staff to come back to the CRC with proposed rule language on these changes. Marc Hairston seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

**ACTION ITEMS**
Fiscal Analysis for 7H.2600 General Permit for Mitigation & In Lieu Fee Projects (CRC 14-04)
Mike Lopazanski

Mike Lopazanski stated this rule was started in early 2013. The current General Permit for a mitigation project is limited to the Ecosystem Enhancement Program for the construction of stream and buffer projects. Private entities were not eligible for this General Permit and had to go through
the Major Permit process. In 2010, the EPA issued guidance that required all mitigation projects to have upfront coordination and included projects of the EEP. Now since everyone has to go through this same process, we feel comfortable in expanding the use of the GP to all mitigation banks and in lieu fee projects.

The fiscal analysis shows the real savings is in the permitting processing time. A Major Permit requires that design work accompany the application which adds about $1000 to the costs and that won’t be required under the amendment. We normally see one permit every two years for these projects. There will be about $3000 worth of savings in a ten year period. This amendment will not have an impact on NCDOT permits. DCM could see an additional $400 per year in permit fees.

Renee Cahoon made a motion to approve the fiscal analysis for 15A NCAC 7H .2600 for public hearing. Bill Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Science Panel Mad Inlet Assessment & Public Comments on 7H .0304 Inlet Hazard Areas and Unvegetated Beach Designations (CRC 14-05)
Mike Lopazanski

Chairman Gorham opened the meeting up to public comment on 7H .0304.

Ron Watts, Mayor of Sunset Beach, stated I am here representing our Town Council and the citizens of Sunset Beach. I want to thank the DCM staff for their cooperation through this comment period. Our Council has asked me to come speak on their behalf to make sure our position on the topic is clear. The Council passed a resolution opposing the removal of the inlet hazard designation in December by a 5-0 vote. We have two points to stress. The first is there appears, at least to us, to be some confusion on how this review got started over ten years ago after the recent Science Panel discussion. From the best that we can determine an informal request came from the town staff and planning board representative in 2004. Neither of them had counsel or planning board approval to make a formal request. It appears the CRC made a recommendation back to the Town for the Town to table the request or it would be rejected. In the meantime the CRC was going to conduct a study on inlet management practices. Moving forward to 2010, it appears the CRC first adopted a motion to remove the inlet hazard area designation for Mad Inlet and then at the same meeting decided to table that decision until a full ocean inlet study was completed. Now we are four years later and it appears the staff is embarking on the development of an updated management program that we just heard about and our community has been invited and will participate in one of the upcoming public hearings next month. We are not really sure of the need to move forward with a decision at this time. Second, I am a business man and not a scientist. Mad Inlet seems to currently lay in some sort of undefined hazard state for inlet management. Yes the inlet is technically closed and has been since the late 1990’s, but it is a hazard area. Several citizens have pointed out in their comments to you how this inlet has had the habit of reopening for a period of time. We have been fortunate to not have storm activity in our area since the mid-1990’s. The last storm to directly hit our area was Tropical Storm Hannah in September 2008 which came in at the Little River Inlet just south and west of Sunset Beach. That storm leveled most of the frontal dune structure that had built up on Bird Island. It is also true, as you have read in some of the public comments, that the area currently gets washover from the ocean and on an occasional high tide. This description to us fits not only Mad Inlet, but other locations along the coastline. There was a full house for the public hearing on this topic in November and you have had the chance to read the summary comments from that
meeting as well as the written comments submitted later. I believe all but two speakers and one writer opposed the change in the inlet’s designation. What our Council respectfully requests from the CRC members is to reaffirm the decision made in 2010 to table any decision on Mad Inlet’s status until the full ocean inlet management program is reviewed and updated by the CRC.

Rich Cerrato, former Mayor of Sunset Beach, stated I would like you to delay any decision related to Mad Inlet’s designation. My concern is the possibly fraudulent process as to how this petition was initiated to the CRC, which appears to have elevated Mad Inlet as a priority item. According to the Sunset Beach Town Clerk there are no official records pertaining to Mad Inlet or any discussions, request or vote taken by the Sunset Beach Town Council to remove Mad Inlet as an inlet designation in 2004. Please refer to my attachment at the bottom of page one where it states, “now therefore be it resolved that the Town Council of Sunset Beach petition the Coastal Resources Commission to remove the inlet hazard designation from the properties located on the western end of Sunset Beach”. Since this petition request is patently untrue and knowingly misrepresents the Town of Sunset Beach, would you please explain as to how the Coastal Resources Commission can proceed with any decision based on the attached fraudulent petition request? I urge all of you to defer your decision today. What is the rush?

(Written comments provided)

Ed Gore stated I am the owner of the property in question that borders on what was an inlet 18 years ago. I have owned the property and my father before me for more than 50 years and we pay taxes on it. No special request was made by anyone, but the former mayor conducted every way that he could to find something illegal about it. I waited for 40 years plus for the state to study it. Much of it never was in the inlet hazard. It had all the features of an estuarine creek. The inlet moved completely off the property that I own and all I am requesting is that the CRC evaluate the study that the Science Committee has done and listen to no one else because I am not a hydrologist or an engineer, but I have lived there and seen how the system works. I am in agreement with the Science Committee with whatever they would recommend. The unintended consequence is the 5,000 square foot rule. You can’t build a bridge to the 1,600 feet that I own with a 5,000 square foot restriction on a structure as classified in the inlet hazard area. That is the method that is being used for the opposition.

**Public comment session closed.

Science Panel Mad Inlet Assessment & Public Comments on 7H .0304
Inlet Hazard Areas and Unvegetated Beach Designations (CRC 14-05) – continued

Mike Lopazanski stated there is a second change associated with this change to 7H .0304 and that is the removal of the Unvegetated Beach designation in the vicinity of Hatteras Village. The CRC’s rules establish a measurement line where vegetation has been destroyed or doesn’t exist naturally or due to storms. In this case the area west of the inlet breach on Hatteras Island was designated as an Unvegetated Beach due to Hurricane Isabel in September 2003. The establishment of a measurement line allowed for the determining of setbacks based on that measurement line. You have a copy of the map that shows the Unvegetated Beach areas. Since 2010, we have found that the vegetation line has recovered to the extent that we can now resume using it for the establishment of setbacks. One comment was received at the public hearing in November and it was supportive of the action.
The inlet hazard areas were established based on a 1978 study that was amended in 1981 for areas that were subject to the dynamic influence of ocean inlets. Quite some time had gone by without these areas being updated. In 2006, at the request of the CRC, the Science Panel began to look at updating these maps. There were cases where some inlets had migrated out of the inlet hazard areas. This inlet hazard update report was completed in 2010. The recommendations that accompany the report include the removal of the Mad Inlet inlet hazard area designation. While the CRC continued their discussion of the revised inlet hazard area maps, the removal of Mad Inlet was approved by the CRC under a separate action. The inlet hazard area designation does not preclude development in these areas. It does affect the density of structures. There are 126 properties that are located in this area. Less than ten are undeveloped at this time. If the inlet hazard area designation is removed these areas would no longer be required to adhere to the density and size restrictions. It would be a benefit to any large, previously unsubdivided property and provides a greater development potential. A map was provided of the Mad Inlet IHA. We held a public hearing in November and 48 people attended with nine speaking against the action and two in favor. Most of the comments dealt with the scientific basis for the decision as well as the Science Panel’s actions with regard to the overall inlet hazard area analysis and update report. During the public hearing we also had two comments in favor of the action and referenced the years of accretion in the area and the stability lends to the area by the construction of the Little River jetties. Since the public hearing we have received 40 written comments. All of the written comments were opposed to the action. We received one written comment in favor of the action. At the December CRC meeting the CRC reviewed some information provided by Spencer Rogers regarding the stability of the area. Since there was a question to what degree the Science Panel addressed Mad Inlet specifically in their inlet hazard update report, the CRC requested that the Science Panel go back and look at the situation and conditions at Mad Inlet. The construction of the Intracoastal Waterway had a large impact on the hydrodynamics of the area and allowed the larger inlets to become more efficient and stable which reduced the tidal volume of the smaller inlets, such as Mad Inlet. The Little River Inlet jetties also had an impact on Mad Inlet. Tubbs Inlet reopening also affected the sand supply on Sunset Beach. Hurricane Hazel opened the channel, but also began the filling of the tidal basin that was supplying Mad Inlet. The Science Panel noted that the constant washovers were bringing fill into the marsh area in the location of Mad Inlet and due to the filling associated with this particular area, it was noted that a breach would be more likely west of Bird Island as opposed to the former location of Mad Inlet. Other considerations that were taken by the Science Panel were that a large body of water was necessary to keep an inlet open and that is one of the factors applied in the analysis of inlet areas for the 2010 study. The shoreline variability associated with Little River Inlet disappears when you get to the location of Mad Inlet. It was also noted that there were similar low lying areas prone to overwash on Topsail Island and the Outer Banks. When it comes to Mad Inlet, while it is still subject to overwash and breaching, conditions don’t exist to support the long-term reopening of this area. The Science Panel made one slight change to the recommendations. It didn’t change the substance of the sentence, but did make it clearer. The main finding with regard to Mad Inlet was that it is presently not an inlet and if it were to breach is not likely to persist as a viable inlet. The Science Panel also wanted to remind the CRC that the present inlet hazard areas are severely out of date and need to be updated, and that the CRC should consider other high hazard areas that could be addressed. Staff response to the public comments is that the findings of the Science Panel support the original findings in the 2010 inlet hazard area boundary update report. The inlet hazard areas are not intended to prevent development entirely, but limit the scale of development in natural hazard areas that are especially vulnerable to erosion, flooding and other adverse affects of sand, wind and water because of their proximity to dynamic ocean inlets. This area to be removed from the inlet hazard area is still subject to the ocean hazard areas rules including setbacks, dune protection, and requirements for flood insurance. When it comes to the
CRC’s authority to address areas of environmental concern, CAMA requires a periodic review of AECs. New areas can be designated and old areas de-designated. Areas should not be deleted unless it is found that the conditions upon which the original designation was based shall have been found to be substantially altered.

Larry Baldwin made a motion to adopt the amendments to 15A NCAC 07H .0304. Greg Lewis seconded the motion. The motion passed with ten votes in favor (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Wynns, J. Simmons, Snipes) and one opposed (Dorsey).

PUBLIC HEARINGS
15A NCAC 7H .0312 Technical Standards for Beach Fill Projects
Matt Slagel
Matt Slagel stated the technical standards for beach fill projects, also known as sediment criteria rules, are intended to ensure that sand use for beach nourishment closely matches the sand on the existing beach. The rule requires that the sediment intended for use as well as the sand on the existing beach be analyzed for grain size and composition and that they be within defined ranges of similarity before the project can begin. The proposed rule change reduced the number of required samples in smaller borrow sites and would also allow slightly more granular sediment to be placed on the beach while continuing to limit fine sediment and gravel material.

No comments were received.

15A NCAC 7H .1204 and 7H .1205 Docks and Piers
Mike Lopazanski
Mike Lopazanski stated this amendment modifies how the CRC defines the use of platform so boats stored on platforms are not counted as docking spaces. The General Permit currently allows for two boat slips or four for a shared pier. This change would allow for the storage of boats on already permitted platforms to not be counted as a slip. The public comment period closes on March 17.

No comments were received.

15A NCAC 7H .1305 Construction of Boat Ramps
Tancred Miller
Tancred Miller stated this amendment will authorize the construction of private boat ramps with an associated access dock and protective groins under a single General Permit and a single permit fee. This action will simplify permitting for applicants and lower their permitting costs since applicants are currently required to obtain three permits and pay three application fees for this activity. The amendments would also reduce the staff time required. The estimated fiscal impact for these amendments is an annual savings of $4,640 to permit applicants and a corresponding reduction in fees to DCM.

No comments were received.

ACTION ITEMS
Land Use Plan Certifications and Amendments
Town of Emerald Isle Land Use Plan Amendment (CRC 14-06)
Maureen Meehan
Maureen Meehan stated the Town of Emerald Isle is requesting an amendment to the 2004 Land Use Plan. The amendment will change 12 parcels of land in the Commercial Corridor to Village West Area. This change will allow more flexibility for development and redevelopment opportunities. The request is consistent with the 7B planning guidelines and state and federal law. Staff recommends approval of this amendment.

Renee Cahoon made a motion to approve the Emerald Isle Land Use Plan Amendment. Bill Naumann seconded the motion. The motion passed unanimously (Andrew, Hairston, Lewis, Baldwin, Naumann, Cahoon, Gorham, Dorsey, Wynns, J. Simmons, Snipes).

Overview of Inlet Management
NC Coastal Management Program Permitting Jurisdictions & Regulatory Framework
Matt Slagel/Doug Huggett

Matt Slagel stated there are twelve developed inlets in North Carolina. There are seven undeveloped inlets. A developed inlet is one that has development in the immediate vicinity of the inlet. Some of the undeveloped inlets may have roads, but no structures. All of the developed inlets are south of Cape Lookout and most of the undeveloped inlets are north of Cape Lookout. There are two broad classes of tidal inlets in North Carolina, oscillating and migrating. Oscillating inlets include Ocracoke, Bogue, and Rich inlets and they are generally positioned along river channels. Migrating inlets include Oregon, Mason, and New Topsail inlets and are generally shallow and migration occurs where the updrift barrier elongates in the direction of net littoral transport and the downdrift shoreline erodes. A distinction can also be made between shallow draft inlets and deep draft inlets. Shallow draft inlets are dredged to depths of about eight feet. There are two deep draft inlets in the State. Beaufort Inlet is maintained to a depth of 45 feet and the Cape Fear River Inlet is maintained at 42 feet to serve the Ports. Inlets act as conduits for the exchange of water and sediment between the estuaries and the open ocean. With the rise and fall of the tide, water and sediment move back and forth. The zone of inlet influence on adjacent barrier islands is a function of the throat size and the ebb tidal delta geometry.

Doug Huggett stated CRC rules 7H .0300 set forth a broad category called an Ocean Hazard Area of Environmental Concern. These areas of environmental concern are your designated jurisdiction and regulatory areas. Within the broad category of the Ocean Hazard AEC, the rules further break down the category into four subcategories including the Ocean Erodible Area, High Hazard Flood Areas, Inlet Hazard Areas, and Unvegetated Beach Area. The CRC rules require construction setbacks off of the oceanfront. The policy of the Commission is that the setback is based off of the erosion rate and structure size. There is a significant amount of regulation relating to erosion control structures. A good portion of rules relating to inlet and beach management deal with beach and inlet projects such as inlet relocation projects, terminal groins, and beach nourishment. The oceanfront setback principal is that the larger the structure and the higher the erosion rate, the farther back the structure can be developed. There are special considerations for linear infrastructure such as water/sewer, power lines and roadways. The Inlet Hazard Areas are areas especially vulnerable to erosion and flooding due to the proximity to ocean inlets. The IHA boundaries were designated in 1981. Within the IHA, the CRC prohibits structures greater than 5,000 square feet. There are also density restrictions and dune building is prohibited. If you have a structure in the inlet hazard area and you want to protect it with an erosion control structure, the only structural approach the CRC rules allow for are the sandbagging of imminently threatened structures. Sandbags that have been permitted can stay in place for up to eight years if the
community is actively pursuing some type of beach nourishment, inlet relocation project or terminal groin and sandbags may be used to protect an imminently threatened structure more than once. Sandbags can also be used to protect septic systems. One of the other options a community may have to respond to erosion is beach bulldozing. General Permit 1800 (7H .1800) allows beach bulldozing landward of the mean high water mark in the Ocean Hazard AEC, but does not apply to the Inlet Hazard Areas. 7H .0308 states that no new dunes shall be created in inlet hazard areas. For all communities that do beach nourishment and inlet relocation projects, project timing is important. The CRC requires that we figure in project timing into our permit actions. Project construction has to be timed to minimize adverse effects on biologic activity. The CRC’s sediment criteria rules used to be one sentence. Technical standards were then set up and put into the CRC rules (7H .0312). Recently we have made some rule changes to reduce the burden on project applicants for sampling and analysis. These changes were based on DCM experience with implementing the rules. There are a lot of different ways that beneficial use of dredged material can be utilized. DCM is supportive of the concept and we want to figure out ways to keep sand from nourishment projects in the system. We have had a couple of inlet channel realignment projects in the past. The first was the Mason Inlet project that took place 10-12 years ago. This project was designed to move the inlet channel away from some threatened structures to a more beneficial location for all parties involved. The project is working very well. For the permitting of this project we had built into the permit process the flexibility to allow the project to change over time based on lessons learned. Everyone here knows the history of terminal groins. Legislation was passed a couple of years ago that was clarified in SB151 last year to allow for four terminal groins to be permitted. There are currently four communities that are in various stages of pursuing one of these projects Bald Head Island, Figure Eight Island, Holden Beach and Ocean Isle Beach. Something else we are heavily involved with right now is an effort to try and do a programmatic approach to allow local governments and municipalities to obtain permits to do some of the work that the federal government had been doing. We are working on the inlets of Bogue, New Topsail, Carolina Beach, Lockwoods Folly and Shallotte. We are trying to determine the costs and the processes to go through for the local government to obtain all of the state and federal permits necessary to allow the local government to maintain the shallow draft inlets to current dimensions (and possibly greater dimensions in the future). This process may be made easier by a recent agreement between the Army Corps of Engineers and the Department of Environment and Natural Resources. It is anticipated that this new Shallow Draft Navigation Channel and Lake Dredging Fund that the legislature set up last year is going to try to cover fifty percent of the costs of the shallow draft programmatic effort that we are undertaking. Session Law 2013-138 required that state permitting agencies work to streamline permitting for this type of activity. It is important to DCM, in fact we were already working on this when the legislation was passed.

**Inlet Dredging Panel Discussion**

Chairman Gorham introduced the panelists and thanked them for their participation.

Layton Bedsole, New Hanover County Shore Protection Coordinator, stated on occasion we will have five inlets in New Hanover County. Our northern border is Rich Inlet; our southern border is Corncake Inlet. Rich Inlet is in Pender County. Corncake Inlet is in Brunswick County and is full of sand thanks to Hurricane Floyd. We don’t mind that. There are three inlets that New Hanover County manages: Masons Inlet, Masonboro Inlet, and Carolina Beach Inlet. Mason Inlet was the first relocated inlet in North Carolina in 2002. It was privately funded by the Mason Inlet Preservation group. The County manages that permit and the project for that group. In 2002, there was much consternation being the first relocated inlet. That consternation generated a lot of consensus science that led to a lot of mitigation and monitoring. Have your science ready, have it
reproducible, and have it available in a manner that can be shared with the public easily. Within that project we raised 15-20 acres of state lands. Over the past 12 years we have managed those state lands. Prepare for that management ahead of time. There are agencies, non-profits and individuals that have the luxury of being specifically resource oriented. Those of us that hold the authorizations have to look at the resources holistically. If in your project there are resources that have needed additional management then address it up front. Masonboro Inlet is the only navigation channel on the State’s coast that is managed through jetties. It was also one of the first designed inlet systems to incorporate CSDR management efforts. It traps sand along Wrightsville Beach and allows sand to bypass into a designed borrow area. We take that sand and put it on the beach. There are negatives. The spit that grows in the borrow area does encroach on the navigation channel. We relocate that sand back on the beach. It also interrupts long-shore drift of sand to Masonboro Island. When OMB funds the Corps they also put sand on Masonboro Island as part of the mitigation for the navigation feature. Next year, if given the opportunity by New Hanover County, I am proposing to acquire the same permit capability that the Corps has on Wrightsville Beach. In the application we would be applying for the coastal storm damage reduction element, not the navigation element nor the mitigation of the navigation element associated with a Corp project. Carolina Beach Inlet may have been North Carolina’s and maybe one of the nation’s earliest habitat restoration, water quality restoration, ecosystem restoration projects ever. The Corp has maintained Carolina Beach Inlet to the best of its ability with the 1950’s technology that it has used. We need to move beyond that. We are going to need the CRC’s help with allowing contracting mechanisms to combine our capabilities to increase the projects.

Rudi Rudolph, Carteret County Shore Protection Manager, stated there is a daunting task in front of the Commission. There are 20 inlets in North Carolina. Five of them are north of Cape Lookout and 15 south of Cape Lookout. Some of them are maintained as deep draft harbors and some are tied to drainage. We have been screaming at you that each inlet needs to be treated differently, but we want easy rules that can apply uniformly. We would like to see a deep draft IHA and a shallow draft IHA. Morehead and Wilmington would be the deep draft IHAs because they are deep and aren’t allowed to move. The Corps has to maintain the inlets at the least cost and this results in sand being taken and dumped off shore. If the Corps can do it under the least cost method then they will put some of the sand on the beach. The Corps hides behind the least cost method and ignores the environmentally acceptable and engineeringly sound pieces. The local communities have to deal with the consequences of that. If some of those consequences include Geotextile tubes, sandbags or terminal groins then the small consequences are very small when compared to the overprint of channel dredging and offshore dumping. The CZMA deals with beneficial use to the maximum extent practicable. In 1992, it was amended to that affect and since then Morehead and Wilmington have been deepened and the sand still goes outside the system. The Dredged Material Management Plan was just released and an overwhelming majority of the sand is still being dumped well outside the system. The state needs to take a more active role in this resource. There are Port issues and we think the federal government is doing us a favor, but we don’t want these types of favors if it is going to result in a bunch of sand going offshore. I thought the Science Panel was going in the right direction with their redefining of boundaries using a standard deviation of shorelines. Keep it simple and don’t get involved with more lines in the sand. There are other things we could do like grandfather the existing structures and allow them to be rebuilt to their original size if it were required. New development should not be allowed further seaward than adjacent properties and size. Temporary erosion control structures need to have a different set of standards if they are located in IHAs. Most of the problems with sandbags are located at the inlet shoulders and staff has altered the time frames, but they need to be reexamined again and allow the bags to stay until a final solution comes to fruition. If a sandbag structure goes in is there a big difference between a sandbag
and a structure on the oceanfront or just a structure? The boundary of a lot of these IHAs goes into the water, but that is just a token because there is no policy in the water. Either extend it into the water and do something about it or don’t extend it into the water. We also need to get a better handle on dredging windows and moratoria. This is a federal versus a state issue. In theory terminal groins don’t need bypassing. They should be designed to develop an accretion filet then the extra sand is allowed to go around. Back-passing to maintain the accretion filet should be allowed. There are only a couple of areas that have static lines in IHAs, but are channel maintenance events being dredged to avoid the static line exception? If that is the case then maybe we could explore that if it is truly for navigation. Emergency permitting, sandbags and beach bulldozing could have different standards in IHAs.

Eric Olsen, President and principal engineer of the Coastal Engineering Firm of Olsen Associates, stated I am here as a Floridian. I submitted a White Paper having to do with the Florida experience and my comments today will be a synopsis of that White Paper. We have been proactively dealing with inlet management since the 1980’s. It is incorporated into our State’s beach management program. In Florida we have 60 tidal inlets, however only about 16 of them are on the east coast. They are very similar to North Carolina’s except that almost all of the Florida’s are developed or improved for navigation. Florida developed much earlier than North Carolina. In Florida we have 825 miles of sandy shoreline and 399 of those are defined as critically eroded. The rule of thumb is that about 80% of the state’s beach erosion problems are attributable to stabilized and improved inlets. In 1998, we passed legislation to fund a beach management program. The state contributes about 30 million per year to contribute to beach restoration. Once we got into this program it became obvious that we also needed to address inlet management since the inlets were the genesis of our most severe problems. In the 1960’s and 1970’s Florida realized, too late, that the political players responsible for navigation project construction and maintenance shunned all or portions of their responsibilities for the shoreline impacts of inlets. There is a technical myth that the level associated with a federal navigation project is a multiple of the length of a jetty. We know today that is not accurate. The primary goal of inlet management legislation is to minimize an inlet’s adverse impacts on adjacent sandy shorelines while simultaneously allowing for safe and reliable navigation through the inlet. Today, almost all material that comes out of federal navigation projects goes back on the beaches of the state. Not in the nearshore, not in the offshore, but on the beaches. In very few instances does the state or locals have to contribute. This includes the Intercoastal Waterway. There have been a few lessons learned over the years. The distribution of dredged sand at stabilized or improved inlets must be guided by analytically derived sediment budgets. We have the tools to develop detailed sediment budgets through modeling. In many instances we find that the inlet shoals are the primary sources of beach compatible material for beach restoration. When you use these inlet shoals there needs to be suitable numerical analysis to impact analysis to determine whether or not there are adverse impacts to either of the abutting shorelines. The division of sand in an inlet generally must be based on measured or predicted losses from the adjacent beaches. Sometimes you can have a stabilized inlet and have dramatic differences in the erosion rates on either side of that inlet. Legislatively states are different, but the fundamental issue that involves inlet management are similar. North Carolina is in a very unique position to capitalize on the experience of others, but principally on the coastal engineering technologies available. I look forward to assisting the CRC with any advice in the future.

Barry Holliday, Executive Director of the Dredging Contractors of America Trade Association, stated you can write down all the words you want for regulations but Mother Nature will ignore you. You are blessed and cursed with so many inlets and beaches, but it is an outstanding effort that you are undertaking an inlet management program and trying to do it in conjunction with dredging.
I represent the dredging industry, but I feel I represent a Corps of Engineer’s position. I spent an inordinate amount of time lobbying in Washington to try and get the Corps more money for exactly what we are talking about today. Just about every one of your inlets is not natural. It has been impacted and dredged and messed with. That puts in context both how you regulate and manage these systems. We would offer to you that there are other ways to maintain inlets than the way they have been done in the past. It is a funding challenge. The Corps is the premier federal agency for managing, contracting and overseeing the navigation system for this country. If the CRC could encourage Congress and NC Representatives for the passage of a Water Resources Bill that would give full use of the Harbor Maintenance Trust Fund, it would have spent its time wisely. There is some opportunity for this group to take a new look at the environmental challenges, windows, restrictions and sand sizes. The dredging industry is not foreign to the challenges of environmental windows and managing the disposal of dredged material in the midst of every endangered species that you can imagine and all of the biological habitats that we place dredged material in. It is a challenge but it isn’t an obstacle. It takes communication and a proactive dialogue with those that have interests on both sides and North Carolina is in a good position to move forward with something that would demonstrate further opportunities to do dredging in some of the non-dredging windows. The concept of an inlet being a piece of a coastal system and that this piece connects with the AIWW, rivers, bays and other channels creates a challenge in the regulatory process that you go through. The idea that all dredged material should be used for beneficial uses is a great idea, but it comes with a huge price tag. You need to plug that in to the reality check. It is not always straight forward. I had a chance to work with the inlet research program all around the country and I am comfortable in saying that while there are lessons to be learned from the Florida experience, North Carolina has some unique challenges that would preclude it from being able to automatically plug into the knowledge base gained there. The tools, monitoring, and modeling we have today are critical to being able to make much better decisions. The placement of sand on adjacent beaches can be done in various ways, but you also need to talk about stockpiling sand for the inevitable storm events. These storm events are going to become more and more violent. The changes in our weather patterns would make it important to find ways to keep sources of sand available.

Todd Miller, founder and Executive Director of Coastal Federation, stated I know Bogue Inlet the best since that is where I have spent most of my time. Anyone that has spent time in our inlets knows how beautiful they are, how powerful they are, and how fickle and unpredictable they are. I would ask the CRC to consider the following six recommendations: strive to manage inlets in a way that perpetuates their natural values and functions; balance human needs by respecting natural inlet processes and functions; minimize inlet management costs in working with and not against natural systems; use regional sand management to provide for large-scale beach renourishment rather than relying on mining inlets; maintain existing limits on new land development within hazardous inlet lands, and look for economical opportunities to strengthen these development standards when feasible; and evaluate what works and does not work with inlet management, and learn from these experiences. Respecting the natural functions of inlets is key to the success of management efforts. We’re lucky that most inlets in our state are largely natural with only minor impacts in how they function that have resulted from human management activities. The two big exceptions are Beaufort Inlet and the Cape Fear River. The more heavily dredged and modified inlets become the more it costs to deal with the consequences of these inlet manipulations each year. Most land use patterns near North Carolina inlets have now been established and all these lands are subject to state and local development regulations. Most inlets are critical habitat for many important species of fish and wildlife. The shorelines and channels around inlets are heavily used for boating, fishing, and swimming which brings huge economic return to the coastal community. Future management of our inlets should reflect their current status and uses as well as the inevitable hazards of living on
shifting barrier islands with rising seas and constant storms. I would ask the CRC to place the highest priority on maintaining the ability of inlet systems to function naturally. This doesn’t mean that inlets can’t be managed. Examples of management measures that work with and preserve the natural ways inlets function include strategic dredging of natural channels to aid in recreational navigation as well as realignment of channels in inlets to help avoid erosion hotspots on adjacent islands. These measures must be done in a way that doesn’t disrupt the natural inlet processes. Second, emphasis on avoiding escalating the extent of disruptions to natural processes within inlets that are already significantly modified and instead seek ways to replicate natural inlet processes where that may still be feasible. We need to limit how much sand can be mined from inlets for beach renourishment projects. Beneficial use of dredge material for established navigation channels may be appropriate but that will only yield limited amounts of sand. The extent of inlet dredging should be based upon established navigational requirements, and not the amount of sand needed for beach renourishment. Sand for renourishment should be found outside of the inlet systems as part of regional sand management planning. There should be adequate monitoring and evaluation criteria on permits issued for inlet management. It is vital to learn from the past successes and failures and document how well previous management measures worked, how much those measures cost and what environmental consequences occurred. Monitoring and evaluation need to be part of project design and not conducted piecemeal as an afterthought. It is critical to require adequate record keeping up front so that projects can be fully analyzed. These recommendations align with several real world conditions that we’re facing. Most local governments support minimizing development in these highly hazardous locations or at least not increasing the potential for development beyond existing standards. Paying for inlet management is increasingly a shared partnership between local and state government and we have to find economical ways to accomplish this management because money is very limited and there will never be enough to go around. The cost of providing services and insurance in these hazardous areas will continue to increase and place more of a burden on property owners and government agencies. Federal environmental laws that protect habitat for fish and wildlife already play a big role in governing inlet management and they cannot be ignored when devising future inlet management strategies.

Jeff Richter, Environmental Resource Section of USACE Wilmington District, stated as we have all heard funding is a big problem for the Corps of Engineers. The Corps’ navigation program only maintains certain inlets. We do not maintain all of the shallow draft inlets in North Carolina. With the funding limitations we have a limited dredge fleet. What those guys do is amazing with the limitations that are put on them. The funding impacts what they can do and when. The cost share programs that we have in place have been a huge help. We do have some environmental restrictions. In certain projects where we have determined that the environmental impacts are minimal or non-existent we work very closely with the federal and state resource agencies and have gotten a little bit of relief so we can work those projects when we can. As far as our coastal storm reduction projects, the recharge of our borrow area is very tricky and we are in the process of looking for more borrow areas that are going to be suitable for future projects.

Chris Gibson, President TI Coastal a coastal engineering firm in Wilmington, stated one thing we need to realize is that as the state moves forward with working with the Corps and/or locals to manage these inlets, we are being asked to manage one of the most dynamic situations anywhere on Earth. For those of you that know me, you know that I ran a commercial fishing boat in high school and college. The inlets between Bogue and Shallotte were my office. I have been in and out of those inlets in the daylight and dark for many years. The father of the mate that I had in high school was in the upper level of the Corps and one night at the dinner table we were talking about dredging and the sidecast dredge was dredging in Topsail Inlet. I asked why the dredge wasn’t working where it
seemed like it should be and I got a great explanation of the federal authorization process. Quite simply, it took an Act of Congress to change how things are done once things are federally authorized. Studies would need to be done on how the inlet was working and what the dynamics were and by the time the study was done it may no longer be what we need to do. It is a dog chasing its tail. This past year working with Topsail Inlet we were in the permitting process and getting down to the end and most of the issues don’t come from Coastal Management or the state agencies, but from the outside and federal agencies. We get letters from National Marine Fisheries Service and US Fish and Wildlife Service saying we don’t need a management plan, we need an adaptive management plan. How does that work? When you look it up, what you need to do is come up with a plan for dealing with every consequence that we could not foresee. We had to plan for what we could not know. That is a difficult situation. We looked at what we did at Mason’s Inlet and looked at what we did on each project and then the next project we would tweak it and make it better and more economical. When you have a federal authorization on these projects, they don’t necessarily have a local permit. You still have to go through the permitting process just to do the exact same work as the feds. It’s relatively easy if you keep it the same, but it’s an extra process we have to go through. In the permitting process you are asked for the purpose of what you are doing. Dual purpose is very difficult. When you want to do navigation maintenance and beach disposal that’s ok, but navigation maintenance and beach management are seen as two different goals and may have competing interests. When the State went down the road with the BIMP we had the realization that these are holistic systems. There is accretion in the inlets and erosion on the beaches. At Mason’s Inlet the accretion rate is nearly identical to the erosion rate on the beach. If we continue to manage the two together then we have the resources that we need. That sand is a valuable resource. When we are looking at local projects we have some flexibility. Within the permitting process we have a lot of flexibility that we don’t have at the federal level. Beneficial use can be a purpose and not just a secondary benefit. We can integrate beach renourishment and navigation maintenance. We aren’t short on sand; it’s just in the wrong place. We can look at dredge depth versus navigation depth when we look at these. With the Corps they look at the navigation depth and going deeper goes beyond the authorization. When we look at these projects at the local level, why can’t we dredge to 15-16 feet and give ourselves time for some shoaling to occur before we have a navigation issue. If you go to the beach and dig a hole and dig two handfuls up, the first wave fills the hole back in. If you dig out ten handfuls then it might last ten minutes. It’s the same with inlet management and beach renourishment. Another thing we have available to us is adaptive beach design. Tweaking the design by a little bit of elevation change on the beach or a little slope change can make a world of difference in how that particular type of sand behaves on the beach. We need to remember that most of what happens in these inlets and on the beaches is event driven. Modeling gives us a great look at what would happen under normal conditions or specific conditions, but everything is North Carolina is event driven. We need to be able to deal with that. We need to be careful with our permitting rules and regulations, particularly our rules that implement the static line. One size does not fit all. We have looked at this and there is a hard number on it. You end up with a project that will result in a static line unless the Town does a dusting on the beach and then there isn’t a lot of storm damage protection because the fill is so thin. When we make properties non-conforming then it reduces the property value. The static line causes an economic burden. We need to look forward and be proactive. It is better to be proactive than reactive. It is hard to manage a beach when you are in a critically eroded state.

Greg Lewis stated Dr. Olsen said that most of the dredge material is put back on the beach in Florida. In North Carolina we find that very hard to happen. What specifically is allowing Florida to benefit from the sand being put back? Is Florida not using the Corps of Engineers under their least cost method or is there some funding mechanism that is paying for that? Dr. Olsen stated a vast
majority of these are federal projects. A lot of it is compliance with Coastal Zone Management. Interestingly enough, in the state of Florida the Corps of Engineers has to pull a permit. Their political position is that they don't have to pull any permits from the state of Florida. As a result of that all of their projects every ten years have to have a new maintenance dredging permit. The Cape Fear River is a good example here. The Corps is implementing an extraordinarily unique management plan at the Cape Fear River. The genesis for that is the state of North Carolina's Coastal Zone Management Program. If you evaluate how and why the permits were issued. A lot of your inlets are different here. Most of ours are navigation related. Most of our inlets are stabilized in a larger manner than yours. We have inlets that are recreational inlets that have breakwaters, jetties and maintenance programs. All of those have disposal back on the beaches. The state has tightened up their standards and the Corps has attempted to meet that. We have money available once in awhile. The rhetorical question with lowest cost and cost effective is, to whom is it the lowest cost? It is more than the federal interest. This is a long-term partnership and there are agreements between the Corps and the Florida Department of Environmental Protection as to how these things will be addressed.

Suzanne Dorsey asked how we have more influence on the activity of the Corps? The Corps seems to dictate to the state rather than the other way around. I have heard from the panel that the Corps is doing great things, but at the same time we are having a hard time getting what we need. How do we make the Corps more responsive to the needs of the state of North Carolina particularly as it relates to putting sand on the beach and the idea of long-term, forward thinking beach and inlet management? Rudi Rudolph stated the state has let the Corps off the hook. You can say legally that we can't do this or that, but then go the political route. If you tell the Corps that they have to do something and they say we can't and therefore the Port will be shut down then the Governor will call a Congressman and ask for help. This is how hard we need to get into this. Layton Bedsole commented that while we are developing these inlet management approaches we need to stockpile for future uses. This is a New Hanover county perspective, but the Carolina Beach CSDR sand source is within the inlet. The Merritt is the primary maintenance dredging apparatus. If we could get full template dredging and perhaps stockpile that material within the borrow area in the inlet system within the next cycle we could remove that sand and put it on the beach. A lot of our permits read that you cannot handle the material twice. If we could progress from a sidecaster to a hopper dredge so we could place and manage the material in an area that we could pick it up in the future and use within a CSDR then we are looking at a closed loop.

Larry Baldwin asked what the top three forces for inlet dynamics are. Rudi Rudolph stated the channel orientation of the ebb tide delta and the flood channels that can be manipulated. The cross sectional area where the tidal prism goes through and manipulating that causes more volume of sand going out to the ebb tide delta which creates more problems. Eric Olsen stated there are many more quasi-natural inlets here. These inlets are a function of balance between the waves driving the sediment and the currents moving sediment to other locations. With large scale, commercial navigation projects the inlets have to respond to them. They are kept in place in the same location and the dynamic geology of that inlet changes over those decades and the ebb tidal platform will collapse. The same thing happens when you have jetties or a draft commercial channel. The effects are the same once you keep it in place. You will have some areas of the inlet that will accrete, but there is the same volume of erosion on the other side. That sets off major changes in beach erosion that you have to respond to. There are unique applications here such as side-casting. I don't know of any other place on the east coast where side-casting is used to keep a channel open. Not that it can't be a cost effective operation, but there are pluses and minuses associated with it and sometimes it is a short-lived channel life. Larry Baldwin asked what the major types of engineered structures that
would combat these things in deep versus shallow draft inlets would be. Layton Bedsole commented that in the shallow draft approach we hear the phrase follow the deep water. If you look at historical post-dredging efforts in Carolina Beach Inlet it is pretty much the same footprint. While we are developing these management plans if we can have some flexibility within a soft solution that is going to move to some degree instead of saying here is the deep water today and two weeks later it moves just enough and make us poke holes again. Give us some flexibility in the shallow draft inlets.

Frank Gorham asked what if we took Chris Gibson’s concept and said from now on permit designs have to attempt to address not today, but reduce frequency and address something for the next four to five years. The CRC could mandate that we be proactive. Can you engineers design that? Chris Gibson said we are already being asked to do that. If you look at what is happening within the rules, particularly within the static line exception, you are already asking us for a 30 year management plan. We are already heading down that road. Todd Miller stated to explore that option it is important to go back and look at our track record and analyze projects where it has been attempted in the past. At the Bogue Inlet project, the channel was dredged pretty deeply when it was relocated and the statement at the time was that it would assure that the channel would be there a lot longer because it was deeper, but it didn’t last very long. Rudi Rudolph stated that with Bogue Inlet we put a new inlet, we didn’t just dig the existing one deeper. We tried to capture the same volume of water the existing channel was moving. Braxton Davis stated the Division wants folks to be proactive and comprehensive and we have to have a quid pro quo on the other side that if you do all the work up front then we will streamline the permitting mechanism. We are working on that for the shallow draft inlets, and on the beach side with Bogue Banks. We have staff involved with that effort and trying to evaluate the long-term potential to streamline reviews of all events over that longer timeframe.

Frank Gorham stated that in my experience I want us to look at projects that we aren’t doing the best engineering design. Sometimes a dredging window and the 300,000 cubic yards makes us take a band aid approach. Is there a scenario where we would want to expand the dredging window? Layton Bedsole responded yes. The work can be done outside the window with specified stipulations and monitoring. By giving us an extra month on both ends and allowing us to contract in that period gives the contractors more flexibility in doing more projects understanding that if we chose that route we have to implement those monitoring and mitigation measures outside the traditional window. Rudi Rudolph stated the water is warmer in Morehead City so we can only hopper dredge between January and March because of the regional turtle take limit that the Corps administers. So we have to get all of our stuff done by March 31 and then the dredges go to Florida where the water is warmer, there are more projects and there are more turtles. They can dredge in Florida until April. The reasoning is there are so many turtles there that we can’t avoid them so we can send the operations there. These are the types of things where there is flexibility. Mr. Rudolph asked the question of the CRC and DCM, what are you all looking for as a roadmap of this to take a broader focus on inlets and development standards inside the boxes? Eric Olsen stated there is a lot of precedent for dredging and sea turtle nesting in other states. It has to do with the density of the nesting on the beaches. In northeast Florida we do our beach restoration projects in the summer. We have low nesting densities. It is a function of what is reasonable and the potential for impact. We are permitted by the US Fish and Wildlife Service for take. In the event that we kill a turtle or ruin a nest you are permitted to do that. It requires an additional coordination with the US Fish and Wildlife Service but it isn’t impossible. In North Carolina it seems to be impossible because there is a basic agreement that all attempts would be made to work out of season. It can cost you dearly with respect to your beach nourishment costs because the hopper dredge fleet is limited to working in the
channels in the winter months. They are unavailable to North Carolina if you want to do beach nourishment in the summer months. They will be working in the Gulf of Mexico, Alabama and certain places in Florida in the summer months. There would be a tremendous cost savings to the state of North Carolina if you address that issue. Now it is going from turtles into birds and that is a dangerous thing because if you look at those two windows there is probably three months of the year that you can work.

Renee Cahoon stated that it took seven years to get a beach nourishment permit up here because we can’t dredge here in the winter time. The summer time is the only time we can dredge. We have to be more realistic as we move along and realize that the state is segmented and that the conditions on the northern part of the state are not the same as the conditions on the southern part.

Braxton Davis stated we will be having four regional meetings on this issue to get public and local government input. The staff will be working hard to pull together a list of ideas for prioritization. We are working with state and federal agency partners on a variety of things including the endangered species issue.

Chris Gibson stated there were several pieces in the post-Irene projects that made it complex. The project was done in two phases and we did the first phase relatively easily. The first phase was to dredge within the channels and we were dredging solely the shoals that were within the inlet channels and to the depths that the Corps was doing. That took about four months to get it permitted. The plan was to do it again to put back what we lost in Irene. Because of the configuration of the channel and some evaluations of the Corps’ authorizations the channel dimensions we dug the first time were no longer the exact dimensions of the federal channel. We wound up with not enough material within the easy authorization in order to get enough material to finish the project. We went through a process of getting a permit to dredge deeper so we could take the channel out to the ocean and obtain enough material to bring the project back to original template. We had four one-stop meetings over about nine months to where we could agree to what we were going to apply for and then went through another phase where we went through the review process and agencies began to change their mind. Historically it was worse because there was NEPA, SEPA and permitting. It has been shortened a little, but how do we get it down into one process with one timeline?

Frank Gorham stated that he would like to keep this panel as an ad hoc panel of expertise and ask if they will work on a phone call and give the CRC five top priorities to be looking at from an inlet management standpoint.

**CRC Science Panel Origin, Role and Composition (CRC 14-08)**

**Mike Lopazanski**

Mike Lopazanski stated in the mid-1990’s, DCM began to put more focus on coastal hazards to take advantage of some advances in understanding, improved technology, and hiring a coastal geologist. We also had back to back hurricanes. In 1997, we had five federally declared disasters. Governor Hunt formed a task force to make recommendations for state recovery. This task force made recommendations to the CRC to reexamine its coastal hazards mitigation rules and policies. The recommendations focused on the inlet hazard areas, high flood hazard areas, erosion rate calculations, and setback determinations. The CRC assembled a panel that made recommendations to change the way we do erosion rates and setbacks as well as the methodologies used to determine them. They also recommended that we establish a barrier island erosion task force that would have
regular involvement with the CRC. There was an interest within the CRC to link science and policy. There was a constant need for scientific knowledge in the development of CRC rules. The CRC was interested in finding scientists that were actively involved in coastal research in North Carolina. The first Science Panel was assembled by DCM staff in consultation with the CRC. It was comprised of geologists and engineers and the original charge was developed. The charge was to update and report on the current state of knowledge of the coastal processes in North Carolina, review the methodologies that we use for identifying various coastal hazards, and review the current rules that apply to development in the coastal hazard area. The Science Panel works on specific tasks and a lot of them go on for several years. In 2013, the CRC has re-examined the Science Panel and made some changes in their charge. The CRC also added two additional slots to the membership, called for ad hoc members to be added to the Panel to fill specific needs for specific projects, attempted to formalize the appointment process, and institute staggered terms. Provisions were also made for review by the CRC of reports prior to their release to the public and the Panel should develop their recommendations by consensus and in the absence of consensus they should include a minority opinion. The Panel now consists of coastal engineers, coastal geologists, and a marine biologist. There are currently 11 members.

Frank Gorham recommended that the four vacancies not be filled until the CRC determines how they want to use the Science Panel. As a Commission we need to look at the job description of the Science Panel.

Braxton Davis stated the Science Panel has been working with staff on revisiting the inlet hazard area boundaries and that was in response to the passage of HB819 (Session Law 2012-202). That law requires us to evaluate whether we should have inlet hazard areas as an AEC. It is a technical conversation about the area of influence on an inlet and why the shoreline changes differ between the inlets and beachfront. There have been ongoing meetings with the Science Panel.

**PUBLIC INPUT AND COMMENT**

Marvin Demers stated I am a resident in Nags Head and I have a brief comment relevant to the D.O.T. in Nags Head variance discussion. We have several outfalls along the Outer Banks. Inevitably they all need maintenance and perhaps extinction sooner or later. Under the current rules the only way to perform maintenance on the outfalls is to come to the CRC for a variance. Since it is such a predictable process my only comment is perhaps a rule could be developed so that the applicant doesn’t have to come for a variance each and every time. The current system works and maybe it doesn’t need to be changed, but that is just a thought for consideration.

Charles Baldwin stated I am the attorney for the Village of Bald Head Island. At Bald Head we have a lot of experience with reactive inlet management but not experience with proactive inlet management. To date that has been essentially sandbags and variances. I can tell you from personal experience over ten years that it has been time consuming, legalistic and far from a long-term fix. Hopefully this inlet management process will get us to examine the tools that might be in the tool box and get us some variety and hopefully get us to a process more collaborative and forward looking and more efficient. Perhaps there could be a General Permit for projects in certain areas or situations where there will be recurring types of work. I have not heard a definition of what we mean by management. I am not sure there has to be a single definition. I heard some terms that might be forward looking such as planning, budgeting and reassessing. If we are simply in a situation where we are going to create a document through this process and put it in a drawer that is the last thing the State needs. Stop the process now and save the time and money. We will have to involve the Corps of Engineers in this process. We can’t manage without their help, permitting and
data. At Bald Head we are waiting right now on the last two monitoring reports that cover several years. We haven’t been provided any explanation about why we don’t have them. We have asked repeatedly. You can’t manage unless you have the data with which to manage. We have a time constraint. We know from decades of experience and from the shipping channel we get 2/3 of the sand that we need. We lose 500,000 cubic yards a year on average. These situations are going to keep recurring and the tools we are talking about are probably a band aid, but we need to manage it as best as we can for everybody’s benefit. Our beaches are not just important for recreation, but they are important for habitat. The beach is important to the tourism and real estate industries. The protective dunes are important. I would encourage the Commission to think big and be bold in this effort. Let’s give the General Assembly a substantive, meaningful document. Monitoring and sand placement involve money. If there are dollar signs attached, so be it, but let’s be able to articulate why those dollars are important and necessary to the State of North Carolina.

Flood Insurance Panel Discussion
John Snipes

John Snipes stated in response to the CRC’s request, today’s panel was put together to address the insurance issues that relate to our coastal areas. Stuart Powell has been personally involved in the insurance business for over 40 years and joined the staff of the Independent Insurance Agents of North Carolina as the Director of Education in 1995, in 2004 he assumed the supervision of the Association’s insurance operations and he also owned an insurance agency. Ken Ashe is the Assistant Director for the Geospatial and Technological Management Office for the NC Division of Emergency Management is a professional engineer and a certified flood map manager. John Gerber serves as the state coordinator for the National Flood Insurance Program, is a professional engineer and certified flood plan manager. Willo Kelly is the Government Affairs Director with the Outer Banks Homebuilders Association and serves as president of NC-20. Spencer Rogers is a member of the Science Panel and is also an expert in this area.

Stuart Powell, Vice President of Agency Operations and Technical Affairs Independent Insurance Agents of North Carolina, stated we are an association of independent agents. We have a unique place in the insurance markets in that we represent a number of insurance companies but we also have lots of clients so our interest is in a viable market. We don’t get involved in rate issues because we are the retailers. The Biggert-Waters Act is a federal reauthorization of the National Flood Insurance Program that was enacted by Congress in July 2012. Since then we have been in various stages of implementing Biggert-Waters. Since this Act was introduced we have seen some problems arise with rating issues. One of the things we were glad about is that it is a five year reauthorization of the Flood Act. Until July 2012, we were suffering through a long series of incremental reauthorizations. That caused a lot of instability in the National Flood Insurance Program. Some of the major issues are the flood rates and the belief that some of them are subsidized, a lot of mapping issues, mitigation programs, flood in progress determinations, studies, and building code enforcement. The flood insurance program was started in 1968 and has worked reasonably well. In 2005, the flood insurance program was bringing in about 2 billion per year in annual premiums. That was largely sustaining their annual losses. To back that up they had a 1.5 billion dollar letter of credit from Congress. After Katrina the flood damage was in excess of 20 billion dollars. Congress has had to appropriate funds to support the program since then. Two years ago after Superstorm Sandy in New Jersey, it was another big hit to the flood program. Premiums that are going into the system have not been adequate to cover the losses they have sustained. If you have a building that was built prior to the determination of the flood zone then it is a “pre-FIRM” building. The pre-FIRM buildings do not comply with building codes and land use plans. The law also removes
subsidies for non-primary residences, severe repetitive loss property, properties that have incurred flood damage cumulatively in excess of fair market value, business property, and flood damages and substantial improvements exceeding 30% of fair market value. The law removes subsidized pre-FIRM rates for new policies; lapsed policies or policies for newly purchased property, property owners who refused a FEMA mitigation offer or repetitive or severe repetitive loss property, and capped the rate increase to 25% until the full risk rate is attained. The rate increase on all other properties went from 10-20%. Part of the problem is there are a number of dynamics that go into the premium you pay. One is rate per unit of insurance. The other is the flood zone that you are in and whether or not the flood maps have changed since your property was built. Severe repetitive loss structures for single family residences are defined as four or more claims each exceeding $5,000 or cumulatively more than $20,000. They did allow FEMA to institute an installment payment plan. There are also limitations on banks and how they can use force placement of flood insurance. If you can't produce a hazard insurance policy then they have programs that they can put in force for you. Those programs are often not very competitive and can be expensive. There were some abuses in the ways that banks were using these programs. A cap has been put into place for 20% per year over five years for flood map changes that cause higher rates. The penalties have been increased for lenders that are not in compliance. There have been increases in the minimum deductibles both pre- and post-FIRM. There is also a mandate that the rates cover the average annual flooding but also catastrophic loss years. FEMA was also mandated to set up a Reserve Fund of at least one percent of the total potential loss. FEMA is also required to repay the current debt over a ten year repayment period (approximately 20 billion dollars). This is putting a lot of pressure on the rate structure. An amendment has been made to RESPA to require explanation of the availability of private flood insurance. There is also a lot in the Biggert-Waters Act about wind versus water damage and a method to resolve the allocation of losses. A Technical Mapping Advisory Council has been set up to tackle some of the mapping issues. FEMA has been required to notify property owners when they have been removed from a mandatory purchase zone or when they have been included into a mandatory purchase zone. There is a scientific resolution panel to arbitrate contested appeals of map revisions. The limitation has been removed on state contributions to updated mapping. There is a lot of interest in Congress in interagency coordination of flood mapping. There has been a consolidation in the NFIP funded mitigation programs into one single program. This allows required flood mitigation plans to be part of a community's multi-hazard mitigation plan. The Act removes beach nourishment as an allowed mitigation activity, but added elevation, relocation or flood-proofing of utilities as allowed mitigation activities. Demolition and rebuild were also added as allowed mitigation activities. Mitigation reforms allow for direct mitigation grants from FEMA if it is determined that local governments are not able to do so. There are caps on federal grants for state and community mitigation plan development and if the money is not spent in five years the money must be returned. Federal share requirements have been restructured. FEMA must develop the process for determining when a flood event has commenced. There is currently a 30-day waiting period for flood insurance. Some of the studies included in the law include an analysis of increasing max limits for residential and commercial structures, annual financial reports including efforts to buy substantially damaged properties and analyses, a GAO report on pre-FIRM structures, and FEMA and GAO study of reinsurance and privatization. A GAO study on business interruption and additional living expenses and a FEMA study of using national recognized building codes as part of floodplain management have also been included in the law. Additional studies include requiring the federal insurance office to study the current markets for natural catastrophe insurance in the United States including affordability and why only 45 of 565 Native American tribes participate in the NFIP. Community development block grants can be used for staffing and local building code enforcement and providing flood hazard and flood insurance information to local residents. Some of the contentious issues are the rate increases and the grandfathering issues. The phase out of the pre-
FIRM for non-primary residences was supposed to begin in January 2013 and we are seeing that now. There is a 25% increase until premiums reflect full risk rates. In October 2013 the phase in began of full risk rates for business properties, severe repetitive loss residential properties with subsidized rates, and owners of property with cumulative claims exceeding the fair market value. These will see an annual increase of 25% until premiums reflect full risk rates. Owners of property not insured upon the enactment of Biggert-Waters have to go in at the full risk rate. If your NFIP policy has lapsed or if you purchase property after the enactment of Biggert-Waters then you pay the full risk rate. In the past if you had flood insurance and the maps changed then you were able to keep that original rate based on the map at the time. This is now in question and was supposed to go into effect in October 2012, but has been delayed. Notes have been added in the flood manual on grandfathering that allow for the transfer of property subject to pre-FIRM rates and are no longer eligible for grandfathering.

If you own property in coastal North Carolina then you have as many as three insurance policies a home owner’s policy, a beach plan wind coverage policy, and a flood policy. What has been happening is we are seeing a steady withdrawal of standard insurance companies from writing wind policies.

Kenneth Ashe stated nature does not read the lines. FEMA mandates that you insure the one percent annual chance. As advocates for citizens and communities we encourage that everybody buy insurance. The Legislature made a commitment to have the most current and most accurate maps possible. Historically the storm surge affects how big the waves can be. In the early 2000’s FEMA had a moratorium on storm surge studies. When we mapped North Carolina the first time around the storm surge stayed the same. One of the big commitments we have done is to redo the storm surge. This is extremely confrontational. We tried to get the most current information that we could. You take the information and combine it with historic information on storms and that is how we make the maps. We surveyed every 800 feet along the beach for wave modeling. This allowed us to figure out where the back of the primary frontal dune is. The maps will be released within the next year for review and comment. We will start to release the maps in July for the southern counties and all the dates for release are dependent on FEMA approval.

Willo Kelly stated I was asked to present information on wind insurance and market conditions. Our wind rates and what we pay for wind coverage is based on your home owner’s insurance rate. There was a recent filing by the North Carolina Rate Bureau where they asked for rate increases on the barrier islands. The rest of the state has wind included in their homeowner’s policy. Over the last 20 years Charlotte did not see an increase in their insurance rates. On the barrier islands in 1993 we were paying $578 as of July 1st of last year when new rates went into effect the rate is $1,613. There is a wide disparity in rates across the state. When we pay our wind insurance we get an extra five percent tacked onto that. When we have a beach plan policy we pay the maximum rate allowed with no discounts. We all know the cost of property insurance affects the affordability of housing and the ability to qualify and maintain a mortgage. If you talk to any realtor you will hear that there are more cash deals. Investors are finding out that due to the rising cost of insurance and the uncertainty of what is happening with the flood insurance program people are paying cash. Over one-quarter of all Outer Banks real estate transactions have been cash transactions in the past two years. If you have no mortgage there is not an insurance requirement.

Frank Gorham asked John Snipes to come back to the CRC with anything that the CRC could advocate for that would bring more competition to the State.
CHAIRMAN'S REPORT
Chairman Gorham stated the next meeting will be May 14-15 in Carteret County. Renee Cahoon, Chair of the Economic Development subcommittee, will give a status report on the economic development report.

OLD/NEW BUSINESS
Jamin Simmons asked that the CRC Mission Statement be posted at the beginning of CRC meetings. He will also look at the Mission Statement and update it. Any recommended changes will be brought before the Commission for consideration. Chairman Gorham added that the conflict of interest statement should be posted at the beginning of each meeting as well.

Alan Holden, Mayor of Holden Beach, thanked the Division and the Corps of Engineers for using common sense in helping us expedite getting the necessary paperwork for the navigation project at Lockwood Folly Inlet. The Corps had the job lined up and we were able to add to our beach nourishment project. It saved the Town of Holden Beach the expense of moving the equipment to our site. The County of Brunswick and hopefully the Town of Oak Island will come on board with some of the finances of this project. It was an overall wonderful success to see some common sense come together with some ingenuity and willingness to help. One request for the CRC is the concern for the Town of Holden Beach in regards to the whole area from the Holden Beach bridge to the Lockwood Folly Inlet being in the Inlet Hazard Area. We never did understand why it was expanded to that large an area.

Braxton Davis stated that the PowerPoint presentations will be posted to the DCM website following CRC meetings.

With no further business, the CRC adjourned.

Respectfully submitted,

Braxton Davis, Executive Secretary

Angela Willis, Recording Secretary
INTERNAL OPERATING PROCEDURES
OF THE COASTAL RESOURCES COMMISSION OF
NORTH CAROLINA

Article I
Purpose

The purpose of the Commission shall be to fulfill the duties prescribed for it in Article 7, Chapter 113A, of the General Statutes of North Carolina.

Article II
Membership

The membership of this Commission shall be as set forth in North Carolina General Statute 113A-104.

Article III
Officers and Executive Secretary

Section 1. Statutory officers of this Commission shall be a Chairperson and Vice Chairperson.

(a). Pursuant to G.S. 113A-104(i), the Chairperson shall be designated by the Governor from among the members of the Commission.

(b). Pursuant to G.S. 113A-104(i), the Vice Chairperson shall be elected from and by members of the Commission and shall serve for a term of two years or until the expiration of the vice-chairperson’s regularly appointed term.

Section 2. The Secretary of the Department of Environment and Natural Resources is hereby authorized to appoint a qualified employee of the State of North Carolina to serve as Executive Secretary for the Commission. Duties of the Executive Secretary shall include any services the Commission may deem necessary and proper; but in any case, such duties shall include the responsibility for secretarial and clerical functions incident to the proper and expeditious conduct of the Commission's business together with those duties prescribed by G.S. 113A-122(b). In addition, the Chairperson may designate as he or she sees fit, any member(s) of the Commission, or employee(s) of the Department of Environment and Natural Resources to serve as parliamentarian or in such other special capacity as may from time to time be required for the orderly conduct of the Commission's business.

Article IV
Meetings

Section 1. The Commission shall meet at such times and places as necessary to discharge its statutory duties as set forth in Chapter 113A, Article 7, North Carolina General Statutes. The Chairperson shall set the dates and locations of regular meetings. Notice shall be provided to all members at least 20 days prior to each regular meeting.

Draft May 2014
Section 2. The Commission Chairperson may call special meetings if he or she determines it is necessary. Timely notice in advance of all special meetings must be given to each member of the Commission in accordance with the requirements of the North Carolina General Statutes. This notice requirement may be adequately discharged by mailings to the members of the Commission at their last known places of residences or by forwarding notice to the designated email address for each member of the Commission.

Section 3. A majority of duly qualified members of the Coastal Resources Commission shall constitute a quorum.

Section 4. Meetings of the Coastal Resources Commission shall be open to the public; provided, the Commission may hold executive sessions where allowed by G.S. 143-318.11.

Section 5. Each regular meeting may include public comment from any member of the public in attendance. Comments shall be limited to subjects falling within the jurisdiction of the Commission. Public comment shall not be directed to any quasi-judicial matter which is pending before the Commission. The chair will first recognize individuals or groups who have signed up to be heard and then may recognize others subject to the time available. The Chair may specify the time allotted to each speaker. If remarks are made that stray from the business of the Authority, exceed time constrains, or are beyond reasonable standards of courtesy, comments can be halted by the Chair or by motion.

Section 5.6. Official meetings of the Coastal Resources Commission may take place by conference telephone or other electronic means as allowed by G.S. 143-318 for the purpose of conducting hearings, participating in deliberations, or voting upon or otherwise transacting the public business within the jurisdiction, real or apparent, of the public body.

Article V
Record

Section 1. Minutes and other records of all Commission meetings shall be collected and maintained under the direction of the Executive Secretary, and be supplemented, where possible, by electronic recording.

Section 2. The Executive Secretary shall be responsible for filing all rules of the Commission in proper form as required by Chapter 150B of the North Carolina General Statutes.

Article VI
Standard Order of Business

The Coastal Resources Commission adopts the following as its Standard Order of Business; provided, that the order of business may be altered by the Chairperson in his or her discretion, by request from the Executive Committee, or by motion made by any member of the Commission in order to more efficiently carry out the Commission's business or for the convenience of the public:

1. Call to order by Chairperson.
2. Ethics statement and members’ disclosure of conflicts of interest
3. Roll call of Commissioners in attendance.
4. Approval of minutes of previous meeting.
5. Opening remarks or ceremonies.
6. Reports from Executive Secretary.
7. Reports from Chairperson of the Commission and CRAC Chairperson.
8. Discussion of matters relating to operation and procedures of the Commission.
9. Consideration of appeals, variance and rulemaking petitions, and declaratory rulings.
10. Comments from the public.
11. Direction by Chairperson to break into working committees, standing or special, to pursue the business of the Commission.
12. Action items
13. Public presentations by special speakers.
15. Consideration of old and new business
16. Announcements.
17. Adjournment

Article VII
Notice Requirements

Section 1. In accordance with G.S. 113A, Article 7, the Secretary of the Department of Environment and Natural Resources or an appropriate designee shall be responsible for the timely issuance to those parties upon which G.S. 113A, Article 7, confers the right of legal notice of Commission hearings, meetings, decisions, and official actions.

Section 2. The Commission may adopt special notice procedures as it deems necessary, subject to the requirements of G.S. Chapter 113A, Article 7.

Article VIII
Committees

Section 1. The Chairperson of the Commission shall appoint such committees, standing or special, as the Chairperson and Commission shall from time to time deem necessary. The Chairperson shall designate the Chairperson of each committee from among its members and shall be an ex officio member of all committees.

Section 2. Duly appointed committees may adopt at their discretion any internal procedures necessary to the discharge of their business; provided, no procedures adopted by any committee shall be inconsistent with these procedures or any other rules adopted by the Commission, or with any statutes applicable to the Commission.

Section 3. The Commission shall have an Executive Committee composed of the Commission Chairperson, the Commission Vice Chairperson and three additional members of the Commission. The three additional members appointed to the Executive Committee shall be selected by the Chairperson and shall represent the northern and southern CAMA counties as well as that area within the CAMA counties which includes inland waterways. The Chairperson of the Commission shall be Chairperson of the Executive Committee and the Vice Chairperson of the Commission shall be Vice Chairperson of the Executive Committee. The Chairperson of
the Coastal Resources Advisory Council and the Commission’s Executive Secretary shall be ex officio members of the Executive Committee. The Executive Committee shall carry out such administrative functions as the Chairperson may direct or such other functions as the Commission may direct. The Executive Committee may make recommendations to the full Commission on any matters it deems relevant to the Commission's work.

Article IX
Parliamentary Authority

Section 1. The rules contained in the current edition of Robert's Rules of Order Newly Revised shall govern the Commission in all cases to which they are applicable and in which they are not inconsistent with these procedures and any special rules of order the Commission may adopt, or with any statutes or rules applicable to the Commission.

Section 2. To the extent that the rules contained in the current edition of Robert's Rules of Order Newly Revised conflict with any rules, regulations, or quasi-judicial procedure adopted by the Commission which establish special rules of procedure for certain meetings or types of meetings, the Commission’s specifically adopted procedures shall be controlling.

Article X
Attendance

As directed by the General Assembly in G.S. 113A-104(1), regular attendance at Commission meetings is a duty of each member. Pursuant to this legislation the Commission may declare vacant any seat for which a member misses three consecutive meetings or fails to attend at least sixty percent of the meetings during any twelve-month period. Under extraordinary conditions the Chairperson has the authority to waive the attendance requirements. The Chairperson shall provide notice of this policy to any member who misses two consecutive meetings or who appears likely to fail to attend at least sixty percent of the meetings during any twelve-month period.

Article XI
Hearings

Section 1. For any Commission hearing, including public hearings on state guideline adoption and amendments pursuant to G.S. 113A-107, hearings on designation of areas of environmental concern pursuant to G.S. 113A-115, hearings regarding local land use plans and local implementation and enforcement programs, and any other hearings conducted by the Commission in carrying out its duties under the Coastal Area Management Act, dredge and fill law, and the Administrative Procedure Act, the Chairperson may at his or her discretion appoint any Commission member or members or appropriate qualified employees of the Department of Environment and Natural Resources to serve as hearing officer. The hearing officer shall report the record of the hearing to the Commission prior to action on the matter that was the subject of the hearing.

Section 2. In appointing hearing officers, the Chairperson shall consider the geographic location of the hearing, the technical complexity of the matter being considered, the public
interest in the matter and the necessity of impartiality on the part of the hearing officer or reporting member.

**Section 3.** Final decisions on all issues before the Commission, including but not limited to variances, rule-making and declaratory rulings, shall be by majority vote. In the event the Chairperson excuses himself or herself from participation in a final decision due to an actual or potential conflict of interest, the Vice-Chairperson shall serve as presiding officer.

**Article XII**

**Conflict of Interest**

The State Government Ethics Act, North Carolina General Statutes at Chapter 138A, sets forth the ethical standards applicable to the Coastal Resources Commission. In addition, any ethics opinions issued before the enactment of the State Government Ethics Act or advisory opinions issued by the State Ethics Commission after 2006 may be applicable to actions taken by the Coastal Resources Commission.

**Article XIII**

**CRAC Appointments**

The Commission shall appoint the twenty (20) members of the Coastal Resources Advisory Council (CRAC) by majority vote of the Commission. Appointments should be made for an initial term in accordance with § 113A-105 of the Coastal Area Management Act. Members may be reappointed at the discretion of the Commission. The Executive Secretary shall, at least 45 days prior to the appointment, notify the CAMA counties and coastal cities that the Commission will be making appointments to the CRAC and solicit recommendations. If any council member appointed by the Commission is unable to serve their full term, the Commission may establish appropriate procedures to select a person to serve the unexpired portion of that term or may consider other nominations received within the preceding nominating period. The Commission may replace any CRAC member who fails to regularly attend CRAC meetings.

**Article XIV**

**Amendments**

These procedures may be amended at any regular meeting of the Commission by a vote of sixty percent of the duly qualified Commission members; provided that a written copy of the amendments has been mailed to each Commission member at least seven days prior to the adoption of the amendment or otherwise has been made available to each Commission member at least five days prior to the adoption of the amendment.

**Article XV**

**Voting**

**Section 1.** Except as otherwise specifically provided by other Articles of these Procedures, all Commission members shall be entitled to make motions, second, and vote on all matters coming before the Commission. The Chairperson may vote on all issues before the Commission.

**Section 2.** If there is a tie vote on a motion, the motion fails.
Section 3. The Executive Secretary shall record in the minutes each member's vote on all final decisions including but not limited to final decisions on variances, rule adoption, repeals, and amendments. Votes shall be recorded on any other matter when so requested by any member.

Section 4. Motions to call the previous question or otherwise limit debate shall be considered extraordinary measures and shall require the affirmative vote of three-fourths of those members present and voting.

Article XVI
Settlements and Other Decisions Related to CRC/CAMA Litigation

The Commission members of the Executive Committee are authorized to act on behalf of the full Commission to settle cases or decide whether to recommend an appeal in cases in which the Commission is a party pursuant to 15A NCAC 7J.0312(c).

Amended effective December 11, 2013

Frank D. Gorham, III, Chairperson
Coastal Resources Commission

Draft May 2014
MEMORANDUM

TO: Coastal Resources Commission

FROM: Matt Slagel, DCM Shoreline Management Specialist

SUBJECT: Town of Wrightsville Beach Static Line Exception 5-Year Progress Report

Petitioner, the Town of Wrightsville Beach (“Town”) requests that its static line exception be reauthorized by the Coastal Resources Commission, based on the information found within the attached 5-year progress report. The granting of such a request by the Commission would result in the continued application of 15A NCAC 07H.0306(a)(8) to proposed development projects along the affected area of the town, instead of the static or pre-project vegetation line of 07H.0305(f) and 07H.0306(a)(1).

The Town’s original static line exception was granted by the Commission on September 9, 2009. The Commission’s rule 15A NCAC 07J.1204(b) indicates that the Commission “shall review a static line exception authorized under 15A NCAC 07J.1203 at intervals no greater than every five years from the initial authorization in order to renew its findings for the conditions defined in 15A NCAC 07J.1201(d)(1) through (d)(4).” Specifically, these four criteria require a showing by the Petitioner of (1) a summary of all beach fill projects in the area proposed for the exception, (2) plans and related materials showing the design of the initial fill projects, and any past or planned maintenance work, (3) documentation showing the location and volume of compatible sediment necessary to construct and maintain the project over its design life, and (4) identification of the financial resources or funding sources to fund the project over its design life. 15A NCAC 07J.1204(b) also states that the Commission shall consider design changes to the initial large-scale beach fill project, design changes to the location and volume of compatible sediment, and changes in the financial resources or funding sources necessary to fund the large-scale beach fill project.

Based on the Town’s 5-year progress report and additional exhibits attached, Staff recommends that the conditions in 15A NCAC 07J.1201(d)(1) through (d)(4) have been met, and there have been no changes in the last five years that should result in the Town’s static line exception being revoked. Staff recommends that the Commission renew the Town’s static line exception for another five years.

The following information is attached to this memorandum:
Attachment A: Relevant Procedural Rules
Attachment B: Staff’s Report to the Commission
Attachment C: Petitioner’s 5-Year Progress Report
Attachment D: New Hanover County Interlocal Agreement for Contingency Plan Beach Nourishment
ATTACHMENT A: Relevant Procedural Rules

SECTION .1200 – STATIC VEGETATION LINE EXCEPTION PROCEDURES

15A NCAC 07J .1201 REQUESTING THE STATIC LINE EXCEPTION

(a) Any local government or permit holder of a large-scale beach fill project, herein referred to as the petitioner, that is subject to a static vegetation line pursuant to 15A NCAC 07H .0305, may petition the Coastal Resources Commission for an exception to the static line in accordance with the provisions of this Section.

(b) A petitioner is eligible to submit a request for a static vegetation line exception after five years have passed since the completion of construction of the initial large-scale beach fill project(s) as defined in 15A NCAC 07H .0305 that required the creation of a static vegetation line(s). For a static vegetation line in existence prior to the effective date of this Rule, the award-of-contract date of the initial large-scale beach fill project, or the date of the aerial photography or other survey data used to define the static vegetation line, whichever is most recent, shall be used in lieu of the completion of construction date.

(c) A static line exception request applies to the entire static vegetation line within the jurisdiction of the petitioner including segments of a static vegetation line that are associated with the same large-scale beach fill project. If multiple static vegetation lines within the jurisdiction of the petitioner are associated with different large-scale beach fill projects, then the static line exception in accordance with 15A NCAC 07H .0306 and the procedures outlined in this Section shall be considered separately for each large-scale beach fill project.

(d) A static line exception request shall be made in writing by the petitioner. A complete static line exception request shall include the following:

1. A summary of all beach fill projects in the area for which the exception is being requested including the initial large-scale beach fill project associated with the static vegetation line, subsequent maintenance of the initial large-scale projects(s) and beach fill projects occurring prior to the initial large-scale projects(s). To the extent historical data allows, the summary shall include construction dates, contract award dates, volume of sediment excavated, total cost of beach fill project(s), funding sources, maps, design schematics, pre-and post-project surveys and a project footprint;

2. Plans and related materials including reports, maps, tables and diagrams for the design and construction of the initial large-scale beach fill project that required the static vegetation line, subsequent maintenance that has occurred, and planned maintenance needed to achieve a design life providing no less than 25 years of shore protection from the date of the static line exception request. The plans and related materials shall be designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for said work;

3. Documentation, including maps, geophysical, and geological data, to delineate the planned location and volume of compatible sediment as defined in 15A NCAC 07H .0312 necessary to construct and maintain the large-scale beach fill project defined in Subparagraph (d)(2) of this Rule over its design life. This documentation shall be designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for said work; and

4. Identification of the financial resources or funding sources necessary to fund the large-scale beach fill project over its design life.

(e) A static line exception request shall be submitted to the Director of the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557. Written acknowledgement of the receipt of a completed static line exception request, including notification of the date of the meeting at which the request will be considered by the Coastal Resources Commission, shall be provided to the petitioner by the Division of Coastal Management.
The Coastal Resources Commission shall consider a static line exception request no later than the second scheduled meeting following the date of receipt of a complete request by the Division of Coastal Management, except when the petitioner and the Division of Coastal Management agree upon a later date.

**History Note:** Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

### 15A NCAC 07J .1202 REVIEW OF THE STATIC LINE EXCEPTION REQUEST
(a) The Division of Coastal Management shall prepare a written report of the static line exception request to be presented to the Coastal Resources Commission. This report shall include:

1. A description of the area affected by the static line exception request;
2. A summary of the large-scale beach fill project that required the static vegetation line as well as the completed and planned maintenance of the project(s);
3. A summary of the evidence required for a static line exception; and
4. A recommendation to grant or deny the static line exception.

(b) The Division of Coastal Management shall provide the petitioner requesting the static line exception an opportunity to review the report prepared by the Division of Coastal Management no less than 10 days prior to the meeting at which it is to be considered by the Coastal Resources Commission.

**History Note:** Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

### 15A NCAC 07J .1203 PROCEDURES FOR APPROVING THE STATIC LINE EXCEPTION
(a) At the meeting that the static line exception is considered by the Coastal Resources Commission, the following shall occur:

1. The Division of Coastal Management shall orally present the report described in 15A NCAC 07J .1202.
2. A representative for the petitioner may provide written or oral comments relevant to the static line exception request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.
3. Additional parties may provide written or oral comments relevant to the static line exception request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.

(b) The Coastal Resources Commission shall authorize a static line exception request following affirmative findings on each of the criteria presented in 15A NCAC 07J .1201(d)(1) through (d)(4). The final decision of the Coastal Resources Commission shall be made at the meeting at which the matter is heard or in no case later than the next scheduled meeting. The final decision shall be transmitted to the petitioner by registered mail within 10 business days following the meeting at which the decision is reached.

(c) The decision to authorize or deny a static line exception is a final agency decision and is subject to judicial review in accordance with G.S. 113A-123.

**History Note:** Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

### 15A NCAC 07J .1204 REVIEW OF THE LARGE-SCALE BEACH-FILL PROJECT AND APPROVED STATIC LINE EXCEPTIONS
(a) Progress Reports. The petitioner that received the static line exception shall provide a progress report to the Coastal Resources Commission at intervals no greater than every five years from date the static line exception is authorized. The progress report shall address the criteria defined in 15A NCAC 07J .1201(d)(1) through (d)(4) and be submitted in writing to the Director of the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557. The Division of Coastal Management shall provide written acknowledgement of the receipt of a completed progress report, including notification of the meeting date at which the report will be presented to the Coastal Resources Commission to the petitioner.

(b) The Coastal Resources Commission shall review a static line exception authorized under 15A NCAC 07J .1203 at intervals no greater than every five years from the initial authorization in order to
renew its findings for the conditions defined in 15A NCAC 07J .1201(d)(2) through (d)(4). The Coastal Resources Commission shall also consider the following conditions:

1. Design changes to the initial large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2) provided that the changes are designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for the work;

2. Design changes to the location and volume of compatible sediment, as defined by 15A NCAC 07H .0312, necessary to construct and maintain the large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2), including design changes defined in this Rule provided that the changes have been designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for the work; and

3. Changes in the financial resources or funding sources necessary to fund the large-scale beach fill project(s) defined in 15A NCAC 07J .1201(d)(2). If the project has been amended to include design changes defined in this Rule, then the Coastal Resources Commission shall consider the financial resources or funding sources necessary to fund the changes.

(c) The Division of Coastal Management shall prepare a written summary of the progress report and present it to the Coastal Resources Commission no later than the second scheduled meeting following the date the report was received, except when a later meeting is agreed upon by the local government or community submitting the progress report and the Division of Coastal Management. This written summary shall include a recommendation from the Division of Coastal Management on whether the conditions defined in 15A NCAC 07J .1201(d)(1) through (d)(4) have been met. The petitioner submitting the progress report shall be provided an opportunity to review the written summary prepared by the Division of Coastal Management no less than 10 days prior to the meeting at which it is to be considered by the Coastal Resources Commission.

(d) The following shall occur at the meeting at which the Coastal Resources Commission reviews the static line exception progress report:

1. The Division of Coastal Management shall orally present the written summary of the progress report as defined in this Rule.

2. A representative for the petitioner may provide written or oral comments relevant to the static line exception progress report. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.

3. Additional parties may provide written or oral comments relevant to the static line exception progress report. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.


15A NCAC 07J .1205 REVOCATION AND EXPIRATION OF THE STATIC LINE EXCEPTION

(a) The static line exception shall be revoked immediately if the Coastal Resources Commission determines, after the review of the petitioner’s progress report identified in 15A NCAC 07J .1204, that any of the criteria under which the static line exception is authorized, as defined in 15A NCAC 07J .1201(d)(2) through (d)(4) are not being met.

(b) The static line exception shall expire immediately at the end of the design life of the large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2) including subsequent design changes to the project as defined in 15A NCAC 07J .1204(b).

(c) In the event a progress report is not received by the Division of Coastal Management within five years from either the static line exception or the previous progress report, the static line exception shall be revoked automatically at the end of the five-year interval defined in 15A NCAC 07J .1204(b) for which the progress report was not received.

(d) The revocation or expiration of a static line exception is considered a final agency decision and is subject to judicial review in accordance with G.S. 113A-123.
15A NCAC 07J .1206 LOCAL GOVERNMENTS AND COMMUNITIES WITH STATIC VEGETATION LINES AND STATIC LINE EXCEPTIONS

A list of static vegetation lines in place for petitioners and the conditions under which the static vegetation lines exist, including the date(s) the static line was defined, shall be maintained by the Division of Coastal Management. A list of static line exceptions in place for petitioners and the conditions under which the exceptions exist, including the date the exception was granted, the dates the progress reports were received, the design life of the large-scale beach fill project and the potential expiration dates for the static line exception, shall be maintained by the Division of Coastal Management. Both the static vegetation line list and the static line exception list shall be available for inspection at the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557.


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 Coastal Resources Commission’s Rules shall be located according to whichever of the following is applicable:

***

(8) Beach fill as defined in this Section represents a temporary response to coastal erosion, and compatible beach fill as defined in 15A NCAC 07H .0312 can be expected to erode at least as fast as, if not faster than, the pre-project beach. Furthermore, there is no assurance of future funding or beach-compatible sediment for continued beach fill projects and project maintenance. A vegetation line that becomes established oceanward of the pre-project vegetation line in an area that has received beach fill may be more vulnerable to natural hazards along the oceanfront. A development setback measured from the vegetation line provides less protection from ocean hazards. Therefore, development setbacks in areas that have received large-scale beach fill as defined in 15A NCAC 07H .0305 shall be measured landward from the static vegetation line as defined in this Section. However, in order to allow for development landward of the large-scale beach fill project that is less than 2,500 square feet and cannot meet the setback requirements from the static vegetation line, but can or has the potential to meet the setback requirements from the vegetation line set forth in Subparagraphs (1) and (2)(A) of this Paragraph, a local government or community may petition the Coastal Resources Commission for a “static line exception” in accordance with 15A NCAC 07J .1200. The static line exception applies to development of property that lies both within the jurisdictional boundary of the petitioner and the boundaries of the large-scale beach fill project. This static line exception shall also allow development greater than 5,000 square feet to use the setback provisions defined in Part (a)(2)(K) of this Rule in areas that lie within the jurisdictional boundary of the petitioner as well as the boundaries of the large-scale beach fill project. The procedures for a static line exception request are defined in 15A NCAC 07J .1200. If the request is approved, the Coastal Resources Commission shall allow development setbacks to be measured from a vegetation line that is oceanward of the static vegetation line under the following conditions:

(A) Development meets all setback requirements from the vegetation line defined in Subparagraphs (a)(1) and (a)(2)(A) of this Rule;

(B) Total floor area of a building is no greater than 2,500 square feet;

(C) Development setbacks are calculated from the shoreline erosion rate in place at the time of permit issuance;
(D) No portion of a building or structure, including roof overhangs and elevated portions that are cantilevered, knee braced or otherwise extended beyond the support of pilings or footings, extends oceanward of the landward most adjacent building or structure. When the configuration of a lot precludes the placement of a building or structure in line with the landward-most adjacent building or structure, an average line of construction shall be determined by the Division of Coastal Management on a case-by-case basis in order to determine an ocean hazard setback that is landward of the vegetation line, a distance no less than 30 times the shoreline erosion rate or 60 feet, whichever is greater;

(E) With the exception of swimming pools, the development defined in 15A NCAC 07H .0309(a) is allowed oceanward of the static vegetation line; and

(F) Development is not eligible for the exception defined in 15A NCAC 07H .0309(b).
ATTACHMENT B: Staff’s Report to the Commission

I. Description of the Affected Area

The Town of Wrightsville Beach (Town) is located primarily on a barrier island located in New Hanover County, North Carolina. The island is approximately 1.2 square miles in size (excluding Harbor Island), and is approximately 4.5 miles long and 0.25 miles wide. It is generally oriented in a north-south direction. It is bounded on the north by Mason Inlet, and to the south by Masonboro Inlet. Mason Inlet was realigned in 2002 to move the main channel 2,500 feet closer to Figure Eight Island to the north and away from the imminently threatened structure of Shell Island Resort. Masonboro Inlet is a navigational channel and there are jetties on either side of the channel. The north jetty was installed in 1966 and the south jetty was installed in 1980.

Currently, the static line extends for approximately 2.3 miles from just north of North Ridge Lane (northern end of the static line) to just south of Sprunt Street (southern end of the static line). The static line was determined by DCM Staff using 1980 aerial photographs, and staff located the static line along the vegetation line shown on those photographs. The current average annual erosion setback for the affected area is 2.0 feet per year. There are 14 vacant residentially zoned oceanfront lots and 2 vacant commercially zoned oceanfront lots in the area with the static line exception. Since September 9, 2009, when the static line exception was granted, no permits have been issued under the static line exception. North of Chadbourn Street, the static line is the most restrictive measurement line for setbacks, but no new homes have been constructed in this area.

II. Summary of Past Nourishment Project and Future Project Maintenance

Wrightsville Beach has had a long history of oceanfront development and beach fill projects. The first beach fill project was authorized by Congress in 1962, and work began in 1965. The north jetty was completed in 1966, with additional fill associated with its construction. The next project was in 1970, along the northern portion of the project area. Following Hurricane David in 1979, the next projects were in April of 1980 to repair the northern portion of the project area, and then a larger restoration project in late-1980 through April 1981 which used sediment from between the north and south jetties after the south jetty was installed in 1980.

The project was reevaluated in September 1982 by the USACE, and was reauthorized in 1986. The reauthorization extended Federal cost sharing for the life of the project (50 years per USACE), and the first work under this reauthorization began in 1991, resulting in a current project authorization through 2041. In 1986, another project placed sand on both Masonboro Island and Wrightsville Beach using sediment from the borrow area between the two jetties and extending into Banks Channel. Since 1986, beach fill projects have occurred approximately every four years, beginning in 1991, using a combination of federal, state, and local funding sources. As the current 50-year federal Coastal Storm Damage Reduction Project was initiated in 1991 (more than five years ago), the Town of Wrightsville Beach’s original static line exception request complied with the five-year time requirement of 15A NCAC 07J.1201(b).

III. Summary of Petitioner’s Evidence Supporting the Four Factors

The Commission’s rule 15A NCAC 07J.1204(b) indicates that the Commission “shall review a static line exception authorized under 15A NCAC 07J.1203 at intervals no greater than every five
years from the initial authorization in order to renew its findings for the conditions defined in 15A NCAC 07J.1201(d)(1) through (d)(4).” Specifically, these four criteria require a showing by the Petitioner of (1) a summary of all beach fill projects in the area proposed for the exception, (2) plans and related materials showing the design of the initial fill projects, and any past or planned maintenance work, (3) documentation showing the location and volume of compatible sediment necessary to construct and maintain the project over its design life, and (4) identification of the financial resources or funding sources to fund the project over its design life.

15A NCAC 07J.1204(b) also states that the Commission shall consider design changes to the initial large-scale beach fill project, design changes to the location and volume of compatible sediment, and changes in the financial resources or funding sources necessary to fund the large-scale beach fill project. Staff’s summary and analysis of Petitioner’s response to these four criteria and any design changes or funding changes in the last five years follows.

A. Summary of fill projects in the area
   First factor per 15A NCAC 07J.1201(d)(1)

The Town’s original static line exception application report (CP&E, 2009) lays out the summary of fill projects in the area as follows:

Project Nourishment History

a. 1965. The initial construction of the Wrightsville Beach project was accomplished in 1965 under authority provided by Public Law 87-874 and consisted of the placement of 2,993,100 cubic yards of material along 14,000 lineal feet of shoreline north from Masonboro Inlet. Initial construction included the closure of a small tidal inlet, known as Moore Inlet, at the northern end of the project. Moore Inlet separated the Town of Wrightsville Beach from Shell Island. Material to initially construct the project was obtained from Banks Channel, a narrow sound lying immediately behind Wrightsville Beach. This initial borrow material was not entirely suited for beach fill; consequently, the fill experienced some initial sorting and winnowing losses. In addition, large quantities of the fill material were moved downslope to deeper portions of the active beach profile. The erosion of the upper portion of the fill that occurred with this offshore movement was primarily due to a design deficiency that did not include a sufficient quantity of sand to nourish the entire active beach profile. At Wrightsville Beach, the active beach profile extends to a depth of 20 to 25 feet below NAVD whereas design slopes assumed for the fill closed in depths of 6 to 10 feet NAVD.

b. 1966. Construction of the north jetty at Masonboro Inlet began immediately following the initial placement of the Wrightsville Beach fill. Associated with the construction of the north jetty was the excavation of a sediment trap adjacent to the weir section of the jetty. The material removed to construct the deposition basin, which totaled about 319,000 cubic yards, was placed on Wrightsville Beach between 3,000 feet and 13,000 feet north of the inlet. Construction of the sediment trap occurred between March and July 1966 or about one year after initial construction of the beach project.

c. 1970. No additional fill was placed on Wrightsville Beach until 1970, at which time about 1.4 million cubic yards was placed along the northern 8,000 feet of the project to correct the earlier design deficiency discussed above and to replace material lost to sorting and winnowing. The material for this operation was obtained from the southern end of Banks Channel near Masonboro
Inlet and from the sound behind Shell Island. The southern 6,000 feet of the project has not required any nourishment since 1966 as it lies within the accretion fillet of the Masonboro Inlet north jetty.

d. 1980-81. In April 1980, approximately 541,000 cubic yards of sand obtained from the southern end of Banks Channel was placed along the northern 8,000 feet of the project to replace sand lost as a result of Hurricane David, which passed near the area in September 1979. This emergency restoration was accomplished using federal funds under authority established by Public Law 84-99 (PL 84-99). The post-Hurricane David fill did not completely restore the design cross section in the north portion of the project. This northern portion was completely restored between December 1980 and April 1981 with the placement of 1,250,000 cubic yards of material obtained from Masonboro Inlet in connection with the restoration of the inlet bar channel between the north jetty and the south jetty following the completion of the south jetty in 1980. The fills placed in the spring of 1980 and the winter of 1980-81 followed an almost 10 year period without any nourishment. The gap in nourishment was due to funding issues for both the State and Federal governments.

e. 1986. Following the 1981 restoration of the project, serious erosion problems persisted, particularly along the northern portion of the project. Studies of this erosion problem attributed 46% of the erosion on Wrightsville Beach to the Masonboro Inlet navigation project and the remaining 54% to other, non-inlet related causes (USACE, 1982). The primary non-inlet related factor contributing to the erosion is the convex seaward planform of the island created with the closure of Moore Inlet. The Masonboro Inlet project was also creating a sediment deficit on Masonboro Island, the undeveloped barrier island lying south of the inlet. In 1986, the first official sand bypassing operation was carried out at Masonboro Inlet when 900,000 cubic yards of sand was placed on Wrightsville Beach and 1,250,000 cubic yards was placed on Masonboro Island. The sediment trap/borrow area established for the Masonboro Inlet sand bypassing program includes the entire inlet area located between the north and south jetties and extends into Banks Channel approximately 2,500 feet from the US Coast Guard Station. At the time of the 1986 sand bypassing/beach nourishment operation, federal funding for the Wrightsville Beach project had expired under the original authorization (PL 87-874). As a result, funding for 54% of the material placed on Wrightsville Beach was provided by the State of North Carolina, New Hanover County, and the Town of Wrightsville Beach. Federal Operation & Maintenance (O&M) funds paid for 46% of the Wrightsville Beach fill. Federal O&M funds also paid for the disposal of material on Masonboro Island.

f. 1986 – Present. Sand bypassing from the inlet and renourishment of the Wrightsville Beach project have been accomplished approximately every four years using a combination of Federal O&M funds, Federal Construction General Funds, and non-Federal cost share contributions from the State and New Hanover County. The one exception was in 2006 when additional Federal and State emergency supplement funds were made available which augmented normal funding. In accordance with the PL 99-662 authorization, Federal O&M pays for 46% of the nourishment required for Wrightsville Beach with funding for the remaining 54% the responsibility of non-federal interests. The non-federal share is normally provided by the State and New Hanover County. New Hanover County funds are derived from the room occupancy tax while State funds are appropriated by the NC General Assembly.

g. Summary – Wrightsville Beach Nourishment Operations. Table 1 provides a history of each nourishment event including the nourishment dates, borrow source, placement area, volumes, and cost of the operation.
One additional beach nourishment project has taken place since the Commission granted the Town of Wrightsville Beach a static line exception in September 2009. A project was constructed between February and March 2010, during which 450,000 cubic yards of sand was placed on the beach.

Table 2 and Figure 1 below provide the details of the project and the project boundary.

### Table 1. Wrightsville Beach Nourishment History

<table>
<thead>
<tr>
<th>Nourishment Dates</th>
<th>Borrow Area (1)</th>
<th>Placement Area (stas) (2)</th>
<th>Pay Yardage (cy)</th>
<th>Cost of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb – Jul 65</td>
<td>Banks Channel</td>
<td>0 to 140</td>
<td>2,933,100</td>
<td>$739,339</td>
</tr>
<tr>
<td>Mar – Jul 66</td>
<td>Deposition Basin</td>
<td>30 to 130</td>
<td>319,408</td>
<td>$436,242</td>
</tr>
<tr>
<td>Oct 66</td>
<td>Behind Shell Is.</td>
<td>120 to 140</td>
<td>42,700</td>
<td>$50,697</td>
</tr>
<tr>
<td>Mar – May 70</td>
<td>S. End Banks Ch.</td>
<td>60 to 140</td>
<td>1,436,533</td>
<td>$578,545</td>
</tr>
<tr>
<td>Mar – May 80</td>
<td>S. End Banks Ch.</td>
<td>60 to 140</td>
<td>540,715</td>
<td>$1,159,936</td>
</tr>
<tr>
<td>Dec 80 – Apr 81</td>
<td>Masonboro In.</td>
<td>60 to 140</td>
<td>1,249,699</td>
<td>$4,427,792</td>
</tr>
<tr>
<td>Apr – Jun 86</td>
<td>Masonboro In.</td>
<td>60 to 140</td>
<td>898,593</td>
<td>$1,331,715</td>
</tr>
<tr>
<td>Jan – May 91</td>
<td>Masonboro In.</td>
<td>60 to 140</td>
<td>1,016,684</td>
<td>$2,682,412</td>
</tr>
<tr>
<td>Mar – Jun 94</td>
<td>Masonboro In.</td>
<td>82 to 146</td>
<td>619,031</td>
<td>$1,973,591</td>
</tr>
<tr>
<td>Mar – Apr 98</td>
<td>Masonboro In.</td>
<td>60 to 140</td>
<td>1,116,573</td>
<td>$2,890,256</td>
</tr>
<tr>
<td>Mar – May 02</td>
<td>Masonboro In.</td>
<td>60 to 140</td>
<td>783,691</td>
<td>$2,463,983</td>
</tr>
<tr>
<td>Jan – Apr 06</td>
<td>Masonboro In.</td>
<td>60 to 140</td>
<td>531,717</td>
<td>$4,810,290</td>
</tr>
</tbody>
</table>

(1) The Masonboro Inlet borrow area includes the southern 2.500 feet of Banks Channel.

(2) Stations in 100’s feet.

### 5-Year Progress Report: Fill Projects

One additional beach nourishment project has taken place since the Commission granted the Town of Wrightsville Beach a static line exception in September 2009. A project was constructed between February and March 2010, during which 450,000 cubic yards of sand was placed on the beach.

Table 2 and Figure 1 below provide the details of the project and the project boundary.

### Table 2.

<table>
<thead>
<tr>
<th>Wrightsville Beach 2010 Coastal Storm Damage Reduction Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Date: 2/17/2010 to 3/2/2010</td>
</tr>
<tr>
<td>Contract Award: November 23, 2009</td>
</tr>
<tr>
<td>Borrow Volume: 450,000 CY</td>
</tr>
<tr>
<td>Project Cost: $2.8M</td>
</tr>
<tr>
<td>Project Design Maps: Provided</td>
</tr>
</tbody>
</table>
Another beach nourishment project is proposed for 2014, and Table 3 and Figure 2 below provide the details of the proposed project and the project boundary.

Table 3.

<table>
<thead>
<tr>
<th>Proposed Wrightsville Beach 2014 Coastal Storm Damage Reduction Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Date</td>
</tr>
<tr>
<td>Contract Award</td>
</tr>
<tr>
<td>Borrow Volume</td>
</tr>
<tr>
<td>Project Cost</td>
</tr>
<tr>
<td>Project Design Maps</td>
</tr>
</tbody>
</table>

All sand for the project will come from the current borrow site within Masonboro Inlet. The sediment trap in Masonboro Inlet has been used since 1986. The area was established to capture material transported over the weir section of the Masonboro Inlet north jetty to facilitate sand bypassing to both Wrightsville Beach and Masonboro Island.
B. Design of the initial fill projects and past/planned maintenance-
Second factor per 15A NCAC 07J.1201(d)(2)

The Town’s original static line exception application report (CP&E, 2009) provides information about the design of the beach fill project for Wrightsville Beach, and how that project has performed in the past, as follows:

Project Performance

The Wrightsville Beach project along with the Carolina Beach project represented the first attempts by the USACE to restore complete beach profiles including the dune. In order to document the performance of the projects, the former USACE Coastal Engineering Research Center (CERC) established and funded a detailed beach profile monitoring program. CERC has subsequently been incorporated into the Engineering Research and Development Center, Coastal & Hydraulics Laboratory (CHL) located in Vicksburg, MS. The monitoring program was carried out during the first 4 to 5 years following initial construction with the monitoring program eventually being accomplished with project funds. The CHL monitoring program included beach profiles approximately every 1,000 feet along Wrightsville Beach, Masonboro Island, and Shell Island. During the initial years, the profile surveys were conducted quarterly. Once the CHL program expired, beach profile monitoring along Wrightsville Beach and Shell Island continued under the auspices of the project, with surveys conducted at least annually and sometimes twice a year depending on storm activity. Surveys of Masonboro Island are funded out of the federal O&M account.

Given the 49 year history of the project, presentation of all of the beach profile surveys would not serve the purpose of this static line exception 5-year progress report. Details of specific beach surveys can be found in the Town’s original static line exception application report (CP&E, 2009). However, a summary of strategically located beach profile stations and representative surveys offer a good analysis of project performance.

A survey conducted after the 2010 beach nourishment project, when compared to the design template, represents typical project performance for Wrightsville Beach observed over its 49 year history. Figures 3 and 4 show beach profile data for Station 95+00 and Station 118+00 before and after the 2010 project. During the past 49 years, the south end of the project from Masonboro Inlet has not experienced any significant losses due to the influence of the Masonboro Inlet north jetty fillet. Volumetric losses from the middle of the project area to the north end of the project have always been fairly significant with these losses associated with the continuing influence of the convex seaward shape of the island associated with the closure of Moore Inlet and losses attributed to the Masonboro Inlet jetties (USACE, 1982).

Following the initial construction of the project under PL 99-662 in 1991, periodic dredging of the Masonboro Inlet sediment trap has averaged 1,080,000 cubic yards every four years. Of this total, 583,000 cubic yards is allocated to the beach fill project and 497,000 to the Masonboro Inlet navigation project to mitigate the impacts of the Masonboro Inlet jetties. Future nourishment requirements for Wrightsville Beach are expected to follow past trends.
5-Year Progress Report: Project Design and Performance
There have been no design changes to the initial large-scale beach fill project following the granting of the static line exception in September 2009 by the Commission. New Hanover County, on behalf of the Town of Wrightsville Beach, will soon be seeking a local permit for the project using the same design as the USACE project. A locally held authorization would be useful in the event that Federal funding wanes.
C. Compatible Sediment-
Third factor per 15A NCAC 07J.1201(d)(3)

The Town’s original static line exception application report (CP&E, 2009) provides information about the availability of compatible sediment for future beach fill projects as follows:

**Borrow Material Sources**

a. *Existing Borrow Area/Sediment Trap*. The borrow area/sediment trap used to nourish the Wrightsville Beach project since 1986 is located in Masonboro Inlet and the south end of Banks Channel. This area was established to capture material transported over the weir section of the Masonboro Inlet north jetty to facilitate sand bypassing to both Wrightsville Beach and Masonboro Island. The material removed from Masonboro Inlet and transported back to Wrightsville Beach represents a sand recycling operation that puts material back on the beach that was eroded off Wrightsville Beach. While the characteristics of the native sand on Wrightsville Beach were not adequately defined prior to the initial fill placement in 1965, the demonstrated quality and performance of the material removed from the inlet and deposited on both Wrightsville Beach and Masonboro Island implicitly satisfies the sediment criteria stipulated in 15A NCAC 07H.0312.

Even though the material in the borrow area/sediment trap is material derived primarily from Wrightsville Beach, the USACE routinely takes vibracores throughout the borrow area/sediment trap to characterize the material. A total of 22 vibracores were collected for the 2006 nourishment project and 16 were collected for the 2010 project. The borrow area/sediment trap is excavated to a depth of -32.4 feet NAVD (-30 feet MLW) in Banks Channel and between -22.4 feet NAVD (-20 feet MLW) and 32.4 feet NAVD between the Masonboro Inlet jetties. In general, all of the material removed from the borrow area/sediment trap has proven to be high quality beach sand with little silt content.

The amount of material captured in the sediment trap has generally been sufficient to meet the nourishment requirements for Wrightsville Beach, including the mitigation fill associated with the impacts of the inlet jetties and the sand bypassing requirements needed to offset the impact of the jetties on Masonboro Island. In this regard, the volume of material removed from Masonboro Inlet during six operations since 1991 totals 6,480,000 cubic yards which is equivalent to 1,080,000 cubic yards every four years with an average of 753,000 cubic yards deposited on Wrightsville Beach and 327,000 cubic yards placed on Masonboro Island.

b. *Alternative Borrow Areas*. The Masonboro Inlet borrow area/sediment trap has been able to satisfy the periodic nourishment requirements for Wrightsville Beach and the sand bypassing needs for Masonboro Island since 1991. Even so, the USACE is concerned that the volume of material available during future operations could fall short of the total volume needs for both islands. To address this concern, the USACE has initiated a sand search seaward of Wrightsville Beach and on the south side of the ebb tide delta of Masonboro Inlet. To date, the USACE has collected vibracores from these areas but has not completed processing and final analysis of the data due to inadequate funding. The Town plans to ask the USACE to consider funding the completion of this project.
The ebb tide delta area off the northern end of Masonboro Island seems to hold some promise of having a relatively large volume of beach compatible material. During the period extending from the completion of the Masonboro Inlet north jetty in 1966 to the completion of the south jetty in 1980, the ebb tide delta on the south side of Masonboro Inlet more than doubled in size and volume. The USACE estimated 5 to 6 million cubic yards of material was deposited on the south side of the ebb tide delta during this period (USACE, 1982). The accumulation of this large volume of sediment was attributed to material being transported seaward by tidal currents once it entered the inlet from both Wrightsville Beach and Masonboro Island and to some extent the wave shadowing effect of the north jetty.

The current investigation of the south side of the ebb tide delta is the second such search conducted by the USACE. The first sand search was conducted in 1998 but the results were never finalized (USACE, 2000). At that time, the USACE had the same concerns regarding the adequacy of material trapped in the Masonboro Inlet borrow area/sediment trap and was exploring alternative sources to augment the material collected in the inlet. In addition to the south side of the Masonboro Inlet ebb tide delta, the USACE performed a cursory examination of existing upland dredged material disposal areas along the Atlantic Intracoastal Waterway (AIWW). The volume and quality of the material in the disposal areas was judged not to be sufficient to satisfy long-term nourishment requirements but could possibly serve as sources of emergency material that might be needed following storms.

The material permanently trapped in the south side of the ebb tide delta represents a net loss to the active beach systems on both Wrightsville Beach and Masonboro Island. Assuming that some of the ebb tide delta material could be removed without causing significant environmental damage, dredging schemes could be developed to return this trapped material back to Masonboro Island. Under this scheme, the material removed from the ebb tide delta would only extend down to depths comparable to the pre-north jetty condition, i.e., no previously existing ebb tide delta material would be removed. Any dredging scheme for removal of the ebb tide delta material would have to be carefully planned to prevent unwanted negative shoreline responses or environmental damages. If the ebb tide delta material was returned to Masonboro Island, the material trapped in Masonboro Inlet could be used solely for Wrightsville Beach for a period of time until the ebb tide delta source is exhausted.

c. **Borrow Area Summary.** Based on the past performance of the Masonboro Inlet borrow area/sediment trap, this renewable source of beach fill material appears to be adequate to maintain the project indefinitely. However, should the available supply fall short during future scheduled nourishment operations, the full development of the alternative offshore and inlet ebb tide delta borrow areas by the USACE would provide a source(s) to augment the nourishment requirements for both Wrightsville Beach and Masonboro Island.

**5-Year Progress Report: Compatible Sediment**

It appears to Staff that the sediment standard of less than 10% fines, used by the USACE and currently by DCM for permitting federal projects, can be met by the current borrow area in the channel between the north and south jetties, and extending into Banks Channel. This source has been compatible and large enough to satisfy past fill projects. Additionally, the USACE has begun looking at alternative sources offshore and on the south side of the ebb tide delta off Masonboro Island should the current source of sand prove to be insufficient to meet project needs.
There have been no design changes to the location and volume of compatible sediment following the granting of the static line exception by the Commission in September 2009. New Hanover County will soon be seeking a local permit for the project using the same design as the USACE project.

**D. Financial Resources**

*Fourth factor per 15A NCAC 07J.1201(d)(4)*

New Hanover County has a 3% room occupancy tax that is used to fund beach nourishment and tourism activities in the County. Sixty percent (60%) of the funds collected go toward beach nourishment. At the present time, the balance is approximately $36 million with annual collections totaling around $3.8 million. The New Hanover County Board of County Commissioners (Board) established the New Hanover County Ports Waterways and Beach Commission (PW&B Commission) to manage the beach nourishment funds and make recommendations to the Board on the use of the funds. In addition to the Wrightsville Beach project, New Hanover County has two other federal storm damage reduction projects it supports; namely, Carolina Beach and Kure Beach.

Federal funding for beach nourishment projects has been difficult to obtain in recent years as more often than not these funds have not been included in the President’s budget. As a result, local representatives have had to add the funds to the House and Senate versions of the appropriations bill. State funding for the projects, which is budgeted through the NC Division of Water Resources, has been fairly reliable, but given the recent budget deficits in North Carolina, continued State support could also present problems for future operations. Based on this, the PW&B Commission has evaluated three funding scenarios involving future funding from the federal government and State of North Carolina. The three scenarios are:

**Scenario 1**: All three projects will continue to receive funding from the federal government and the State at the same level as in the past. Under this scenario, the federal government will cover 65% of the cost of periodic nourishment and nonfederal interests responsible for the remaining 35%. The State’s share of the nonfederal portion is authorized up to 75% and the local (County) share 25% of the non-federal costs. Scenario 1 assumes the State will contribute the maximum allowed under State Law or 75% of the non-federal costs which is equal to 26.25% of the total cost for periodic nourishment. The 25% local share of the non-federal cost is equivalent to 8.75% of the total cost of periodic nourishment. Federal O&M funds will continue to pay for 46% of the nourishment costs to mitigate for the impacts of the Masonboro Inlet jetties.

**Scenario 2**: Federal funding support for the projects will end but O&M funds to mitigate for the impacts of the Masonboro Inlet jetties will continue. The State will contribute 75% of the normal 35% local share or 26.25% of the periodic nourishment costs allocated to the Wrightsville Beach project. New Hanover County will fund the balance of the periodic nourishment costs or 73.75% of the total cost of periodic nourishment for all three County projects.

**Scenario 3**: Federal funding and State funding for the Wrightsville Beach project will end but federal O&M funding to mitigate for the impacts of the Masonboro Inlet project will continue. The County will assume responsibility for 100% of the cost of periodic
nourishment of the Wrightsville Beach project and 100% of the nourishment costs for the other two County projects.

Under Scenario 1, sufficient funds will be available to continue nourishment of the Wrightsville Beach project and the other two County projects well beyond the 25 year requirement stipulated in 15A NCAC 07J.1201.

For Scenarios 2 and 3, the PW&B Commission made projections of future funds that would be available from the occupancy tax. The projections assumed revenues generated by the occupancy tax would grow at rates ranging from 1% to 3% over the next 25 years. The lower rate of growth was applied to the near future taking into account the present economic condition of the country. Interest on the fund balance was also varied ranging from 3% during the near term to 5% in the out years.

Future nourishment costs for all three County projects were estimated based on the past nourishment requirements and dredging costs with future costs inflated at an annual rate of 5%. Based on this estimate, the future nourishment costs for periodic nourishment of the Wrightsville Beach project over the next 25 years could range from an estimated $5.1 million in 2009-10 to over $16.4 million in 2033-34. Of this total nourishment cost, the Wrightsville Beach project would be responsible for $2.8 million in 2009-10 to $8.9 million in 2033-34. Federal O&M would be responsible for $2.3 million in 2009-10 to $7.5 million in 2033-34.

As a result of its analysis, the PW&B Commission concluded that under Scenario 2, State funds combined with the County funds would be able to completely fund all three County projects well beyond the 25 years required by 15A NCAC 07J.1201. Under Scenario 3 in which all funding would be provided by the County, funds generated by the room occupancy tax would be sufficient to support all three projects through the year 2041 and possibly 2044.

Based on the three funding scenarios, the Wrightsville Beach project will continue to receive periodic nourishment well beyond the 25 years required for the static line exception.

5-Year Progress Report: Financial Resources

The primary funding mechanism (Federal Project Cooperation Agreement) remains current for the Wrightsville Beach Coastal Storm Damage Reduction Project. A second federal funding mechanism is now in place in the form of contributing authority approved by Congress in 2012. The contributing authority option allows the non-federal sponsor the option of augmenting federal funding shortfalls. As a local funding strategy, an interlocal agreement has been approved between New Hanover County and each beach community. The agreement sets percentages of financial participation (attached) in the event shortfalls occur within federal and state budgets. Considering only funding at current intervals and historical placement volumes, ample funding should be available for the Wrightsville Beach Coastal Storm Damage Reduction Project for the foreseeable future (greater than 25 years).

New Hanover County currently has approximately $36 million in room occupancy tax reserve funding for future local match or local participation in beach projects. Annual collections totaled an estimated $3.8 million in 2013 for CSDR projects and, historically, the fund has grown by approximately 3% per year since 1984. The Town of Wrightsville Beach has placed an additional $324,000 in a Capital Improvement Fund to augment room occupancy tax funds and is committed
to setting aside additional funds in future budgets. Staff also notes that while 25 years of funding must be shown through this process, the Commission will have the opportunity to re-evaluate the static line exception and the necessary requirements every five years, and can address major changes in future funding.

IV. Staff’s Recommendation

The Commission, through 15A NCAC 07J.1204(c), directs Staff to provide a recommendation to the Commission whether the conditions defined in 15A NCAC 07J.1201(d)(1) through (d)(4) have been met and whether any design or funding changes in the last five years should result in the static line exception being revoked. Based on the Town’s 5-year progress report and additional exhibits attached, Staff recommends that the conditions in 15A NCAC 07J.1201(d)(1) through (d)(4) have been met, and there have been no changes in the last five years that should result in the Town’s static line exception being revoked. Staff recommends that the Commission renew the Town’s static line exception for another five years.

V. References


TOWN OF WRIGHTSVILLE BEACH, NC

REVIEW OF THE LARGE SCALE BEACH-FILL PROJECT AND APPROVED STATIC LINE EXCEPTION PURSUANT TO 15A NCAC 07J .1204

Prepared by: Town of Wrightsville Beach

March 1, 2014
March 1, 2014

NC Division of Coastal Management
Attn: Braxton Davis, Director
400 Commerce Avenue
Morehead City, NC 28557

Dear Mr. Davis,

The Town of Wrightsville Beach filed a request for a static line exception from the CRC on July 13, 2009. The case was heard by the CRC and later approved on September 9, 2009. Pursuant to 15A NCAC 07J .1204, the Town or Wrightsville Beach is required to provide a progress report to the Coastal Resources Commission at intervals no greater than every 5 years from the initial authorization in order to renew its findings for conditions defined in 15A NCAC 07J .1201(d) (1) through (d)4. The Coastal Resources Commission will also consider conditions as outlined in 15A NCAC 07J .1204(b)(1) through (3).

Attached is information that is being submitted as a progress report for the Town’s Static Line Exception. I believe that you will find that it meets all of the criteria required by the North Carolina Administrative Code as outlined above. Since the Town received the static line exception, the Town has had 1 storm damage reduction project completed by the US Army Corps of Engineers with one being planned for FY14. The Town continues to value the importance of storm damage reduction projects and the
importance that they play in protecting local infrastructure, property and the Town's tourism economy.

Thank you for your assistance with this matter. If you have any questions, please contact me at (910)239-1770.

Sincerely,

[signature]

Timothy W. Owens
Town Manager
Wrightsville Beach, NC
Static Line Exception 5 Year Review

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PURPOSE
The Town of Wrightsville Beach applied for and received an exception from the static line pursuant to NCGS 113A-107, 113(b)(6), 113A-124 and 15A NCAC 7J .1200 from the North Carolina Coastal Resources Commission on August 27, 2009. The Coastal Resources Commission shall review a static line exception authorized under 15A NCAC 07J .1203 at intervals no greater than every five years from the initial authorization in order to renew its findings for the conditions defined in 15A NCAC 07J .1201(d)(2) through (d)(4).

This document has been created for submittal to the NC Coastal Resources Commission for the review of conditions as it relates to the Town’s static line exception reauthorization.

PROJECT AUTHORIZATION AND HISTORY
(Text and Figures taken from Wrightsville Beach Static Line Exception Report, Coastal Planning and Engineering, Inc. June 2009)

The Town is located primarily on a barrier island located in New Hanover County, North Carolina. The island is approximately 1.2 square miles in size (excluding Harbor Island) and is approximately 4.5 miles long and 0.25 miles wide. It is generally oriented in a north-south direction. It is bounded on the north by Mason Inlet and to the south by Masonboro Inlet. Mason Inlet was relocated in 2002 moving the inlet system 3,000 feet closer to the north and away from threatened structures on the north end of Wrightsville Beach and Shell Island Resort. Masonboro Inlet is a navigational channel and there are jetties on either side of the channel. The north jetty was installed in 1966 and the south jetty was installed in 1980.

Currently, the static line extends for approximately 2.3 miles from just north of North Ridge Lane (northern end of the static line) to just south of Sprunt Street (southern end of the static line). The static line was determined by DCM Staff using 1980 aerial photographs and staff located the static line along the vegetation line shown on those photographs. The current average annual erosion setback factor for the affected area is 2.0 feet per year. Based on New Hanover County's GIS images with 2006 aerial photographs overlain with parcel boundaries, the affected area is a highly developed area with an estimated 6 vacant oceanfront lots located in the affected area.

Wrightsville Beach has had a long history of oceanfront development and of beach fill projects. The first beach fill project was authorized by Congress in 1962 and work began in 1965. The north jetty was completed in 1966 with additional fill associated with its construction. The next project was in 1970 along the northern portion of the project area. Following Hurricane David in 1979, the next projects were in April of 1980 to repair the northern portion of the project area and then a larger restoration project in late-1980 through April 1981 which
used sediment from between the north and south jetties after the south jetty was installed in 1980.

The project was reevaluated in September 1982 by the United States Army Corps of Engineers (USACE), and was reauthorized in 1986. The reauthorization extended federal cost sharing for the life of the project (50 years per USACE), and the first work under this reauthorization began in 1991, resulting in a current project authorization through 2041. In 1986, another project placed sand on both Masonboro Island and Wrightsville Beach using sediment from the borrow area between the two jetties and extending into Banks Channel. Since 1986, beach fill projects have occurred approximately every four years, beginning in 1991, using a combination of federal, state, and local funding sources.

**PROJECT DESIGN TEMPLATE**
(Text and Figures taken from Wrightsville Beach Static Line Exception Report, Coastal Planning and Engineering, Inc. June 2009)

The Wrightsville Beach federal storm damage reduction project was originally authorized by Public Law 87-874 in 1962 (H.D. 511, 87th Cong. 2nd session.). The project covers 14,000 feet of ocean shoreline extending north from Masonboro Inlet (Figure 1). While not part of the authorized project, a 1,000-foot to 2,000-foot transition fill is normally included at the north end for engineering performance purposes. The cross-sectional configuration of the authorized project consists of a 25-foot wide dune at elevation 12.5 feet above NAVD fronted by a 50-foot wide storm berm at elevation 9.5 feet above NAVD (Figure 2). A plan layout of the project showing its footprint is provided in Figures 3a and 3b. Periodic nourishment of the project is performed approximately every 4 years.

A reevaluation of the Wrightsville Beach project was made in September 1982 with the results provided in a report entitled *Feasibility Report and Environmental Assessment on Shore and Hurricane Wave Protection, Wrightsville Beach, North Carolina* (USACE1982). The reevaluation report led to the reauthorization of the project by the Water Resources Development Act of 1986 (PL 99-662). The re-authorization extended Federal cost sharing for periodic beach nourishment for the life of the project. This has been interpreted by the Corps of Engineers (USACE) to mean 50 years from the initiation of construction under the new authority. Initial construction under the PL 99-662 occurred in 1991. Based on this USACE interpretation of the PL 99-662 reauthorization, federal funding for periodic nourishment of the Wrightsville Beach project is authorized through the year 2041. The 1986 reauthorization acknowledged the Federal navigation project at Masonboro Inlet (USACE, 1977) was responsible for 46% of the volumetric erosion along the Wrightsville Beach project and this impact would be mitigated through Federal funds for sand bypassing. Sand bypassing at Masonboro Inlet is accomplished by removing material from a dredged sediment trap that begins about 2,500 feet into Banks Channel and includes most of the area between
the two jetties. Material enters the sediment trap by passing over the weir section of the north jetty.

The 1991 nourishment operation will be used in this static line exception renewal as the project construction start date. Therefore, the Wrightsville Beach project has been in existence for 22 years and satisfies the minimum requirement of 5 years as specified in 15A NCAC 07J .1201. Also as specified in 15A NCAC 07J .1201, this application will provide information that demonstrates the project will continue to be maintained until at least the year 2041 or 25 years from the date of the exception application. Given the existing federal authority that extends through 2041 and the likelihood the project could be reauthorized yet again, maintenance of the project is expected to continue well beyond 2039.

Figure 1. Wrightsville Beach project limits and USACE Baseline Stations.
Figure 2. Wrightsville Beach authorized cross-section.
### Table 1. Wrightsville Beach Nourishment History

| Nourishment Dates | Borrow Area | Placement Area (stat.
|                  |             | y)
|-------------------|-------------|-------------------
| Feb–Jul 65        | Banks Channel | 0 to 140          |
| Mar–Jul 66        | Deposition Basin | 30 to 130        |
| Oct 66            | Behind Shell Is. | 120 to 140       |
| Mar–May 70        | S. End Banks Ch. | 60 to 140        |
| Mar–May 80        | S. End Banks Ch. | 60 to 140        |
| Dec 80–Apr 81     | Masonboro Ina. | 60 to 140        |
| Apr–Jun 86        | Masonboro Ina. | 60 to 140        |
| Jan–May 91        | Masonboro Ina. | 60 to 140        |
| Mar–Jun 94        | Masonboro Ina. | 82 to 146        |
| Mar–Apr 98        | Masonboro Ina. | 60 to 140        |
| Mar–May 02        | Masonboro Ina. | 60 to 140        |
| Jan–Apr 06        | Masonboro Ina. | 60 to 140        |

*(1)* The Masonboro Inlet borrow area includes the southern 2,500 feet of Banks Channel.

*(2)* Stations in 100’s feet.

### Table 2. Wrightsville Beach Funding Sources

<table>
<thead>
<tr>
<th>Nourishment Dates</th>
<th>Federal Funding Source</th>
<th>Non-Federal</th>
<th>Cost of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb–Jul 65</td>
<td>CG: $496,836</td>
<td>$242,503</td>
<td>$739,339</td>
</tr>
<tr>
<td></td>
<td>PL84-99: $167,826</td>
<td>$79,667</td>
<td>$436,242</td>
</tr>
<tr>
<td></td>
<td>Sec III: $12,397</td>
<td>$32,375</td>
<td>$50,697</td>
</tr>
<tr>
<td></td>
<td>ORM: $142,888</td>
<td>$173,475</td>
<td>$59,770</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$53,011</td>
<td>$1,159,936</td>
</tr>
<tr>
<td>Dec 80–Apr 81</td>
<td>$550,239</td>
<td>$259,271</td>
<td>$986,282</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$676,415</td>
<td>$1,331,715</td>
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<tr>
<td></td>
<td></td>
<td>$1,277,848</td>
<td>$2,682,412</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$970,408</td>
<td>$1,973,591</td>
</tr>
<tr>
<td></td>
<td>$1,436,812</td>
<td>$549,457</td>
<td>$2,880,256</td>
</tr>
<tr>
<td></td>
<td>$756,726</td>
<td>$1,207,196</td>
<td>$500,061</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$1,075,018</td>
<td>$4,810,290</td>
</tr>
</tbody>
</table>

*(1)* The 2006 operation included both Federal and State Emergency Supplemental Funds.
RECENT PROJECT DATA AND FIGURES

Wrightsville Beach 2010 Coastal Storm Damage Reduction Project

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Date</td>
<td>2/17/2010 to 3/2/2010</td>
</tr>
<tr>
<td>Contract Award</td>
<td>November 23, 2009</td>
</tr>
<tr>
<td>Borrow Volume</td>
<td>450,000 CY</td>
</tr>
<tr>
<td>Project Cost</td>
<td>$2.8M</td>
</tr>
<tr>
<td>Project Design Maps</td>
<td>Provided</td>
</tr>
</tbody>
</table>

2010 Project Boundary
2010 Project Boundary and Beach Profile (large copies of maps below provided as an attachment)
Proposed Wrightsville Beach 2014 Coastal Storm Damage Reduction Project

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Date</td>
<td>January 2014 to May 2014</td>
</tr>
<tr>
<td>Contract Award</td>
<td>December 2013</td>
</tr>
<tr>
<td>Borrow Volume</td>
<td>700,000 cy</td>
</tr>
<tr>
<td>Project Cost</td>
<td>$6.15 M</td>
</tr>
<tr>
<td>Project Design Maps</td>
<td>Attached</td>
</tr>
</tbody>
</table>

All sand for the project will come from the current borrow site within Masonboro Inlet. The sediment trap in Masonboro Inlet has been used since 1986. The area was established to capture material transported over the weir section of the Masonboro Inlet north jetty to facilitate sand bypassing to both Wrightsville Beach and Masonboro Island.
Review of the Large-Scale Beach Fill Projects and Approved Static Line Exceptions

As previously stated, the North Carolina Coastal Resources Commission is to review the status of Large-Scale Beach Fill Projects and approved Static Line Exceptions at least every 5 years pursuant to 15A NCAC 07J .1204.

FINDINGS

15A NCAC 07J .1204 REVIEW OF THE LARGE-SCALE BEACH-FILL PROJECT AND APPROVED STATIC LINE EXCEPTIONS

(b) The Coastal Resources Commission shall review a static line exception authorized under 15A NCAC 07J .1203 at intervals no greater than every five years from the initial authorization in order to renew its findings for the conditions defined in 15A NCAC 07J .1201(d)(2) through (d)(4). The Coastal Resources Commission shall also consider the following conditions:

(1) Design changes to the initial large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2) provided that the changes are designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for the work;

There have been no design changes following the granting of the static line exception in 2009 by the Coastal Resource Commission. New Hanover County, on behalf of Wrightsville Beach, will soon be seeking a local permit for the project using the same design as the US Army Corps of Engineers Project. The purpose of a locally held authorization would be in the event that federal funding wanes.
(2) Design changes to the location and volume of compatible sediment, as defined by 15A NCAC 07H.0312, necessary to construct and maintain the large-scale beach fill project defined in 15A NCAC 07J.1201(d)(2), including design changes defined in this Rule provided that the changes have been designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for the work; and

There have been no design changes to the location and volume of compatible sediment following the granting of the static line exception in 2009. New Hanover County will soon be seeking a local permit for the project using the same design as the US Army Corps of Engineers Project.

The US Army Corps of Engineers has completed vibracore sampling of several potential offshore borrow sites. While these areas appear promising, the Corps of Engineers has not received adequate funding to complete the final analysis of the areas. The Town plans on asking the Corps to consider funding the completion of this project.
(3) Changes in the financial resources or funding sources necessary to fund the large-scale beach fill project(s) defined in 15A NCAC 07J .1201(d)(2). If the project has been amended to include design changes defined in this Rule, then the Coastal Resources Commission shall consider the financial resources or funding sources necessary to fund the changes.

The primary funding mechanism (Federal Project Cooperation Agreement) remains current for the Wrightsville Beach Coastal Storm Damage Reduction Project. A second federal funding mechanism is now in place in the form of contributing authority approved by Congress in 2012. The contributing authority option allows the non-federal sponsor the option of augmenting federal funding shortfalls.

As a local funding strategy, an Inter-local agreement has been approved between New Hanover County and each beach community. The agreement sets percentages of financial participation (attached) in the event shortfalls occur within federal and state budgets. Considering only funding at current intervals and historical placement volumes, ample funding should be available for the Wrightsville Beach Coastal Storm Damage Reduction Project for the foreseeable future (greater than 25 years).

New Hanover County currently has approximately $36M in room occupancy tax reserve funding for future the local match or local participation in beach projects. Annual collections total an estimated $3.8M in 2013 for CSDR projects and, historically, the fund has grown by approximately 3% per year since 1984. The Town of Wrightsville Beach has placed an additional $324,000 in a Capital Improvement Fund to augment Room Occupancy Tax funds and is committed to setting aside additional funds in future budgets.
ATTACHMENT D: New Hanover County Interlocal Agreement for Contingency Plan Beach Nourishment

New Hanover County Contract #12-0190

STATE OF NORTH CAROLINA
NEW HANOVER COUNTY

INTERLOCAL AGREEMENT FOR CONTINGENCY PLAN BEACH NOURISHMENT

This Interlocal Agreement ("Agreement") is made __________, 2011 by and between the County of New Hanover, North Carolina, a body corporate and politic (hereinafter referred to as the "County") and the Municipalities of Wrightsville Beach, Carolina Beach, and Kure Beach, bodies politic and corporate (hereinafter referred to as the "Towns").

PURPOSE

WHEREAS, the ocean beaches located within the corporate boundaries of Wrightsville Beach, Carolina Beach and Kure Beach (herein collectively the "Town Beaches") are a valuable resource bringing economic, environmental, cultural and recreational benefits to people of the United States, including those in the State of North Carolina; and

WHEREAS, the financing and maintenance of the Town Beaches has been and remains an appropriate function of the Federal and State governments; and

WHEREAS, maintenance of the Town Beaches through United States Army Corps of Engineers nourishment projects funded primarily by the Federal and State governments has accordingly been successfully performed for many decades; and

WHEREAS, the maintenance of Town Beaches is vital to continued economic, environmental and cultural well-being of the County and Town; and

WHEREAS, critical to the Municipalities of Wrightsville Beach, Carolina Beach, and Kure Beach is demonstrating the long-term feasibility of financing plans for the maintenance of their ocean beaches, in order to preserve their status as or to establish eligibility for designation as a Static Vegetation Line Exception community under regulations promulgated by the State's Coastal Area Management Act; and
WHEREAS, the ongoing availability of Federal and State funding for Corps of Engineers managed beach nourishment projects remains uncertain; and

WHEREAS, County and Towns accordingly seek to establish contingency plans to address various scenarios wherein Federal or State monies may not be available for beach nourishment; and

WHEREAS, County and Towns also seek to provide for the potential use of sixty percent (60%) of the first three percent (3%) of the Room Occupancy Tax available for beach nourishment (subsequent references to the “use of Room Occupancy Tax” shall mean use of the portion of the Room Occupancy Tax available for beach nourishment as defined hereinabove) and local general revenues, as necessary, for funding of either a portion of Corps managed beach nourishment or County managed beach nourishment projects if Federal or State funds are unavailable or insufficient for such purposes; and

WHEREAS, County and Towns are jointly seeking approval by State and Federal Agencies of a contingent Nourishment Plan for the Town Beaches, and the State, in anticipation of such a plan, is prepared to complete/review any necessary environmental studies, and State and Federal Agencies involved in the funding have indicated that they strongly prefer and require that units of local government work on and submit one mutual plan for beach nourishment without individual towns seeking separate funding or individual beach nourishment projects except in emergencies. Provided that nothing contained in this Agreement shall be construed to limit or restrict the authority of Wrightsville Beach, Carolina Beach, and Kure Beach to continue to participate in and seek funding for their existing Corps managed beach nourishment programs; and

WHEREAS, it is within the contemplation of the Parties hereto and State agencies involved in the approval process that the U.S. Army Corps of Engineers and other Federal approval agencies will issue one permit for the Town Beaches. Use of said permit is contingent upon Federal and/or State funding being unavailable or insufficient for Corps managed projects; and
WHEREAS, County and Towns now desire to enter into an agreement that provides a planning mechanism, plan, and compact among the parties for a contingent beach nourishment program for the Town Beaches (hereinafter referred to as the “Master Nourishment Plan”, “Master Plan” or “Plan”), which utilizes available funds from the County’s Room Occupancy Tax together with the general revenue of the respective locality and any State and Federal funding secured for the Master Nourishment Plan; and

WHEREAS, County and Towns now desire to enter into an agreement addressing local funding sources should Federal and State monies be unavailable or insufficient to finance nourishment projects for the Town Beaches; and

WHEREAS, under this Agreement it is contemplated that the County as the lead sponsor, with the assistance of its Wilmington/New Hanover County Port, Waterway and Beach Commission, and consultants hired by the County, in consultation with the Towns, will prepare the Master Nourishment Plan for approval by the Towns. Upon written approval by all of the Towns of such Plan, the Plan will then be implemented under this Agreement with the County being the designated permittee for beach nourishment; and

WHEREAS, notwithstanding this Agreement or any provisions therein, the Parties agree to support and continue efforts to procure Federal and State funding for beach nourishment projects.

NOW THEREFORE, County and Towns pursuant to NCGS 160A-17 and Part 1 of Article 20 of Chapter 160A of the North Carolina General Statutes, hereby contract and agree as follows:

1. **Purpose.** This agreement seeks to address the following different potential scenarios:
   a. Those situations in which Federal or State funding for beach nourishment for Corps managed projects for Town Beaches is reduced.
   b. Those situations in which no Federal or State funding for beach nourishment for Town Beaches is available. In such event the County and Towns would proceed under the contingent plan and permit process set-forth herein.

County and Towns enter into this Agreement in order to prepare, approve and carry out the Master Nourishment Plan providing for acquisition of one permit for
nourishment of the Town Beaches and identification of the source of tax funds and other revenues to be used to implement such plan. The Master Nourishment Plan shall not include navigational or harbor dredging where the dredged materials is not used for beach nourishment.

2. Development of Master Nourishment Plan. The County, using available Room Occupancy Tax revenues, will over the next 18 to 36 months develop the Master Plan in consultation with State and Federal Agencies, the Towns, consulting engineers, and the Wilmington/New Hanover County Port, Waterway and Beach Commission, and submit the same to the Towns for consideration and approval by all of the Towns. Concurrently the County will submit for a State and Federal permit to carry out and complete the Plan. The Master Plan shall not be effective until approved by all of the Towns in writing. The final approved plan will contain the following principles and encompass and cover the following subjects, goals and objectives:

a. Easements and Rights-of-Way. Each Town shall be responsible for providing the staging areas, sites or necessary lands, easements, and rights-of-way required for the development, construction, and maintenance of those elements of the Master Nourishment Plan to be implemented within the Town. No Town will be obligated to provide sites, staging areas or facilities for nourishment that will take place in another party’s jurisdiction. However, the plan will provide that Towns may cooperate in providing staging areas and access to the beach for beach construction equipment regardless of where the beach construction activity is taking place when joint nourishment projects are undertaken.

b. Public Beach Access and Parking. The Towns shall be responsible for securing, constructing, and maintaining any and all access/parking facilities stipulated as a condition of receiving State or Federal funding. All public beach accesses and parking facilities must be secured prior to issuing a notice to proceed for each construction event.

c. Funding Contingency. Each party’s participation in a nourishment project associated with the Master Nourishment Plan will be contingent on such party, in its sole discretion, being able to fund its portion of the project. Each
New Hanover County Contract #12-0190

Town is required to anticipate the need for the local funding share and to either budget for the same over a period of years, provide for and conduct elections to approve of bonds or borrowing pursuant to State law, or put in place tax districts or similar means of funding the local share. Failure to meet local funding needs by one or more Towns could result in the County passing over a project of the Town due to lack of funding.

d. **Construction Administration.** The County may serve in the role as lead administrator for any nourishment event associated with the Master Nourishment Plan.

3. **Cost-sharing for Corps-Managed Projects or Projects Implemented Under the Master Nourishment Plan.** In the event Federal and State funding is insufficient to pay the costs of any beach nourishment project, the Room Occupancy Tax will pay any shortfall in funding for such project up to a maximum of 82.5% of the total project costs. If after payment of Room Occupancy Tax funds in an amount equal to 82.5% of the total project costs a shortfall remains, such shortfall shall be paid by the Town in which such project is located up to a maximum of 17.5% of the total project costs.

4. **Ownership and Use of Nourished Beaches.** The ownership and use of beaches nourished under this Agreement are subject to the State Lands Act.

5. **Withdrawal, Termination, Modifications, Amendments, and Binding Effects.** The commitment of each Town to provide public beach access, parking or any other lands or rights-of-way, or any rules or regulations with respect to use of the same, as a party to this agreement, is expressly conditioned on Federal and State laws, regulations, or interpretations thereof, as of the date of approval of this agreement by signatories herewith. If there are amendments, changes or interpretations to Federal or State law or regulations, which are adopted after this Agreement is approved which affect a party’s rights and obligations in this Agreement, any party that chooses not to meet the requirements shall have a right to withdraw from this Agreement at any time.
Once approved by the County and all of the Towns, this Agreement shall remain in effect until June 30, 2015 and be binding on the Parties regardless of changes in the composition of boards of the respective units of local government that are parties hereto. This Agreement shall automatically renew for subsequent periods of four years unless any party gives notice in writing to all other parties at least 180 days before the expiration of the then current term of its desire that the Agreement not renew at its termination. In such event, the Agreement shall terminate at the end of its then current term.

Once approved, no party may withdraw except that a Town upon twelve (12) months written notice to the County and other Towns may withdraw. Withdrawal of a party as provided in this paragraph shall not cause the Agreement to terminate. The Agreement shall only be terminated as provided in the preceding paragraph.

6. Any amendment of modification to this Agreement shall require the written consent of all Parties.

IN WITNESS WHEREOF, the parties have executed this Agreement.

COUNTY OF NEW HANOVER

ATTEST:

[Signature]
Chairman of the Board

Clerk to the Board

TOWN OF WRIGHTSVILLE BEACH

ATTEST:

[Signature]
Town Clerk

[Stamp]
Approved as to form/County Attorney

[Signature]

6
NORTH CAROLINA

NEW HANOVER COUNTY

I, ________________, a Notary Public of the State and County aforesaid certify that Sheila L. Schult acknowledged that she is Clerk to the Board of Commissioners of New Hanover County and that by authority duly given and as the act of the Board the foregoing instrument was signed in its name by its Chairman, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal this __8__ day of __Dec__, 2011.

______________
Notary Public

My commission expires: ________________

TERESA P. ELMORE
NOTARY PUBLIC - NORTH CAROLINA
NEW HANOVER COUNTY
My Commission Expires 4-11
NORTH CAROLINA

NEW HANOVER COUNTY

I, Virginia A. Houser, a Notary Public of the State and County aforesaid certify that Sylvia J. Holleman acknowledged that she is Clerk to the Board of Alderman of Wrightsville Beach and that by authority duly given and as the act of the Board the foregoing instrument was signed in its name by its Mayor, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal this 17th day of November, 2011.

Virginia A. Houser
Notary Public

My commission expires: 5/3/12

NORTH CAROLINA

NEW HANOVER COUNTY

I, Iris D. Slate, a Notary Public of the State and County aforesaid certify that Melissa M. Pruszack acknowledged that she is Clerk to the Town Council of Carolina Beach and that by authority duly given and as the act of the Council the foregoing instrument was signed in its name by its Mayor, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal this 15th day of November, 2011.

Iris D. Slate
Notary Public

My commission expires: 2-3-2014

ORIGINAL
NORTH CAROLINA

NEW HANOVER COUNTY

I, _______________________, a Notary Public of the State and County aforesaid certify that ______________________ acknowledged that she is Clerk to the Town Council of Kure Beach and that by authority duly given and as the act of the Council the foregoing instrument was signed in its name by its Mayor, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal this ___ day of __________, 2011.

______________________________
Notary Public

My commission expires: __________

______________________________
Notary Public

New Hanover County Contract #12-0190
MEMORANDUM

TO: Coastal Resources Commission

FROM: Matt Slagel, DCM Shoreline Management Specialist

SUBJECT: Town of Carolina Beach Static Line Exception 5-Year Progress Report

Petitioner, the Town of Carolina Beach (“Town”) requests that its static line exception be reauthorized by the Coastal Resources Commission, based on the information found within the attached 5-year progress report. The granting of such a request by the Commission would result in the continued application of 15A NCAC 07H.0306(a)(8) to proposed development projects along the affected area of the town, instead of the static or pre-project vegetation line of 07H.0305(f) and 07H.0306(a)(1).

The Town’s original static line exception was granted by the Commission on September 9, 2009. The Commission’s rule 15A NCAC 07J.1204(b) indicates that the Commission “shall review a static line exception authorized under 15A NCAC 07J.1203 at intervals no greater than every five years from the initial authorization in order to renew its findings for the conditions defined in 15A NCAC 07J.1201(d)(1) through (d)(4).” Specifically, these four criteria require a showing by the Petitioner of (1) a summary of all beach fill projects in the area proposed for the exception, (2) plans and related materials showing the design of the initial fill projects, and any past or planned maintenance work, (3) documentation showing the location and volume of compatible sediment necessary to construct and maintain the project over its design life, and (4) identification of the financial resources or funding sources to fund the project over its design life. 15A NCAC 07J.1204(b) also states that the Commission shall consider design changes to the initial large-scale beach fill project, design changes to the location and volume of compatible sediment, and changes in the financial resources or funding sources necessary to fund the large-scale beach fill project.

Based on the Town’s 5-year progress report and additional exhibits attached, Staff recommends that the conditions in 15A NCAC 07J.1201(d)(1) through (d)(4) have been met, and there have been no changes in the last five years that should result in the Town’s static line exception being revoked. Staff recommends that the Commission renew the Town’s static line exception for another five years.

The following information is attached to this memorandum:
Attachment A: Relevant Procedural Rules
Attachment B: Staff’s Report to the Commission
Attachment C: Petitioner’s 5-Year Progress Report
Attachment D: New Hanover County Interlocal Agreement for Contingency Plan Beach Nourishment
ATTACHMENT A: Relevant Procedural Rules

SECTION .1200 – STATIC VEGETATION LINE EXCEPTION PROCEDURES

15A NCAC 07J .1201 REQUESTING THE STATIC LINE EXCEPTION

(a) Any local government or permit holder of a large-scale beach fill project, herein referred to as the petitioner, that is subject to a static vegetation line pursuant to 15A NCAC 07H .0305, may petition the Coastal Resources Commission for an exception to the static line in accordance with the provisions of this Section.

(b) A petitioner is eligible to submit a request for a static vegetation line exception after five years have passed since the completion of construction of the initial large-scale beach fill project(s) as defined in 15A NCAC 07H .0305 that required the creation of a static vegetation line(s). For a static vegetation line in existence prior to the effective date of this Rule, the award-of-contract date of the initial large-scale beach fill project, or the date of the aerial photography or other survey data used to define the static vegetation line, whichever is most recent, shall be used in lieu of the completion of construction date.

(c) A static line exception request applies to the entire static vegetation line within the jurisdiction of the petitioner including segments of a static vegetation line that are associated with the same large-scale beach fill project. If multiple static vegetation lines within the jurisdiction of the petitioner are associated with different large-scale beach fill projects, then the static line exception in accordance with 15A NCAC 07H .0306 and the procedures outlined in this Section shall be considered separately for each large-scale beach fill project.

(d) A static line exception request shall be made in writing by the petitioner. A complete static line exception request shall include the following:

   (1) A summary of all beach fill projects in the area for which the exception is being requested including the initial large-scale beach fill project associated with the static vegetation line, subsequent maintenance of the initial large-scale projects(s) and beach fill projects occurring prior to the initial large-scale projects(s). To the extent historical data allows, the summary shall include construction dates, contract award dates, volume of sediment excavated, total cost of beach fill project(s), funding sources, maps, design schematics, pre-and post-project surveys and a project footprint;

   (2) Plans and related materials including reports, maps, tables and diagrams for the design and construction of the initial large-scale beach fill project that required the static vegetation line, subsequent maintenance that has occurred, and planned maintenance needed to achieve a design life providing no less than 25 years of shore protection from the date of the static line exception request. The plans and related materials shall be designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for said work;

   (3) Documentation, including maps, geophysical, and geological data, to delineate the planned location and volume of compatible sediment as defined in 15A NCAC 07H .0312 necessary to construct and maintain the large-scale beach fill project defined in Subparagraph (d)(2) of this Rule over its design life. This documentation shall be designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for said work; and

   (4) Identification of the financial resources or funding sources necessary to fund the large-scale beach fill project over its design life.

(e) A static line exception request shall be submitted to the Director of the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557. Written acknowledgement of the receipt of a completed static line exception request, including notification of the date of the meeting at which the request will be considered by the Coastal Resources Commission, shall be provided to the petitioner by the Division of Coastal Management.
The Coastal Resources Commission shall consider a static line exception request no later than the second scheduled meeting following the date of receipt of a complete request by the Division of Coastal Management, except when the petitioner and the Division of Coastal Management agree upon a later date.  

**History Note:** Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

**15A NCAC 07J .1202 REVIEW OF THE STATIC LINE EXCEPTION REQUEST**

(a) The Division of Coastal Management shall prepare a written report of the static line exception request to be presented to the Coastal Resources Commission. This report shall include:

1. A description of the area affected by the static line exception request;
2. A summary of the large-scale beach fill project that required the static vegetation line as well as the completed and planned maintenance of the project(s);
3. A summary of the evidence required for a static line exception; and
4. A recommendation to grant or deny the static line exception.

(b) The Division of Coastal Management shall provide the petitioner requesting the static line exception an opportunity to review the report prepared by the Division of Coastal Management no less than 10 days prior to the meeting at which it is to be considered by the Coastal Resources Commission.  

**History Note:** Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

**15A NCAC 07J .1203 PROCEDURE FOR APPROVING THE STATIC LINE EXCEPTION**

(a) At the meeting that the static line exception is considered by the Coastal Resources Commission, the following shall occur:

1. The Division of Coastal Management shall orally present the report described in 15A NCAC 07J .1202.
2. A representative for the petitioner may provide written or oral comments relevant to the static line exception request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.
3. Additional parties may provide written or oral comments relevant to the static line exception request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.

(b) The Coastal Resources Commission shall authorize a static line exception request following affirmative findings on each of the criteria presented in 15A NCAC 07J .1201(d)(1) through (d)(4). The final decision of the Coastal Resources Commission shall be made at the meeting at which the matter is heard or in no case later than the next scheduled meeting. The final decision shall be transmitted to the petitioner by registered mail within 10 business days following the meeting at which the decision is reached.

(c) The decision to authorize or deny a static line exception is a final agency decision and is subject to judicial review in accordance with G.S. 113A-123.  

**History Note:** Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

**15A NCAC 07J .1204 REVIEW OF THE LARGE-SCALE BEACH-FILL PROJECT AND APPROVED STATIC LINE EXCEPTIONS**

(a) Progress Reports. The petitioner that received the static line exception shall provide a progress report to the Coastal Resources Commission at intervals no greater than every five years from date the static line exception is authorized. The progress report shall address the criteria defined in 15A NCAC 07J .1201(d)(1) through (d)(4) and be submitted in writing to the Director of the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557. The Division of Coastal Management shall provide written acknowledgement of the receipt of a completed progress report, including notification of the meeting date at which the report will be presented to the Coastal Resources Commission to the petitioner.

(b) The Coastal Resources Commission shall review a static line exception authorized under 15A NCAC 07J .1203 at intervals no greater than every five years from the initial authorization in order to
renew its findings for the conditions defined in 15A NCAC 07J .1201(d)(2) through (d)(4). The Coastal Resources Commission shall also consider the following conditions:

(1) Design changes to the initial large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2) provided that the changes are designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for the work;

(2) Design changes to the location and volume of compatible sediment, as defined by 15A NCAC 07H .0312, necessary to construct and maintain the large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2), including design changes defined in this Rule provided that the changes have been designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for the work; and

(3) Changes in the financial resources or funding sources necessary to fund the large-scale beach fill project(s) defined in 15A NCAC 07J .1201(d)(2). If the project has been amended to include design changes defined in this Rule, then the Coastal Resources Commission shall consider the financial resources or funding sources necessary to fund the changes.

(c) The Division of Coastal Management shall prepare a written summary of the progress report and present it to the Coastal Resources Commission no later than the second scheduled meeting following the date the report was received, except when a later meeting is agreed upon by the local government or community submitting the progress report and the Division of Coastal Management. This written summary shall include a recommendation from the Division of Coastal Management on whether the conditions defined in 15A NCAC 07J .1201(d)(1) through (d)(4) have been met. The petitioner submitting the progress report shall be provided an opportunity to review the written summary prepared by the Division of Coastal Management no less than 10 days prior to the meeting at which it is to be considered by the Coastal Resources Commission.

(d) The following shall occur at the meeting at which the Coastal Resources Commission reviews the static line exception progress report:

(1) The Division of Coastal Management shall orally present the written summary of the progress report as defined in this Rule.

(2) A representative for the petitioner may provide written or oral comments relevant to the static line exception progress report. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.

(3) Additional parties may provide written or oral comments relevant to the static line exception progress report. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.


15A NCAC 07J .1205 REVOCATION AND EXPIRATION OF THE STATIC LINE EXCEPTION

(a) The static line exception shall be revoked immediately if the Coastal Resources Commission determines, after the review of the petitioner’s progress report identified in 15A NCAC 07J .1204, that any of the criteria under which the static line exception is authorized, as defined in 15A NCAC 07J .1201(d)(2) through (d)(4) are not being met.

(b) The static line exception shall expire immediately at the end of the design life of the large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2) including subsequent design changes to the project as defined in 15A NCAC 07J .1204(b).

(c) In the event a progress report is not received by the Division of Coastal Management within five years from either the static line exception or the previous progress report, the static line exception shall be revoked automatically at the end of the five-year interval defined in 15A NCAC 07J .1204(b) for which the progress report was not received.

(d) The revocation or expiration of a static line exception is considered a final agency decision and is subject to judicial review in accordance with G.S. 113A-123.
15A NCAC 07J .1206 LOCAL GOVERNMENTS AND COMMUNITIES WITH STATIC VEGETATION LINES AND STATIC LINE EXCEPTIONS

A list of static vegetation lines in place for petitioners and the conditions under which the static vegetation lines exist, including the date(s) the static line was defined, shall be maintained by the Division of Coastal Management. A list of static line exceptions in place for petitioners and the conditions under which the exceptions exist, including the date the exception was granted, the dates the progress reports were received, the design life of the large-scale beach fill project and the potential expiration dates for the static line exception, shall be maintained by the Division of Coastal Management. Both the static vegetation line list and the static line exception list shall be available for inspection at the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557.


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 Coastal Resources Commission’s Rules shall be located according to whichever of the following is applicable:

(8) Beach fill as defined in this Section represents a temporary response to coastal erosion, and compatible beach fill as defined in 15A NCAC 07H .0312 can be expected to erode at least as fast as, if not faster than, the pre-project beach. Furthermore, there is no assurance of future funding or beach-compatible sediment for continued beach fill projects and project maintenance. A vegetation line that becomes established oceanward of the pre-project vegetation line in an area that has received beach fill may be more vulnerable to natural hazards along the oceanfront. A development setback measured from the vegetation line provides less protection from ocean hazards. Therefore, development setbacks in areas that have received large-scale beach fill as defined in 15A NCAC 07H .0305 shall be measured landward from the static vegetation line as defined in this Section. However, in order to allow for development landward of the large-scale beach fill project that is less than 2,500 square feet and cannot meet the setback requirements from the static vegetation line, but can or has the potential to meet the setback requirements from the vegetation line set forth in Subparagraphs (1) and (2)(A) of this Paragraph, a local government or community may petition the Coastal Resources Commission for a “static line exception” in accordance with 15A NCAC 07J .1200. The static line exception applies to development of property that lies both within the jurisdictional boundary of the petitioner and the boundaries of the large-scale beach fill project. This static line exception shall also allow development greater than 5,000 square feet to use the setback provisions defined in Part (a)(2)(K) of this Rule in areas that lie within the jurisdictional boundary of the petitioner as well as the boundaries of the large-scale beach fill project. The procedures for a static line exception request are defined in 15A NCAC 07J .1200. If the request is approved, the Coastal Resources Commission shall allow development setbacks to be measured from a vegetation line that is oceanward of the static vegetation line under the following conditions:

(A) Development meets all setback requirements from the vegetation line defined in Subparagraphs (a)(1) and (a)(2)(A) of this Rule;

(B) Total floor area of a building is no greater than 2,500 square feet;

(C) Development setbacks are calculated from the shoreline erosion rate in place at the time of permit issuance;
(D) No portion of a building or structure, including roof overhangs and elevated portions that are cantilevered, knee braced or otherwise extended beyond the support of pilings or footings, extends oceanward of the landward most adjacent building or structure. When the configuration of a lot precludes the placement of a building or structure in line with the landward-most adjacent building or structure, an average line of construction shall be determined by the Division of Coastal Management on a case-by-case basis in order to determine an ocean hazard setback that is landward of the vegetation line, a distance no less than 30 times the shoreline erosion rate or 60 feet, whichever is greater;

(E) With the exception of swimming pools, the development defined in 15A NCAC 07H .0309(a) is allowed oceanward of the static vegetation line; and

(F) Development is not eligible for the exception defined in 15A NCAC 07H .0309(b).
ATTACHMENT B: Staff’s Report to the Commission

I. Description of the Affected Area

The Town of Carolina Beach (Town) is located primarily on a barrier island, known as Pleasure Island, located in New Hanover County, North Carolina. The Town is approximately 6.4 square miles in size, and is approximately 4.25 miles long and 1.5 miles wide. It is generally oriented in a north-south direction. It is bounded on the north by Carolina Beach Inlet and Snow’s Cut, to the south by the Town of Kure Beach, to the west by the Cape Fear River, and to the east by the Atlantic Ocean. Carolina Beach Inlet was artificially opened in 1952, and is a navigation channel.

Currently, the static line extends for approximately 3.3 miles from the north end of Canal Drive (northern end of the static line) to Alabama Avenue (southern end of the static line). The static line was determined by DCM Staff using 1980 aerial photographs, and staff located the static line along the vegetation line (or along the rock revetment on the very north end) shown on those photographs, as virtually no dune existed when the project started in 1964. The current average annual erosion setback for the affected area is 2.0 feet per year and 3.0 feet per year at the northern end of the Town, adjacent to Freeman Park. There are 13 vacant oceanfront lots in the area with the static line exception. Since September 9, 2009, when the static line exception was granted, two single-family oceanfront houses were permitted, which measured their setbacks from the existing first line of stable and natural vegetation instead of the static line.

II. Summary of Past Nourishment Project and Future Project Maintenance

Carolina Beach has had a long history of oceanfront development and beach fill projects. The first beach fill project was authorized by Congress in 1962, and initial work began in 1964. This first project moved material from the Carolina Beach Yacht Basin to the project shoreline. This project experienced severe erosion and required emergency fill in 1967, including a temporary timber groin at the north end. The severe erosion continued, leading to the construction of a 2,050 foot rock revetment which was constructed in two phases in 1970 and 1973. Additional beach fill was also placed in 1971. The USACE completed two studies of the severe erosion in 1970 and 1981, and concluded that it was caused by the entrapment of material in the inlet, and proposed using sand from the throat of the inlet to nourish the beach. The next fill project was nine years later in 1980, after funding issues delayed fill projects. In late-1980, two severe storms hit this area, causing some homes to be condemned and otherwise damaging the project area. Emergency fill taken from the inlet was placed in the spring of 1981 to rebuild the most severely damaged areas. The next major project took place in 1982, and included the entire length of the project area. Fill from a site next to the Cape Fear River was used, and completely restored the berm and dune to the project specifications. Since 1982, the project has received fill approximately every 3 years using material from Carolina Beach Inlet.

The project was reevaluated in September 1993 by the USACE, and was reauthorized for the remaining portion of the 50-year life of the project through 2014 (1964-2014). With federal participation in periodic nourishment set to expire in 2014, the USACE is seeking authorization and funding to conduct a reevaluation of the project under authority of Section 216 of Public Law 91-611, which could lead to a reauthorization of the project for another 50 years (until 2064). U.S. Congressional efforts continue supporting a reauthorization of the Carolina Beach Coastal Storm Damage Reduction Project in the current Water Resources Reform and Development Act.
(WRRDA) bill negotiations. New Hanover County received State permit No. 138-12, which would allow New Hanover County to move forward with the project if federal funding is not available or if the federal project is not reauthorized. As the current 50-year federal Coastal Storm Damage Reduction Project was initiated in 1964 (more than five years ago), the Town of Carolina Beach’s original static line exception request complied with the five-year time requirement of 15A NCAC 07J.1201(b).

III. Summary of Petitioner’s Evidence Supporting the Four Factors

The Commission’s rule 15A NCAC 07J.1204(b) indicates that the Commission “shall review a static line exception authorized under 15A NCAC 07J.1203 at intervals no greater than every five years from the initial authorization in order to renew its findings for the conditions defined in 15A NCAC 07J.1201(d)(1) through (d)(4).” Specifically, these four criteria require a showing by the Petitioner of (1) a summary of all beach fill projects in the area proposed for the exception, (2) plans and related materials showing the design of the initial fill projects, and any past or planned maintenance work, (3) documentation showing the location and volume of compatible sediment necessary to construct and maintain the project over its design life, and (4) identification of the financial resources or funding sources to fund the project over its design life.

15A NCAC 07J.1204(b) also states that the Commission shall consider design changes to the initial large-scale beach fill project, design changes to the location and volume of compatible sediment, and changes in the financial resources or funding sources necessary to fund the large-scale beach fill project. Staff’s summary and analysis of Petitioner’s response to these four criteria and any design changes or funding changes in the last five years follows.

A. Summary of fill projects in the area
   First factor per 15A NCAC 07J.1201(d)(1)

The Town’s original static line exception application report (CP&E, 2009) lays out the summary of fill projects in the area as follows:

**Project Nourishment History**

a. 1964-1973. The initial stage of construction for the project started in December 1964 and was completed in May 1965 with a total of 3,597,400 cubic yards of borrow material distributed along the 14,000-foot project shoreline. The borrow material was obtained from the Carolina Beach Yacht Basin located at the head of Myrtle Grove Sound (Figure 1).

Immediately following the initial placement, severe erosion occurred along the entire length of the fill. Over the southern 10,000 feet of the project, the erosion was attributed to hydraulic sorting of the borrow material by waves and the movement of the borrow material down slope to deeper portions of the active beach profile (USACE, 1970). These initial sorting and slope adjustments continued until 1967 at which time the southern 10,000 feet became fairly stable. By the time stability was reached along this 10,000-foot segment, the cross section of the fill was somewhat less than the authorized section.

The erosion that occurred along the northern 4,000 feet of the project was considerably greater than that which could be explained by hydraulic sorting and slope adjustments. Within the first year
following the initial fill placement, essentially all of the fill material was eroded from the northern 4,000-foot section. Accordingly, authority was granted to proceed with emergency measures involving additional beach nourishment and the construction of a temporary timber groin at the north terminus of the project. Also, a special investigation of the erosion problem was authorized to determine the causes of the inordinate erosion and to recommend a feasible long term solution. The emergency corrective measures were completed in June 1967 with the construction of the timber groin and the placement of 390,000 cubic yards of fill.

Figure 1. Location of Carolina Beach borrow areas.

The emergency fill was completely gone within a year and the temporary groin was undergoing rapid deterioration. The continuation of the severe erosion necessitated additional emergency actions involving the construction of a 2,050-foot long rock revetment extending southward from near the north terminus of the project and the placement of 282,400 cubic yards of fill. The revetment was constructed in two stages with the first stage along with the placement of the fill completed in December 1970. The second stage revetment was completed in September 1973.

During the interim period between the two stages of revetment construction, 734,100 cubic yards of fill was placed along the entire length of the project to restore the project to its authorized dimensions. This fill was completed in May 1971.

The special investigation of the erosion problem at the north end of the project was completed in 1970 (USACE, 1970). This special study and a subsequent study of the feasibility of improving navigation through Carolina Beach Inlet (USACE, 1981a) identified the entrapment of littoral material in Carolina Beach Inlet as the cause of the erosion problem at the north end of the project. The modifications to the Carolina Beach project involving sand bypassing from Carolina Beach Inlet are presented in a Final Environmental Impact Statement dated July 1981 (USACE, 1981b).
Carolina Beach Inlet was artificially opened by local interests in September 1952. Prior to its opening, the beach was continuous from Carolina Beach north to Masonboro Inlet with shoreline changes along the entire area relatively moderate. Immediately following the opening of the inlet, the shoreline south of the inlet began to erode at an accelerated rate. Over time, the accelerated erosion zone migrated south eventually entering into the north limits of the project area about the same time the project was initially constructed. The long term solution recommended in the Carolina Beach Inlet report involved the bypassing of littoral sediment every three years from a sediment trap located in the throat of the inlet. This sand would be distributed along the entire length of the project with some concentration of fill material along the north end to serve as a source of sediment for the beach to the south. The reports concluded that the failure to accomplish the sand bypassing on a regular basis would result in the continued deterioration of the entire project as the severe erosion associated with the inlet deficit would migrate southward.

b. 1980-1982. No additional fill material was placed on the project shoreline between the 1971 nourishment and April 1980. This gap in the periodic nourishment program was due to funding issues with both the federal government and the State. Without nourishment during this period, the severe erosion migrated to the south, as predicted, leaving only the southernmost 2,000 feet of the project showing any degree of stability.

In December 1980, the southeastern coastal area of North Carolina was struck by two severe storms which further aggravated the erosion at Carolina Beach, particularly along the section of the project located just south of the rock revetment. In this area, seven cottages were undermined and were condemned. Further south, the shoreline had moved to within 25 feet of 122 other structures, making them vulnerable to damage in the event of another moderate storm. In response to the cumulative effects of the inlet related and storm induced shoreline retreats, 406,400 cubic yards of emergency fill was placed between stations 60+00 and 120+00 during April and May 1981. This emergency fill was only intended to partially rebuild the severely eroded section of the project in order to provide protection against moderate storms until the entire project could be restored to authorized dimensions.

The material for the emergency fill was obtained from a borrow area located in Carolina Beach Inlet (Figure 1). This borrow area began at the Atlantic Intracoastal Waterway (AIWW) and extended approximately 2,000 feet seaward. The removal of the material for this section of the inlet effectively created a sediment trap which could supply material for future beach nourishment operations in accordance with the long term erosion control plan for Carolina Beach.

Construction of the Carolina Beach project was officially completed in July 1982 following the placement of 3,662,200 cubic yards of sand along the entire length of the project. Material to reconstruct the project was removed by pipeline dredge from an upland area located on the back side of the peninsula next to the Cape Fear River (Figure 1). This final phase of construction completely restored the berm and dune section up to the southern end of the rock revetment and provided a 130-foot wide berm at 5.5 feet NAVD in front of the revetment.

As part of the 1982 renourishment, a construction berm with a crest elevation of 5.5 feet NAVD was placed in front of the authorized beach fill cross section. The construction berm is designed to provide the volume of material necessary to nourish the deeper portions of the active beach profile.
c. 1982 – Present. The Carolina Beach project has performed well since 1982 with periodic nourishments being accomplished approximately every 3 years with material removed from the Carolina Beach Inlet sediment trap/borrow area and distributed along the project shoreline by cutter suction pipeline dredges. The amount of periodic nourishment material deposited on Carolina Beach following the complete restoration in 1982 totals 8,515,000 cubic yards which is equivalent to approximately 283,800 cubic yards/year. The nourishment history of the Carolina Beach project is provided in Table 1.

Table 1. Carolina Beach Nourishment History

<table>
<thead>
<tr>
<th>Nourishment Dates</th>
<th>Borrow Area (1)</th>
<th>Placement Area (stas.) (2)</th>
<th>Pay Yardage (cy)</th>
<th>Cost of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 64 – May 65</td>
<td>CB Yacht Basin</td>
<td>0 to 140</td>
<td>3,597,400</td>
<td>$945,135</td>
</tr>
<tr>
<td>Mar – Jun 67</td>
<td>CB Inlet</td>
<td>100 to 140</td>
<td>390,000</td>
<td>$207,482</td>
</tr>
<tr>
<td>Apr – Jun 70</td>
<td>CB Inlet</td>
<td>60 to 120</td>
<td>282,400</td>
<td>$294,384</td>
</tr>
<tr>
<td>Apr – May 71</td>
<td>CB Inlet</td>
<td>0 to 140</td>
<td>734,100</td>
<td>$839,216</td>
</tr>
<tr>
<td>Apr – May 81</td>
<td>CB Inlet</td>
<td>60 to 120</td>
<td>406,400</td>
<td>$1,188,716</td>
</tr>
<tr>
<td>Dec 81 – Aug 82</td>
<td>Upland Site</td>
<td>0 to 140</td>
<td>3,662,200</td>
<td>$8,384,406</td>
</tr>
<tr>
<td>Apr – Jun 85</td>
<td>CB Inlet</td>
<td>80 to 140</td>
<td>764,200</td>
<td>$1,652,004</td>
</tr>
<tr>
<td>Mar – Apr 88</td>
<td>CB Inlet</td>
<td>85 to 142</td>
<td>950,900</td>
<td>$1,890,535</td>
</tr>
<tr>
<td>May – Jul 91</td>
<td>CB Inlet</td>
<td>0 to 140</td>
<td>1,008,700</td>
<td>$2,450,286</td>
</tr>
<tr>
<td>Feb – May 95</td>
<td>CB Inlet</td>
<td>0 to 140</td>
<td>1,157,700</td>
<td>$3,185,642</td>
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<tr>
<td>1998</td>
<td>CB Inlet</td>
<td>0 to 140</td>
<td>1,204,600</td>
<td>$3,061,390</td>
</tr>
<tr>
<td>7-18 Mar 01</td>
<td>CB Inlet</td>
<td>0 to 140</td>
<td>567,300</td>
<td>$2,096,174</td>
</tr>
<tr>
<td>Mar – Apr 04</td>
<td>CB Inlet</td>
<td>0 to 140</td>
<td>800,400</td>
<td>$2,076,561</td>
</tr>
<tr>
<td>2006 - 2007</td>
<td>CB Inlet</td>
<td>0 to 140</td>
<td>632,143</td>
<td>$7,125,737</td>
</tr>
</tbody>
</table>

(1) Borrow Areas shown on Figure 1.
(2) Stations in 100’s feet.

d. Carolina Beach Historic Funding Sources. The source of funds for each of the nourishment events listed in Table 1 is provided in Table 2. Federal funds are broken into Construction General (CG) and PL 84-99 – Emergency Restoration. The authorized federal share for Carolina Beach is 65% which applies to funds specifically appropriated for the project (Construction General). The non-federal share (State and County) is 35% of the cost allocated to nourishment of the beach project (Construction General). State statutes allow the State of North Carolina to contribute up to 75% of the non-federal share of the nourishment costs. The actual amount of State funds provided for each operation has varied based on appropriations provided by the US Congress and the NC General Assembly. New Hanover County’s share of the non-federal portion of the project cost is 25% but the County has occasionally contributed more in order to cover shortfalls in the State appropriations. Since 1982, the actual cost share between federal and non-federal for periodic nourishment of the project (CG funds) has been 60.6% federal and 39.4% non-federal.
Two additional beach nourishment projects have taken place since the Commission granted the Town of Carolina Beach a static line exception in September 2009.

The federal project covering Carolina Beach was nourished in 2010. During the project, 440,000 cy of sand was placed on Carolina Beach at a total cost of $5,809,718. Of this cost, $3,776,317 was from the federal government, $1,016,701 was from the State, and $1,016,701 was from New Hanover County.

The federal projects covering Carolina Beach and Kure Beach were also nourished in May 2013. The two projects were successful in repositioning federal funds in the amount of $4.2 million for Carolina Beach and $3.9 million for the Area South (Kure Beach) Project. The State of North Carolina also appropriated $1.18 million for the Carolina Beach project, but did not include funding for the Area South Project. With approval of the State, New Hanover County and Carolina Beach agreed to allocate the $1.18 million in state funds for the Area South Project with New Hanover County providing $2.3 million for the nourishment of the Carolina Beach project. The County also provided $900,000 for the Area South Project. A breakdown of the nourishment volumes and cost contributions for the two projects is as follows:

May 2013 Carolina Beach Project:  
Nourishment Volume = 989,200 cy  
Total Cost = $6,500,000  
Federal = $4,200,000  
State = $0  
County = $2,300,000

May 2013 Area South (Kure Beach) Project:  
Nourishment Volume = 557,702 cy  
Total Cost = $5,900,000  
Federal = $3,900,000  
State = $1,180,000  
County = $900,000

<table>
<thead>
<tr>
<th>Year Progress Report: Fill Projects</th>
</tr>
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<tr>
<td>Table 2. Carolina Beach Funding Sources</td>
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</table>

## Table 2. Carolina Beach Funding Sources

<table>
<thead>
<tr>
<th>Nourishment Dates</th>
<th>Federal Funding Source</th>
<th>Non-Federal</th>
<th>Cost of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 64 – May 65</td>
<td>CG $579,898 Emergency $0</td>
<td>CG $365,237 Emergency $0</td>
<td>$945,135</td>
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<tr>
<td>Mar – Jun 67</td>
<td>CG $136,239 Emergency $0</td>
<td>CG $71,243 Emergency $0</td>
<td>$207,482</td>
</tr>
<tr>
<td>Apr – Jun 70</td>
<td>CG $3,225 Emergency $291,159</td>
<td>CG $0 Emergency $0</td>
<td>$294,384</td>
</tr>
<tr>
<td>Apr – May 71</td>
<td>CG $523,435 Emergency $0</td>
<td>CG $315,781 Emergency $0</td>
<td>$839,216</td>
</tr>
<tr>
<td>Apr – May 81</td>
<td>CG $236,332 Emergency $679,985</td>
<td>CG $0 Emergency $272,399</td>
<td>$1,188,716</td>
</tr>
<tr>
<td>Dec 81 – Aug 82</td>
<td>CG $5,247,893 Emergency $0</td>
<td>CG $3,136,513 Emergency $0</td>
<td>$8,384,406</td>
</tr>
<tr>
<td>Apr – Jun 85</td>
<td>CG $835,817 Emergency $0</td>
<td>CG $816,187 Emergency $0</td>
<td>$1,652,004</td>
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<tr>
<td>Mar – Apr 88</td>
<td>CG $914,556 Emergency $0</td>
<td>CG $975,979 Emergency $0</td>
<td>$1,890,535</td>
</tr>
<tr>
<td>May – Jul 91</td>
<td>CG $1,271,856 Emergency $0</td>
<td>CG $1,207,696 Emergency $0</td>
<td>$2,479,552</td>
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<tr>
<td>Feb – May 95</td>
<td>CG $2,070,667 Emergency $0</td>
<td>CG $1,114,975 Emergency $0</td>
<td>$3,185,642</td>
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<tr>
<td>1998</td>
<td>CG $914,556 Emergency $0</td>
<td>CG $975,979 Emergency $0</td>
<td>$1,890,535</td>
</tr>
<tr>
<td>7-18 Mar 01</td>
<td>CG $1,325,897 Emergency $0</td>
<td>CG $770,277 Emergency $0</td>
<td>$2,096,174</td>
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<tr>
<td>Mar – Apr 04</td>
<td>CG $1,289,191 Emergency $0</td>
<td>CG $787,370 Emergency $0</td>
<td>$2,076,561</td>
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<tr>
<td>2006 - 2007</td>
<td>CG $0 Emergency $4,570,995</td>
<td>CG $0 Emergency $2,554,742</td>
<td>$7,125,737</td>
</tr>
</tbody>
</table>

(1) The 2006-07 operation included both Federal and State Emergency Supplemental Funds.
B. Design of the initial fill projects and past/planned maintenance - Second factor per 15A NCAC 07J.1201(d)(2)

The Town’s original static line exception application report (CP&E, 2009) provides information about the design of the beach fill project for Carolina Beach, and how that project has performed in the past, as follows:

Project Description/Authorization

The Carolina Beach federal storm damage reduction project was authorized by Congress in 1962 (House Document Number 418, 87th Congress, 2nd Session). The project extends along 14,000 lineal feet of ocean shoreline as shown in Figure 1. As originally authorized, the project consisted of a beach fill shaped in the form a 25-foot wide dune with a crest elevation of 12.5 feet above NAVD fronted by a 50-foot wide storm berm at elevation 9.5 feet above NAVD. The project was later modified to include a 2,075-foot long rock revetment at the extreme north end of the project which is fronted by a 130-foot wide berm at elevation 5.5 feet above NAVD. The crest elevation of the revetment is at 9.5 feet NAVD. The authorization also included periodic nourishment of the project with the nourishment interval estimated to be approximately every 3 years. The plan layout of the project is shown in Figure 2 with typical profiles of the beach fill and revetment sections shown in Figures 3 and 4, respectively.

Figure 2. Plan Layout of the Carolina Beach Nourishment Project
The Water Resources Development Act of 1986 (PL 99-662), specifically Section 934 of the Act, provides for federal participation in beach nourishment for a total period of 50 years beginning at the initiation of construction. The Carolina Beach portion of the authorized project was reevaluated under Section 934 in February 1993 and was found to be eligible for continued federal participation in beach nourishment for the remaining economic life of the project (USACE 1993). Construction of the Carolina Beach portion of the project was initiated in 1964 (see Project History); therefore, federal cost-sharing for beach nourishment is authorized to continue through the year 2014.
With federal participation in periodic nourishment set to expire in 2014, the USACE is seeking authorization and funding to conduct a reevaluation of the project under authority of Section 216 of Public Law 91-611, which could lead to a reauthorization of the project for another 50 years (until 2064). U.S. Congressional efforts continue supporting a reauthorization of the Carolina Beach Coastal Storm Damage Reduction Project in the current Water Resources Reform and Development Act (WRRDA) bill negotiations. New Hanover County received State permit No. 138-12, which would allow New Hanover County to move forward with the project if federal funding is not available or if the federal project is not reauthorized.

**Project Performance**

The Carolina Beach project along with the Wrightsville Beach project represented the first attempts by the USACE to restore complete beach profiles including the dune. In order to document the performance of the projects, the former USACE Coastal Engineering Research Center (CERC) established and funded a detailed beach profile monitoring program. CERC has subsequently been incorporated into the Engineering Research and Development Center, Coastal & Hydraulics Laboratory (CHL) located in Vicksburg, MS. The monitoring program was carried out during the first 4 to 5 years following initial construction with the monitoring program eventually being accomplished with project funds. The CHL monitoring program included beach profiles approximately every 1,000 feet along Carolina Beach including the undeveloped area known as Freeman Park located between the north end of the project and Carolina Beach Inlet. During the initial years, the profile surveys were conducted quarterly. Once the CHL program expired, beach profile monitoring continued under the auspices of the project, with surveys conducted at least annually and sometimes twice a year depending on storm activity.

Given the total 50 year history of the project, presentation of all of the beach profile surveys would not serve the purpose of this static line exception 5-year progress report. Details of specific beach surveys can be found in the Town’s original static line exception application report (CP&E, 2009). However, a summary of strategically located beach profile stations and representative surveys offer a good analysis of project performance.

Profiles selected include: Station 40+00 located in the vicinity of the Boardwalk section of Carolina Beach; Station 70+00 located in the middle of the project; Station 110+00 located 670 feet south of the south end of the revetment; and Station 120+00 located in the revetment area. Selected profiles show before (solid black line) and after (dashed black line) surveys of the May 2013 nourishment project (Figures 5 through 8).

**5-Year Progress Report: Project Design and Performance**

There have been no design changes to the initial large-scale beach fill project following the granting of the static line exception in September 2009 by the Commission. New Hanover County received State permit No. 138-12, which would allow New Hanover County to move forward with the project if federal funding is not available or if the federal project is not reauthorized.
Figure 5. Station 40+05, 2013 Carolina Beach Nourishment Project, Before and After Survey

Figure 6. Station 70+00, 2013 Carolina Beach Nourishment Project, Before and After Survey

Figure 7. Station 110+00, 2013 Carolina Beach Nourishment Project, Before and After Survey

Figure 8. Station 120+00, 2013 Carolina Beach Nourishment Project, Before and After Survey
C. Compatible Sediment -
Third factor per 15A NCAC 07J.1201(d)(3)

The Town’s original static line exception application report (CP&E, 2009) provides information about the availability of compatible sediment for future beach fill projects as follows:

Borrow Material Source: Carolina Beach Inlet Sediment Trap

The sediment trap/borrow area located in the throat of Carolina Beach Inlet was used during the 2013 periodic nourishment operation. The material contained in the vibracores, collected during the 2006-2007 project, had the following composite characteristics:

- Mean (M) = 0.22 mm
- Silt = 1.4%
- Shell = 8.7%
- $d \geq 2.0$ mm = 3.8%

Samples of the native material on Carolina Beach prior to the initial construction of the beach fill in 1964-65 were not sufficient to develop characteristics of the native material. However, samples of the native beach material taken along Kure Beach prior to initial construction of the federal project had a mean grain size of 0.20 mm, a silt content of 1.8%, and $d \geq 2.0$ mm of 4.2%. An estimate of the shell content was not available. Using the Kure Beach samples as a proxy for the native material on Carolina Beach, the material bypassed from Carolina Beach Inlet and placed on Carolina Beach meets the requirements of the State sediment criteria stipulated in 15A NCAC 07H.0312. The compatibility of the Carolina Beach Inlet material is not surprising as it is the same material that would have been transported to and deposited on Carolina Beach had Carolina Beach Inlet not been artificially opened in 1952.

The volume of material collected in the Carolina Beach Inlet sediment trap/borrow area has been sufficient to maintain the Carolina Beach project over the past 30 years. For the 10 periodic nourishment operations conducted for Carolina Beach since 1985, the average volume of material removed from the sediment trap/borrow area has been approximately 851,500 cubic yards. Based on the past performance of the sediment trap/borrow area, the material collected in Carolina Beach Inlet and bypassed to Carolina Beach is sufficient to satisfy future nourishment needs of Carolina Beach.

5-Year Progress Report: Compatible Sediment

It appears to Staff that the sediment standard of less than 10% fines, used by the USACE and currently by DCM for permitting federal projects, can be met by the current borrow area in the throat of Carolina Beach Inlet. This source has been compatible and of a large-enough volume to satisfy past fill projects. While other sources have been used in the past (Carolina Beach Yacht Basin and upland source adjacent to Cape Fear River), the inlet throat source has been used consistently since 1985 and has provided sufficient sediment for the fill projects.

There have been no design changes to the location and volume of compatible sediment following the granting of the static line exception by the Commission in September 2009.
D. Financial Resources-
Fourth factor per 15A NCAC 07J.1201(d)(4)

New Hanover County has a 3% room occupancy tax that is used to fund beach nourishment and tourism activities in the County. Sixty percent (60%) of the funds collected go toward beach nourishment. At the present time, the balance is approximately $36 million with annual collections totaling around $3.8 million. The New Hanover County Board of County Commissioners (Board) established the New Hanover County Ports Waterways and Beach Commission (PW&B Commission) to manage the beach nourishment funds and make recommendations to the Board on the use of the funds. In addition to the Carolina Beach project, New Hanover County has two other federal storm damage reduction projects it supports; namely, Wrightsville Beach and Kure Beach.

The past history of the Carolina Beach project was used to develop possible future cost for nourishment of the project over the next 40 years. While the storm damage reduction history for Carolina Beach dates back to 1964, only the cost experienced since 1981 were used for the projections. Prior to 1981, the nourishment frequency for Carolina Beach was sporadic as a result of issues with both state and local funding as well as issues associated with severe erosion along the north end of the project. Once the funding and erosion issues were resolved, the Carolina Beach project underwent a major rehabilitation between 1981 and 1982 which restored the project to its authorized conditions. Since that time, periodic nourishment has been routinely accomplished approximately every 3 years with material removed from a sediment trap in Carolina Beach Inlet.

A plot of the “gross” unit cost of each periodic nourishment operation for Carolina Beach since 1981 is provided in Figure 9. Gross unit cost is the total cost of the nourishment operation, which includes mobilization and demobilization of the dredge, pipeline, and ancillary equipment plus the pumping cost divided by the volume of material placed on the beach.

The gross unit cost remained fairly constant between 1981 and 1991 but began to increase significantly after 1991. Based on these past gross unit costs, two time periods were selected as possible indicators of how dredging cost could change in the future. The first time period extends from 1981 to 2013 while the second period extends from 1991 to 2013. For the 1981 to 2013 time period, the gross unit cost increased at a rate of $0.1352 per year which represents an approximate 1.3% per year increase in dredging cost. For the 1991 to 2013 time period, the gross unit cost increased at a rate of $0.2307 per year which is close to a 2% per year increase. Given the uncertainty of future dredging cost, both of these rates of increase in the gross unit dredging cost (1.3%/yr and 2.0%/yr) were used to develop future costs for nourishing the Carolina Beach project. Since 1985, the Carolina Beach project has been nourished approximately every three years with the volume placed along the shoreline during each operation averaging 851,500 cubic yards.
Funding Scenario 1
Under Funding Scenario 1, the federal government and the State of North Carolina would continue to fund periodic nourishment of the Carolina Beach project in accordance with past cost sharing agreements (Table 3). Under this scenario, all of the periodic nourishment costs would be covered by contributions from the federal government (65%), the State of North Carolina (17.5%) and New Hanover County (17.5%). This scenario carries a positive New Hanover County room occupancy tax balance beyond 2054.

Table 3. Carolina Beach Funding Scenario 1\(^{(1)}\): 1.3%/year and 2.0%/year increase in dredging costs

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\(^{(1)}\)Funding by Town not required under Scenario 1.
Funding Scenario 2  
Following the 2013 nourishment of Carolina Beach and the Area South Project, Funding Scenario 2 assumes federal and state funding would not be provided for future nourishment of Carolina Beach. This represents a “worst-case” with regard to county and town funding requirements. Even without future federal funding, there is still a possibility the State would provide some limited funding for future nourishment operations but at this time future state funding remains an uncertainty. Under Funding Scenario 2, the Town of Carolina Beach would be responsible for 17.5% of the periodic nourishment costs with New Hanover County contributing 82.5% of the nourishment costs (Table 4). This scenario continues to carry a positive New Hanover County room occupancy tax balance beyond 2054.

Table 4. Carolina Beach Funding Scenario 2 for 1.3%/year and 2.0%/year increase in dredging costs

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5-Year Progress Report: Financial Resources
As a local funding strategy, an interlocal agreement has been approved between New Hanover County and each beach community. The agreement sets percentages of financial participation (attached) in the event shortfalls occur within federal and state budgets. Under this agreement, if no federal or state funding is provided, the three beach towns would provide 17.5% of the funds needed for periodic nourishment of their respective projects and the County would contribute 82.5%. Considering only funding at current intervals and historical placement volumes, ample funding should be available for the Carolina Beach Coastal Storm Damage Reduction Project for the foreseeable future (greater than 25 years).

New Hanover County currently has approximately $36 million in room occupancy tax reserve funding for future local match or local participation in beach projects. Annual collections totaled an estimated $3.8 million in 2013 for CSDR projects and, historically, the fund has grown by approximately 3% per year since 1984. With the budget adoption in July 2013, Town Council began a new policy for setting aside funding for storm damage reduction. The policy reserves revenue that is generated from public parking and Freeman Park to fund future storm damage reduction projects. Currently, $350,000 is available from the Freeman Park revenues. Staff also notes that while 25 years of funding must be shown through this process, the Commission will have the opportunity to re-evaluate the static line exception and the necessary requirements every five years, and can address major changes in future funding.
IV. Staff’s Recommendation

The Commission, through 15A NCAC 07J.1204(c), directs Staff to provide a recommendation to the Commission whether the conditions defined in 15A NCAC 07J.1201(d)(1) through (d)(4) have been met and whether any design or funding changes in the last five years should result in the static line exception being revoked. Based on the Town’s 5-year progress report and additional exhibits attached, Staff recommends that the conditions in 15A NCAC 07J.1201(d)(1) through (d)(4) have been met, and there have been no changes in the last five years that should result in the Town’s static line exception being revoked. The project has been maintained for well over the 5-year minimum, it has an identified source of beach-compatible borrow material that will sustain the project for more than the minimum 25 years, and funding strategies are in place to continue supporting the project beyond 25 years. Staff recommends that the Commission renew the Town’s static line exception for another five years.

V. References


Town of Carolina Beach Static Line Exception Progress Report.

Prepared By:
The Town of Carolina Beach

April 17, 2014
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Purpose.

The federal storm damage reduction project has served the Town well over the last 50 years and continued nourishment of the project will continue to provide storm damage reduction to the Town’s infrastructure and development within the Town. Also, in order to retain its Static Vegetation Line Exception granted by the NC Coastal Resources Commission (CRC) on September 9, 2009, the Town must provide a progress report to the CRC every 5 years describing the condition of the project and an update of the requirements outlined in the Static Vegetation Line Exception rule (15A NCAC 07J). The first progress report is due on September 9, 2014.

Project Description

The Carolina Beach federal storm damage reduction project was authorized by Congress in 1962 (House Document Number 418, 87th Congress, 2nd Session). The project extends along 14,000 lineal feet of ocean shoreline as shown in Figure 1. As originally authorized, the project consisted of a beach fill shaped in the form a 25-foot wide dune with a crest elevation of 12.5 feet above North American Vertical Datum (NAVD) fronted by a 50-foot wide storm berm at elevation 9.5 feet above NAVD. The project was later modified to include a 2,075-foot long rock revetment at the extreme north end of the project which is fronted by a 130-foot wide berm at elevation 5.5 feet above NAVD. The crest elevation of the revetment is at 9.5 feet NAVD. The authorization also included periodic nourishment of the project with the nourishment interval estimated to be approximately every three years. Maintenance of the rock revetment is a non-federal responsibility. The plan layout of the project is shown in Figure 2 with typical profiles of the beach fill and revetment sections shown in Figures 3 and 4, respectively. The Carolina Beach portion of the authorized project was re-evaluated in February 1993 under authority provided by Section 934 of the Water Resources Development Act of 1986 (PL 99-662) and found to be eligible for continued Federal participation in beach nourishment for the remaining economic life of the project (USACE 1993). Construction of the Carolina Beach portion of the project was initiated in 1964; therefore, federal cost-sharing for storm damage reduction is authorized to continue through the year 2014.

With federal participation in periodic nourishment set to expire in 2014, the U.S. Army Corps of Engineers - Wilmington District (USACE) is seeking authorization and funding to conduct a reevaluation of the project under authority of Section 216 of Public Law 91-611 which could lead to reauthorization of the project for another 50 years (Glenn McIntosh, USACE – Wilmington District, Per. Comm. May 20, 2009). US Congressional efforts continue supporting a reauthorization of the Carolina Beach CSDR in the current WRRDA bill negotiations. New Hanover County received State permit No.138-12, which would allow New Hanover County to move forward with the project if federal funding is not available or if the federal project is not reauthorized.
The Area South Project was also authorized by the same legislation that authorized Carolina Beach; however, construction of the Area South Project was not initiated until June 1997. As a result, and based on conditions contained in the Water Resources Development Act of 1986, the Area South Project is eligible for federal funding for a period of 50 years after initiation of construction or through June 2047.
Figure 2. Carolina Beach – Beach Fill Plan.
Figure 3. Authorized beach fill cross-section (stations 0+00 to 116+40).

Figure 4. Rock revetment cross-section (stations 116+40 to 137+20).
Storm Damage Reduction Project

The federal projects covering Carolina Beach and Kure Beach were nourished in May 2013. The two projects were successful in repositioning federal funds in the amount of 4.2 million for Carolina Beach and $3.9 million for the Area South Project. The State of North Carolina also appropriated $1.18 million for the Carolina Beach project; New Hanover County provided $2.3 million for the nourishment of the Carolina Beach project. The County also provided $900,000 for the Area South Project. A breakdown of the nourishment volumes and cost contributions for the two projects is as follows:

2013 Nourishment
Carolina Beach Project:
Nourishment Volume = 989,200 cy
Total Cost = $6,500,000
Federal = $4,200,000
State = $ 0
County = $2,300,000

Area South Project:
Nourishment Volume = 557,702 cy
Total Cost = $5,900,000
Federal = $3,900,000
State = $1,180,000
County = $ 900,000

Attachment 2 provided by the Army Corps of Engineers is the computed end area quantities for the beach fill at Carolina Beach. This shows how the volume is distributed and the end area calculations that come to a total of 989,200 cy.

2010 Nourishment
Nourishment Volume = 440,000 cy
Total Cost = $5,809,718
Federal: $3776,317
State: $1,016,701
New Hanover County: $1,016,701

Inter-local Agreement

A key element of the New Hanover County contingency plan was the adoption of an inter-local agreement, signed by all three beach towns and New Hanover County, that specifies how funds from the New Hanover County beach nourishment fund would be used to support continued periodic nourishment of all three projects in the absence of federal and/or state funding. Under this agreement, if no federal or state funding is provided, the three beach towns would provide 17.5% of the funds needed for periodic nourishment of their respective projects and the County would contribute 82.5%. If some federal and state funding is provided but the combined amount is less than 17.5%, the towns agreed to make-up the difference. For example, if the state provided 10% of the nourishment cost, the
towns would provide 7.5%. The remaining balance of 82.5% would be covered by New Hanover County (Interlocal agreement attached).

**Future Cost Projections**

The past history of the Carolina Beach project was used to develop possible future cost for nourishment of the project over the next 40 years. While the storm damage reduction history for Carolina Beach dates back to 1964, only the cost experienced since 1981 were used for the projections. Prior to 1981, the nourishment frequency for Carolina Beach was sporadic as a result of issues with both state and local funding as well as issues associated with severe erosion along the north end of the project. Once the funding and erosion issues were resolved, the Carolina Beach project underwent a major rehabilitation between 1981 and 1982 which restored the project to its authorized conditions. Since that time, periodic nourishment has been routinely accomplished approximately every 3 years with material removed from a sediment trap in Carolina Beach Inlet.

A plot of the “gross” unit cost of each periodic nourishment operation for Carolina Beach since 1981 is provided in Figure 5. Gross unit cost is the total cost of the nourishment operation, which includes mobilization and demobilization of the dredge, pipeline, and ancillary equipment plus the pumping cost divided by the volume of material placed on the beach.

The gross unit cost remained fairly constant between 1981 and 1991 but began to increase significantly after 1991. Based on these past gross unit costs, two time periods were selected as possible indicators of how dredging cost could change in the future. The first time period extends from 1981 to 2013 while the second period extends from 1991 to 2013. For the 1981 to 2013 time period, the gross unit cost increased at a rate of $0.1352 per year which represents an approximate 1.3% per year increase in dredging cost. For the 1991 to 2013 time period, the gross unit cost increased at a rate of $0.2307 per year which is close to a 2% per year increase. Given the uncertainty of future dredging cost, both of these rates of increase in the gross unit dredging cost (1.3%/yr and 2.0%/yr) were used to develop future costs for nourishing the Carolina Beach project.
Figure 5. Changes in gross unit dredging cost for the Carolina Beach project

Periodic Nourishment Volumes. Since 1985, the Carolina Beach Project has been nourished approximately every three years with the volume placed along the shoreline during each operation averaging 858,600 cubic yards. This 3-year nourishment volume was used to develop future nourishment cost for the project.

The average 3-year periodic nourishment volume needed to maintain the Area South Project is estimated to be 649,900 cubic yards. Of this total, 36,600 cubic yards, or 5.63% of the total volume, would be placed in the northern 3,500-foot shoreline segment that is now within the Town Limits of Carolina Beach. For Funding Scenario 1 in which nourishment funds are provided by the federal government, the State, New Hanover County, and the Town of Carolina Beach would not incur any additional cost for the 3,500-foot shoreline segment. Under funding Scenario 2; however, the cost that would be assumed by the Town of Carolina Beach would depend on how nourishment of the Area South Project is accomplished.

In the case where New Hanover County and the Town of Kure Beach nourish the project using non-federal permits and accomplish the nourishment in the same manner as previous nourishment operations by the USACE, the cost of nourishing the 3,500-foot segment was based on nourishment material derived from the offshore borrow area. However, should the Town of Kure Beach elect not to nourish its project during a particular 3-year nourishment cycle, material to nourish the 3,500-foot segment
would come from the Carolina Beach Inlet borrow area/sediment trap. Based on past performance of the sediment trap/borrow area, the material collected in the Carolina Beach Inlet and bypassed to Carolina Beach is sufficient to satisfy nourishment needs of Carolina Beach project indefinitely. Estimates of the future cost of nourishing the 3,500-foot segment are provided for both possibilities.

**Future Storm Damage Reduction Cost**

Funding Scenario 1. Under Funding Scenario 1, the federal government and the State of North Carolina would continue to fund periodic nourishment of the Carolina Beach project in accordance with past cost sharing agreements. Under this scenario, all of the periodic nourishment costs would be covered by contributions from the federal government (65%), the State of North Carolina (17.5%) and New Hanover County (17.5%). This scenario carries a positive New Hanover County ROT balance beyond 2054.

![Table 1: Carolina Beach Funding Scenario 1: 1.3% year increase and 2.0% year increase in dredging costs.](image)

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<td><strong>$69,332,250</strong></td>
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<td><strong>$21,877,100</strong></td>
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Funding Scenario 2. Following the 2013 nourishment of Carolina Beach and the Area South Project, Funding Scenario 2 assumes federal and state funding would not be provided for future nourishment Carolina Beach operations. This represents a “worst-case” with regard to county and town funding requirements. Even without future federal funding, there is still a possibility the State of North Carolina would provide some limited funding for future nourishment operations but at this time future state funding remains an uncertainty. Under Funding Scenario 2, the Town of Carolina Beach would be responsible for 17.5% of the periodic nourishment costs with New Hanover County contributing 82.5% of the nourishment costs. This scenario continues to carry a positive New Hanover County ROT balance beyond 2054.
New Hanover County has a 3% room occupancy tax that is used to fund beach nourishment and tourism activities in the County. Sixty percent (60%) of the funds collected go toward beach nourishment. At the present time, the balance is sufficient to maintain current operations with annual collections totaling around $3.8 million. The New Hanover County Board of County Commissioners (Board) established the New Hanover County Ports Waterways and Beach Commission (PW&B Commission) to manage the beach nourishment funds and make recommendations to the Board on the use of the funds. In addition to the Carolina Beach project, New Hanover County has two other federal storm damage reduction projects it supports; namely, Wrightsville Beach and Kure Beach. With the budget adoption in July 2013 Town Council began a new policy for setting aside funding for storm damage reduction. The policy reserves revenue that is generated from public parking and Freeman Park to fund future storm damage reduction projects. Currently $350,000 is available from the Freeman Park revenues.

For funding Scenario 2 in which the Town of Carolina Beach and New Hanover County assume responsibility for storm damage reduction projects. New Hanover County annually allocates a portion of ROT funds to cover costs while the Town of Carolina Beach has implemented a strategy to allocate a portion of the revenue from Freeman Park to cover costs.

**CAROLINA BEACH INLET SEDIMENT TRAP/BORROW AREA.**

The sediment trap/borrow area located is shown in Figure 6. The volume of material collected in the Carolina Beach Inlet sediment trap/borrow area has been sufficient to maintain the Carolina Beach project over the past 25 years. For the 9 periodic nourishment operations conducted for Carolina Beach since 1985, the average volume of material removed from the sediment trap/borrow area has been approximately 886,000 cubic yards. Based on the past performance of the sediment trap/borrow area, the material collected in Carolina Beach Inlet and bypassed to Carolina Beach is sufficient to satisfy future nourishment needs of Carolina Beach.

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### Table 2. Carolina Beach Funding Scenario 2 for 1.3%/year and 2.0%/year increase in dredging costs.

<table>
<thead>
<tr>
<th>Year</th>
<th>1.3%/year Increase in Dredging Cost</th>
<th>2.0%/year Increase in Dredging Cost</th>
</tr>
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<tr>
<td></td>
<td>Total Cost</td>
<td>County Share</td>
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<tr>
<td>2016</td>
<td>$6,435,000</td>
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<td>2019</td>
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<tr>
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<tr>
<td><strong>Totals (10)</strong></td>
<td><strong>$106,665,000</strong></td>
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(1) Totals include costs for the 2013 operation.
The Carolina Beach project satisfies all of the requirements for the static line exception as stipulated in 15A NCAC 07J .1201. By virtue of this updated report, the Town of Carolina Beach has demonstrated the project has been maintained for well over the 5-year minimum, it has an identified source of beach compatible borrow material that will sustain the project for more than the minimum 25 years, and funding strategies are in place continuing to support the project beyond 25 years.
Attachment 2: Beach fill quantities for Carolina Beach

![Carolina Beach Final Beach Survey 3 June 2013](image)

Figure 1 Distribution of beachfill by station vs. template estimates (cy/lf).

- CB Allowed Template +0.5’
- CB Design Template
- CB 3jun- Unadjusted for excess above template
- CB 3jun- adjusted for excess
ATTACHMENT D: New Hanover County Interlocal Agreement for Contingency Plan Beach Nourishment

New Hanover County Contract #12-0190

STATE OF NORTH CAROLINA
NEW HANOVER COUNTY

INTERLOCAL AGREEMENT FOR CONTINGENCY PLAN BEACH NOURISHMENT

This Interlocal Agreement ("Agreement") is made 8, 2011 by and between the County of New Hanover, North Carolina, a body corporate and politic (hereinafter referred to as the "County") and the Municipalities of Wrightsville Beach, Carolina Beach, and Kure Beach, bodies politic and corporate (hereinafter referred to as the "Towns").

PURPOSE

WHEREAS, the ocean beaches located within the corporate boundaries of Wrightsville Beach, Carolina Beach and Kure Beach (herein collectively the "Town Beaches") are a valuable resource bringing economic, environmental, cultural and recreational benefits to people of the United States, including those in the State of North Carolina; and

WHEREAS, the financing and maintenance of the Town Beaches has been and remains an appropriate function of the Federal and State governments; and

WHEREAS, maintenance of the Town Beaches through United States Army Corps of Engineers nourishment projects funded primarily by the Federal and State governments has accordingly been successfully performed for many decades; and

WHEREAS, the maintenance of Town Beaches is vital to continued economic, environmental and cultural well-being of the County and Town; and

WHEREAS, critical to the Municipalities of Wrightsville Beach, Carolina Beach, and Kure Beach is demonstrating the long-term feasibility of financing plans for the maintenance of their ocean beaches, in order to preserve their status as or to establish eligibility for designation as a Static Vegetation Line Exception community under regulations promulgated by the State’s Coastal Area Management Act; and
WHEREAS, the ongoing availability of Federal and State funding for Corps of Engineers managed beach nourishment projects remains uncertain; and

WHEREAS, County and Towns accordingly seek to establish contingency plans to address various scenarios wherein Federal or State monies may not be available for beach nourishment; and

WHEREAS, County and Towns also seek to provide for the potential use of sixty percent (60%) of the first three percent (3%) of the Room Occupancy Tax available for beach nourishment (subsequent references to the “use of Room Occupancy Tax” shall mean use of the portion of the Room Occupancy Tax available for beach nourishment as defined hereinabove) and local general revenues, as necessary, for funding of either a portion of Corps managed beach nourishment or County managed beach nourishment projects if Federal or State funds are unavailable or insufficient for such purposes; and

WHEREAS, County and Towns are jointly seeking approval by State and Federal Agencies of a contingent Nourishment Plan for the Town Beaches, and the State, in anticipation of such a plan, is prepared to complete/review any necessary environmental studies, and State and Federal Agencies involved in the funding have indicated that they strongly prefer and require that units of local government work on and submit one mutual plan for beach nourishment without individual towns seeking separate funding or individual beach nourishment projects except in emergencies. Provided that nothing contained in this Agreement shall be construed to limit or restrict the authority of Wrightsville Beach, Carolina Beach, and Kure Beach to continue to participate in and seek funding for their existing Corps managed beach nourishment programs; and

WHEREAS, it is within the contemplation of the Parties hereto and State agencies involved in the approval process that the U.S. Army Corps of Engineers and other Federal approval agencies will issue one permit for the Town Beaches. Use of said permit is contingent upon Federal and/or State funding being unavailable or insufficient for Corps managed projects; and
NEW HANOVER COUNTY CONTRACT #12-0190

WHEREAS, County and Towns now desire to enter into an agreement that provides a planning mechanism, plan, and compact among the parties for a contingent beach nourishment program for the Town Beaches (hereinafter referred to as the "Master Nourishment Plan", “Master Plan” or “Plan”), which utilizes available funds from the County’s Room Occupancy Tax together with the general revenue of the respective locality and any State and Federal funding secured for the Master Nourishment Plan; and

WHEREAS, County and Towns now desire to enter into an agreement addressing local funding sources should Federal and State monies be unavailable or insufficient to finance nourishment projects for the Town Beaches; and

WHEREAS, under this Agreement it is contemplated that the County as the lead sponsor, with the assistance of its Wilmington/New Hanover County Port, Waterway and Beach Commission, and consultants hired by the County, in consultation with the Towns, will prepare the Master Nourishment Plan for approval by the Towns. Upon written approval by all of the Towns of such Plan, the Plan will then be implemented under this Agreement with the County being the designated permittee for beach nourishment; and

WHEREAS, notwithstanding this Agreement or any provisions therein, the Parties agree to support and continue efforts to procure Federal and State funding for beach nourishment projects.

NOW THEREFORE, County and Towns pursuant to NCGS 160A-17 and Part 1 of Article 20 of Chapter 160A of the North Carolina General Statutes, hereby contract and agree as follows:

1. Purpose. This agreement seeks to address the following different potential scenarios:
   a. Those situations in which Federal or State funding for beach nourishment for Corps managed projects for Town Beaches is reduced.
   b. Those situations in which no Federal or State funding for beach nourishment for Town Beaches is available. In such event the County and Towns would proceed under the contingent plan and permit process set-forth herein.

County and Towns enter into this Agreement in order to prepare, approve and carry out the Master Nourishment Plan providing for acquisition of one permit for
nourishment of the Town Beaches and identification of the source of tax funds and other revenues to be used to implement such plan. The Master Nourishment Plan shall not include navigational or harbor dredging where the dredged materials is not used for beach nourishment.

2. Development of Master Nourishment Plan. The County, using available Room Occupancy Tax revenues, will over the next 18 to 36 months develop the Master Plan in consultation with State and Federal Agencies, the Towns, consulting engineers, and the Wilmington/New Hanover County Port, Waterway and Beach Commission, and submit the same to the Towns for consideration and approval by all of the Towns. Concurrently the County will submit for a State and Federal permit to carry out and complete the Plan. The Master Plan shall not be effective until approved by all of the Towns in writing. The final approved plan will contain the following principles and encompass and cover the following subjects, goals and objectives:

a. Easements and Rights-of-Way. Each Town shall be responsible for providing the staging areas, sites or necessary lands, easements, and rights-of-way required for the development, construction, and maintenance of those elements of the Master Nourishment Plan to be implemented within the Town. No Town will be obligated to provide sites, staging areas or facilities for nourishment that will take place in another party’s jurisdiction. However, the plan will provide that Towns may cooperate in providing staging areas and access to the beach for beach construction equipment regardless of where the beach construction activity is taking place when joint nourishment projects are undertaken.

b. Public Beach Access and Parking. The Towns shall be responsible for securing, constructing, and maintaining any and all access/parking facilities stipulated as a condition of receiving State or Federal funding. All public beach accesses and parking facilities must be secured prior to issuing a notice to proceed for each construction event.

c. Funding Contingency. Each party’s participation in a nourishment project associated with the Master Nourishment Plan will be contingent on such party, in its sole discretion, being able to fund its portion of the project. Each
New Hanover County Contract #12-0190

Town is required to anticipate the need for the local funding share and to either budget for the same over a period of years, provide for and conduct elections to approve of bonds or borrowing pursuant to State law, or put in place tax districts or similar means of funding the local share. Failure to meet local funding needs by one or more Towns could result in the County passing over a project of the Town due to lack of funding.

d. **Construction Administration.** The County may serve in the role as lead administrator for any nourishment event associated with the Master Nourishment Plan.

3. **Cost-sharing for Corps-Managed Projects or Projects Implemented Under the Master Nourishment Plan.** In the event Federal and State funding is insufficient to pay the costs of any beach nourishment project, the Room Occupancy Tax will pay any shortfall in funding for such project up to a maximum of 82.5% of the total project costs. If after payment of Room Occupancy Tax funds in an amount equal to 82.5% of the total project costs a shortfall remains, such shortfall shall be paid by the Town in which such project is located up to a maximum of 17.5% of the total project costs.

4. **Ownership and Use of Nourished Beaches.** The ownership and use of beaches nourished under this Agreement are subject to the State Lands Act.

5. **Withdrawal, Termination, Modifications, Amendments, and Binding Effects.** The commitment of each Town to provide public beach access, parking or any other lands or rights-of-way, or any rules or regulations with respect to use of the same, as a party to this agreement, is expressly conditioned on Federal and State laws, regulations, or interpretations thereof, as of the date of approval of this agreement by signatories herewith. If there are amendments, changes or interpretations to Federal or State law or regulations, which are adopted after this Agreement is approved which affect a party's rights and obligations in this Agreement, any party that chooses not to meet the requirements shall have a right to withdraw from this Agreement at any time.
New Hanover County Contract #12-0190

Once approved by the County and all of the Towns, this Agreement shall remain in effect until June 30, 2015 and be binding on the Parties regardless of changes in the composition of boards of the respective units of local government that are parties hereto. This Agreement shall automatically renew for subsequent periods of four years unless any party gives notice in writing to all other parties at least 180 days before the expiration of the then current term of its desire that the Agreement not renew at its termination. In such event, the Agreement shall terminate at the end of its then current term.

Once approved, no party may withdraw except that a Town upon twelve (12) months written notice to the County and other Towns may withdraw. Withdrawal of a party as provided in this paragraph shall not cause the Agreement to terminate. The Agreement shall only be terminated as provided in the preceding paragraph.

6. Any amendment of modification to this Agreement shall require the written consent of all Parties.

IN WITNESS WHEREOF, the parties have executed this Agreement.

COUNTY OF NEW HANOVER

ATTEST:

By: Ted Doran
Chairman of the Board

Clerk to the Board

TOWN OF WRIGHTSVILLE BEACH

ATTEST:

Mayor

Town Clerk

Approved as to form/County Attorney

[Signature]

6
NORTH CAROLINA

NEW HANOVER COUNTY

I, Teresa P. Elmore, a Notary Public of the State and County aforesaid certify that Sheila L. Schult acknowledged that she is Clerk to the Board of Commissioners of New Hanover County and that by authority duly given and as the act of the Board the foregoing instrument was signed in its name by its Chairman, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal this 8th day of Dec, 2011.

Teresa P. Elmore
Notary Public

My commission expires: 

TERESA P. ELMORE  
NOTARY PUBLIC - NORTH CAROLINA 
NEW HANOVER COUNTY  
My Commission Expires 4.14
NORTH CAROLINA

NEW HANOVER COUNTY

I, Virginia A. Houser, a Notary Public of the State and County aforesaid certify that Sylvia J. Holleman acknowledged that she is Clerk to the Board of Alderman of Wrightsville Beach and that by authority duly given and as the act of the Board the foregoing instrument was signed in its name by its Mayor, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal this 17th day of November, 2011.

Virginia A. Houser
Notary Public

My commission expires: 5/3/12

NORTH CAROLINA

NEW HANOVER COUNTY

I, Iris D. Salko, a Notary Public of the State and County aforesaid certify that Michela N. Prusa acknowledged that she is Clerk to the Town Council of Carolina Beach and that by authority duly given and as the act of the Council the foregoing instrument was signed in its name by its Mayor, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal this 15th day of November, 2011.

Iris D. Salko
Notary Public

My commission expires: 2-3-2014

ORIGINAL
NORTH CAROLINA

NEW HANOVER COUNTY

I, ________________, a Notary Public of the State and County aforesaid certify that ________________ acknowledged that she is Clerk to the Town Council of Kure Beach and that by authority duly given and as the act of the Council the foregoing instrument was signed in its name by its Mayor, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal this ________________ day of ________________, 2011.

______________________________
Notary Public

My commission expires: ________________

NEW HANOVER COUNTY

SHEILA L. SCHULT
NOTARY PUBLIC

ORIGINAL
MEMORANDUM

TO: Coastal Resources Commission

FROM: Matt Slagel, DCM Shoreline Management Specialist

SUBJECT: Summary of Regional Inlet Management Meetings and Preliminary Findings

The N.C. Coastal Resources Commission (CRC) held a series of public meetings in March and April to hear from local government officials, citizens, and stakeholders about specific concerns related to the management of ocean inlets in North Carolina. The regional meetings are part of the CRC’s comprehensive review of inlet management in the state. In addition to the four public meetings and the dredging expert panel at the February 2014 CRC meeting, written comments were accepted through April 15, 2014. The public comments received can be broken up into 20 categories as follows. (F) indicates Federal authority and (S) indicates State authority.

1) **Beneficial Use of Dredged Materials:** 15 comments
   
   Common Themes:
   - Beach-compatible sand dredged from inlets should be placed back on adjacent beaches; it should never be disposed offshore. (F/S)
   - The distribution of dredged sand that is pumped onto adjacent beaches should be guided by analytically derived sediment budgets. (F/S)

2) **Dredging Depths and Sediment Criteria Rules:** 15 comments
   
   Common Themes:
   - Dredging projects should evaluate the optimal depth of a channel, not just the “authorized depth.” Authorized depths should be increased. (F)
   - It’s difficult for the federal agencies to alter authorized channel dimensions, but obtaining permits at the local level may allow for more flexibility. (F/S)
   - Increasing the depth of shallow-draft inlets would increase the tidal prism, change the flood shoal and ebb shoal geometry and orientations, and likely result in increased erosion on adjacent shorelines. (F/S)
   - The sediment criteria rules should be reevaluated. If the sand came from the beach, it should be allowed to be placed back on the beach. (S)

3) **Erosion Rate Calculations for Inlet Hazard Areas:** 15 comments
   
   Common Themes:
   - The CRC should task the Science Panel to complete the development of methods to define revised Inlet Hazard Areas and potential inlet and near-inlet setback lines for CRC review. (S)
• The Inlet Hazard Areas should be eliminated and incorporated into the Ocean Erodible Area (OEA) while applying the same development standards currently utilized in the OEA. (S)
• The current “adjacent erosion rate” rule for IHAs doesn’t make sense. Every inlet is different and erosion rates are dramatically different. Good erosion rate information is needed for setbacks to be valid. (S)
• The concept of a Deep-Draft IHA and Shallow-Water IHA should be explored, and the boundaries should extend in the water, where issues related to dredging can be codified and enforced in policy. (S)

4) **Dredge Plants and Scheduling of Dredging Projects:** 14 comments
Common Themes:
• Shallow-draft hopper dredges can place material closer to the shore and should be used more frequently as a first option instead of sidecast dredges. Sidecast dredges are only good for clearing a channel enough for a hopper dredge to follow behind it. One benefit of sidecast dredges is that they keep the sediment in the system. (F)
• The U.S. Army Corps of Engineers (USACE) dredge plants are stretched thin and scheduled well into the future, so immediate responses aren’t always possible. (F)
• Consistency is needed for dredging for ferries in Dare and Hyde counties. Dredging is needed not just for getting in and out of inlets, but also traveling between islands through the sounds. (F/S)

5) **Terminal Groins and Sand Bypassing:** 14 comments
Common Themes:
• The legislative cap of four terminal groins should be removed. (S)
• Monitoring of downdrift impacts and financial aspects of mitigation need to be sufficient to safeguard adjacent properties and communities that could be negatively impacted by terminal groins. (S)
• Migrating inlets are not good candidates for terminal groins. (S)

6) **Approach to Inlet Management, In General:** 13 comments
Common Themes:
• Inlets should be managed proactively instead of reactively. (F/S)
• Beach and inlet management is related- what happens to one impacts the other. The goal of inlet management should be to reconnect sediment pathways to minimize dredging impacts. (F/S)
• Each inlet is diverse and unique, so one management scheme cannot be applied to all inlets. (F/S)

7) **Funding Sources and Partnerships:** 13 comments
Common Themes:
• With decreasing federal funds, inlet management is increasingly a shared partnership between local and state government. A stable source of funding for beach and inlet projects is needed at the state level. (S)
• The 50% state matching fund for inlet dredging is a good start, but if one locality wants to undertake a major project and applies for the state matching funds, it could wipe out the funds for the rest of the state. (S)
Congressional funding is an issue for federal projects. A project may be authorized and permitted, but if it is never funded, it does no good. (F)

8) **Emergency Permitting: Bulldozing and Sandbags:** 11 comments

Common Themes:
- New dunes should be allowed to be created in Inlet Hazard Areas. (S)
- Sandbags in IHAs should have a different set of standards (permitted sooner and allowed to remain on beach longer). (S)
- More efficient and timely procedures for emergency permitting are needed. (S)

9) **Dredging Windows / Moratoria:** 10 comments

Common Themes:
- The dredge windows should be extended under stipulated conditions to increase competition, increase the number of bids on projects, reduce costs, and provide more flexibility for completing the work. (F/S)

10) **Economic Value of Inlets and Beaches:** 10 comments

Common Themes:
- The economic value of inlets should consider tourism, culture, recreation, jobs, and storm damage reduction; not just commercial tonnage. (F/S)
- Safe and navigable inlets are vitally important to the local and state economy. (S)

11) **Channel Realignment Projects:** 9 comments

Common Themes:
- The Bogue Inlet and Mason Inlet channel realignment projects were successful, so the CRC should make sure that the permitting process is quicker and easier and that monitoring requirements are reduced for future similar projects. (F/S)
- These types of projects should be designed to accommodate the same volume of water (tidal prism) that the pre-existing ebb channel possessed. (F/S)

12) **Permitting Process, In General:** 8 comments

Common Themes:
- Permitting needs to be proactive. There is a need to be able to react quickly, be adaptive, and look longer term versus authorizing single events. (F/S)
- DCM Major Permit lifecycles should be increased for inlet management or Coastal Storm Damage Reduction projects. (S)

13) **Development Standards / Erosion Setbacks:** 8 comments

Common Themes:
- Inlets are a primary ocean hazard in North Carolina. Development standards adjacent to inlets should be different from development standards along the oceanfront. (S)
- Existing rules for new development adjacent to inlets should not be relaxed. (S)
- There is no need for IHA specific development standards. (S)

14) **Monitoring Conditions Associated with Projects:** 8 comments

Common Themes:
- Monitoring requirements should not be so onerous as to prohibit what has otherwise been authorized. The amount of monitoring on projects should be reasonable and consistent with CAMA objectives. (S)
- Monitoring conditions should focus more on physical monitoring and less on biological monitoring. (S)

15) **Other Erosion Control Structures:** 7 comments
Common Themes:
- Rock groins, breakwaters, jetties, sandbags, beach bulldozing, and beach nourishment should all be allowed to mitigate channel-induced erosion. (S)

16) **Volumetric Triggers for Beachfront “Static Lines”:** 6 comments
Common Themes:
- The “300,000 cubic yard rule” for establishing a static vegetation line should be reevaluated. (S)
- The Ocean Reef Condominiums in Emerald Isle cannot meet the setback from the static vegetation line, and they are over 2,500 sq ft so they would not be able to rebuild from the first line of stable and natural vegetation (under the static line exception rule). Property owners request the CRC to consider allowing an exception for building back on the original footprint, even though the buildings are more than 2,500 sq ft. (S)

17) **Stockpiling of Sand:** 6 comments
Common Themes:
- Stockpiling of sand dredged from inlets and stored for future placement on beaches should be allowed. (S)

18) **Negative Impacts of Dredging:** 5 comments
Common Themes:
- The federal engineered channel locations at Beaufort Inlet and Cape Fear River Inlet result in episodic maintenance dredging, high erosion rates, and shifting shorelines adjacent to these inlets. (F)
- Dredging of Oregon Inlet has exacerbated erosion of Hatteras Island. (F)

19) **New Inlet Breaches:** 5 comments
Common Themes:
- A new type of Area of Environmental Concern (AEC) is needed for areas where an inlet used to exist, has closed, but could re-open again in the future. (S)
- If a new inlet is breached, it should be filled in instead of bridged. (F/S)

20) **Dredging of Inlet Shoals:** 3 comments
Common Themes:
- Since the orientation of ebb shoals is a primary driver of erosion on adjacent shorelines, any dredging of shoals should only proceed after modeling and studies indicate no adverse impacts will occur to the adjacent shorelines. (F/S)

A summary of the public comments and a full record of the public comments are attached. Commissioners were also asked to provide their priorities, and these are included as Attachment G.
The following information is attached to this memorandum:
Attachment A: Summary of Public Comments, by topic
Attachment B: Comments from Dredging Panel at February 2014 CRC Meeting
Attachment C: DCM Overview of Inlet Management Presentation
Attachment D: Buxton Meeting Notes and Public Comments
Attachment E: Beaufort Meeting Notes and Public Comments
Attachment F: Ocean Isle Beach Meeting Notes and Public Comments
Attachment G: Wilmington Meeting Notes and Public Comments
Attachment H: CRC Member Priorities
### Beneficial Use of Dredged Materials

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<thead>
<tr>
<th>Topic</th>
<th>Number of Comments</th>
<th>Specific Comments</th>
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<tbody>
<tr>
<td>Beneficial Use of Dredged</td>
<td>15</td>
<td>Beneficial use of dredged materials for established navigation channels may be appropriate, but that will only yield limited amounts of sand. Adequate and compatible sand for beach renourishment should be found through regional planning, and not from inlet systems.</td>
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<td>The distribution of dredged sand at stabilized or improved inlets must be guided by analytically derived sediment budgets and not by maintenance dredging records or perceived regional sediment transport rates.</td>
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<td>Most of the sediment that is dredged from inlets can be used beneficially.</td>
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<td>The essence of the NC Beach and Inlet Management Plan (BIMP) is to serve the dual purpose of enhancing navigation and beach management.</td>
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<td>The CRC and State should insist that the U.S. Army Corps of Engineers (USACE) disposes all dredged beach-quality sand on adjacent beaches or the ebb delta to mimic the natural sediment budget. &quot;No Net Loss of Sand Policy&quot;</td>
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<td>Incorporating beneficial use policies into the State's enforceable Coastal Management Program could be used to keep the USACE consistent and in-line with State policy and what the State actually desires. The State should use the Federal Consistency process under the Coastal Zone Management Act of 1972 to ensure that beach quality sand is not removed from the active beach system.</td>
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<td>Dredge spoils can be used as a resource for creating bird habitat instead of just discarding it. The USACE has money they can use for habitat restoration. Creating new bird habitat in the sounds could cause the birds to start using those areas and leave the ocean beaches for human use.</td>
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<td>Dumping dredged sand from Oregon Inlet offshore has caused fishermen grief because the sand comes back.</td>
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<td>Due to the scarcity of sand for erosion control use, dredged sand should be utilized whenever practicable. Offshore sand deposits are not only scarce in most instances but also prohibitively expensive.</td>
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<td>All dredged materials should be utilized for placement on the adjacent or near shore beach. This makes both economic and ecological sense. The majority of sand that has to be dredged is sand that has eroded from the beach strand. Pumping this sand offshore should only be used as a last resort.</td>
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<td>Oregon Inlet needs sand out of it; Hatteras Island needs sand put on its beaches. This sounds like a match made in heaven. Beach-compatible sand should never be taken offshore; it should be put on beaches.</td>
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<td>Dredged material from deep-draft inlets shouldn't be placed immediately adjacent to the inlet, because it falls right back in the channel.</td>
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<td><strong>Beneficial Use of Dredged Materials (continued)</strong></td>
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<td>It is completely unfair to dredge a navigational inlet for 45 years without putting the sand lost to the beaches South of the inlet. Oregon Inlet should not be dredged without putting the sand back on the beaches of Hatteras Island, where it is needed badly.</td>
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<td>It is important to identify environmentally acceptable places for the disposal of dredged material ahead of time so this doesn't become an issue during a project.</td>
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<td>If it wasn’t for Hurricane Sandy, Dare County would not have received the $6 million that was needed to dredge Oregon Inlet. They asked for the sand to be placed on Hatteras Island, but the USACE said they couldn’t because of regulations.</td>
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<td>Dredging Depths and Sediment</td>
<td>15</td>
<td>No inlet should ever be viewed as a &quot;sand mine&quot; for beach renourishment projects unless the sand is going to be dredged anyway for established navigation channels. The extent of dredging should be based upon real navigation requirements, and not the amount of sand needed for beach renourishment.</td>
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<td>Criteria Rules</td>
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<td>Dredging projects should evaluate the optimal depth of a channel, not just the &quot;authorized&quot; depth. Advanced maintenance dredging should be allowed for economical and resource management needs.</td>
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<td>Advanced maintenance should be used such as dredging channels 4 to 5 feet deeper than the permit calls for to buy time before it is needed again.</td>
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<td>If there is ample evidence the sediment sample beneath the deepest core obtained will meet the State's nourishment compatibility standard, then that should be acceptable as part of the application (not a variance after the fact).</td>
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<td>Flexibility should be considered in applications where sand sources are used to mitigate inlet impacts - e.g., where sand volume requirements exceed those associated with beach disposal alone.</td>
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<td>The shallower the depth of an inlet, the more frequent the dredging and the more expensive the costs due to mobilization. The authorized depths of shallow-draft inlets need to be deeper than they currently are. Additionally, sediment criteria rules are currently too stringent and need to be relaxed to provide for a wider range of acceptable sediment.</td>
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<td>Dredging should be allowed at a depth that would benefit the area being dredged. There is not a one size fits all solution. For example, the Shallotte Inlet is not recognized as a navigable inlet; however, a deeper draft at the inlet is essential to recreational boaters. A deeper dredging depth could also facilitate commercial traffic at this inlet.</td>
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<td>The sediment criteria rules should be reevaluated. If the sand came from the beach, it should be allowed to be placed back on the beach.</td>
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<td>Overdredging should be increased. Oregon Inlet was dredged to about 17 feet deep with Hurricane Sandy funds and began to fill back in a few days later.</td>
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<td>Full maintenance of the channel design template should be allowed each time an inlet is dredged.</td>
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<td>Dredging the full template each time would result in a wider, more navigable inlet.</td>
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<td>The approach to dredging Carolina Beach Inlet needs to be reconsidered. If the inlet is dredged deeper (12-14 ft), it would allow for bigger dredges, which are more efficient and effective. This approach to dredging deeper would be safer and would have a ripple effect throughout the county and into the state.</td>
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It’s difficult for the Federal agencies to alter authorized channel dimensions, but obtaining permits at the local level may allow for more flexibility.

Increasing the depth of shallow-draft inlets through dredging would increase the tidal prism, change the flood shoal and ebb shoal geometry and orientations, and likely result in increased erosion on adjacent shorelines.

Maintaining the depth of inlets is the primary concern for boat captains in Ocracoke.
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| Erosion Rate Calculations for Inlet Hazard Areas | 15 | Near-inlet management has been ineffective due to multi-year oscillations (~3 to 20 years) that make long-term erosion rates and floating vegetation lines alone, unreliable predictors of the future. The CRC should task the Science Panel to complete the development of methods to define revised Inlet Hazard Areas and potential inlet and near-inlet setback lines for CRC review.  
All inlets erode and move at differing rates. As such, each inlet's erosion rate should be calculated on historical data individually. Terminal groins, channel realignment, as well as other engineering efforts should be taken into consideration when calculations are made.  
DCM staff and the CRC Science Panel were heading in the right direction with redefining the boundaries of the Inlet Hazard Areas based upon the standard deviation of shoreline change rates.  
The cost of providing services and insurance in these hazardous areas will continue to increase and place more of a burden on property owners and government.  
The Inlet Hazard Areas have proven ineffective and arbitrary. For the mouth of the Cape Fear River, the IHA and Ocean Erodible Area (OEA) should be replaced by a single AEC.  
Erosion rates along inlet areas have been assessed similar to other oceanfront shorelines. No additional analysis is deemed necessary for these areas.  
The erosion rate calculations for IHAs should be based on the same criteria as the remainder of the beach outside of the IHA.  
Actual physical monitoring data required for permitted inlet/shoreline projects should be used to calculate erosion rates. Good erosion rate information is needed for setbacks to be valid.  
Inlet Hazard Areas are dangerous for the economy, and any proposed expansion of them should be accompanied by an economic impact analysis.  
The current "adjacent erosion rate" rule doesn't make sense. Every inlet is different and erosion rates are dramatically different. Every foot that is subject to unnecessary additional requirements could possibly disenfranchise landowners from reasonable use of their property, which has a negative impact on local governments and their tax base.  
The concept of a Deep-Draft IHA and Shallow-Water IHA should be explored, and the boundaries should extend in the water, where issues related to dredging can be codified and enforced in policy.  
Rules should be different for deep-draft vs. shallow-draft inlets. |
As erosion rates are calculated for inlet shorelines, the history of each inlet needs to be considered: who did what, when, and how much?

The Inlet Hazard Areas should be eliminated and incorporated into the Ocean Erodible Area while applying the same development standards currently utilized in the OEA. New Topsail Inlet in particular is a migrating inlet that has demonstrated consistent southwest accretion (accreted 6.5 miles in 275 years) which makes it extremely unique and a candidate for removal from the IHA. The migrating side of the inlet doesn't have the unique challenges associated with oscillating inlets that build up and then erode, and no homes were lost in Topsail Beach's IHA due to storm surge after Hurricane Fran (185 oceanfront buildings were lost elsewhere on the island).

The "30-Year Risk Line" concept as a setback line isn't predictive of the future risk at New Topsail Inlet and should not be used to regulate development as it could dramatically take developable property away from the owners.
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<tr>
<td>Dredge Plants and Scheduling of Dredging Projects</td>
<td>14</td>
<td>The USACE dredge plants are stretched thin and scheduled well into the future, so immediate responses aren't always possible. The USACE funding process also doesn't allow for short turn-around times to meet quickly arising issues.</td>
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<td>The shallow-draft hopper dredges hardly ever work the shallow-draft inlets; instead the sidecasters do it. Shallow-draft hopper dredges can place dredged material closer to shore and are the preferred method and should be used as a first option.</td>
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<td>The dredging industry lobbies to not allow the USACE to have another dredge, and this is a big problem. Sidecast dredges are good for clearing a channel enough for a hopper dredge to follow behind it, but besides that, sidecasters are a colossal waste of time and money.</td>
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<td>The creation of dredge spoil islands in the sounds would be more beneficial than sidecast dredging because it would create habitat for birds and may keep them off the ocean beach. The agencies should work together to make this happen.</td>
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<td>When Oregon Inlet is dredged, hopper dredges should take the sand to Buxton and Rodanthe.</td>
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<td>Consistency is needed for dredging for ferries in Dare and Hyde Counties. Dredging is needed not just for getting in and out of inlets, but also traveling between islands through the sounds. Currently, state dredging of Hatteras Inlet stops in one spot, and USACE dredging stops in another.</td>
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<td>Sidecast dredging should only be used to provide more depth for larger dredges to come in and work.</td>
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<td>The State should consider getting into the dredging business so the USACE and private dredge companies don't have to be relied upon.</td>
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<td>The USACE now seems to only dredge once emergency conditions exist rather than performing periodic maintenance dredging.</td>
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<td>The CRC should think outside the box and evaluate private methods of dredging since the federal government can’t be relied upon to meet all local needs.</td>
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<td>The Jones Act has limited the dredge fleet, because all dredges must be American flagged and crewed.</td>
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<td>One benefit of sidecast dredges is that they keep the sediment in the system and the USACE can look for low spots in the bar to straighten out the channel.</td>
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<td>Carolina Beach Inlet used to be dredged quarterly, but now there is no maintenance schedule, and the inlet is only dredged reactively instead of proactively. A maintenance schedule is needed again.</td>
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<td>Dredge Plants and Scheduling of Dredging Projects (continued)</td>
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<td>Inlet management options available to local stakeholders should be maximized (appropriate dredge material double handling, dredge plant types, seasonal maintenance access, disposal/reuse options, minor template flexibility, historically managed deep water corridors).</td>
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| Terminal Groins and Sand Bypassing | 14 | If hard structures will aid in the retention of sand within the inlet shoulder areas and perhaps reduce shoaling of the inlet, then that should be perfectly acceptable and welcomed. In theory, terminal groins won't require sand bypassing because they only trap enough sand to create an accretion fillet, then the remainder is allowed to migrate into the inlet system and there are no/miniscule downdrift impacts.  
There should be no limits on the number of terminal groins permitted in NC. They are a useful tool that can be of tremendous help in the effort to contain and stabilize inlets.  
The ability to permit terminal groins is a significant benefit and can greatly reduce the cost of future renourishment activities. In addition to increasing the longevity of beach nourishment projects, terminal groins can also maintain minimum upper beach and dune widths that aid as storm buffers even under erosional conditions. It is believed that the cap of only 4 terminal groins should be lifted. Additionally, an Environmental Impact Statement (EIS) is currently required for terminal groin permitting. This should not be a prerequisite. For example, in South Carolina an EIS is not required for terminal groin permitting.  
Terminal groins across the United States as well as the existing ones in North Carolina, have been shown to be successful as well as a great asset to communities that are experiencing severe erosion and have tried all other methods of reversing the effects of erosion. The cap on the number of these structures in the State should be removed. It seems contradicting that the State allows use of these structures to protect historical areas and structures but will not allow others to use this as a tool as well.  
Who owns land under inlets, and who has the right to build terminal groins? Can they be built on private land? Why are only four terminal groins allowed? This should be reevaluated.  
There is a derelict groin on the Cape Lookout side of Barden Inlet. This old structure should be removed to restore natural sand transport from Cape Lookout to Shackleford Banks.  
The Sunset Beach Town Council is opposed to the use of terminal groins. Monitoring of downdrift impacts and financial aspects of mitigation need to be sufficient to safeguard the Town of Sunset Beach.  
Potential downdrift impacts of any proposed terminal groins need to be thoroughly evaluated.  
Scientific studies of the environmental and economic pros and cons of terminal groins are needed; not emotional reactions.  
The legislative cap of four terminal groins should be removed. A terminal groin is filled with sand; it doesn't rob downdrift beaches of sand. |
### Terminal Groins and Sand Bypassing (continued)

<p>| Migrating inlets are not good candidates for terminal groins. The four inlets/municipalities that are pursuing terminal groins are the four best candidates in NC. |
| The terminal groin at Pea Island was built to protect the end of Bonner Bridge and resulted in the creation of over 40 acres of new land. |
| Although the structures at Masonboro Inlet are jetties (not terminal groins) the weir is very important to trap sand and allow it to be placed back on Wrightsville Beach and Masonboro Island. |</p>
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| Approach to Inlet Management, In General | 13 | North Carolina is in a unique position to capitalize on the coastal engineering technologies of today and the experience of others in order to initiate a proactive, rational, and successful program of statewide inlet management.  
The highest priority should always be given to maintaining the ability of an inlet system to function naturally. Inlets that function as mostly natural systems should be managed to maintain those natural processes.  
North Carolina is in an ideal position to establish a comprehensive regional sediment management plan for its coast, and inlet dredging will be a significant part of this plan.  
The use of available scientific modeling can now be used to make accurate predictions regarding the unique challenges that NC inlets and beaches present.  
A new inlet management paradigm would be collaborative/cooperative, flexible, efficient, effective, anticipatory, and involve engineering based problem-solving and staff level resolutions.  
Proactive inlet management is in the best interests of the State, environment, Ports Authority operations, commerce, property owners, beaches, and recreational resources.  
Adaptive inlet management is required where an umbrella of coastal management tools (e.g., realignment, sand trap dredging, terminal groins, emergency orders) can be used in an expedient manner without overly-restrictive and costly permit and monitoring conditions.  
Beach and inlet management is related - what happens to one impacts the other. The goal of inlet management should be to reconnect sediment pathways to minimize dredging impacts.  
The CRC inlet management study shows leadership by seeking input at the local level. Allowing local governments to have more authority, with CRC oversight, can result in balanced management between local needs and Mother Nature. A cost-effective balance is needed.  
Because the maintained shipping channel in Cape Fear Inlet is in a fixed location, it is neither an oscillating nor a migrating inlet, as are typical of most other inlets in North Carolina. Any inlet management plan for the Cape Fear Inlet must address the unique circumstances and challenges posed by a maintained shipping channel.  
The southern inlets are different from the northern inlets. Most inlets in the state are modified to some extent, and two are severely modified (Cape Fear and Beaufort). Each inlet is diverse and unique, so one management scheme cannot be applied to all inlets.  
A regional approach to inlet management is a good idea because one size does not fit all.  
A State shoreline protection program is wise public policy and is needed in NC. |
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<td>Funding Sources and Partnerships</td>
<td>13</td>
<td>Paying for inlet management is increasingly a shared partnership between local and state government (no federal funds). Several inlets in North Carolina have been &quot;maintained&quot; with less than ideal funding, and mainly in a reactive mode. The State should develop a funding source to assist local interests to help mitigate the impacts of federal dredging projects to adjacent communities. Since Congress has not provided sufficient funding for dredging shallow-draft inlets, the burden has fallen to the State and local governments to keep these inlets open. The State and DWR have begun to pick up the slack regarding funding, however the Corps projects are much easier to implement (little to no monitoring and permitting conditions). Congressional funding is an issue for Federal projects. A project may be authorized and permitted, but if it is never funded, it does no good. The 50% state matching fund for inlet dredging is a good start, but if one locality wants to undertake a major project and applies for the state matching funds, it could wipe out the funds for the rest of the State. The amount of commerce that flows through individual inlets should determine how much funding they receive for dredging. A stable source of funding for beach and inlet projects is needed at the State level. Towns have responsibility for funding too, but they need the support of County, State, and Federal government. Coastal Recreational Fishing License (CRFL) funds should be looked at as a potential source of beach and inlet project funding. Local governments raising matching funds for dredging has been and will continue to be difficult to meet the 50/50 match with the State. Room Occupancy Tax (ROT) funds have been very helpful in funding beach projects. Different pots of funding for USACE projects (navigation vs. coastal storm damage reduction) is a big concern because this can result in a navigation project and a coastal storm damage reduction project occurring at the same inlet at the same time, using different contractors, with pipes criss-crossed, and a general lack of coordination.</td>
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<td>Emergency Permitting: Bulldozing and Sandbags</td>
<td>11</td>
<td>Sandbags need to have a different set of standards if located in Inlet Hazard Areas compared to the oceanfront. They should be allowed to be permitted well before structures are imminently threatened, and the time limit for sandbags also needs to be reexamined. Sandbags should be allowed in perpetuity until the solution (inlet realignment, hard structure, retreat, etc.) is employed or the primary structure itself is destroyed. New dunes should be allowed to be created in Inlet Hazard Areas. An increase in flexibility in emergency circumstances for more timely and effective responses is needed, along with more efficient and timely procedures. Efforts to create protective dunes should be allowed in IHAs. Also, the general permit for beach bulldozing under 15A NCAC 7H.1800 should apply to IHAs. The current method appears to be working adequately. Due to the immediate needs of these communities following a major storm, State and Federal agencies must continue to seek ways to expedite these permitting processes. Sandbags are effective and should still be allowed. Sandbag removal is a difficult issue... Creating new dunes should also be allowed within Inlet Hazard Areas. The statement that new dunes &quot;create a sense of false security&quot; is not the case. Some owners would prefer the creation of new dunes rather than placing sandbags on their property. Also, there is a timeline on sandbags but owners could build dunes on a continuous basis if needed. The notion that you can rebuild old dunes but not create new dunes seems to be arbitrary. The only temporary allowed solution for erosion control is sandbags, but these are not adequate. New dunes should be allowed to be created in Inlet Hazard Areas. Sandbags that are allowed to remain buried results in a more resilient shoreline than if sandbags are required to be removed. When the National Park Service created a new dune line on Hatteras Island in the 1950s, it made the erosion worse.</td>
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<td>Dredging Windows / Moratoria</td>
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<td>Federal environmental laws that protect habitat for fish and wildlife already play a big role in governing inlet management, and they cannot be ignored when devising future inlet management strategies.</td>
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<td>Environmental windows and emergencies often do not mix well, so it is important to be proactive and have a plan ready. Expanding the dredging windows would increase competition, increase the number of bids on projects, reduce costs, and provide more flexibility for completing the work.</td>
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<td>The Federal government is dictating these windows. The State needs to determine what is best for its resources; not the Federal agencies.</td>
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<td>The dredging window needs to be extended by one month on each end, which can be done without environmental or wildlife/biological issues based on recent history.</td>
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<td>The dredging windows should be reduced in appropriate circumstances for projects that require construction during the current moratoria timeframe.</td>
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<td>Windows are often overly conservative and based largely on limited, poorly quantified data or merely on subjective opinion. Year-round dredging should be allowed, especially when operations have already been mobilized. This has been successful in other states and should be implemented with proper controls in North Carolina. Compliance with environmental windows complicates scheduling, causes contractual delays, and substantially increases project costs.</td>
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<td>Dredging windows should be automatically extended or fluctuate depending on the time of the project and condition of the beach being nourished. Most of these windows focus on sea turtle nesting season. However, if there is no beach then turtles cannot nest. Also, with the limited number of dredges now available, some projects have to be delayed in order to secure the type of dredge needed. Delaying these projects only allows further erosion and threatening of structures to occur and additional damages to critical habitat areas.</td>
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<td>The current windows affect costs because all projects in North Carolina are crammed between October and March. Consistent, science-based dredging windows throughout the State need to be pursued. The same windows need to be applied consistently statewide from project to project.</td>
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<td>Environmental windows should be extended under stipulated conditions.</td>
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<tr>
<td>Economic Value of Inlets and Beaches</td>
<td>10</td>
<td>Most inlets are critical habitat for many important species of fish and wildlife, and the shorelines and channels around inlets are heavily used for boating, fishing, and swimming, which brings a huge economic return to the coastal communities.</td>
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<td>The Dare County economy is based predominately upon tourism, fishing, and boatbuilding, and the beaches, inlets, and waterways are needed in order to thrive.</td>
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<td>Keeping existing jobs associated with inlets is of utmost importance. Oregon Inlet is an outlet and dredging is important for more than just navigation. Dredging improves water quality upstream by allowing the water to exit the inlet, the inlet serves as safe harbor for rough seas, and shoaled inlets result in decimated commercial fishing and boat building industries.</td>
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<td>At Oregon Inlet, Hatteras Inlet, and Ocracoke Inlet, 80-85% of charter boat fishing customers are from out-of-state. They bring significant money into the state.</td>
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<td>Safe and navigable inlets are vitally important to the local and state economy, and Carolina Beach Inlet alone has an economic impact of millions of dollars annually.</td>
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<td>In 2007, Chris Dumas (ECU) calculated the economic value of inlets in NC, and the numbers were staggering. The direct and indirect value of Carolina Beach Inlet alone was about $10 million/year. The benefit-cost ratio of dredging projects is 16:1. Since the study was based on 2007 values, Dumas will be updating the economic impact values soon, and those numbers will be used to lobby for more funding.</td>
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<td>The economic value of inlets should consider tourism, culture, recreation, jobs, and storm damage reduction; not just commercial tonnage.</td>
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<td>Oregon Inlet has been a commercial highway for 150 years, but in the last few years, it has become a death trap. Since commercial fishing boats can’t safely get in and out of Oregon Inlet, the Seafood Industrial Park at Wanchese was recently renamed the Maritime Industrial Park. The loss of the seafood industry at Wanchese has had a huge economic impact on the fishermen, the State of North Carolina, and the surrounding area.</td>
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<td>The hundreds of millions that have been spent on dredging Oregon Inlet is wonderful for the jobs and money that needs that inlet open but the business community on Hatteras Island is just as important.</td>
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<td>Restored beaches are an important recreational asset and economically attract visitors from all over the country and globe. Restored beaches save Federal, State, and Local Governments money and avoid the stress and misery of the destruction of private property and public infrastructure.</td>
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<td>Channel Realignment Projects</td>
<td>9</td>
<td>The depths and other channel configurations for relocated inlets should be designed to accommodate (not exceed) the same volume of water (tidal prism) that the existing or some agreed upon pre-existing ebb channel possessed.</td>
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<td>These measures must be done in a way that does not disrupt natural inlet processes.</td>
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<td>Where federal project channels for commercial use are proposed for realignment, such measures shall be subject to extensive study including but not limited to appropriate numerical modeling, and project mitigation should be required. This type of study was not done at the entrance to the Cape Fear River prior to the last deepening. Since the channel was relocated closer to Bald Head Island and cut through the Island’s protective shoals, Bald Head Island has experienced increased, chronic erosion.</td>
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<td>The practice of channel realignment is a practical way of controlling erosion and provides a possible source of material for erosion control purposes.</td>
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<td>Due to the presence of three Civil War wrecks on the ebb shoal at Lockwoods Folly Inlet, realignment is exceedingly difficult. The Shallotte outer channel is centrally aligned (as designed by the Corps) and is likely the best orientation. Both inlets have terminal groin feasibility studies underway which deal with this in much more detail.</td>
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<td>Channel realignment projects should remain an option as long as all possible outcomes are thoroughly researched, both pro and con.</td>
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<td>The Bogue Inlet channel realignment project took about three years to obtain state and federal permits. Since the project was a success, the CRC should make sure that the permitting process is quicker and easier for future similar projects.</td>
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<td>RIVET (River Mouth and Inlet Research Initiative) was a 1-month study by the Office of Naval Research at New River Inlet. The purpose of the study was to measure inlet dynamics and movement of sediments with predictive models. The benefit is that it gives credence to scientific opinion and recommendations. Very little science exists for inlets, so studies like RIVET provide a useful tool for assessing engineering solutions.</td>
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<td>Mason Inlet was the first channel realignment project in the state; therefore, state and federal resource agencies required significant levels of different types of monitoring. Requirements need to be reduced for these types of projects in the future. If Mason Inlet moves out of its &quot;corridor limit,&quot; permitting for the channel realignment project has to start all over again. Initial corridor limits should be as large as possible to meet the purpose and need of a given project.</td>
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<td>Permitting Process, In General</td>
<td>8</td>
<td>The process of getting permits needs to be streamlined to make it more adaptive to needs. The permits need to be broad enough to allow engineers to tweak the projects in order to learn over time what works best. Existing coastal regulations are reactive, inflexible, inadequate, involve long time periods, have a limited toolbox, and a one size fits all approach. The State (DCM and DWR) has recently been making a stronger effort to simplify coastal permitting processes and should be commended. The coastal permitting process can be long, difficult, and redundant where State and Federal agencies ask for similar information and then require different permit and monitoring conditions. Non-Governmental Organizations (NGOs) and special interest groups have delayed the permitting process, and they hold everyone hostage. Long-term inlet management plans need to be adaptive and flexible. Permitting can take 6-9 months or longer, but inlets change rapidly. Most projects were authorized in the 1960s or 1970s, but vessels have changed in 50 years, and the projects are still designed for boats built at that time. Things have changed and adaptations have not been made in the permits. Permitting needs to be proactive. There is a need to be able to react quickly, be adaptive, and look longer term versus authorizing single events. The State government has been great at updating permitting by combining NEPA and NCEPA. DCM Major Permit lifecycles should be increased for inlet management or Coastal Storm Damage Reduction projects. Additionally, umbrella permitting capabilities should be explored including a programmatic Biological Assessment addressing U.S. Fish and Wildlife Service threatened and endangered species critical habitat designations.</td>
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<td>Development Standards / Erosion Setbacks</td>
<td>8</td>
<td>Most of the threats to public infrastructure, private property, and the environment that garner the most attention of the CRC and the public at-large are related to inlets. This requires a different approach than that compared to the oceanfront.</td>
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<td>Existing buildings should be grandfathered, and new development should not be allowed further seaward than adjacent properties. The first seaward line of existing dwellings could be used as a &quot;60 foot setback&quot; demarcation, and graduated setbacks could be measured from it.</td>
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<td>Regulations should address circumstances where developed lots adjacent to a navigation channel will receive sand on an ongoing basis. In some cases, what has eroded will be restored.</td>
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<td>Homes have been lost over the last few decades due to erosion along both Lockwoods Folly and Shallotte Inlets. It is not believed that any additional significant build-outs will occur along either inlet and therefore no additional restrictions are needed.</td>
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<td>Land masses and environmental conditions change on a daily basis. These standards and setbacks need to be revisited on a regular basis and adjusted accordingly.</td>
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<td>Since CAMA implementation in 1978, it is highly likely that inlet-induced shoreline changes have destroyed or threatened more near-ocean buildings than hurricanes or other coastal storms. Inlets are therefore a primary ocean hazard in North Carolina.</td>
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<td>Existing limitations on locating new development within hazardous inlet lands should never be relaxed, and should be increased when economically feasible.</td>
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<td>The vegetation line should always be used as the basis for setbacks, and it is a valid reference point for setbacks on the Topsail Beach side of New Topsail Inlet. OEA development standards should apply if the CRC eliminates the Topsail Beach IHA or if it doesn't. There is no need for IHA specific development standards.</td>
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<td>Monitoring Conditions Associated with Projects</td>
<td>8</td>
<td>Monitoring needs to be part of project design, and not conducted piecemeal as an afterthought. Monitoring should document how well previous management measures worked, how much those measures cost, and what environmental consequences occurred.</td>
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<td>Surveying, monitoring, and watching trends in the weather, the tidal flow, and the sedimentation/erosion are necessary.</td>
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<td>Some level of monitoring is acceptable, but what questions need to be answered? Monitoring for monitoring's sake, or monitoring to get a baseline condition when baselines should already exist is no longer acceptable.</td>
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<td>Monitoring requirements should not be so onerous as to prohibit what has otherwise been authorized. The amount of monitoring on projects should be reasonable and consistent with CAMA objectives, including environmental and economic balancing.</td>
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<td>Efforts need to take place to &quot;regionalize&quot; data where possible to meet monitoring requirements. The cost of monitoring is very high, and in some cases excessive. More often than not identical monitoring efforts produce the same results in the same region costing the sponsoring unit millions of dollars in excessive costs. The data collected usually finds itself on a bookshelf never to be reviewed again.</td>
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<td>Monitoring of projects is something that can be a useful tool to assess the success of the project. Monitoring should be used to quantify the amount of sand that is gained or lost during the year. However, monitoring should not be so restrictive that it eliminates the chance of using the aforementioned tools. Monitoring should also be for a reasonable time frame for project to prove its effect. Information monitored should be useful and meaningful.</td>
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<td>Monitoring conditions should focus more on physical monitoring and less on biological monitoring. Environmental monitoring is not always helpful or meaningful. Instead of biological monitoring requirements, applicants should be allowed to purchase land for conservation/mitigation.</td>
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<td>Instead of biological monitoring, sand dune fencing and vegetation should be required in permits. Monitoring data and results are often inconclusive. Monitoring shouldn't be required for projects where sand is dredged from an inlet and placed on the beach.</td>
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| Other Erosion Control Structures | 7                  | Rock groins, terminal structures, breakwaters, jetties, sandbags, beach bulldozing, beach nourishment, etc should be allowed to mitigate channel-induced erosion adjacent to the Cape Fear Inlet. These structures could be allowed as an exception for a new Cape Fear River AEC.  
Sheetpile and riprap need to be added to the toolbox to protect roads and bridges.  
Roadways on barrier islands should be designed to be overwashed but not breached. Erosion control structures on the ocean side and sound side of the road would prevent breaching from happening.  
There are environmentally-friendly solutions to erosion control that should be considered by the CRC, including Holmberg Undercurrent Stabilizers.  
Oregon Inlet needs to be dredged and stabilized with jetties, but the rest of Hatteras Island can't be ignored. Cape Point is at the end of a littoral current, so groins should be allowed there.  
The jetties at Masonboro Inlet have moved the wet/dry line further seaward and have helped reduce channel shoaling.  
The CRC should be open to new techniques that could potentially reduce erosion. |
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<td>Volumetric Triggers for Beachfront &quot;Static Lines&quot;</td>
<td>6</td>
<td>The &quot;300,000 cubic yard rule&quot; should be reevaluated because one size does not fit all. The static line rule was based on the volumes of typical navigation projects (with beach placement) but shouldn't have been. Projects can be designed more effectively if they are not restricted by the static line or if we were to go back to the old system of evaluating projects based on the rate of sand placed per linear foot. It's important that we're not adversely impacting communities wanting a longer project versus a wider project. This is an oceanfront issue that requires a separate discussion. The entire static vegetation line issue for oceanfront needs to be reviewed and revamped. On Oak Island, there is a very large area of oceanfront property that has been stable for over 13 years with some of the largest lots on the beach that are currently unbuildable. Continue to investigate procedures used for determining static lines. The first line of stable vegetation has always been a moveable line. An arbitrary volumetric number should not automatically enforce a static line. One size does not fit all and all factors, history, science, etc. should be considered when determining the static line. The 2,500 square foot building limitation for new or replacement buildings measuring the setback from the first line of stable and natural vegetation (in areas with a static line exception) is a problem for the Ocean Reef HOA at Emerald Isle. Based on the measurement guidelines set forth by the CRC, the buildings would fall between 3,768 sq ft and 4,296 sq ft. Because of the 2,500 sq ft limitation now in place, they would lose approximately 1 to 1.5 units per building therefore being unable to rebuild a fair and acceptable configuration. The Ocean Reef HOA strongly believes the limitation now in place on their build back ability is not only affecting their property values but also generating consumer fear, affecting their ability to resell. They seriously doubt this is a consequence the CRC meant to happen when establishing their guidelines, but nevertheless is having a dire effect on their property. The Ocean Reef Board of Directors respectfully requests the CRC to allow an exception for building back on the original footprint if the building is more than the 2,500 sq ft limitation now in place. Ocean Reef Condominium property owners in Emerald Isle are concerned that they are at risk of not being able to rebuild their buildings in the event of major damage caused by storms or other disasters (such as fire). The Static Line Exception limits rebuilding to 2,500 sq ft when the setback is measured from the first line of stable and natural vegetation. The approximate living space of the oceanfront buildings is 4,400 sq ft. They seek relief in the Static Line Exception ruling with the 2,500 sq ft limitation and ability to rebuild as is within the approximate existing footprint. They are concerned that build-back fear is having a serious impact on the value of their properties and owners’ ability to sell their units.</td>
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<td>Stockpiling of Sand</td>
<td>6</td>
<td>The stockpiling or storing of dredged sand should be considered when beaches are functioning well. When a storm hits the coast, the need for the stockpiled sand will arise. It would be optimal to identify two placement areas: one on the beach during environmentally acceptable periods, and one in a nearby location (e.g., an AIWW upland site) that could serve as an available/dredgeable storage site for urgent beach nourishment purposes. Carolina Beach is interested in stockpiling sands and continuing to marry the Carolina Beach Inlet project with beach renourishment. Sand from Carolina Beach Inlet could be dredged and stockpiled, or put in temporary storage, until needed on the beach. Dredged beach-compatible sand should be stockpiled for future use as beach fill. If sand were stockpiled as it is dredged, the stockpiled sand could have been used to fill the new Pea Island Inlet when it breached. Stockpiling of sand should be allowed in the Ocean Erodible Area (OEA).</td>
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<td>Negative Impacts of Dredging</td>
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<td>The more we intervene and try to overpower the natural functions of inlets, the more costly and damaging those interventions will become, and the costs will continue to escalate because there is no permanent solution to inlet management.</td>
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<td>Very few inlets in NC are truly natural; many are influenced by the AIWW, other Federal project channels, development, or structural modifications including bridges.</td>
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<td>The Federal navigation channels at Beaufort Inlet and Cape Fear River Inlet are maintained in particular locations whereas natural inlets migrate. The engineered channel locations result in episodic maintenance dredging activities, high erosion rates, and shifting shorelines adjacent to these inlets.</td>
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<td>Maintaining Oregon Inlet is important for the fishing industry, but it shouldn’t be done at the expense of Hatteras Island. Dredging of Oregon Inlet has exacerbated erosion of Hatteras Island.</td>
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<td>Hatteras Island has been affected greatly by the dredging at Oregon Inlet. The highway has been attacked by the ocean, eroded beaches from Pea Island down to the end of the littoral drift in Buxton.</td>
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<td>New Inlet Breaches</td>
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<td>If a new inlet is breached, it should be filled in instead of bridged. Inlet breaches should not be allowed to occur. Ground Penetrating Radar should be used to identify former inlet locations, and these areas should be stabilized with erosion control structures. A new type of AEC is needed for areas where an inlet used to exist, has closed, but could re-open again in the future. The tourism industry on Hatteras Island is suffering, especially in the spring and fall, because nobody wants to book a rental house and then not be able to get there because of new inlet breaches. Funding needs to be available to fill new inlet breaches as quickly as possible.</td>
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<td>Dredging of Inlet Shoals</td>
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<td>In many instances, inlet shoals are a primary future source of beach compatible material for beach restoration. State-of-the-art numerical analyses are required in each instance to ensure no adverse impacts to all parties abutting the inlet. Sand for renourishment should be found outside of inlet systems as part of regional sand management planning. The orientation of ebb shoals is a primary driver of erosion on adjacent shorelines.</td>
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OVERVIEW OF THE FLORIDA EXPERIENCE

- In Florida, we have been proactively dealing with inlet management legislation (Statutes and Rules) since the 1980’s. Inlet management – in this instance – is functionally related to the State’s Beach Management Program.

BACKGROUND

- In Florida there are 60 tidal inlets – sixteen on the east coast alone. Very few are not stabilized or improved for navigation. The oldest federal projects were constructed in mid-1800’s. Florida’s east coast “coastal development pressures” date back to the 1920’s with the advance of the railroad down the State by Henry Flagler.

- In Florida, 399 of the State’s 825 miles of sandy shoreline are determined to be “critically eroded.” It is estimated that approximately 80% of the State’s beach erosion is caused by impacts originating from stabilized or improved inlets (R.G. Dean, Ph.D., Jim Houston, Ph.D. – ERDC).

20 February 2014
• In 1998 the expressed legislative intent of Chapter 201.15 F.S. (as revised) was to allocate a minimum of $30M annually for the preservation and repair of Florida's beaches. Project by project State cost-sharing varies, but can be up to 50% through the State's Beach Management program.

• Very quickly after its establishment however, it became obvious that a major part of the solution to Florida's historical beach erosion problems needed to include the mitigation of inlet impacts around the State through the concept of strategic “Inlet Management.”

• In retrospect by the 1960’s and 70’s, it had been acknowledged _all too late_ in Florida that political entities responsible for navigation project construction and maintenance, be they federally or locally constructed, essentially shunned all, or portions of their responsibilities for shoreline impacts at inlets. In response to this phenomena, the Florida Congressional delegation in 1968 was directly responsible for the passage of Section 111 of the Rivers and Harbors Act (authority for mitigation of shore damage attributable to federal navigation works – nationally).

• Similarly, throughout the 20th century there were numerous technical myths regarding the impacts of stabilized inlets on littoral processes. Today, the myths have been basically dispelled, but fundamental “positions” regarding responsibility for navigation project impacts has

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not experienced wide-spread acceptance within the federal government. There has however been relatively recent formal acknowledgement of the physical and economic benefits of Regional Sediment Management.

- Overview – The primary goal of inlet management legislation in Florida is “to minimize an inlet’s adverse impacts on adjacent sandy shorelines, while simultaneously allowing for safe and reliable navigation through the inlet.” As a result – today, almost all beach compatible material dredged from inlet channels is placed directly on the beaches of the State. Most of this work is facilitated by the Jacksonville District, USACOE. This includes abutting portions of the AIWW and WCIWW.

**A FEW LESSONS LEARNED**

- The distribution of dredged sand at stabilized or improved inlets must be guided by analytically derived sediment budgets and not by maintenance dredging records, perceived regional sediment transport rates, etc.

- In many instances, inlet shoals are a primary future source of beach compatible material for beach restoration. State-of-the-art numerical analyses are required in each instance to ensure no adverse impacts to all parties abutting the inlet.
• The division of sand at an inlet must be based upon measured or predicted net losses from the adjacent beaches – both ongoing and historical. One cannot simply divide an inlet into zones of future sand appropriation based upon geography or political boundaries.

• Accordingly, the long-term morphology of any improved inlet historically, as well as in modern times, must be considered in the equitable distribution of the highly valuable sand “resources” which derive from navigation project maintenance. This is particularly true for large inlets stabilized or improved for navigation in the 1800’s where today’s shoal features, sand sharing systems (if any) and hydraulic regimens bear no semblance to what existed prior to the initiation of man-induced alterations.

**TAKE AWAY**

• Legislatively most states are somewhat different – but the fundamental issues involving inlet management are completely self-similar. Hence, NC is in a unique position to capitalize on the coastal engineering technologies of today and the experience of others in order to initiate a proactive, rational and successful program of statewide inlet management.
Comments on Inlet Management
CRC Meeting, February 27, 2014
Nags Head, N.C.

By:

Todd Miller
Executive Director
N.C. Coastal Federation

Thank you for the opportunity to make a few remarks about inlet management.

Here are six recommendations that I'll ask you to consider today:

1. Strive to manage inlets in a way that perpetuates their natural values and functions;
2. Balance human needs by respecting natural inlet processes and functions;
3. Minimize inlet management costs by working with and not against natural systems.
4. Use regional sand management to provide for large-scale beach renourishment rather than relying on mining inlets;
5. Maintain existing limits on new land development within hazardous inlet lands, and look for economical opportunities to strengthen these development standards when feasible; and
6. Evaluate what works and does not work with inlet management, and learn from these experiences.

It is important to have a consistent way to manage inlets in North Carolina for generations to come. I applaud the CRC for working towards a comprehensive approach to managing inlets.

Respecting natural functions of inlets is key to the success of management efforts. We're lucky that most inlets in our state are largely natural with only minor impacts in how they function that have resulted from human management activities. The two most altered inlets are Beaufort Inlet and the Cape Fear River. Both of these inlets are now shipping channels. The more heavily dredged and fortified, the more it costs to deal with the consequences of these inlet manipulations each year.

Most land use patterns near N.C. inlets are now established, and all these lands are subject to state and local development restrictions. Moreover, most inlets are critical habitat for many important species of fish and wildlife, and the shorelines and channels around inlets are heavily used for boating, fishing and swimming...
which brings a huge economic return to the coastal communities. Future management of our inlets should reflect their current status and uses, as well as the inevitable hazards of living on shifting barrier islands with rising sea levels and constant storms.

That’s why the N.C. Coastal Resources Commission should place:

1. Highest priority on maintaining the ability of inlet systems to function naturally. This does not mean that inlets can’t be “managed.” Examples of management measures that work with and preserve the natural ways inlets function include strategic dredging of natural channels to aid in recreational navigation as well as realignment of channels in inlets to help avoid erosion hotspots on adjacent barrier islands. These measures must be done in a way that does not disrupt natural inlet processes;

2. Emphasis on avoiding escalating the extent of disruptions to natural processes within inlets that are already significantly modified, and instead seek ways to replicate natural inlet processes where that may still be feasible;

3. Limits on how much sand can be mined from inlets for beach renourishment projects. Beneficial use of dredge material for established navigation channels may be appropriate, but that will only yield limited amounts of sand. The extent of inlet dredging should be based upon established navigational requirements, and not the amount of sand needed for beach renourishment. Sand for renourishment should be found outside of inlet systems as part of regional sand management planning; and

4. Criteria on permits issued for inlet management to make sure that adequate monitoring and evaluations occur. It is vital to learn from past successes and failures. Document how well previous management measures worked, how much those measures cost, and what environmental consequences occurred. Monitoring and evaluation need to be part of project design, and not conducted piecemeal as an afterthought. It is critical to require adequate record keeping up front so that projects can be fully analyzed.

These recommendations align with the following real world conditions:

1. Most local governments support minimizing development in these highly hazardous locations, or at least, not increasing the potential for development beyond existing standards;

2. Paying for inlet management is increasingly a shared partnership between local and state government, and we have to find economical ways to accomplish this management because money is very limited and there will never be enough to go around;

3. The cost of providing services and insurance in these hazardous areas will continue to increase and place more of a burden on property owners and
government; and

4. Federal environmental laws that protect habitat for fish and wildlife already play a big role in governing inlet management, and they can not be ignored when devising future inlet management strategies.

Thank you for allowing me to make these comments.
Outline of Barry Holliday’s Remarks for Coastal Resources Commission Meeting

February 27, 2014

- Blessed and cursed with so many inlets and barrier islands in NC
- Very few are truly natural, many are influenced by the AIWW, other Federal project channels, development, structural modifications, including bridges
- Several inlets have been “maintained” with less than ideal funding, and mainly in a reactive mode
- An inlet is not an isolated physical feature, but is part of a dynamic coastal system
- NC is in an ideal position to establish a comprehensive regional sediment management plan for its coast
- Dredging the inlets will be a significant part of this plan
- Most of the sediment can be used beneficially, and how the inlets are dredged will be a critical issue
- Suggest looking at optimal depth, not just “authorized” depth, also consider application of advanced maintenance dredging for economical and resource management needs
- Understand the inlet/coastal system, seek to develop enhanced flow patterns, improved navigation channels and viable beach nourishment volumes
- Consider “stockpiling”/storing sand when beaches are functioning well, the storm will come, and the need will arise
- Surveying, monitoring and watching trends in the weather, the tidal flow and the sedimentation/erosion are necessary – these coastal systems will always be changing and shifting
- Environmental windows and emergencies often don’t mix well, have a plan ready. The key is being proactive and upfront communication – lots of it!
Sorry to be so slow in getting back to you, one of those days...

1) Should we expand the dredging window, 2) If so, how do we protect the environment and specifically turtles: Yes, it really helps to have as much time as possible to dredge, to get more competition, and more bidders, but also to have flexible periods to get the work done. As to the environment and turtles, with good field monitoring of the beach, inlet and dunes, NC should be able to better manage placement sites for dredged material, and minimize impacts to shore birds, and turtle nesting activities. The dredging industry is very aware of the need to operate in an environmentally sustainable manner, and has demonstrated innovative ways to work with these sensitive habitats.

3) Are you familiar with our 300,000cy project limit and static line rules?
I have only read the criteria in your Management documents, but am not comfortable commenting at this time.
4) If so, do you have any comments on how this limits projects and requires more frequent dredging. If you are not familiar then no comment is appropriate.

5) If you were designing an Inlet Management plan for NC what would it look like: I believe North Carolina would benefit from looking for a scheme that develops viable inlets that consistently serve the needs of the boating users, while ensuring the dredged material is available for the adjacent beaches and dunes, and is executed with the least impact to the environment.
It must be flexible and all stakeholders must understand that not all inlets and beaches will be dredged or receive dredged material in a given year.
And, of course, when substantial storm events impact a segment of the coast, the resources will be focused on restoring that portion to a viable system first. The depth of the ocean inlet portion should not be limited to the Federally authorized depth, but needs to be some increased depth and width that will offer the opportunity to be more reliable in its alignment, more navigable under varying wave environments, and be sufficiently deep to support ocean certified dredges, and dredges that can operate in stronger flow and wave regimes. Accordingly, the additional dredged material removed from these larger inlet openings will better serve the dynamic needs of the adjacent beaches. In some cases, the flood delta that forms on the inside of these deepened inlets may need additional dredging/more frequent dredging to ensure proper flow regimes remain through the ocean inlet. It would probably be optimal to identify two sources for placement of this dredged material - one on the beach during environmentally acceptable periods, and one in a nearby location (e.g. an AIWW upland site) that could serve as an available/dredgeable storage site for urgent beach nourishment purposes.
For those inlets that directly connect to the AIWW, or other Federal navigation project, North Carolina should ensure adequate flow supports the maintenance of the ocean inlet, and dredging permits should be in place to dredge these connecting channels and/or segments of the project (e.g. the AIWW inlet crossing) as this will help prolong the viability of the advanced maintenance dredging of the inlet. Each inlet system will need to be monitored, and it will take a few dredgings to optimize the depth and width configuration of the ocean inlet system.

6) What regulatory and policy considerations should we examine to meet your idea management plan for #5 above. I am sure in the development of the dredging permits for this plan, there will be interest in other applications for the dredged material for bird islands, erosion control, etc. There may also be places where fine grained material may be present that will need alternative disposal options for placement. It may be best to look upon this non-status quo approach to be
characterized as a Regional Sediment Management demonstration plan, and establish milestones, and oversight discussions to ensure North Carolina is moving in a direction that will best serve its goals.

Thanks for this opportunity and I look forward to meeting you all and discussing this further.

Barry
Barry Holliday
Executive Director
Dredging Contractors of America
503 D Street, NW
Washington, DC 20001-2728
(202) 737-2674
cell 202 415-1332

-----Original Message-----
From: Frank Gorham [mailto:frankgorhamcrc@gmail.com]
Sent: Sunday, February 23, 2014 8:49 AM
To: barryholliday@dredgingcontractors.org
Cc: Braxton Davis
Subject: Inlet Management Panel

Barry, I look forward to meeting you and hearing your input.
I reviewed your outline. I am also interested in your specific comments on
1) Should we expand the dredging window
2) If so, how do we protect the environment and specifically turtles
3) Are you familiar with our 300,000cy project limit and static line rules?
4) If so, do you have any comments on how this limits projects and requires more frequent dredging. If you are not familiar then no comment is appropriate
5) If you were designing an Inlet Management plan for NC what would it look like
6) What regulatory and policy considerations should we examine to meet your idea management plan for #5 above

This panel will just be the start of our Inlet Management study. We hope we can further solicit your input as we continue this process

Again I look forward to working with you Frank Gorham

Sent from my iPad
Outline of Chris Gibson’s Remarks for Coastal Resources Commission Meeting
February 27, 2014

Adaptive Management
How to manage an ever changing environment?

- Environmental Resources
- Physical Project Features
- Federal Authorization vs. State and Local Projects
- Dual Purpose of Navigation and Beach Management (The Essence of NCBIMP)
- Local Goals (Culture, Tourism, Recreation, Storm Protection, & Navigation)
- Flexibility of Local Project Process and Design
  - Beneficial Use
  - Dredge Depth and Navigation Depth
  - Adaptive Beach Design (Elevation, Width, Slope Dunes)
- One Size Doesn’t Fit All (300,00 cy rule)

Lesson: Manage the Systems to avoid the Triage Scenarios
Manage Proactively rather than Reactively
Inlet Dredging Panel Discussion
N.C. Coastal Resources Commission Meeting
February 26 - 27, 2014
Jennette’s Pier, Nags Head, NC

Introduction – We appreciate the Division’s, the CRC’s, and the General Assembly’s attention and willingness to address inlet issues, and recognition that all inlets are not created equal. North Carolina has twenty inlets and roughly twelve are routinely dredged – some (actually 2) are maintained as deep draft navigation thoroughfares, some are maintained as shallow draft channels, some have more riverine input, some are tied to specific drainage patterns, and some are more ephemeral in nature. Five inlets are located north of Cape Lookout and generally drain/flush huge expansive drowned-river estuaries, while south of Cape Lookout there are fifteen inlets that for the most part drain much smaller estuarine systems (sans Cape Fear). From a coastal hazards standpoint most of the State’s permitted sand-bag sites are located along the shoulder of inlets, and most of the highest “erosion” rates are also located within these same areas (inlet shoulders). In fact, most of the threats to public infrastructure, private property, and the environment that garner the most attention of the CRC and the public at-large are related to inlets. This requires a different approach than that compared to the oceanfront. Issues such as tidal amplitude, tidal prism, tidal dominancy, and ebb and flood channel orientations must be taken in consideration when inlets are manipulated and coastal policy is administered in these areas.

It’s important to keep in mind that roughly half of the State’s coast and maybe less of its inlet shoulders are developed, while the remaining half is undeveloped compliments of being part of the National Park System, State Park System, or military. The genie is out of the bottle for the developed part of the coast, and more tools to protect these areas simply have to be employed and allowed – that’s the essence of coastal policy – i.e., merging the best science solution with the best socio-economic solution.

Deep Draft Inlets (Morehead City and Wilmington Harbors) - The U.S. Corps of Engineers (Corps) is responsible for maintaining the Nation’s waterways and is mandated by 33 C.F.R. 335.7 to dispose of dredged material at the least cost. The Corps has used this excuse time and time again to dump material outside the littoral zone and completely ignore sand budgets of the inlet system. They have argued that dumping material a mile or usually more offshore is still inside the littoral system or is “nourishing the ebb delta”, when simply it is not – there’s not a single engineer or geologist who would say otherwise. This practice has decimated adjacent shorelines, which the Corps claim is not their responsibility because they can stove-pipe their operations under the guise of navigation servitude. If the Corps can place sand on these beaches under the least cost mantra – they will, and of course only if they get the federal dollars to do so. If not, then too bad for the environment – we’re coming to dredge and dump offshore anyway. In the process, the Corps will never say they are responsible for mitigation and will never fully address erosion issues. Unfortunately, the Corps hides behind the “least-cost” phrase and fails to honor or just flat out ignores the remaining portion of 33 C.F.R. 335.7 – least cost, and environmentally acceptable, and engineeringly sound. As a result, local communities have to spend their own time, resources, and dollars to offset impacts of a mismanaged State resource (sand). The Corps even acknowledges its wasteful practices.

"The Corps practice of disposing beach-quality sand in offshore dredged material disposal sites is poor management of a limited resource. This practice removes sand from the littoral system and essentially 'throws it away' without regard to environmental
consequences on adjacent shorelines or other economic benefit.” (Draft DMMP, Wilmington Harbor, 2007).

"[T]he removal of a cubic yard of littoral sediment from a tidal entrance or inlet with deposition outside the active littoral zone of the beach will ultimately cause a cubic yard deficit somewhere within the sand sharing system.” (Draft DMMP, Wilmington Harbor, 2007).

If there are any negative consequences to temporary sand bags/geotextile tubes, terminal groins, sand placement, etc. aimed to offset navigation impacts; then they are microscopic compared to the overprint channel dredging/offshore dumping has on the system. This point is reiterated in the State’s Terminal Groin Study Report – the positive or negative impacts of the terminal groin and other old hard structures at Ft. Macon is barely detectable at Beaufort Inlet.

The State has been clear on this issue and has relied upon the Coastal Zone Management Act to require the Corps to comply to the "maximum extent practicable" with North Carolina’s Coastal Management Program. When the Corps’ activities will have a reasonably foreseeable effect on the State’s coastal resources, the Corps must make a formal consistency determination and the State must concur. In 1992, the State’s Coastal Management Program was amended to include a requirement that beach quality dredged material from navigation channels be used in a beneficial way wherever practicable and be retained in the littoral system to the maximum extent practicable. The word "practicable" needs to be highlighted here because the Corps has used this word to run rough shot over the wishes of the State and local governments. Despite the Corps’ actions, the Corps has acknowledged its obligation to comply with these regulations.

"The Federal [Standard] notwithstanding, the State of North Carolina has adopted a set of policies in 1992 designated to insure that beach quality sand not be removed from the active beach system. The U.S. Department of Commerce, pursuant to [CZMA], has incorporated these policies into the [NC CMP]. As a result, the State of North Carolina includes these policies in its consistency review of Federal activities. . . . While there is continuing debate over the applicability of State Law to Federal projects, the Federal Government is required to be consistent with the State’s [CMP] to the maximum extent practicable. Accordingly, the disposal plan for the maintenance material removed from the Wilmington Harbor entrance channel will attempt to satisfy these requirements.” (Draft DMMP, Wilmington Harbor, 2007).

However, both the Morehead City and Wilmington Harbors have been deepened since this amendment, AND a new draft Dredged Material Management Plan (DMMP) was just released for the Morehead City Harbor and again an overwhelming majority of the sand is planned to be dumped well outside the 25 feet contour – not on the ebb delta nor on the adjacent beaches. The Corps will act like they are doing the State a favor by dredging millions of cubic yards of sand to maintain Port operations. We don’t need favors like that if the adjacent environment and infrastructure are being sacrificed in the process. The CRC and State need to be more aggressive on this issue – period. The Corps has jumped through the consistency loophole with both feet time and time again, and this must be addressed in any new initiative the CRC pursues. This is your resource (sand) and your state waters; and even your State policy along the inlet.

Ideally there would be a mutually agreeable sediment budget for these two inlets/harbors – all disposal material must be placed on adjacent beaches or the ebb delta to mimic this budget. The Corps should never, ever under any circumstance be allowed to deviate from this budget. Moreover, special attention needs to be applied to the beach placement component – placing sand on the beach just a few hundred feet away from a 45-feet deep inlet is not effective beach placement because the material will be transported immediately back into the channel. Nodal points and breaks in longshore transport
gradients must be identified and utilized for sand placement. If hard structures will aid in the retention of sand within the inlet shoulder areas (and perhaps reduce shoaling of the inlet); then that should be perfectly acceptable and welcomed; because again it will eventually help the sediment budget of the entire system, offset the deleterious effects of channel dredging/disposal, and help the inlet reach equilibrium. If the CRC and State is unwilling to push for this action due to local economic concerns of jobs associated with the ports, the State should at least be willing to develop a funding source to assist local interests to help mitigate these impacts to adjacent communities.

**Inlet Hazard Areas (IHAs)** – I believe staff and the Science Panel were heading in the right direction with redefining the boundaries based upon the standard deviation of shoreline change rates. Of course what to do within the boundaries from a policy perspective is not as straightforward. Regardless, I urge the CRC to keep it simple and to not get involved with more “lines in the sand” – (a) grandfather the existing structures and allow them to rebuild to their original size if ever required, (b) don’t allow any new development further seaward than adjacent properties, and (c) lift the size restrictions for dwellings as long as they meet the minimum graduated setback requirements again using the first seaward line of existing dwellings as a “60 foot setback” demarcation. Will this be a perfect solution in each and every instance? Of course not; but it will be a better system than employed now and could be considered as the 95% (hopefully more) solution. That’s not bad.

Temporary erosion control structures (sand bags) need to have a different set of standards if located in IHAs compared to the oceanfront – they should be allowed to be permitted well before structures are imminently threatened and a reasonable methodology to allow this has to be explored beyond the more subjective and discretionary process that exists today. Inlet shorelines can move tens of feet per day and property owners can’t wait until structures are imminently threatened or it will be too late. The time limit for sandbags also need to be reexamined (again) - in perpetuity until the solution (inlet realignment, hard structure, retreat etc.) is employed or the primary structure itself is destroyed is a recommendation. I understand this flies in the face of current policy, but even in a worse-case scenario; there is very little difference to an orphaned structure sitting on a State beach to that of an orphaned structure with sandbags sitting on a State beach. Moreover, it will save the State and property owners a tremendous amount of time and money involved with mind-numbing variance processes.

The notion of a Deep-Draft IHA and Shallow-Water IHA should be explored and the boundaries should extend in the water, where issues related to dredging can be codified and enforced in policy. IHA boundaries currently do extend into the water but are more of a token rather than representing any type of substantive boundary. For the Deep-Draft IHA, the issues mentioned above in terms of removing sand from littoral system, mimicking the sediment budget, hard structures, mitigation, etc. can all be addressed using this vehicle (in addition to the development standards on land). Incorporating these policies into the State’s enforceable Coastal Management Program could be used to keep the Corps consistent and in-line with State policy and what the State actually desires. The Shallow-Water IHAs should also be extended into the water and this could help guide channel realignment projects and terminal groin proposals (plus development standards).

**Miscellaneous** – In closing, I would like to very briefly address some of the issues staff has asked us to possibly consider and will do so in bullet-point format.

1. **Beneficial use of dredged materials** – Addressed *ad nauseam* in the opening section of this monologue; must be a priority for the Division.

2. **Dredging windows / moratoria** – This is probably beyond the scope of “inlet dredging” and needs an entire session or initiative in itself. Again, the federal government is dictating these windows – the State needs to determine what is best for its resources – not the feds (i.e., the Corps administers the NMFS regional biological opinion as they deem fit with little regard to the density of species in North Carolina and other issues relative to other States).
(3) Channel Realignments, dredging depths, and sediment criteria rules – This could be an issue addressed in the “Deep-Draft vs. Shallow Water” IHA process. For shallow water, the depths and other channel configurations for relocated inlets should ideally be designed to accommodate (not exceed) the same volume of water (tidal prism) that the existing or some agreed upon pre-existing ebb channel possesses/possessed. If there is ample evidence the sediment sample beneath the deepest core obtained will meet the State’s nourishment compatibility standard, then that should be acceptable as part of the application (not a variance after the fact). There are real logistical and safety concerns that often limit how deep these cores can be taken in shallow inlets and past history of projects should be considered. We have raised this issue on multiple occasions.

(4) Development standards / erosion setbacks / local vs. state authorities – Mentioned above for IHAs.

(5) Volumetric triggers for “static lines” – Very, very few static lines exist in IHAs. This issue does not need to be addressed when discussing inlets – it is an oceanfront issue and requires a separate discussion (which we’re in favor of).

(6) Emergency permitting: beach bulldozing and sandbags – Discussion needs to be limited to IHAs and was mentioned previously (i.e., allow and reconsider “imminently” threatened).

(7) Terminal groins and sand bypassing – In theory terminal groins won’t require sand bypassing because they only trap enough sand to create an accretion filet, then the remainder is allowed to migrate into the inlet system and there are no/minuscule downdrift impacts. “Back-passing” to maintain the accretion filet and the inlet shoulder geometry should be allowed and is consistent with the intent of emplacing terminal groins to begin with.

Sand by-passing at deep draft projects to address down-drift sand deprivation issues should be encouraged – again in the nexus of maintaining a sediment budget for the inlet complex. Placement of the sand inside and outside the immediate inlet beach needs careful consideration.

(8) Erosion rate calculations for Inlet Hazard Areas – Mentioned previously and is too complicated to administer and the current “adjacent erosion rate” rule doesn’t make intuitive sense either. The State should investigate a construction line (no further seaward than adjacent structure).

(9) Dune creation in the IHA – yes.

(10) Monitoring conditions associated with various projects – yes, but what questions need to be answered? Monitoring for monitoring sake, or monitor to get a baseline when baselines should already exist is no longer acceptable.
In my opinion, one of the biggest "problems" faced by the Corps' main dredging program, both contract and govt plant, is our funding process. We can't solicit a dredging project for bids or obligate our own dredge plant until we have sufficient funding. Our design & contract process, including development of project plans and specifications, is somewhat lengthy so when we do get funding we have to design for whatever the available funding allows. This doesn't allow for short turn-around times to meet quickly arising issues. In the same vein, our dredge plant is stretched thinly and scheduled well into the future, so immediate responses aren't always able to be met. Because coastal inlets are some of the most if not the most dynamic areas within our federal navigation channel purview, it's often the fulfillment of the dredging, the environment, or both that take the hit when funding delays a dredging response. I can't say strongly enough how well the state and federal resource agencies work with us to minimize the adverse impacts to both successful dredging and environment and we as a District are committed to maintaining the trust we've developed with the agencies when we discuss dredging missions and needs.

Jeff Richter
Environmental Resources Section
Wilmington Dist. Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403
910-251-4636
April 10, 2014

Braxton Davis
Director
N.C. Division of Coastal Management
400 Commerce Ave
Morehead City, North Carolina 28557

Dear Dr. Davis:

Please accept the following comments on the ongoing Inlet Management Study on behalf of the N.C. Coastal Federation. For the past 33 years the federation has been taking an active role in the protection of North Carolina’s coastal water quality, habitat, and public beach access.

Following are the main points that the federation considers critical when it comes to management of North Carolina’s inlets:

1. We should always strive to manage inlets in a manner that perpetuates their natural values and functions. Inlets are high-energy components of barrier island system that act as self-adjusting safety valves in the barrier island sand-dam. Maintaining their natural dynamic to the highest extent possible increases their critical role in barrier island evolution.
2. It is possible to address many human needs around inlets (access, navigation, and protection of investments) and respect the natural functions of inlets.
3. The more we intervene and try to overpower the natural functions of inlets, the more costly and damaging those interventions will become, and the costs will continue to escalate because there is no permanent solution to inlet management.
4. Adequate and compatible sand for beach renourishment should be found through regional planning, and not from inlet systems.
5. We need good monitoring and evaluations of all inlet management to learn what the best practices are.

It is important to have a consistent way to manage inlets in North Carolina for generations to come, and the federation applauds the Coastal Resources Commission for working towards doing that.
Respecting natural functions of inlets is key to the success of inlet management. We’re lucky because most inlets in our state are still largely natural with only minor impacts in how they function that have resulted from human management activities. Only two inlets in North Carolina are heavily altered - Beaufort Inlet and the mouth of the Cape Fear River. Both of these inlets have been radically altered and made into ship channels. The more inlets are dredged and altered, the more costly it is each year to maintain these inlets in their non-natural conditions.

In addition, most land uses near N.C. inlets are now established, and all these lands are subject to state and local development restrictions. Moreover, most inlets are critical habitat for many important fish and wildlife, and the shorelines and channels around inlets are heavily used for boating, fishing, and swimming.

Future management of our inlets should reflect their current status and uses. This means:

1. Inlets that function as mostly natural systems should be managed to maintain those natural processes.
2. Highly altered inlet systems may need more unnatural interventions to deal with the negative consequences of the existing disturbances to those systems.
3. Existing limitations on locating new development within hazardous inlet lands should never be relaxed, and should be increased when economically feasible.

These recommendations are based upon the requirements of existing federal and state environmental laws, and local zoning and planning, and the fact that over time these locations will become even more hazardous and more costly places for permanent development and infrastructure.

In conclusion, the federation makes the following recommendations:

1. The highest priority should always be given to maintaining the ability of an inlet system to function naturally. This does not mean that inlets cannot be “managed” to some degree. Examples of management measures that work with and preserve the natural ways inlets function include spot dredging of natural channels to aid in recreational navigation as well as realignment of channels in inlets to help avoid erosion hotspots on adjacent barrier islands. However, these measures must be done in a way that does not disrupt natural inlet processes.
2. Second priority should be to work to avoid escalating the extent of disruptions to natural processes within inlets that are already heavily modified, and to attempt to replicate natural inlet processes where that may still be feasible.
3. No inlet should ever be viewed as a “sand mine” for beach renourishment projects unless the sand is going to be dredged anyway for established navigation channels. The extent of dredging should be based upon real navigation requirements, and not the amount of sand needed for beach renourishment. Sand for renourishment should be found outside of inlet systems as part of regional sand management planning.
4. Adequate monitoring and evaluating our past successes and failures in dealing with inlet issues is necessary. We should document how well previous management measures have worked as intended, how much those measures have ultimately cost, and fully document environmental consequences. Monitoring and evaluation need to be part of project design, and not conducted piecemeal as an afterthought. It is critical to require adequate record keeping up front so that projects can be fully analyzed.

These recommendations will align with the following real world conditions:

1. Most local governments support minimizing development in these highly hazardous locations, or at least, not increasing the potential for development beyond existing standards;
2. Paying for inlet management is increasingly a shared partnership between local and state government, and we have to find economical ways to accomplish this management because money is very limited.
3. The cost of providing services and insurance in these hazardous areas will continue to increase and place more of a burden on property owners.
4. Federal environmental laws will restrict projects that cause damage to valuable and already protected habitat for fish and wildlife.

Thank you.

Sincerely,

Todd Miller
Executive Director
Attachment C

CRC Inlet Management Study

Matt Slagel
Shoreline Management Specialist
Study Origin

• CRC “shall study feasibility of creating new AEC” for lands adjacent to mouth of Cape Fear River (HB 819)
  – Collaborate with the Town of Caswell Beach and Village of Bald Head Island, landowners and stakeholders
  – Report to DENR, Governor, Gen. Assembly on Dec. 31, 2013

• Based on regulatory issues identified in the report, the Commission decided to undertake a comprehensive, coast-wide inlet management study in 2014
Related Initiatives

• S.L. 2012-202 (HB 819): Inlet Hazard Areas
  – Determine feasibility of eliminating IHA AEC and incorporating appropriate development standards adjacent to developed inlets.
  – Past and ongoing Science Panel work

• S.L. 2013-138: Ensure Safe Navigation Channels
  – Permit mechanisms to streamline inlet dredging projects

• S.L. 2013-413: Regulatory Reform Act of 2013
  – Re-evaluate the merits of all existing rules
Study Topics

1) Beneficial use of dredged materials (beach placement)
2) Dredging windows / moratoria
3) Dredging depths and sediment criteria rules
4) Channel realignment projects
5) Development standards / erosion setbacks / local vs. state authorities
6) Volumetric triggers for beachfront “static lines”
7) Emergency permitting: beach bulldozing & sandbags
8) Terminal groins and sand bypassing
9) Erosion rate calculations for Inlet Hazard Areas
10) Monitoring conditions associated with projects
Study Schedule / Milestones

• Expert panel at Feb. 2014 CRC Meeting
• Four regional meetings by end of April 2014
• Written comments accepted through April 15
  • Matthew.Slagel@ncdenr.gov
  – May 15: Comments summarized/categorized for CRC
  – July 31: Final draft findings/recommendations
  – September 30: Submit proposed rulemaking changes for public comment
  – December 31, 2014: Final report to Governor & G.A.
Public Meetings

- **Regional Inlet Management Meeting Locations**

  - **March 6, 2016  4:00 PM**
    - Fessenden Center
    - 46830 Hwy 12
    - Buxton NC 27920

  - **March 12, 2014  6:00 PM**
    - NOAA/NERR Administration Bldg
    - 101 Pivers Island Road
    - Beaufort, N.C. 28516

  - **March 26, 2014  6:00 PM**
    - Ocean Isle Beach Town Hall
    - 3 West Third Street
    - Ocean Isle Beach, NC 28469

  - **April 2, 2014  6:00 PM**
    - New Hanover County Gov’t Center
    - 30 Government Center Drive
    - Wilmington, NC 28403
N.C. Division of Coastal Management

Overview of Inlet Management

Heather Coats
DCM Field Representative
Ocean Hazard Areas

- DCM jurisdiction includes:
  - Ocean Erodible Area
  - High Hazard Flood Areas
  - Inlet Hazard Areas
  - Unvegetated Beach Area

- Erosion rate-based setbacks based on size of structures
- Erosion-control structures
- Beach and inlet projects
## Ocean Hazard Setbacks

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Inlet Hazard Areas (IHA)

- Areas especially vulnerable to erosion and flooding due to proximity to ocean inlets
- IHA boundaries designated in 1981
- Structures < 5,000 sf
- Density restrictions
- No dune building
Sandbags in Inlet Hazard Areas

- If community is actively pursuing inlet relocation or stabilization project, sandbags may remain in place for up to 8 years from date of approval, and may be used more than once.
- Bags can be used to protect septic systems.

New River Inlet  Shallotte Inlet  Tubbs Inlet
Bulldozing in Inlet Hazard Areas

• GP 1800 (15A NCAC 7H.1800) allows beach bulldozing landward of the MHW mark in the Ocean Hazard AEC, but does not apply to IHAs.

• 15A NCAC 7H.0308(b)(5) “no new dunes shall be created in inlet hazard areas.”
Timing of Projects

• 15A NCAC 7H.0308(a)(1)(F) states that “project construction shall be timed to minimize adverse effects on biological activity.”
“Umbrella Permitting”

• Hold pre-application meetings
  – Staff work with the applicant to develop a project that will likely meet CRC and other state and federal regulations.

• Assist applicants in filling out permit applications, which also meet req’s for:
  – Water Quality Certification (DWR)
  – Federal Wetlands Permit (USACE)
  – Section 10 (Navigation) Permit (USACE)
Sediment Criteria Rules

- Recent rule changes have reduced the burden on project applicants for sampling and analysis.
- Changes were based on DCM experience with implementing the rules.
  - Adequate sediment sampling is maintained.
  - Costs for applicants are decreased.
Beneficial Use of Dredged Materials

Dredging of Cape Fear River Inlet with Sand Placed on Bald Head Island
Inlet Channel Realignment

Figure Eight Island

Before

Mason Inlet

Shell Island Resort

Wrightsville Beach

After

Mason Inlet

Shell Island Resort

Wrightsville Beach
Inlet Channel Realignment
Terminal Groins

- SB 151 allows 4 terminal groins to be permitted
- In various stages of the process:
  - Bald Head Island, Figure Eight Island, Holden Beach, Ocean Isle Beach
Barden Inlet

Shackleford Banks

Cape Lookout

April 6, 2013
Beaufort Inlet

December 31, 2011
Brown’s Inlet

December 31, 2011

Camp Lejeune

Brown’s Island

Onslow Beach

AIWW
Masonboro Inlet

Masonboro Island

Wrightsville Beach

AIWW

January 3, 2013
Lockwoods Folly Inlet

AIWW
Holden Beach
Oak Island

January 3, 2013
The N.C. Coastal Resources Commission (CRC) is undertaking a comprehensive review of inlet management in North Carolina to more fully understand and respond to the issues confronted by local governments and stakeholders in these dynamic areas. CRC members in the Dare County region hosted a public meeting on Thursday, March 6, 2014, at the Fessenden Center in Buxton, NC to elicit a range of management options and regulatory reforms related to inlet management. These summary notes are not intended to represent a meeting transcript, per se.

CRC Members in Attendance:
Renee Cahoon
Jamin Simmons

DCM Staff in Attendance:
Mike Lopazanski, Policy and Planning Section Chief
Frank Jennings, Elizabeth City District Manager
Matt Slagel, Shoreline Management Specialist

Attendees:
Warren Judge, Dare County
Wally Overman, Dare County
Bill Rich, Hyde County
Jason Gardner, National Park Service
Robert Brown, Norfolk Resident
Peregrine White, Town of Nags Head Resident
James Fletcher, Manns Harbor Resident
Mike Daniels, Wanchese Resident
Harry Schiffman, Wanchese Resident
Beth Midgett, Hatteras Island Resident
Jeff Dawson, Hatteras Island Resident
Bob Davis, Hatteras Island Resident
Barbara Ackley, Hatteras Island Resident
Dave Dawson, Hatteras Island Resident
Carol Dawson, Hatteras Island Resident
Ernie Foster, Hatteras Island Resident
Steve Colter, Hatteras Island Resident
Welcome
CRC members Renee Cahoon and Jamin Simmons opened the meeting at 4 p.m. and thanked everyone for attending. They emphasized that the inlet management study is a focus of the Commission, and they look forward to receiving input on management options and potential regulatory reforms related to inlet management in North Carolina.

CRC Inlet Management Study
Mike Lopazanski, DCM Policy and Planning Section Chief, introduced the new CRC Inlet Management Study initiative, which was proposed at the December 2013 CRC meeting. This initiative is an offshoot of the Cape Fear Inlet Area of Environmental Concern (AEC) Study that was mandated by the General Assembly. The CRC recognized that there are a number of ongoing inlet related studies including the IHA feasibility study associated with HB819, which the Science Panel has been working on, S.L. 2013-138 which pertains to streamlining permitting of inlet dredging projects, and S.L. 2013-413 which pertains to re-evaluating the merits of all existing rules. In considering the Cape Fear River AEC Feasibility Study, the Commission decided to undertake a comprehensive review of inlet-related issues to examine ways to streamline routine inlet projects, and to collaborate with local governments to ensure equitable and cost-effective inlet management. The CRC Inlet Management Study development began with an inlet dredging panel discussion at the Commission’s February 2014 meeting in Nags Head, and has continued with four regional meetings: this meeting in Buxton, followed by meetings in Beaufort, Ocean Isle Beach, and Wilmington to gather input and concerns from affected local governments and other stakeholders. A public comment period for written comments is also open and extends until April 15, 2014. The CRC is especially interested in getting input on the following topics:

1) Beneficial use of dredged materials (beach placement)
2) Dredging windows / moratoria
3) Dredging depths and sediment criteria rules
4) Channel realignment projects
5) Development standards / erosion setbacks / local vs. state authorities
6) Volumetric triggers for beachfront “static lines”
7) Emergency permitting: beach bulldozing and sandbags
8) Terminal groins and sand bypassing
9) Erosion rate calculations for Inlet Hazard Areas
10) Monitoring conditions associated with projects

The CRC inlet study will take place over the course of about one year, and the schedule is as follows:

April 30, 2014: Four regional meetings completed
May 15, 2014: Summary of regional meetings and findings to CRC
July 31, 2014: Final draft findings and recommendations to CRC
September 30, 2014: Submit proposed rulemaking changes for public comment
December 31, 2014: Submit report findings to Governor and General Assembly
Introduction to Inlets in North Carolina
Matt Slagel, DCM Shoreline Management Specialist, then provided a brief introduction to inlets in North Carolina. There are 12 developed inlets in the State, and seven undeveloped inlets. All of the developed inlets are located south of Cape Lookout, and most of the undeveloped inlets are located north of Cape Lookout. The developed inlets are those with buildings immediately adjacent to the inlets, but the undeveloped inlets face other issues such as channel shoaling and dredging. All of the inlets in the Dare County and Hyde County region are considered undeveloped. There are two broad classes of tidal inlets in North Carolina: oscillating inlets and migrating inlets. Oscillating inlets include Ocracoke, Bogue, and Rich Inlets. They are generally positioned along ancestral river channels. They can swing back and forth, but their throat sections have stayed within a relatively narrow zone over recent history. Migrating inlets include Oregon, Mason, and New Topsail Inlets. Migrating inlets are generally shallow, and migration occurs where the updrift barrier island or spit elongates in the direction of net littoral sand transport and the downdrift shoreline erodes. Although Bogue Inlet is an oscillating-type and Mason Inlet is a migrating-type, both of these inlets had inlet channel realignment projects undertaken to move the channel away from threatened development at Emerald Isle and Wrightsville Beach, respectively.

A distinction can also be made between shallow-draft inlets and deep-draft inlets. Shallow-draft inlets are dredged to depths of about eight feet. There are two deep-draft inlets in the State that are maintained at depths of 45 feet (Beaufort Inlet) and 42 feet (Cape Fear River Inlet). Beaufort Inlet serves the Port of Morehead City, and Cape Fear River Inlet serves the Port of Wilmington.

Overview of Inlet Management & Regulatory Framework
Frank Jennings, DCM Elizabeth City District Manager, gave an overview of inlet management strategies and the regulatory framework in North Carolina. The Ocean Hazard designation is a grouping of Areas of Environmental Concern (AECs) created by the CRC with the objective of recognizing risks of erosion associated with the barrier islands that could lead to endangerment of life and property. The purpose of identifying Ocean Hazard Areas and establishing the Rules was to “further goals set out in G.S. 113A-102(b), with particular attention to minimizing losses to life and property resulting from storms and long-term erosion, preventing encroachment of permanent structures on public beach areas, preserving the natural ecological conditions of the barrier dune and beach systems, and reducing the public costs of inappropriately sited development. Furthermore, it is the objective of the CRC to protect present common-law and statutory public rights of access to and use of the lands and waters of the coastal area.” There are four AECs within the Ocean Hazard category, one of which is the Inlet Hazard Area (IHA) designation. Rules establish erosion rates and setbacks, use standards for erosion control structures, and use standards for beach and inlet projects. The graduated setback is based on the long-term erosion rate for the specific project area and the size, or total floor area, of the structure. The larger the structure or greater the erosion rate, the larger the setback. Exceptions to the setback include elevated beach accessways, sand fencing, driveways/parking areas, up to 500 sq ft of open decking, swimming pools, temporary amusement stands, and small gazebos and sheds. The setbacks apply to all Ocean Hazard AECs including the IHAs, but erosion rates have only been established for the Ocean Erodible Areas (OEAs), and the erosion rate of the adjacent OEA applies to the IHA. Erosion rates in the IHAs have not been established.
Inlet Hazard Areas are defined as areas that are especially vulnerable to erosion and flooding due to proximity to ocean inlets. The IHA boundaries were originally designated in 1981 by the Commission and have not been updated since. Specific use standards for IHAs include: no more than one commercial/residential unit per 15,000 sq ft land area for lots platted after July 1981; residential structures must be four units or less and non-residential structures less than 5,000 sq ft; and the building of new dunes is prohibited. The rebuilding of an eroded dune is allowed.

Sandbags are meant to be used as temporary protection for threatened structures. They previously were allowed one time only per building, regardless of ownership, for a period of 2-5 years. In 2009, the rule was changed to allow sandbags in the IHA to remain in place up to 8 years for properties within a community pursuing an inlet realignment project. That rule change also allowed sandbags to remain an additional 8 years if the structure became threatened again and if the community was still seeking an inlet realignment project. The rule was then updated again in 2013 to remove the one time only limit for communities seeking a beach nourishment or stabilization project. Sandbags can be used to protect houses, septic systems, and roads. They cannot be used to protect swimming pools, decks, or gazebos. DCM has a General Permit (15A NCAC 7H.1800) for beach bulldozing landward of mean high water, but it currently does not apply to the IHAs. Beach bulldozing in IHAs would have to be authorized under a Minor Permit with agency coordination if confined above normal high water or with a Major Permit for bulldozing below mean high water.

Regarding the timing of projects, 15A NCAC 7H.0308(a)(1)(F) states that “project construction shall be timed to minimize adverse effects on biological activity.” Many of the beach and inlet projects DCM evaluates are considered major development, which requires other state or federal agency permits or authorization. DCM relies on the commenting resource agencies during the Major Permit process to advise on how to comply with this rule. These types of projects also require other permits, often from the U.S. Army Corps of Engineers (USACE), who then has to coordinate with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). The State cannot supersede Federal laws.

DCM works to streamline the permitting process by working with USACE and other agencies. Many State rules were established with Federal regulations in mind. Additionally, DCM General Permits were developed in coordination with USACE, so an applicant generally doesn’t need written concurrence from USACE if DCM issues a General Permit, since it also meets their rules. The Coastal Area Management Act (CAMA) Major Permit application also serves as an application for a permit from the USACE and N.C. Division of Water Resources (DWR) so the applicant can deal directly with DCM, and DCM staff can coordinate the other permits. DCM also coordinates any requests to work within the moratoriums with the relevant agencies after a permit is issued.

DCM staff have been working to make the Sediment Criteria Rules more efficient by reducing unnecessary burdens in cases where there have been previous projects establishing sediment compatibility or where previous requirements were later discovered to be overly onerous or without benefit. As a result, DCM has reduced costs for applicants without compromising the integrity of the sampling requirements.
There has been a shift in inlet dredging projects towards beneficial use of dredged materials. The Village of Bald Head Island is one example as part of the Wilmington Harbor Sand Management Plan. Federal dredging projects generally fall under either navigation or coastal storm damage reduction projects. If they are navigation projects, the USACE typically has to consider least-cost in terms of disposal. The dredging of Wilmington Harbor/Cape Fear River Inlet is a Federal navigation project, and beach-compatible sand from dredging is placed on either Bald Head Island or Caswell Beach.

A number of inlet channel realignment projects have also been completed in North Carolina. These projects have occurred at Tubbs Inlet, Mason Inlet, Bogue Inlet, and New River Inlet. The Mason Inlet project relocated the channel between the north end of Wrightsville Beach and the sound end of Figure Eight Island. The project occurred in 2002 and has been successful in protecting Shell Island Resort at the north end of Wrightsville Beach.

Senate Bill 151 was passed into law and allows up to four terminal groins to be permitted in North Carolina. Four communities are in various stages of the process of pursuing a terminal groin. Three are in Brunswick County (Bald Head Island, Holden Beach, and Ocean Isle Beach), and one is in New Hanover County (Figure Eight Island).

Dare County Perspectives on Inlet Management
Warren Judge, Dare County Board of Commissioners

- Keeping existing jobs associated with inlets is of utmost importance. Oregon Inlet is an outlet and dredging is important for more than just navigation. Dredging improves water quality upstream by allowing the water to exit the inlet, the inlet serves as safe harbor for rough seas, and shoaled inlets result in decimated commercial fishing and boat building industries.
- Congressional funding is an issue for Federal projects. A project may be authorized and permitted, but if it is never funded, it does no good.
- Oregon Inlet needs sand out of it; Hatteras Island needs sand put on its beaches. This sounds like a match made in heaven. Beach-compatible sand should never be taken offshore; it should be put on beaches.
- Non-Governmental Organizations (NGOs) and special interest groups have delayed the permitting process, and they hold everyone hostage.
- The 50% state matching fund for inlet dredging is a good start, but if one locality wants to undertake a major project and applies for the state matching funds, it could wipe out the funds for the rest of the State.
- The dredging industry lobbies to not allow the USACE to have another dredge, and this is a big problem. Sidecast dredges are good for clearing a channel enough for a hopper dredge to follow behind it, but besides that, sidecasters are a colossal waste of time and money.
- Dare County is supportive of the terminal groin legislation.

Public Input
Bill Rich, Hyde County Manager

- Maintaining the depth of inlets is the primary concern for boat captains in Ocracoke.
• It is important to identify environmentally acceptable places for the disposal of dredged material ahead of time so this doesn't become an issue during a project.

**Wally Overman, Dare County Commissioner**

• The process of getting permits needs to be streamlined to make it more adaptive to needs. The permits need to be broad enough to allow engineers to tweak the projects in order to learn over time what works best.
• Advanced maintenance should be used such as dredging channels 4 to 5 feet deeper than the permit calls for to buy time before it is needed again.
• The dredging window needs to be extended by one month on each end, which can be done without environmental or wildlife/biological issues based on recent history.
• The use of available scientific modeling can now be used to make accurate predictions regarding the unique challenges that NC inlets and beaches present.
• The Dare County economy is based predominately upon tourism, fishing, and boatbuilding, and the beaches, inlets, and waterways are needed in order to thrive.

**Beth Midgett, Hatteras Island Resident**

• Sheetpile and riprap need to be added to the toolbox to protect roads and bridges.
• The only temporary allowed solution for erosion control is sandbags, but these are not adequate.
• Dredged beach-compatible sand should be stockpiled for future use as beach fill.
• If a new inlet is breached, it should be filled in instead of bridged.

**James Fletcher, Manns Harbor Resident**

• Inlets are actually “outlets” because stormwater and chemicals run off the land and flow through these features to the ocean.
• What is CAMA concerned about? They’re not concerned about chemicals killing marine life or commercial or recreational fishermen dying in Oregon “Outlet”.
• Who owns land under “outlets”, and who has the right to build terminal groins? Can they be built on private land?

**Robert Brown, Norfolk Resident**

• Roadways on barrier islands should be designed to be overwashed but not breached. Erosion control structures on the ocean side and sound side of the road would prevent breaching from happening.
• Inlet breaches should not be allowed to occur. Ground Penetrating Radar should be used to identify former inlet locations, and these areas should be stabilized with erosion control structures.
• Mr. Brown submitted a proposed NC Hwy 12 stabilization diagram (attached).

**Jeff Dawson, Hatteras Island Resident**

• Maintaining Oregon Inlet is important for the fishing industry, but it shouldn’t be done at the expense of Hatteras Island. Dredging of Oregon Inlet has exacerbated erosion of Hatteras Island.
• Artifacts on Hatteras Island date back to 11,000 B.C., so the island has existed in its current location for at least 13,000 years.
The tourism industry on Hatteras Island is suffering, especially in the spring and fall, because nobody wants to book a rental house and then not be able to get there because of new inlet breaches.

There are environmentally-friendly solutions to erosion control that should be considered by the CRC, including Holmberg Undercurrent Stabilizers.

Bob Davis, Hatteras Island Resident

- The creation of dredge spoil islands in the sounds would be more beneficial than sidecast dredging because it would create habitat for birds and may keep them off the ocean beach. The agencies should work together to make this happen.
- Recreational boaters would like to have a 4-ft channel dredged in Pamlico Sound from Avon to Hatteras Inlet to have easier access to the ocean and to improve commerce.

Barbara Ackley, Hatteras Island Resident

- Dredge spoils can be used as a resource for creating bird habitat instead of just discarding it. The USACE has money they can use for habitat restoration. Creating new bird habitat in the sounds could cause the birds to start using those areas and leave the ocean beaches for human use.
- If sand were stockpiled as it is dredged, the stockpiled sand could have been used to fill the new Pea Island Inlet when it breached.

Dave Dawson, Hatteras Island Resident

- The Cape Hatteras Motel was 800 feet from the ocean when it was built in 1947.
- When the National Park Service created a new dune line on Hatteras Island in the 1950s, it made the erosion worse.
- Oregon Inlet needs to be dredged or stabilized with jetties, but the rest of Hatteras Island can't be ignored. Cape Point (Buxton beach) is at the end of a littoral current, so groins should be allowed there.
- The CRC should be open to new techniques that could potentially reduce erosion.

Carol Dawson, Hatteras Island Resident

- The concept of “letting nature take its course” was adopted by North Carolina, but it didn’t apply to everyone; it just applied to Hatteras Island. It is completely unfair to dredge a navigational inlet for 45 years without putting the sand lost to the beaches south of the inlet. Oregon Inlet should not be dredged without putting the sand back on the beaches of Hatteras Island, where it is needed badly.
- When Oregon Inlet is dredged, hopper dredges should take the sand to Buxton and Rodanthe.
- Hatteras Island has been affected greatly by the dredging at Oregon Inlet. The highway has been attacked by the ocean, eroded beaches from Pea Island down to the end of the littoral drift in Buxton.
- The hundreds of millions that have been spent on dredging Oregon Inlet is wonderful for the jobs and money that needs that inlet open but the business community on Hatteras Island is just as important.
- Ms. Dawson also provided written comments (attached).

Peregrine White, Town of Nags Head Resident
Oregon Inlet has been a commercial highway for 150 years, but in the last few years, it has become a death trap. Since commercial fishing boats can’t safely get in and out of Oregon Inlet, the Seafood Industrial Park at Wanchese was recently renamed the Maritime Industrial Park. The loss of the seafood industry at Wanchese has had a huge economic impact on the fishermen, the State of North Carolina, and the surrounding area.

Dumping dredged sand from Oregon Inlet offshore has caused fishermen grief because the sand comes back.

The terminal groin at Pea Island was built to protect the end of Bonner Bridge and resulted in the creation of over 40 acres of new land.

Ernie Foster, Hatteras Island Resident

- The amount of commerce that flows through individual inlets should determine how much funding they receive for dredging and management.
- At Oregon Inlet, Hatteras Inlet, and Ocracoke Inlet, 80-85% of charter boat fishing customers are from out-of-state. They bring significant money into the state.

Steve Coulter, Hatteras Island Resident

- Consistency is needed for dredging for ferries in Dare and Hyde Counties. Dredging is needed not just for getting in and out of inlets, but also traveling between islands through the sounds. Currently, state dredging of Hatteras Inlet stops in one spot, and USACE dredging stops in another.

Mike Daniels, Wanchese Resident

- If it wasn’t for Hurricane Sandy, Dare County would not have received the $6 million that was needed to dredge Oregon Inlet. They asked for the sand to be placed on Hatteras Island, but the USACE said they couldn’t because of regulations.
- Funding needs to be available to fill new inlet breaches as quickly as possible.

Harry Schiffman, Wanchese Resident

- New dunes should be allowed to be created in Inlet Hazard Areas.
- The sediment criteria rules should be reevaluated. If the sand came from the beach, it should be allowed to be placed back on the beach.
- Stockpiling of sand should be allowed in the Ocean Erodible Area (OEA).
- Why are only four terminal groins allowed? This should be reevaluated.
- Overdredging should be increased. Oregon Inlet was dredged to about 17 feet deep with Hurricane Sandy funds and began to fill back in a few days later.
- Sidecast dredging should only be used to provide more depth for larger dredges to come in and work.
Appendix: Agenda

North Carolina
Coastal Resources Commission

N.C. CRC Inlet Management Study:
Regional Public Meeting in Buxton

The N.C. Coastal Resources Commission (CRC) is undertaking a comprehensive review of inlet management in North Carolina to more fully understand and respond to the issues confronted by local governments and stakeholders in these dynamic areas. The CRC is holding a series of regional public meetings along the coast in order to elicit a range of management options and regulatory reforms related to inlet management.

Date: Thursday, March 6, 2014
Time: 4:00 – 7:00 P.M.
Place: Fessenden Center (46830 Hwy 12) Buxton, N.C.
Contact: Matt Slagel, DCM @ (252) 808-2808 Ext. 233 or Matthew.Slagel@ncdenr.gov

4:00 Welcome
Renee Cahoon and Jamin Simmons, N.C. CRC

4:05 CRC Inlet Management Study
Mike Lopazanski, N.C. Division of Coastal Management

4:20 Introduction to Inlets in North Carolina
Matt Slagel, N.C. Division of Coastal Management

4:30 Overview of Inlet Management & Regulatory Framework
Frank Jennings, N.C. Division of Coastal Management

5:00 Dare County Perspectives on Inlet Management
Warren Judge, Dare County Board of Commissioners

5:15 Public Input

7:00 Adjourn
1. Based upon presentations by a consensus panel of experts at the CRC meeting in Nags Head, there appears to be a number of areas where inlet maintenance and beach renourishment can be improved.

2. Some of these are as follows and are generic and a synopsis of the ideas presented:

- The process of getting permits needs to be streamlined to make it more adaptive to needs. Additionally, we are dealing with dynamic issues and the permits need to be broad enough to allow engineers to “tweak” the projects in order to learn over time what works best.

- “Advanced maintenance” should be used such as dredging channels 4 to 5 feet deeper than the permit calls for to “buy time” before it is needed again.

- The acceptable timing of dredging in NC needs to be extended by approximately one month on each end to increase the “dredging window”. This can be done without environmental or wildlife/biological issues based on recent history. As stated by Mr. Eric Olsen at the CRC meeting in Nags Head, “tremendous cost savings can be realized in NC regarding beach restoration if the dredging window is increased”.

This is crucial for local governments trying to fund renourishment projects.
= THE USE OF AVAILABLE SCIENTIFIC MODELLING CAN NOW BE USED TO MAKE ACCURATE PREDICTIONS REGARDING THE UNIQUE CHALLENGES THAT NC INLETS AND BEACHES PRESENT.


IN DARE COUNTY, THIS IS BASED PREDOMINATELY UPON TOURISM, FISHING, AND BOATBUILDING, AND WE MUST HAVE OUR BEACHES, OUR INLETS, AND OUR WATERWAYS IN ORDER TO THRIVE.

4. CHAIRMAN JUDGE MENTIONED IN HIS REMARKS THAT MANAGING OUR ENVIRONMENT AND OUR WILDLIFE IS IMPORTANT FOR ANY RESPONSIBLE GOVERNMENT. NOW, IT SEEMS THAT WILDLIFE IS MANAGING US DUE TO THE WISHES OF SPECIAL INTERESTS. THIS MUST STOP.

THANK YOU.
North Carolina Route 12 Stabilization

Is there a viable solution to the maintenance of route 12 on the Outer Banks. My answer is Yes. Man over the last 5,000 years has benefited tremendously by altering or working with nature for the benefit of both mankind and nature. Erosion of the Outer Banks Coast Line presents a historic challenge to the wellbeing of both nature and mankind. No less than the State Border of North Carolina is at risk. Numerous studies have provided a great deal of information but no solutions other than a constant retreat and surrender.

Robert Young of WCU concluded there is no positive plan or outlook. Stanley Riggs ECU concluded the only reason the islands haven’t collapsed is because of Human intervention. These conclusions are definitely going to become true if over regulation and lack of innovation are continued. Studies by ECU with ground penetrating radar has revealed many Inlets were cut through the Outer Banks over the last few centuries from Corolla to Portsmouth Island. These Inlets closed themselves over time. Development and recreation on the Outer Banks leads one to conclude that this process of breaching is not an acceptable condition. This random chaos can be controlled. These natural resources are too valuable to the State of North Carolina to be left to chance when corrective action can be achieved.

The State of North Carolina should have the Sovereign Right to defend the State Borders at whatever effort it decrees necessary. Including the Border with the Atlantic Ocean.

What is the cost of a surrender to the Sea.

1. No highway access to Hatteras.
2. What effect will daily tidal changes have on the Pamlico and Albemarle Sounds.
3. What will an increase in salinity have on future water supply.
4. What effect will daily tidal flow have on all forms of inland plant life.
5. What effect will uncontrolled tidal flow have on inland storm flooding.

These concerns should be addressed satisfactory before a doomsday outcome is allowed to be fulfilled.
With the predicted rise in Sea level over the next century the problem is compounded. But is that an excuse to surrender this treasure to the Sea. Can this roadway and the barrier islands be maintained at a reasonable cost. The answer is YES. Where is the proof this can be accomplished. One of the most apparent examples in this area is the man made islands of the Chesapeake Bay Bridge tunnel. These islands were built in open ocean conditions. Another example is the Zuiderzee dike between Holland and the Netherlands. This causeway is 25 feet above sea level 20 miles long and created 895 square miles of reclaimed land, Flevoland with a population of 400,000 people. These projects are examples of what can be done. Equipment and engineering has improved greatly since then. The Zuiderzee is a flood control dike. The amount of material to build this dike, flood locks and pumps was enormous. N.C. Route 12 on the Outer Banks is not required to serve any flood control function. Compared to the Zuiderzee maintenance of a roadway and shoreline on route 12 should be rather simple. The key to accomplishing this is that this roadway does not have to serve as a dike. This can be achieved by building a roadway low enough that it can be overwashed and not breached. During flood conditions such as hurricanes and extreme north east storms the road would be closed to traffic. After the storm with a little maintenance the roadway could be reopened.

A design to achieve these goals is shown in the accompany plans and models. One of the first areas to prove this design could be in the Pea Island area. Once a workable roadway is constructed then the resources that are constantly used to rebuild route 12 can be used for beach nourishment.

Robert Brown
A Solution for Maintaining and Defending North Carolina

Proposed Cross Section

Atlantic Ocean

Seawall

Bike Path

PDL-Sand

25

75

15

NB 3c
Access on N.C. Route 12 and North Carolina's Coastal Border

Section N.C. Route 12 Outer Banks
My name is Carol Dillon Dawson, I'm a native of Cape Hatteras, NC. For the past 40 years Hatteras island has had no beach nourishment! Oregon inlet gets regular dredging while Hatteras island has been told " we are letting nature take its course"! The only problem with allowing nature to take its course, it has to be applied to everyone and everything. It is completely unfair to dredge a navigational inlet for 45 years without putting the sand lost to the beaches South of the inlet. Our island has been affected greatly by the dredging at Oregon inlet. Our highway has been attacked by the ocean, eroded beaches from pea island down to the end of the littoral drift in Buxton.

I do not agree that Oregon inlet should be dredged without putting the sand back on the beaches of Hatteras island. We have been through enough. This island needs sand desperately. The hundreds of millions that have been spent on dredging Oregon inlet is wonderful for the jobs and money that needs that inlet open but the business community on Hatteras island is just as important. I'm not against trying to keep the inlet open, I am just asking for the USACE to put the sand that they dredge back on the beaches of Hatteras island, we need it badly.

Carol Dillon Dawson
434-249-7546

Sent from my iPad
Meeting Summary

N.C. CRC Inlet Management Study:
Regional Public Meeting #2 – Beaufort

March 12, 2014

The N.C. Coastal Resources Commission (CRC) is undertaking a comprehensive review of inlet management in North Carolina to more fully understand and respond to the issues confronted by local governments and stakeholders in these dynamic areas. CRC members in the Carteret County region hosted a public meeting on Wednesday, March 12, 2014, at the NOAA/NCNERR Auditorium in Beaufort, NC to elicit a range of management options and regulatory reforms related to inlet management. These summary notes are not intended to represent a meeting transcript, per se.

CRC Members in Attendance:
Larry Baldwin
Bob Emory
Greg Lewis
Bill Naumann
John Snipes

DCM Staff in Attendance:
Braxton Davis, Director
Tancred Miller, Coastal and Ocean Policy Manager
Matt Slagel, Shoreline Management Specialist
Roy Brownlow, Morehead City District Manager and Compliance Coordinator
Maureen Meehan, Morehead City District Planner
Ken Richardson, GIS Analyst
Kevin McVerry, GIS Analyst

Attendees:
Eddie Barber, Town of Emerald Isle
Frank Rush, Town of Emerald Isle
Trace Cooper, Town of Atlantic Beach
David Whitlow, Town of Morehead City
Charlie Burgess, Town of Beaufort
Bucky Oliver, Town of Beaufort
Russell Overman, Carteret County
Greg “Rudi” Rudolph, Carteret County
Maria Dunn, NC Wildlife Resources Comm.
David Cox, NC Wildlife Resources Comm.
J.D. Potts, NC Shellfish Sanitation
Ana Zivanovic-Nenadovic, NC Coastal Fed.
Johnny Martin, Moffatt & Nichol
James Willis
Jannette Pippin, Jacksonville Daily News
Boynton Adams, WCTI TV-12 New Bern
Welcome
CRC members Larry Baldwin, Bob Emory, Greg Lewis, Bill Naumann, and John Snipes opened the meeting at 6 p.m. and thanked everyone for attending. They emphasized that the inlet management study is a focus of the Commission, and they look forward to receiving input on management options and potential regulatory reforms related to inlet management in North Carolina.

CRC Inlet Management Study
Tancred Miller, DCM Coastal and Ocean Policy Manager, introduced the new CRC Inlet Management Study initiative, which was proposed at the December 2013 CRC meeting. This initiative is an offshoot of the Cape Fear Inlet Area of Environmental Concern (AEC) Study that was mandated by the General Assembly. The CRC recognized that there are a number of ongoing inlet related studies including the IHA feasibility study associated with HB819, which the Science Panel has been working on, S.L. 2013-138 which pertains to streamlining permitting of inlet dredging projects, and S.L. 2013-413 which pertains to re-evaluating the merits of all existing rules. In considering the Cape Fear River AEC Feasibility Study, the Commission decided to undertake a comprehensive review of inlet-related issues to examine ways to streamline routine inlet projects, and to collaborate with local governments to ensure equitable and cost-effective inlet management. The CRC Inlet Management Study development began with an inlet dredging panel discussion at the Commission’s February 2014 meeting in Nags Head, and has continued with four regional meetings in Buxton, this meeting in Beaufort, Ocean Isle Beach, and Wilmington to gather input and concerns from affected local governments and other stakeholders. A public comment period for written comments is also open and extends until April 15, 2014. The CRC is especially interested in getting input on the following topics:

1) Beneficial use of dredged materials (beach placement)
2) Dredging windows / moratoria
3) Dredging depths and sediment criteria rules
4) Channel realignment projects
5) Development standards / erosion setbacks / local vs. state authorities
6) Volumetric triggers for beachfront “static lines”
7) Emergency permitting: beach bulldozing and sandbags
8) Terminal groins and sand bypassing
9) Erosion rate calculations for Inlet Hazard Areas
10) Monitoring conditions associated with projects

The CRC inlet study will take place over the course of about one year, and the schedule is as follows:

April 30, 2014: Four regional meetings completed
May 15, 2014: Summary of regional meetings and findings to CRC
July 31, 2014: Final draft findings and recommendations to CRC
September 30, 2014: Submit proposed rulemaking changes for public comment
December 31, 2014: Submit report findings to Governor and General Assembly
Introduction to Inlets in North Carolina
Matt Slagel, DCM Shoreline Management Specialist, then provided a brief introduction to inlets in North Carolina. There are 12 developed inlets in the State, and seven undeveloped inlets. All of the developed inlets are located south of Cape Lookout, and most of the undeveloped inlets are located north of Cape Lookout. The developed inlets are those with buildings immediately adjacent to the inlets, but the undeveloped inlets face other issues such as channel shoaling and dredging. There are two broad classes of tidal inlets in North Carolina: oscillating inlets and migrating inlets. Oscillating inlets include Ocracoke, Bogue, and Rich Inlets. They are generally positioned along ancestral river channels. They can swing back and forth, but their throat sections have stayed within a relatively narrow zone over recent history. Migrating inlets include Oregon, Mason, and New Topsail Inlets. Migrating inlets are generally shallow, and migration occurs where the updrift barrier island or spit elongates in the direction of net littoral sand transport and the downdrift shoreline erodes. Although Bogue Inlet is an oscillating-type and Mason Inlet is a migrating-type, both of these inlets had inlet channel realignment projects undertaken to move the channel away from threatened development at Emerald Isle and Wrightsville Beach, respectively.

A distinction can also be made between shallow-draft inlets and deep-draft inlets. Shallow-draft inlets are dredged to depths of about eight feet. There are two deep-draft inlets in the State that are maintained at depths of 45 feet (Beaufort Inlet) and 42 feet (Cape Fear River Inlet). Beaufort Inlet serves the Port of Morehead City, and Cape Fear River Inlet serves the Port of Wilmington.

Overview of Inlet Management & Regulatory Framework
Roy Brownlow, DCM Morehead City District Manager and Compliance Coordinator, gave an overview of inlet management strategies and the regulatory framework in North Carolina. The Ocean Hazard designation is a grouping of Areas of Environmental Concern (AECs) created by the CRC with the objective of recognizing risks of erosion associated with the barrier islands that could lead to endangerment of life and property. The purpose of identifying Ocean Hazard Areas and establishing the Rules was to “further goals set out in G.S. 113A-102(b), with particular attention to minimizing losses to life and property resulting from storms and long-term erosion, preventing encroachment of permanent structures on public beach areas, preserving the natural ecological conditions of the barrier dune and beach systems, and reducing the public costs of inappropriately sited development. Furthermore, it is the objective of the CRC to protect present common-law and statutory public rights of access to and use of the lands and waters of the coastal area.” There are four AECs within the Ocean Hazard category, one of which is the Inlet Hazard Area (IHA) designation. Rules establish erosion rates and setbacks, use standards for erosion control structures, and use standards for beach and inlet projects. The graduated setback is based on the long-term erosion rate for the specific project area and the size, or total floor area, of the structure. The larger the structure or greater the erosion rate, the larger the setback. Exceptions to the setback include elevated beach accessways, sand fencing, driveways/parking areas, up to 500 sq ft of open decking, swimming pools, temporary amusement stands, and small gazebos and sheds. The setbacks apply to all Ocean Hazard AECs including the IHAs, but erosion rates have only been established for the Ocean Erodible Areas (OEAs), and the erosion rate of the adjacent OEA applies to the IHA. Erosion rates in the IHAs have not been established.
Inlet Hazard Areas are defined as areas that are especially vulnerable to erosion and flooding due to proximity to ocean inlets. The IHA boundaries were originally designated in 1981 by the Commission and have not been updated since. Specific use standards for IHAs include: no more than one commercial/residential unit per 15,000 sq ft land area for lots platted after July 1981; residential structures must be four units or less and non-residential structures less than 5,000 sq ft; and the building of new dunes is prohibited. The rebuilding of an eroded dune is allowed.

Sandbags are meant to be used as temporary protection for threatened structures. They previously were allowed one time only per building, regardless of ownership, for a period of 2-5 years. In 2009, the rule was changed to allow sandbags in the IHA to remain in place up to 8 years for properties within a community pursuing an inlet realignment project. That rule change also allowed sandbags to remain an additional 8 years if the structure became threatened again and if the community was still seeking an inlet realignment project. The rule was then updated again in 2013 to remove the one time only limit for communities seeking a beach nourishment or stabilization project. Sandbags can be used to protect houses, septic systems, and roads. They cannot be used to protect swimming pools, decks, or gazebos. DCM has a General Permit (15A NCAC 7H.1800) for beach bulldozing landward of mean high water, but it currently does not apply to the IHAs. Beach bulldozing in IHAs would have to be authorized under a Minor Permit with agency coordination if confined above normal high water or with a Major Permit for bulldozing below mean high water.

Regarding the timing of projects, 15A NCAC 7H.0308(a)(1)(F) states that “project construction shall be timed to minimize adverse effects on biological activity.” Many of the beach and inlet projects DCM evaluates are considered major development, which requires other state or federal agency permits or authorization. DCM relies on the commenting resource agencies during the Major Permit process to advise on how to comply with this rule. These types of projects also require other permits, often from the U.S. Army Corps of Engineers (USACE), who then has to coordinate with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). The State cannot supersede Federal laws.

DCM works to streamline the permitting process by working with USACE and other agencies. Many State rules were established with Federal regulations in mind. Additionally, DCM General Permits were developed in coordination with USACE, so an applicant generally doesn’t need written concurrence from USACE if DCM issues a General Permit, since it also meets their rules. The Coastal Area Management Act (CAMA) Major Permit application also serves as an application for a permit from the USACE and N.C. Division of Water Resources (DWR) so the applicant can deal directly with DCM, and DCM staff can coordinate the other permits. DCM also coordinates any requests to work within the moratoriums with the relevant agencies after a permit is issued.

DCM staff have been working to make the Sediment Criteria Rules more efficient by reducing unnecessary burdens in cases where there have been previous projects establishing sediment compatibility or where previous requirements were later discovered to be overly onerous or without benefit. As a result, DCM has reduced costs for applicants without compromising the integrity of the sampling requirements.
There has been a shift in inlet dredging projects towards beneficial use of dredged materials. Fort Macon and the eastern end of Atlantic Beach is one example as part of the Morehead City Harbor Interim Dredged Material Management Plan. Federal dredging projects generally fall under either navigation or coastal storm damage reduction projects. If they are navigation projects, the USACE typically has to consider least-cost in terms of disposal. The dredging of Morehead City Harbor/Beaufort Inlet is a Federal navigation project, and beach-compatible sand from dredging is sometimes placed on the beaches of Fort Macon and Atlantic Beach.

A number of inlet channel realignment projects have also been completed in North Carolina. These projects have occurred at Tubbs Inlet, Mason Inlet, Bogue Inlet, and New River Inlet. The Bogue Inlet project relocated the channel between the east end of Bear Island and the west end of Emerald Isle. The project occurred in 2006 and has been successful in protecting development at the Point of Emerald Isle.

Senate Bill 151 was passed into law and allows up to four terminal groins to be permitted in North Carolina. Four communities are in various stages of the process of pursuing a terminal groin. Three are in Brunswick County (Bald Head Island, Holden Beach, and Ocean Isle Beach), and one is in New Hanover County (Figure Eight Island).

Local Government Perspectives on Inlet Management

Greg “Rudi” Rudolph, Carteret County Shore Protection Manager

- Mr. Rudolph gave a presentation (attached), which is summarized below.
- The CRC and State should insist that the U.S. Army Corps of Engineers (USACE) disposes all dredged beach-quality sand on adjacent beaches or the ebb delta to mimic the natural sediment budget. "No Net Loss of Sand Policy"
- Incorporating beneficial use policies into the State's enforceable Coastal Management Program could be used to keep the USACE consistent and in-line with State policy and what the State actually desires. The State should use the Federal Consistency process under the Coastal Zone Management Act of 1972 to ensure that beach quality sand is not removed from the active beach system.
- The federal government is dictating dredging windows. The State needs to determine what is best for its resources; not the federal agencies.
- If there is ample evidence the sediment sample beneath the deepest core obtained will meet the State's nourishment compatibility standard, then that should be acceptable as part of the application (not a variance after the fact).
- The depths and other channel configurations for relocated inlets should be designed to accommodate (not exceed) the same volume of water (tidal prism) that the existing or some agreed upon pre-existing ebb channel possessed.
- Most of the threats to public infrastructure, private property, and the environment that garner the most attention of the CRC and the public at-large are related to inlets. This requires a different approach than that compared to the oceanfront.
- Existing buildings within the Inlet Hazard Areas should be grandfathered, and new development should not be allowed further seaward than adjacent properties. The first seaward line of existing dwellings could be used as a "60 foot setback" demarcation, and graduated setbacks could be measured from it.
• The concept of a Deep-Draft IHA and Shallow-Water IHA should be explored, and the boundaries should extend in the water, where issues related to dredging can be codified and enforced in policy.
• DCM staff and the CRC Science Panel were heading in the right direction with redefining the boundaries of the Inlet Hazard Areas based upon the standard deviation of shoreline change rates.
• “Static Lines” are an oceanfront issue that requires a separate discussion.
• Sandbags need to have a different set of standards if located in Inlet Hazard Areas compared to the oceanfront. They should be allowed to be permitted well before structures are imminently threatened, and the time limit for sandbags also needs to be reexamined. Sandbags should be allowed in perpetuity until the solution (inlet realignment, hard structure, retreat, etc.) is employed or the primary structure itself is destroyed.
• New dunes should be allowed to be created in Inlet Hazard Areas.
• If hard structures will aid in the retention of sand within the inlet shoulder areas and perhaps reduce shoaling of the inlet, then that should be perfectly acceptable and welcomed. In theory, terminal groins won't require sand bypassing because they only trap enough sand to create an accretion fillet, then the remainder is allowed to migrate into the inlet system and there are no/miniscule downdrift impacts.
• Some level of monitoring is acceptable, but what questions need to be answered? Monitoring for monitoring's sake, or monitoring to get a baseline condition when baselines should already exist is no longer acceptable.
• The State should develop a funding source to assist local interests to help mitigate the impacts of federal dredging projects to adjacent communities.

Frank Rush, Town Manager, Town of Emerald Isle
• The Bogue Inlet channel realignment project took about three years to obtain state and federal permits. Since the project was a success, the CRC should make sure that the permitting process is quicker and easier for future similar projects.
• Monitoring conditions should focus more on physical monitoring and less on biological monitoring. Environmental monitoring is not always helpful or meaningful. Instead of biological monitoring requirements, applicants should be allowed to purchase land for conservation/mitigation.

Public Input
James Willis
• There is a derelict groin on the Cape Lookout side of Barden Inlet. This old structure should be removed to restore natural sand transport from Cape Lookout to Shackleford Banks.

Johnny Martin, Coastal Engineer, Moffatt and Nichol
• Beach and inlet management is related- what happens to one impacts the other. The goal of inlet management should be to reconnect sediment pathways to minimize dredging impacts.
• Dredged material from deep-draft inlets shouldn't be placed immediately adjacent to the inlet, because it falls right back in the channel.
- Rules should be different for deep-draft vs. shallow-draft inlets.

Trace Cooper, Mayor, Town of Atlantic Beach; Carteret County Beach Commission Chair
- Expressed appreciation to the CRC and DCM for their willingness to look at ways to improve inlet management.

Bucky Oliver, Town of Beaufort Resident
- In local politics, the squeaky wheel typically gets the grease, but sometimes, a carrot may be a better way to achieve results. The CRC inlet management study shows leadership by seeking input at the local level. Allowing local governments to have more authority, with CRC oversight, can result in balanced management between local needs and Mother Nature. A cost-effective balance is needed.
- The CRC should think outside the box and evaluate private methods of dredging since the federal government can’t be relied upon to meet all local needs.
N.C. CRC Inlet Management Study:
Regional Public Meeting - Beaufort

The N.C. Coastal Resources Commission (CRC) is undertaking a comprehensive review of inlet management in North Carolina to more fully understand and respond to the issues confronted by local governments and stakeholders in these dynamic areas. The CRC is holding a series of regional public meetings along the coast in order to elicit a range of management options and regulatory reforms related to inlet management.

Date: Wednesday, March 12, 2014
Time: 6:00 – 9:00 P.M.
Place: NOAA Administration Building, 101 Pivers Island Rd., Beaufort, N.C.
Contact: Matt Slager, DCM @ (252) 808-2808 Ext. 233 or Matthew.Slager@ncdenr.gov

6:00 Welcome
Larry Baldwin, Bob Emory, Greg Lewis, Bill Naumann, John Snipes, N.C. CRC

6:05 CRC Inlet Management Study
Tancred Miller, N.C. Division of Coastal Management

6:20 Introduction to Inlets in North Carolina
Matt Slager, N.C. Division of Coastal Management

6:30 Overview of Inlet Management & Regulatory Framework
Roy Brownlow, N.C. Division of Coastal Management

7:00 Carteret County Perspectives on Inlet Management
Greg “Rudi” Rudolph, Carteret County Shore Protection Manager

Town of Emerald Isle Perspectives on Inlet Management
Frank Rush, Town Manager

7:20 Public Input

9:00 Adjourn
Reference Object
Bogue Inlet – The Point
(2003 – 2014)

CRC Inlet Management Study Public Meeting
NOAA Administration Building, Beaufort, N.C. – March 12, 2014
20 to 21 Inlets Total - roughly twelve are routinely dredged

- some have more riverine input,
- some are tied to specific drainage patterns, and
- some are more ephemeral in nature.

- some (2) are maintained as deep draft navigation thoroughfares,
- some are maintained as shallow draft channels.

5 to 6 Inlets Located North of Cape Lookout – generally drain/flush huge expansive drowned-river estuaries.

15 Inlets Located South of Cape Lookout - for the most part drain much smaller estuarine systems (sans Cape Fear).
Coastal Hazards

Sandbags - *Most* of the State’s permitted sand-bag sites are located along the shoulder of inlets.

Erosion Rates - *Most* of the highest “erosion” rates are also located within these same areas (inlet shoulders).

In fact, *most* of the threats to public infrastructure, private property, and the environment garnering the attention of the CRC and the public at-large are related to inlets.

However, these areas constitute a *small percentage* of the State’s entire open oceanfront and inlet shorelines.

- We’ve picked our battles and should be using all the methods and tools necessary.

- Current rules don’t do a great job of differentiating the inlet vs. oceanfront.

CRC & Stakeholder Dilemma
“Each inlet is different – we need more flexibility in the rules” YET “keep it simple”
“OCEANFRONT”
Drivers (1) sand supply, (2) sea level, & (3) storms (freq. & duration).

“INLET”
Shorelines affected by inlet processes (tidal amplitude, tidal prism, tidal dominancy), & channel orientations.

REQUIRE DIFFERENT MANAGEMENT APPROACHES

Projected Inlet shoreline in absence of sandbags

Two Very Different Types of Shorelines
(geomorphology & process)
**Deep Draft Inlets**
(Morehead City and Wilmington Harbors)

U.S. Corps of Engineers responsible for maintaining the Nation’s waterways.

Mandated by 33 C.F.R. 335.7 to dispose of dredged material at the **least cost**.

**Abuse of policy & navigation servitude** – Claiming that dumping material a mile or more offshore is inside the littoral system or “nourishing the ebb delta” is simply not true.

**Beach Dumping** – only performed under guise of least cost and is NEVER admitted as mitigation. --- “Remember, this is a navigation project”.

**Abuse of policy & navigation servitude (part II)** - 33 C.F.R. 335.7 states least cost, and **environmentally acceptable**, and **engineerly sound**.

The Corps is mis-managing STATE RESOURCES and often local communities have to spend their own time, resources, and dollars to offset impacts of mismanaged sand.

Negative consequences associated with temporary sand bags/geotextile tubes, terminal groins, sand placement, etc. aimed to offset navigation impacts are microscopic compared to the overprint channel dredging/offshore dumping has on the system. *See the terminal groin report.*
SAND BUDGET

Function of:

(1) Total Sand Dredged
(2) % Beach Quality
(3) Less Beach Disposal

48.6 mcy total!!!
Deep Draft Inlets
(NO NET LOSS OF SAND POLICY)

CRC & GA need to adopt & enforce a “NO NET LOSS OF SAND POLICY”.

State has been clear on this issue - relies upon the Coastal Zone Management Act.

Requires Corps to comply to the “maximum extent practicable” with North Carolina’s Coastal Management Program.

When the Corps’ activities have a foreseeable effect on State coastal resources, the Corps must make a formal consistency determination and the State must concur.

In 1992, the State’s Coastal Management Program was amended to include a requirement that beach quality dredged material from navigation channels be used in a beneficial way wherever practicable and be retained in the littoral system to the maximum extent practicable.
Deep Draft Inlets
(maximum extent practicable has not worked)

Maximum extent practicable has failed
- NOAA fails to provide consistency.
- Corps has driven a truck through it.

Since 1992......
- Morehead City deepened.
- Wilmington Harbor deepened.
- AND a new draft Dredged Material Management Plan (DMMP) for Morehead City.

Overwhelming majority of the sand is planned to be dumped well outside the 25 feet contour – not on the ebb delta nor on the adjacent beaches.

Should be completely unacceptable. Strengthen and enforce policy (e.g. Florida).

Establish sediment budget - all disposal material must be placed on adjacent beaches or the ebb delta to mimic this budget. Nodal points and hard structures...
- Staff and the Science Panel were heading in the right direction with redefining the boundaries based upon the standard deviation of shoreline change rates.

- Keep setbacks simple and do not get involved with more “lines in the sand”
  (a) grandfather existing structures and allow them to rebuild to their original size if ever required,
  (b) don’t allow any new development further seaward than adjacent properties,
  (c) lift the size restrictions for dwellings as long as they meet the minimum graduated setback requirements again using the first seaward line of existing dwellings as a “60 foot setback” demarcation.

- Temporary erosion control structures (sand bags) need to have a different set of standards if located in IHAs compared to the oceanfront.
  (a) Should be allowed well before structures are imminently threatened.
  (b) Time limit for sandbags need to be reexamined (again) - in perpetuity until the solution (inlet realignment, hard structure, retreat etc.) is employed or the primary structure itself is destroyed.

--- very little difference to an orphaned structure sitting on a State beach to that of an orphaned structure with sandbags sitting on a State beach. Moreover, it will save the State and property owners a tremendous amount of time and money involved with mind-numbing variance processes.
Deep-Draft IHA and Shallow-Water IHA - concept should be explored and the boundaries should extend in the water, where issues related to dredging can be codified and enforced in policy. IHA boundaries currently do extend into the water but are more of a token rather than representing any type of substantive boundary.

Deep-Draft IHA - the issues in terms of removing sand from littoral system, mimicking the sediment budget, hard structures, mitigation, etc. can all be addressed using this vehicle (in addition to the development standards on land).

*Incorporating these policies into the State’s enforceable Coastal Management Program could be used to keep the Corps consistent and in-line with State policy and what the State actually desires.

Shallow-Water IHA - should also be extended into the water and this could help guide channel realignment projects and terminal groin proposals (plus development standards).
DEEP DRAFT & SHALLOW DRAFT IHAs

Beaufort Inlet

Legend
- Inlet Hazard Areas (Current)
- Inlet Hazard Areas (Proposed)
- Transects

Map image by Ken Richardson

NCDENR - Division of Coastal Management - GIS - 2007
(1) Beneficial use of dredged materials.

(2) Dredging windows / moratoria.

(3) Channel Realignments, dredging depths, and sediment criteria rules.

(4) Development standards / erosion setbacks / local vs. state authorities.

(5) Volumetric triggers for “static lines”.

(6) Emergency permitting: beach bulldozing and sandbags.

(7) Terminal groins and sand bypassing.

(8) Erosion rate calculations for Inlet Hazard Areas.

(9) Dune creation in the IHA.

(10) Monitoring conditions associated with various projects.
Dear Members of the CRC,

My husband and I are oceanfront property owners in the Ocean Reef condominium complex in Emerald Isle, NC. I also serve on the Board of Directors of the HOA and am writing this letter not only on my behalf but also that of the entire community and the HOA Board.

We understand the CRC’s ruling about build backs and setbacks on the oceanfront and we totally understand the reasoning behind these rulings. However I would like to point out to the CRC that over the years our community has worked diligently to build back the sand dunes along our oceanfront property, knowing we are just as responsible, if not more so, for protecting our property than any government agency or group. Since 2002 our community has extended the dune structure over 60’ oceanward from the static vegetation line. May I remind the CRC there have been several storms since 2002; so many times we would take one step forward and 2 backwards! We believe our diligence in promoting dune growth proves that we are willing to use proper channels and suggested guidelines for protecting our property from the sea. However, to further our cause I would like to also submit the fact that the Town of Emerald Isle has confirmed their commitment to the beach nourishment program. Between their commitment to replace lost beach and our commitment to grow the dune structure we feel these are considerations the CRC should review. Frankly, we are just as concerned about loss of property by fire as we are about storm damage, if not more so. A loss by fire would have nothing to do with beach erosion but sadly, we would be limited by the CRC ruling on building our property back. Is this really the limitation the CRC had in mind when putting these guidelines in place?

Because of how our little community (10 oceanfront buildings and 8 second row buildings with one 3rd row bldg.) was developed on the property, there is little room to move the buildings farther away from the water than they are now located. We would have never thought we would be in danger of losing our little 900+/1,000+ sq ft condos because of a build back limitation on our entire buildings (less than 5,000 sq ft). We recently had a survey of the property conducted and found that our buildings fell way beyond the 60ft set back required from the 1st line of stable vegetation. The 2,500 sq ft building limitation is the problem we face. Based on the measurement guidelines set forth by the CRC our buildings would fall between 3768 sq.ft. – 4296 sq.ft. Because of the 2500 sq ft limitation now in place, we would lose approximately 1-1.5 units per building therefore being unable to rebuild a fair and acceptable configuration.

The Ocean Reef HOA strongly believes the limitation now in place on our build back ability is not only affecting our property values but also generating consumer fear, affecting our ability to resell. We seriously doubt this a consequence the CRC meant to happen when establishing their guidelines, but nevertheless is having a dire affect on our property.

The Ocean Reef Board of Directors respectfully requests the CRC re-examine situations like ours and allow an exception for building back on the original footprint if the building is more than the 2500 sq ft limitation now in place.

Respectfully submitted,

Lyla Washburn, Ocean Reef HOA

OCEAN REEF HOA BOARD OF DIRECTORS
Randy Hedrick, President
Mike Archie, Treasurer
Dan Turner
Lyla Washburn

Kevin Moen, Vice-President
Bettie Doughtie, Secretary
Russ Yeager
April 25, 2014

Dear Members of the Coastal Resource Commission,

I am an owner in the Ocean Reef Condominium complex in Emerald Isle (http://www.oceanreefhoa.com). I am also currently serving on the Board of Directors of the Association. Ocean Reef recently commissioned an engineering survey of our neighborhood. The purpose for this survey was to help us better understand where our buildings, and the dunes in front of them, sit in relation to the various static and stable vegetation lines that describe the boundaries of the dunes and govern build-back rules.

The outcome of the survey was very encouraging to our owners of oceanfront units. As a result of our efforts to stimulate dune growth via sand fencing and grass plantings, and also likely due to beach re-nourishment (see Figure 1), the Stable Vegetation Line is now drawn no less than 91 feet from the nearest building (range: 91-104 ft). The nearest point of the CAMA Line (which is 60 ft from the Stable Vegetation Line) to any building is 31 feet. The CAMA line is considerably farther away from our buildings than the 2002 Static Vegetation Line.

Figure 1: Dunes at Ocean Reef

Despite these apparent improvements in the dunes, and in the distances from the ocean to our 10 oceanfront buildings, we are concerned that we are at risk of not being able to rebuild our buildings in the event of major damage caused by storms or other disasters (such as fire). As we understand the Static Line Exception granted to Emerald Isle, rebuilding is limited to structures no larger than 2500 sq ft. The approximate living space of the oceanfront buildings in Ocean Reef is 4400 sq ft (this represents 2 or 4 units on two floors above wash through garages, and all constructed on sunken pilings, see Figure 2).

Figure 2: Ocean Reef Building configuration
We believe that the impact to Ocean Reef and other neighborhoods in a similar situation is an unintended consequence of this exception.

Our request is for relief in the Static Line Exception ruling with the 2500 sq ft limitation and ability to rebuild as is within the approximate existing footprint. We are concerned that build-back fear is having a serious impact on the value of our properties and owners ability to sell their units.

Thank you for your consideration.

Sincerely,

Russell and Denise Yeager
2509 Ocean Dr unit 5A2
Emerald Isle, NC 28594
e-mail: russyeager@hotmail.com

Mailing address: 305 Ironwoods Dr. Chapel Hill, NC 27516

cc:
The Ocean Reef Board of Directors are:

Mike Archie
Betty Doughtie
Randy Hedrick
Kevin Moen
Dan Turner
Lyla Washburn
Russ Yeager
Meeting Summary  
_N.C. CRC Inlet Management Study:_  
_Regiona l Public Meeting #3 – Ocean Isle Beach_  

_March 26, 2014_

_The N.C. Coastal Resources Commission (CRC) is undertaking a comprehensive review of inlet management in North Carolina to more fully understand and respond to the issues confronted by local governments and stakeholders in these dynamic areas. CRC members in the Brunswick County region hosted a public meeting on Wednesday, March 26, 2014, at the Town Hall Building in Ocean Isle Beach, NC to elicit a range of management options and regulatory reforms related to inlet management. These summary notes are not intended to represent a meeting transcript, per se._

_CRC Members in Attendance:_  
Harry Simmons  
Suzanne Dorsey

_DCM Staff in Attendance:_  
Tancred Miller, Coastal and Ocean Policy Manager  
Matt Slagel, Shoreline Management Specialist  
Debbie Wilson, Wilmington District Manager  
Heather Coats, Field Officer, Wilmington Regional Office  
Holley Snider, Field Officer, Wilmington Regional Office  
Michele Walker, Public Information Officer

_Attendees:_  
Frank Iler, N.C. House of Representatives  
David Kellam, Figure 8 Island  
Charles Baldwin, Village of Bald Head Island  
Andy Sayre, Village of Bald Head Island  
Ray Webb, Village of Bald Head Island  
Richard Holbrook, Fort Caswell, Oak Island  
Betty Wallace, Town of Oak Island  
Steve Foster, Town of Oak Island  
Carol Painter, Town of Oak Island  
Alan Holden, Town of Holden Beach  
David Hewett, Town of Holden Beach  
Amanda Wiggins, Town of Holden Beach  
Debbie Smith, Town of Ocean Isle Beach  
Dean Walters, Town of Ocean Isle Beach  
Daisy Ivey, Town of Ocean Isle Beach  
Justin Whiteside, Town of Ocean Isle Beach  
R. Wayne Rowell, Town of Ocean Isle Beach  
Betty Williamson, Town of Ocean Isle Beach  
Skipper Walters, Town of Ocean Isle Beach  
Ron Watts, Town of Sunset Beach  
Richard Hilderman, Town of Sunset Beach  
Wilson Sherrill, Town of Sunset Beach  
Sara Schweitzer, NC Wildlife Resources Comm  
Chris Marello, Gahagan and Bryant  
Fran Way, Applied Technology & Mgmt.  
Robin Ilardi
Welcome
CRC members Harry Simmons and Suzanne Dorsey opened the meeting at 6 p.m. and thanked everyone for attending. They emphasized that the inlet management study is a focus of the Commission, and they look forward to receiving input on management options and potential regulatory reforms related to inlet management in North Carolina.

CRC Inlet Management Study
Matt Slagel, DCM Shoreline Management Specialist, introduced the new CRC Inlet Management Study initiative, which was proposed at the December 2013 CRC meeting. This initiative is an offshoot of the Cape Fear Inlet Area of Environmental Concern (AEC) Study that was mandated by the General Assembly. The CRC recognized that there are a number of ongoing inlet related studies including the IHA feasibility study associated with HB819, which the Science Panel has been working on, S.L. 2013-138 which pertains to streamlining permitting of inlet dredging projects, and S.L. 2013-413 which pertains to re-evaluating the merits of all existing rules. In considering the Cape Fear River AEC Feasibility Study, the Commission decided to undertake a comprehensive review of inlet-related issues to examine ways to streamline routine inlet projects, and to collaborate with local governments to ensure equitable and cost-effective inlet management. The CRC Inlet Management Study development began with an inlet dredging panel discussion at the Commission’s February 2014 meeting in Nags Head, and has continued with four regional meetings in Buxton, Beaufort, this meeting in Ocean Isle Beach, and Wilmington to gather input and concerns from affected local governments and other stakeholders. A public comment period for written comments is also open and extends until April 15, 2014. The CRC is especially interested in getting input on the following topics:

1) Beneficial use of dredged materials (beach placement)
2) Dredging windows / moratoria
3) Dredging depths and sediment criteria rules
4) Channel realignment projects
5) Development standards / erosion setbacks / local vs. state authorities
6) Volumetric triggers for beachfront “static lines”
7) Emergency permitting: beach bulldozing and sandbags
8) Terminal groins and sand bypassing
9) Erosion rate calculations for Inlet Hazard Areas
10) Monitoring conditions associated with projects

The CRC inlet study will take place over the course of about one year, and the schedule is as follows:

April 30, 2014: Four regional meetings completed
May 15, 2014: Summary of regional meetings and findings to CRC
July 31, 2014: Final draft findings and recommendations to CRC
September 30, 2014: Submit proposed rulemaking changes for public comment
December 31, 2014: Submit report findings to Governor and General Assembly

Matt Slagel then provided a brief introduction to inlets in North Carolina. There are 12 developed inlets in the State, and seven undeveloped inlets. All of the developed inlets are located south of Cape Lookout, and most of the undeveloped inlets are located north of Cape
Lookout. The developed inlets are those with buildings immediately adjacent to the inlets, but the undeveloped inlets face other issues such as channel shoaling and dredging. All of the inlets in Brunswick County are considered developed. There are two broad classes of tidal inlets in North Carolina: oscillating inlets and migrating inlets. Oscillating inlets include Ocracoke, Bogue, and Rich Inlets. They are generally positioned along ancestral river channels. They can swing back and forth, but their throat sections have stayed within a relatively narrow zone over recent history. Migrating inlets include Oregon, Mason, and New Topsail Inlets. Migrating inlets are generally shallow, and migration occurs where the updrift barrier island or spit elongates in the direction of net littoral sand transport and the downdrift shoreline erodes. Although Bogue Inlet is an oscillating-type and Mason Inlet is a migrating-type, both of these inlets had inlet channel realignment projects undertaken to move the channel away from threatened development at Emerald Isle and Wrightsville Beach, respectively.

A distinction can also be made between shallow-draft inlets and deep-draft inlets. Shallow-draft inlets are dredged to depths of about eight feet. There are two deep-draft inlets in the State that are maintained at depths of 45 feet (Beaufort Inlet) and 42 feet (Cape Fear River Inlet). Beaufort Inlet serves the Port of Morehead City, and Cape Fear River Inlet serves the Port of Wilmington.

**Overview of Inlet Management & Regulatory Framework**

Heather Coats, DCM Field Officer in the Wilmington Regional Office, gave an overview of inlet management strategies and the regulatory framework in North Carolina. The Ocean Hazard designation is a grouping of Areas of Environmental Concern (AECs) created by the CRC with the objective of recognizing risks of erosion associated with the barrier islands that could lead to endangerment of life and property. The purpose of identifying Ocean Hazard Areas and establishing the Rules was to “further goals set out in G.S. 113A-102(b), with particular attention to minimizing losses to life and property resulting from storms and long-term erosion, preventing encroachment of permanent structures on public beach areas, preserving the natural ecological conditions of the barrier dune and beach systems, and reducing the public costs of inappropriately sited development. Furthermore, it is the objective of the CRC to protect present common-law and statutory public rights of access to and use of the lands and waters of the coastal area.” There are four AECs within the Ocean Hazard category, one of which is the Inlet Hazard Area (IHA) designation. Rules establish erosion rates and setbacks, use standards for erosion control structures, and use standards for beach and inlet projects. The graduated setback is based on the long-term erosion rate for the specific project area and the size, or total floor area, of the structure. The larger the structure or greater the erosion rate, the larger the setback. Exceptions to the setback include elevated beach accessways, sand fencing, driveways/parking areas, up to 500 sq ft of open decking, swimming pools, temporary amusement stands, and small gazebos and sheds. The setbacks apply to all Ocean Hazard AECs including the IHAs, but erosion rates have only been established for the Ocean Erodible Areas (OEAs), and the erosion rate of the adjacent OEA applies to the IHA. Erosion rates in the IHAs have not been established.

Inlet Hazard Areas are defined as areas that are especially vulnerable to erosion and flooding due to proximity to ocean inlets. The IHA boundaries were originally designated in 1981 by the Commission and have not been updated since. Specific use standards for IHAs include: no more than one commercial/residential unit per 15,000 sq ft land area for lots platted after July 1981;
residential structures must be four units or less and non-residential structures less than 5,000 sq ft; and the building of new dunes is prohibited. The rebuilding of an eroded dune is allowed.

Sandbags are meant to be used as temporary protection for threatened structures. They previously were allowed one time only per building, regardless of ownership, for a period of 2-5 years. In 2009, the rule was changed to allow sandbags in the IHA to remain in place up to 8 years for properties within a community pursuing an inlet realignment project. That rule change also allowed sandbags to remain an additional 8 years if the structure became threatened again and if the community was still seeking an inlet realignment project. The rule was then updated again in 2013 to remove the one time only limit for communities seeking a beach nourishment or stabilization project. Sandbags can be used to protect houses, septic systems, and roads. They cannot be used to protect swimming pools, decks, or gazebos. DCM has a General Permit (15A NCAC 7H.1800) for beach bulldozing landward of mean high water, but it currently does not apply to the IHAs. Beach bulldozing in IHAs would have to be authorized under a Minor Permit with agency coordination if confined above normal high water or with a Major Permit for bulldozing below mean high water.

Regarding the timing of projects, 15A NCAC 7H.0308(a)(1)(F) states that “project construction shall be timed to minimize adverse effects on biological activity.” Many of the beach and inlet projects DCM evaluates are considered major development, which requires other state or federal agency permits or authorization. DCM relies on the commenting resource agencies during the Major Permit process to advise on how to comply with this rule. These types of projects also require other permits, often from the U.S. Army Corps of Engineers (USACE), who then has to coordinate with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). The State cannot supersede Federal laws.

DCM works to streamline the permitting process by working with USACE and other agencies. Many State rules were established with Federal regulations in mind. Additionally, DCM General Permits were developed in coordination with USACE, so an applicant generally doesn’t need written concurrence from USACE if DCM issues a General Permit, since it also meets their rules. The Coastal Area Management Act (CAMA) Major Permit application also serves as an application for a permit from the USACE and N.C. Division of Water Resources (DWR) so the applicant can deal directly with DCM, and DCM staff can coordinate the other permits. DCM also coordinates any requests to work within the moratoriums with the relevant agencies after a permit is issued.

DCM staff have been working to make the Sediment Criteria Rules more efficient by reducing unnecessary burdens in cases where there have been previous projects establishing sediment compatibility or where previous requirements were later discovered to be overly onerous or without benefit. As a result, DCM has reduced costs for applicants without compromising the integrity of the sampling requirements.

There has been a shift in inlet dredging projects towards beneficial use of dredged materials. The Village of Bald Head Island is one example as part of the Wilmington Harbor Sand Management Plan. Federal dredging projects generally fall under either navigation or coastal storm damage reduction projects. If they are navigation projects, the USACE typically has to consider least-cost
in terms of disposal. The dredging of Wilmington Harbor/Cape Fear River Inlet is a Federal navigation project, and beach-compatible sand from dredging is placed on either Bald Head Island or Caswell Beach.

A number of inlet channel realignment projects have also been completed in North Carolina. These projects have occurred at Tubbs Inlet, Mason Inlet, Bogue Inlet, and New River Inlet. The Mason Inlet project relocated the channel between the north end of Wrightsville Beach and the sound end of Figure Eight Island. The project occurred in 2002 and has been successful in protecting Shell Island Resort at the north end of Wrightsville Beach.

Senate Bill 151 was passed into law and allows up to four terminal groins to be permitted in North Carolina. Four communities are in various stages of the process of pursuing a terminal groin. Three are in Brunswick County (Bald Head Island, Holden Beach, and Ocean Isle Beach), and one is in New Hanover County (Figure Eight Island).

Local Government Perspectives on Inlet Management
Charles Baldwin, Attorney, Village of Bald Head Island

- Mr. Baldwin gave a presentation (attached), and the Village of Bald Head Island submitted written comments (also attached).
- Proactive inlet management is in the best interests of the State, environment, Ports Authority operations, commerce, property owners, beaches, and recreational resources.
- A new inlet management paradigm would be collaborative/cooperative, flexible, efficient, effective, anticipatory, and involve engineering based problem-solving and staff level resolutions.
- Existing coastal regulations are reactive, inflexible, inadequate, involve long time periods, have a limited toolbox, and a one size fits all approach.
- Because the maintained shipping channel in Cape Fear Inlet is in a fixed location, it is neither an oscillating nor a migrating inlet, as are typical of most other inlets in North Carolina. Any inlet management plan for the Cape Fear Inlet must address the unique circumstances and challenges posed by a maintained shipping channel.
- The dredging windows should be reduced in appropriate circumstances for projects that require construction during the current moratoria timeframe.
- Flexibility should be considered in applications where sand sources are used to mitigate inlet impacts - e.g., where sand volume requirements exceed those associated with beach disposal alone.
- Where federal project channels for commercial use are proposed for realignment, such measures shall be subject to extensive study including but not limited to appropriate numerical modeling, and project mitigation should be required. This type of study was not done at the entrance to the Cape Fear River prior to the last deepening. Since the channel was relocated closer to Bald Head Island and cut through the Island's protective shoals, Bald Head Island has experienced increased, chronic erosion.
- Regulations should address circumstances where developed lots adjacent to a navigation channel will receive sand on an ongoing basis. In some cases, what has eroded will be restored.
- The Inlet Hazard Areas have proven ineffective and arbitrary. For the mouth of the Cape Fear River, the IHA and Ocean Erodible Area (OEA) should be replaced by a single AEC.
- An increase in flexibility in emergency circumstances for more timely and effective responses is needed, along with more efficient and timely procedures.
- Rock groins, terminal structures, breakwaters, jetties, sandbags, beach bulldozing, beach nourishment, etc. should be allowed to mitigate channel-induced erosion adjacent to the Cape Fear Inlet. These structures could be allowed as an exception for a new Cape Fear River AEC.
- Monitoring requirements should not be so onerous as to prohibit what has otherwise been authorized. The amount of monitoring on projects should be reasonable and consistent with CAMA objectives, including environmental and economic balancing.
- Efforts to create protective dunes should be allowed in IHAs. Also, the general permit for beach bulldozing under 15A NCAC 7H.1800 should apply to IHAs.
- The Federal navigation channels at Beaufort Inlet and Cape Fear River Inlet are maintained in particular locations whereas natural inlets migrate. The engineered channel locations result in episodic maintenance dredging activities, high erosion rates, and shifting shorelines adjacent to these inlets.

Betty Wallace, Mayor, Town of Oak Island

- The Town of Oak Island submitted written comments (attached) and summarized below.
- The entire static vegetation line issue for oceanfront needs to be reviewed and revamped. On Oak Island, there is a very large area of oceanfront property that has been stable for over 13 years with some of the largest lots on the beach that are currently unbuildable.
- Due to the scarcity of sand for erosion control use, dredged sand should be utilized whenever practicable. Offshore sand deposits are not only scarce in most instances but also prohibitively expensive.
- Dredging windows are often overly conservative and based largely on limited, poorly quantified data or merely on subjective opinion. Year-round dredging should be allowed, especially when operations have already been mobilized. This has been successful in other states and should be implemented with proper controls in North Carolina. Compliance with environmental windows complicates scheduling, causes contractual delays, and substantially increases project costs.
- Since Congress has not provided sufficient funding for dredging shallow-draft inlets, the burden has fallen to the State and local governments to keep these inlets open.
- The shallower the depth of an inlet, the more frequent the dredging and the more expensive the costs due to mobilization. The authorized depths of shallow-draft inlets need to be deeper than they currently are. Additionally, sediment criteria rules are currently too stringent and need to be relaxed to provide for a wider range of acceptable sediment.
- The practice of channel realignment is a practical way of controlling erosion and provides a possible source of material for erosion control purposes.
- The current "adjacent erosion rate" rule doesn't make sense. Every inlet is different and erosion rates are dramatically different. Every foot that is subject to unnecessary additional requirements could possibly disenfranchise landowners from reasonable use of their property, which has a negative impact on local governments and their tax base.
The current emergency permitting process appears to be working adequately. There should be no limits on the number of terminal groins permitted in NC. They are a useful tool that can be of tremendous help in the effort to contain and stabilize inlets. All inlets erode and move at differing rates. As such, each inlet's erosion rate should be calculated on historical data individually. Terminal groins, channel realignment, as well as other engineering efforts should be taken into consideration when calculations are made. Efforts need to take place to "regionalize" data where possible to meet monitoring requirements. The cost of monitoring is very high, and in some cases excessive. More often than not identical monitoring efforts produce the same results in the same region costing the sponsoring unit millions of dollars in excessive costs. The data collected usually finds itself on a bookshelf never to be reviewed again.

Alan Holden, Mayor, and David Hewett, Town Manager, Town of Holden Beach

In addition to oral comments, the Town of Holden Beach submitted written comments (attached).

The State (DCM and DWR) has recently been making a stronger effort to simplify coastal permitting processes and should be commended. The coastal permitting process can be long, difficult, and redundant where State and Federal agencies ask for similar information and then require different permit and monitoring conditions.

Adaptive inlet management is required where an umbrella of coastal management tools (e.g., realignment, sand trap dredging, terminal groins, emergency orders) can be used in an expedient manner without overly-restrictive and costly permit and monitoring conditions.

The State and DWR have begun to pick up the slack regarding funding, however the Corps projects are much easier to implement (little to no monitoring and permitting conditions).

The shallow-draft hopper dredges hardly ever work the shallow-draft inlets; instead the sidecasters do it. Shallow-draft hopper dredges can place dredged material closer to shore and are the preferred method and should be used as a first option.

Due to the presence of three Civil War wrecks on the ebb shoal at Lockwoods Folly Inlet, realignment is exceedingly difficult. The Shallotte outer channel is centrally aligned (as designed by the Corps) and is likely the best orientation. Both inlets have terminal groin feasibility studies underway which deal with this in much more detail.

Homes have been lost over the last few decades due to erosion along both Lockwoods Folly and Shallotte Inlets. It is not believed that any additional significant build-outs will occur along either inlet and therefore no additional restrictions are needed.

Due to the immediate needs of these communities following a major storm, State and Federal agencies must continue to seek ways to expedite emergency permitting processes. Sandbags are effective and should still be allowed. Sandbag removal is a difficult issue...

Erosion rates along inlet areas have been assessed similar to other oceanfront shorelines. No additional analysis is deemed necessary for these areas.

The ability to permit terminal groins is a significant benefit and can greatly reduce the cost of future renourishment activities. In addition to increasing the longevity of beach nourishment projects, terminal groins can also maintain minimum upper beach and dune widths that aid as storm buffers even under erosional conditions. It is believed that the
cap of only 4 terminal groins should be lifted. Additionally, an Environmental Impact Statement (EIS) is currently required for terminal groin permitting. This should not be a prerequisite. For example, in South Carolina an EIS is not required for terminal groin permitting.

- Instead of biological monitoring, sand dune fencing and vegetation should be required in permits. Monitoring data and results are often inconclusive. Monitoring shouldn't be required for projects where sand is dredged from an inlet and placed on the beach.

Debbie Smith, Mayor, Town of Ocean Isle Beach

- In addition to oral comments, the Town of Ocean Isle Beach submitted written comments (attached).
- All dredged materials should be utilized for placement on the adjacent or near shore beach. This makes both economic and ecological sense. The majority of sand that has to be dredged is sand that has eroded from the beach strand. Pumping this sand offshore should only be used as a last resort.
- Dredging windows should be automatically extended or fluctuate depending on the time of the project and condition of the beach being nourished. Most of these windows focus on sea turtle nesting season. However, if there is no beach then turtles cannot nest. Also, with the limited number of dredges now available, some projects have to be delayed in order to secure the type of dredge needed. Delaying these projects only allows further erosion and threatening of structures to occur and additional damages to critical habitat areas.
- Dredging should be allowed at a depth that would benefit the area being dredged. There is not a one size fits all solution. For example, the Shallotte Inlet is not recognized as a navigable inlet; however a deeper draft at the inlet is essential to recreational boaters. A deeper dredging depth could also facilitate commercial traffic at this inlet.
- Channel realignment projects should remain an option as long as all possible outcomes are thoroughly researched, both pro and con.
- Land masses and environmental conditions change on a daily basis. These standards and setbacks need to be revisited on a regular basis and adjusted accordingly.
- Continue to investigate procedures used for determining static lines. The first line of stable vegetation has always been a moveable line. An arbitrary volumetric number should not automatically enforce a static line. One size does not fit all and all factors, history, science, etc. should be considered when determining the static line.
- Creating new dunes should also be allowed within Inlet Hazard Areas. The statement that new dunes "create a sense of false security" is not the case. Some owners would prefer the creation of new dunes rather than placing sandbags on their property. Also, there is a timeline on sandbags but owners could build dunes on a continuous basis if needed. The notion that you can rebuild old dunes but not create new dunes seems to be arbitrary.
- Terminal groins across the United States as well as the existing ones in North Carolina, have been shown to be successful as well as a great asset to communities that are experiencing severe erosion and have tried all other methods of reversing the effects of erosion. The cap on the number of these structures in the State should be removed. It seems contradicting that the State allows use of these structures to protect historical areas and structures but will not allow others to use this as a tool as well.
• The erosion rate calculations for IHAs should be based on the same criteria as the remainder of the beach outside of the IHA.
• Monitoring of projects is something that can be a useful tool to assess the success of the project. Monitoring should be used to quantify the amount of sand that is gained or lost during the year. However, monitoring should not be so restrictive that it eliminates the chance of using the aforementioned tools. Monitoring should also be for a reasonable time frame for project to prove its effect. Information monitored should be useful and meaningful.

Ron Watts, Mayor, Town of Sunset Beach
• The Sunset Beach Town Council is opposed to the use of terminal groins. Monitoring of downdrift impacts and financial aspects of mitigation need to be sufficient to safeguard the Town of Sunset Beach.
• A new type of AEC is needed for areas where an inlet used to exist, has closed, but could re-open again in the future.

Public Input
Richard Hilderman, Town of Sunset Beach Resident
• Potential downdrift impacts of any proposed terminal groins need to be thoroughly evaluated.

Dean Walters, Mayor Pro-Tem, Town of Ocean Isle Beach
• Scientific studies of the environmental and economic pros and cons of terminal groins are needed; not emotional reactions.
• A regional approach to inlet management is a good idea because one size does not fit all.
• A stable source of funding for beach and inlet projects is needed at the State level. Towns have responsibility for funding too, but they need the support of County, State, and Federal government.

Frank Iler, N.C. House of Representatives, District 17, Brunswick County
• The legislative cap of four terminal groins should be removed. A terminal groin is filled with sand; it doesn't rob downdrift beaches of sand.
• Coastal Recreational Fishing License (CRFL) funds should be looked at as a potential source of beach and inlet project funding.
• The State should consider getting into the dredging business so the USACE and private dredge companies don't have to be relied upon.

Steve Foster, Town Manager, Town of Oak Island
• Inlet Hazard Areas are dangerous for the economy, and any proposed expansion of them should be accompanied by an economic impact analysis.
Appendix: Agenda

North Carolina
Coastal Resources Commission

N.C. CRC Inlet Management Study:
Regional Public Meeting – Ocean Isle

The N.C. Coastal Resources Commission (CRC) is undertaking a comprehensive review of inlet management in North Carolina to more fully understand and respond to the issues confronted by local governments and stakeholders in these dynamic areas. The CRC is holding a series of regional public meetings along the coast in order to elicit a range of management options and regulatory reforms related to inlet management.

Date: Wednesday, March 26, 2014
Time: 6:00 – 9:00 P.M.
Place: Ocean Isle Beach Town Hall, 3 West Third St., Ocean Isle Beach, N.C.
Contact: Matt Slagel, DCM @ (252) 808-2808 Ext. 233 or Matthew.Slagel@ncdcr.gov

6:00 Welcome
Harry Simmons and Suzanne Dorsey, N.C. CRC

6:05 CRC Inlet Management Study
Matt Slagel, N.C. Division of Coastal Management

6:15 Overview of Inlet Management & Regulatory Framework
Heather Coats, N.C. Division of Coastal Management

6:30 Local Government Perspectives on Inlet Management
Charles Baldwin, Attorney, Village of Bald Head Island
Betty Wallace, Mayor, Town of Oak Island
Alan Holden, Mayor, Town of Holden Beach
Debbie Smith, Mayor, Town of Ocean Isle Beach
Ron Watts, Mayor, Town of Sunset Beach

7:30 Public Input

9:00 Adjourn
Inlet Management
Village of Bald Head Island

Charles S. Baldwin, IV
Brooks Pierce
Village of Bald Head Island
March 26, 2014
Doc # 894238
Channel is Dominant Influence: **Bathymetry**
Channel is Dominant Influence

- Channel bifurcates the natural sand by-passing system
- Channel increases water flow and rate
Navigation Project induced morphological changes at the Cape Fear River Entrance.
Engineered Channel Location

- Channel is maintained in a particular location
  - Natural inlets migrate
- New Channel alignment (2000-present) cuts through Bald Head’s protective shoals
Engineered Channel Location

• Cape Fear Inlet is characterized by episodic maintenance dredging activities
  – On going and high erosion rates
  – Shifting and evolving shorelines
Accelerated Erosion Rates

10 March 09
View South

10 March 09
View North
Erosion at ‘The Point’
• Beaches come and go with sand removal and placement from maintenance dredging
• Beach erosion/Channel shoaling affects the Channel's performance, State Ports Authority operations, and Channel maintenance.
Channel Shoaling

February 2010 (Photo: April 2010)

May 2011 (Photo: April 2011)

April 2012 (Photo: May 2012)

Capt. Fear River Estuary
Channel Condition Surveys (CCS)
(Feb. 2010 - April 2012)
Survey Data

• Bald Head Island (as of May 2009) had received well in excess of 4.04M cubic yards of beach fill placement since 2001 on South Beach alone.
• Of that amount, by the COE's surveys, only 118,000 cubic yards remained Island-wide as of May 2009.
• The Village of Bald Head Island surveys between May 2009 and September 2009 document an additional volumetric erosional loss at South Beach in excess of 550,000 cubic yards.
Local Financial Impacts

• Village has spent over $22MM to mitigate erosion
• **Existing relationship with coastal regulatory agencies**
  - Erosion crisis-driven
  - Time sensitive
  - Variances/contested cases
  - Legalistic
  - Expensive
  - Untimely
  - Uncertain outcomes
• **Existing coastal regulations**
  - Reactive
  - Limited toolbox
  - Overlapping IHA and OEA
  - One size fits all
  - Inflexible
  - Long time periods
  - Inadequate
Inlet Management Paradigm

- Collaborative/cooperative
- Flexible
- Engineering based problem-solving
- Staff level resolutions
- Efficient
- Effective
- Anticipatory, not reactive
New Regulations

- IHA and OE AECs are replaced by single AEC
- Existing regulations continue to apply at BHI outside of AEC
- Commission to recommend that General Assembly enacts exception for new AEC from G.S. 113A-115.1, "Limitations on erosion control structures" and subjects those structures to Commission jurisdiction within AEC
New Regulations

– CRC (and DCM staff by delegation) may permit structures or actions (rock groins, terminal structures, breakwaters, jetties, sandbags, sand push, beach sand placement project, etc.) to mitigate channel-induced erosion that are otherwise prohibited by 15A NCAC 07H.0308 or other CRC regulations

• Permit process allows agency review and public input but contains efficient timelines
  – Allows expedited process/timeline upon demonstration of emergency
Beneficial Use of Dredged Materials

“One cubic yard of removal equals one cubic yard of erosion.”
Beneficial Use of Dredged Material

• “(h2) Clean, beach quality material dredged from navigation channels within 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.”

N.C.G.S. §113-229 (h2).
Beneficial Sand Use

• “Sand is a resource to both beach communities and the environmental communities that make the coastal zone home. Sand should be managed because it has value both nationally and regionally. The Corps practice of disposing of beach-quality sand in offshore dredged material disposal sites is poor management of a limited resource”. USACE, WH DMMP, Alt. Formulation Briefing, p. 92 (Oct. 2007).
Beneficial Sand Use

• “This practice removes sand from the littoral system and essentially ‘throws it away’ without regard to environmental consequences on adjacent shorelines or other economic benefit. Regional Sediment Management (RSM) is the principle of managing the valued sand resource in a way that is beneficial (or at least not damaging) to the region.” USACE, WH DMMP, Alt. Formulation Briefing, p. 92 (Oct. 2007).
Beneficial Sand Use

• North Carolina adopted a set of policies in 1992 and statutes in 1993 and 2002 designated to insure that beach quality sand not be removed from the active beach system.

• Policies incorporated in NC Coastal Management Program and in consistency review of federal activities under Federal Coastal Zone Management Act of 1972.
Dredging Windows/Moratoria

• Some projects, such as terminal groin (where fillet must be filled at construction) must be constructed outside window.

• We support variance or reduction of dredge windows in appropriate circumstances.

• Positive inlet management benefit to federal and state interests.
Dredging Depths & Sediment Criteria

Rules

• Flexibility should be considered in application where sand sources are used to mitigate inlet impacts – e.g., where sand volume requirements exceed those associated with beach disposal alone.
Channel Realignment Projects

• Where federal project channels for commercial use are proposed for realignment, such measures shall be subject to extensive study including but not limited to appropriate numerical modeling. Note – none was done at the entrance to Cape Fear River prior to the last deepening.

• Project mitigation should be required.
Development Standards/Erosion Setbacks

• Regulations should address circumstances where developed lots adjacent a navigation channel will receive sand on an ongoing basis. In some cases, what has eroded will be restored.

• Further study is needed.
Volumetric Triggers for Beachfront “Static Lines”

• Further study is needed.
Emergency Permitting: Bulldozing & Sandbags

• We support an increase in flexibility in emergency circumstances for more timely and effective responses.

• More efficient and timely procedures are needed.
Terminal Groins and Sand Bypassing

• We support an increase in flexibility, to incorporate sound coastal engineering and advances in techniques and materials.

• Appropriate structures in a particular location may include a combination of terminal groins, t-head groins, breakwaters and jetties.
Erosion Rate Calculations for Inlet Hazard Areas

- The Inlet Hazard Areas have proven ineffective and arbitrary.
- IHAs should be replaced with a new AEC or regulations.
- Further study is needed.
Monitoring Conditions Associated with Projects

• Monitoring requirements should not be so onerous as to prohibit what has otherwise been authorized.

• The amount of monitoring on projects should be reasonable and consistent with CAMA objectives, including environmental and economic balancing.

• Village monitored Jay Bird Shoal and Bald Head Creek for 4 years with NO negative impacts from pre-project baselines.
Dune Creation

- Village supports efforts to create protective dunes, such as sand-placement and sand-push.
Proactive Inlet Management is in the best interests of the State, environment, Ports Authority operations, commerce, property owners, beaches and recreational resources.
Inlet Management

• Determine process and actions needed:
  – Shoreline erosion rates, change rates with inlet processes
  – Causes of impacts
  – Determine healthy sediment sand budget
  – Identify sand sources
  – Allocation of sand sources based upon mitigation, environment, structures, etc.
Inlet Management

– Unique inlet management plan for each inlet
– Dedicated source(s) of funding for inlet management
– Contingency plans
– Cooperation of other agencies and stakeholders
– Permits
– Other?
Inlet Management
Village of Bald Head Island

Charles S. Baldwin, IV
Brooks Pierce
Village of Bald Head Island
March 26, 2014
Doc # 894238
 VIA EMAIL: matthew.slagel@ncdenr.gov

N.C. Division of Coastal Management
400 Commerce Avenue
Morehead City, NC  28557

Attention: Matthew Slagel, P.E.

Re: Inlet Management Strategy Development

Dear Mr. Slagel:

The Village of Bald Head Island ("Village") submits its comments and expresses its appreciation to you, other Division of Coastal Management Staff, and the Coastal Resources Commission for your ongoing efforts to develop an inlet management strategy. The Village previously submitted to you its PowerPoint presentation from the March 26, 2014 public hearing at Ocean Isle Beach.

The Wilmington Harbor Navigation Project Channel ("Channel") and its ongoing maintenance dredging are the dominant influences on the shorelines adjacent the Cape Fear River Inlet. Attached at Tab A are a three dimensional model of the Cape Fear River entrance and photo of a dredge working immediately adjacent Bald Head Island. Because the Channel location is fixed by an Act of Congress, the Channel cannot be moved. See Tab B (comparison of historical pre-navigation project and post-navigation project inlet systems). Instead, the inlet morphology and associated shoals and beaches must change. Attached at Tab C is the 2005-2009 chronology of "The Point," Bald Head Island, NC.

Since the Channel was relocated closer to Bald Head Island and cut through the Island's protective shoals (see Tab D, New Channel Alignment), Bald Head Island has experienced increased, chronic erosion. Attached at Tab E are the shoreline locations at "The Point," Bald Head Island, NC from 2005 to 2013. The Channel bifurcates the natural sand bypassing system and increases the water flow and rate. See Tab B. This has resulted in substantial environmental and economic harm at the Island (see photos at Tab F). The Village has spent over $22 million to mitigate erosion. See Summary of Expenses, Tab G. The shoaling also impacts the Channel and restricts shipping. See Tab H (February 2010 – April 2012 Channel shoaling).

Because the maintained shipping Channel is in a fixed location, it is neither an oscillating nor a migrating inlet, as are typical of most other inlets in North Carolina. To be effective, therefore, any inlet management plan for the Cape Fear Inlet must address the unique...
circumstances and challenges posed by a maintained shipping channel. For example, Bald Head Island (as of May 2009) had received well in excess of 4.04 million cubic yards of beach fill placement since 2001 on South Beach alone. Of that amount, only 118,000 cubic yards remained island-wide as of May 2009 relative to the 2000 pre-fill condition. Between May 2009 and September 2009, an additional volumetric erosional loss at South Beach occurred in excess of 550,000 cubic yards.

The Village provides the following observations with respect to the specific issues listed in the DCM public hearing notice:

1. **Beneficial Use of Dredge Material**

   “1 cubic yard of removal = 1 cubic yard of erosion.” Beneficial use of dredge material is embodied in North Carolina law which provides: “(h2) Clean, beach quality material dredged from navigation channels within 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.” N.C.G.S. § 113-229(h2).

   The U.S. Army Corps of Engineers (“Corps”) has recognized that “[s]and is a resource to both beach communities and the environmental communities that make the coastal zone home. Sand should be managed because it has value both nationally and regionally. The Corps practice of disposing of beach-quality sand in offshore dredge material disposal sites is poor management of a limited resource.” Wilmington Harbor Dredge Material Management Plan, Alternative Formulation Briefing, p. 92 (Oct. 2007). “This practice removes sand from the littoral system and essentially ‘throws it away’ without regard to environmental consequences on adjacent shorelines or other economic benefit. Regional Sediment Management is the principle of managing the valued sand resource in a way that is beneficial (or at least not damaging) to the region.” Id. The North Carolina Statute and policy that beach quality sand not be removed from the active beach system are incorporated in the North Carolina Coastal Management Program and in consistency review of federal activities under the Federal Coastal Zone Management Act of 1972.

2. **Dredging Windows/Moratoria**

   Some projects, such as terminal groin construction (where the sand fillet must be filled at construction) must be constructed outside the sea turtle environmental window. The Village supports a variance or enlargement of dredge windows in appropriate circumstances. Positive inlet management benefits environmental, federal and state interests. Without sandy beaches, there can be no turtle nesting habitat.

3. **Dredging Depths and Sediment Criteria Rules**
Flexibility should be considered in application of rules where sand sources are used to mitigate inlet impacts – e.g., where sand volume requirements exceed those associated with beach disposal alone.

4. **Channel Realignment Projects**

Where federal project channels for commercial use are proposed for realignment, such projects should be subject to extensive study, including but not limited to appropriate numerical modeling. Note – No such modeling was done at the entrance to the Cape Fear River prior to the last deepening. Project related mitigation should be authorized as part of the “project cost”.

5. **Development Standards/Erosion Setbacks**

Regulations should address circumstances where developed lots adjacent a maintained navigation channel will receive sand on an ongoing basis. In some cases, property that has eroded will be restored. The regulations should not punish people whose properties are temporarily unable to meet setbacks.

6. **Volumetric Triggers for Beach Front “Static Lines”**

Further study is needed.

7. **Emergency Permitting: Bulldozing and Sandbags**

The Village supports an increase in flexibility in emergency or unique circumstances for more timely and effective responses. More efficient and timely procedures are needed.

8. **Terminal Groins and Sand Bypassing**

The Village supports an increase in flexibility, to incorporate sound coastal engineering and advances in techniques and materials. Appropriate structures in a particular location may include a combination of terminal groins, T-head groins and breakwaters.

9. **Erosion Rate Calculations for Inlet Hazard Areas**

The Inlet Hazard Areas (“IHAs”) have proven ineffective, arbitrary and may have stigmatized certain areas. The IHAs should be replaced with a new Area of Environmental Concern (“AEC”) or regulations that address the active processes within and morphology of a particular inlet.

10. **Monitoring Conditions Associated with Projects**

Monitoring requirements should not be so onerous as to prohibit what has otherwise been authorized. The amount of monitoring on projects should be reasonable and consistent with
CAMA objectives, including environmental and economic balancing. The Village monitored its Jaybird Shoal and Bald Head Creek sand dredging projects for four years, with NO negative impacts from pre-project baselines.

Additionally, the Village supports efforts to create protective dunes, such as sand placement and sand push. Dune building is presently prohibited by Regulation in the IHA. 15A NCAC 7H.0308(b)(v). However, rebuilding of eroded dunes is presently allowed. Also, the general permit for beach bulldozing under 15A NCAC 7H.1800 should apply to the inlet hazard AEC. Cf. 15A NCAC 7H.1801 ("This general permit shall not apply to the inlet hazard AEC.").

To date, the Village’s experience with inlet management and coastal regulatory agencies has been erosion-crisis driven, time sensitive, and dependent upon variances/contested cases. The existing coastal regulations have proven reactive and employ only a limited toolbox. Hopefully, proactive inlet management will allow a new paradigm that is proactive, collaborative/cooperative, flexible, involve engineering based problem-solving, and staff level resolutions.

With respect to the Cape Fear Inlet, the Village proposes that:

a. The IHA and OEA are replaced by a single AEC.

b. Existing regulations continue to apply at BHI outside of the new AEC.

c. The Commission recommend to the General Assembly an enactment of an exception for a new AEC from N.C.G.S. §113A-115.1, “Limitations on Erosion Control Structures” and subject those structures to Commission jurisdiction within the AEC. The CRC (and DCM staff by delegation) may permit structures or actions (rock groins, terminal structures, breakwaters, jetties, sandbags, sand push, beach and sand placement project, etc.) to mitigate channel-induced erosion that are otherwise prohibited by 15A NCAC 07H.0308 or other CRC regulations. The permit process would allow agency review and public input but contain efficient timelines and provide balanced monitoring and post-project protocols. It would allow expedited process/timetable upon demonstration of emergency.

Further, to implement inlet management, it is necessary to determine the process and actions needed. These may include:

- Shoreline erosion rates
- Change rates with inlet processes
- Causes of impacts
- Determine healthy sediment budget
- Identify sand sources
- Allocation of sand sources based upon mitigation, environment, structures, etc.
• Unique inlet management plan for each inlet
• Unique management plan for inlets adjacent a maintained shipping channel
• Dedicated source(s) of funding for inlet management
• Contingency plans
• Cooperation of other agencies and stakeholders
• Permits
• Other?

Proactive inlet management is in the best interest of the State, environment, Ports Authority operations, commerce, property owners, beaches and recreational resources.

We look forward to continuing this inlet management process and to providing any additional input or data necessary.

Respectfully,

[Signature]

J. Andrew Sayre
Mayor

Attachments

cc: Chris McCall, Village Shoreline Protection Manager
    Erik J. Olsen, P.E.
    Todd Roessler, Esq.
Channel is Dominant Influence:
Bathymetry

3-DIMENSIONAL MODEL OF CAPE FEAR RIVER ENTRANCE
Tab A

Evolving shorelines

- Shifting and erosion rates
- On-going and high dredging activities characterized by episodic maintenance

Cape Fear Inlet is Engineered Channel Location
Navigation Project induced morphological changes at the Cape Fear River Entrance.

Channel Locations

1865 (Pre-Navigation Project)

2005/06 (Post-Navigation Project)
Recent Chronology at the Point 2005-2009

May 2007

Nov 2005

May 2006

Apr 2006

Jan 2009

Oct 2006

Source: Village of Galley Head - Pierce
Erosion at 'The Point'
dredging maintenance from and placement sand removal and go with Beaches come
BHI indicating instability and erosion

The beach slope is steepening on the south and west of...
Local Financial Impacts

Mitigate erosion over $22MM to Village has spent
Channel Shoaling
1) **Beneficial use of dredged materials**
The Town supports the use of dredge material that is beach compatible sand from any dredge project on our beaches. Due to the scarcity of sand for erosion control use, dredged sand should be utilized whenever practicable. Offshore sand deposits are not only scarce in most instances but also prohibitively expensive.

2) **Dredging windows / moratoria**
State agencies have routinely requested that various aspects of dredging projects be restricted to specified time periods known as environmental windows. However it is the opinion of many experts in the field that windows are inconsistently applied, as evidenced by variation in window start/end dates from state to state, even for protection of identical resources in contiguous waterways. In addition, windows are often overly conservative and based largely on limited, poorly quantified data or merely on subjective opinion. The Town would like to see year round dredging windows, especially when operations have already been mobilized. This has been successful in other states and should be implemented with proper controls in North Carolina.

Compliance with environmental windows complicates scheduling, causes contractual delays, and substantially increases project costs. Dredging projects are subject to multiple restrictions which tend to confine dredging to winter months when biological activity is considered to be minimal. This in turn tends to increase risk to personnel safety for dredge crew members and limit contingencies for repairs, severe weather shutdowns as well as costs.

3) **Dredging depths and sediment criteria rules**
Shallow draft inlets in NC have authorized depths, and the USACE has in the past dredged to those depths. Since Congress has not provided funding for dredging these inlets the burden has fallen to the State and local governments to keep these inlets open. One of the chief costs involved with dredging is the cost of mobilization of equipment to the work site. The shallower the depth the more frequent the dredging and the more expensive the costs due to mobilization. The authorized depths need to be deeper than they currently are.

Additionally, sediment criteria rules are currently too stringent and need to be relaxed to provide for a wider range of acceptable sediment.

4) **Channel realignment projects**
The Board supports the practice of channel realignment as a practical way of controlling erosion and also providing a possible source of material for erosion control purposes.

5) **Development standards / erosion setbacks**
The current “adjacent erosion rate” rule doesn’t make sense. Every inlet is different and erosion rates are dramatically different. Every foot that is subject to unnecessary additional requirements
could possible disenfranchise landowners from reasonable use of their property, which has a negative impact on local governments and their tax base.

6) **Volumetric triggers inlet “static lines”**
Volumetric triggers for “static lines” – Very, very few static lines exist in Inlet Hazard Areas. This issue does not need to be addressed when discussing inlets – it is an oceanfront issue and requires a separate discussion. The entire static vegetation line issue for oceanfront needs to be reviewed and revamped. On Oak Island we have a very large area of ocean front property that has been stable for over 13 years with some of the largest lots on the beach that are currently unbuildable.

7) **Emergency permitting: bulldozing & sandbags**
The current method appears to be working adequately.

8) **Terminal groins and sand bypassing**
The Board feels that there should be no limits on the number of terminal groins permitted in NC. They are a useful tool that can be of tremendous help in the effort to contain and stabilize inlets. Sand bypassing is characteristic of terminal groins.

9) **Erosion rate calculations for Inlet Hazard Areas**
All inlets erode and move at differing rates. As such each inlet’s erosion rate should be calculated on historical data individually. Terminal groins, channel realignment, as well as other engineering efforts should be taken into consideration when calculations are made.

10) **Monitoring conditions associated with projects**
This is an area where significant changes need to be made. Efforts need to take place to “regionalize” data where possible to meet monitoring requirements. The cost of monitoring is very high, and in some cases excessive. More often than not identical monitoring efforts produce the same results in the same region costing the sponsoring unit millions of dollars in excessive costs. The data collected usually finds itself on a bookshelf never to reviewed again. As an example the Town of North Topsail Beach completed a channel realignment project, and Donax monitoring was required. The cost to the Town, along with substantial other monitoring costs, was $130,000. The study was to determine how long it took for Donax to repopulate that renourished section of the beach next to an inlet. In researching Donax, it has been long established that Donax fully repopulates a renourished area within six months. As in many cases, these studies costs taxpayers an inordinate amount of money, and generally are relegated to a self never to see the “light of day” again.
DCM Inlet Management Meetings
http://dcm2.enr.state.nc.us/News/inletmtgs.html

These regional meetings are part of a new, comprehensive review of inlet management in the state by the CRC to more fully understand and respond to issues confronted by local governments and stakeholders in these dynamic areas. The commission is particularly interested in receiving input on:

1. Inlet dredging issues,
2. Channel realignment projects,
3. Development standards for inlet areas,
4. Emergency measures such as beach bulldozing and sandbags,
5. Erosion rates in inlet areas, and
6. Terminal groins.

Issues of concern for LWF and Shallotte Inlets:

Inlet Dredging Issues
Inlet dredging is not optimal due to lack of federal funding and difficulty in permitting outside of federal navigation areas. The State and DWR have begun to pick up the slack regarding funding, however the Corps projects are much easier to implement (little to no monitoring and permitting conditions).

The shallow draft hopper dredges hardly every work these inlets, instead the sidecasters do it. Shallow draft hopper dredges can place dredged material closer to shore and are the preferred method and should be used as a first option.

Channel Realignment Projects
Due to the presence of three civil war wrecks on the ebb shoal at LWF Inlet, realignment is exceedingly difficult. The Shallotte outer channel is centrally aligned (as designed by the Corps) and is likely the best orientation. Both inlets have terminal groin feasibility studies underway which deal with this in much more detail.

Development Standards for Inlet Areas
Homes have been lost over the last few decades due to erosion along both LWF and Shallotte Inlets. It is not believed that any additional significant build-outs will occur along either inlet and therefore no additional restrictions are needed. While homes may still be lost in the future, the local municipalities along with State and Federal support have been relatively successful at staving off losses over the last decade. This is in large part due to nourishment activity while terminal groins will also help in this effort. No additional development standards are necessary.

Emergency Measures
Emergency measures typically follow major storm events where beach bulldozing, immediate minor/moderate sand nourishments, or sandbagging can be extremely beneficial. Due to the immediate needs of these communities following a major storm, State and Federal agencies must continue to seek ways to expedite these permitting processes. Holden Beach owns an upland borrow site that is currently permitted and the Town plans to use this source of sand
following a major storm event. This is far superior to bulldozing sand from the lower beach to the upper beach, however bulldozing can still be an effective short term fix. Sand bags are also effective and should still be allowed. Sandbag removal is a difficult issue...

**Erosion Rates in Inlet Areas**
Erosion rates along inlet areas have been assessed similar to other ocean-front shorelines. No additional analysis is deemed necessary for these areas. Note that proposed terminal groin projects will include much more detailed and up-to-date inlet shoreline and erosion monitoring.

**Terminal Groins**
The ability to permit terminal groins is a significant benefit and can greatly reduce the cost of future renourishment activities. In addition to increasing the longevity of beach nourishment projects, terminal groins can also maintain minimum upper beach and dune widths that aid as storm buffers even under erosional conditions. It is believed that the cap of only 4 terminal groins should be lifted. Additionally, an Environmental Impact Statement (EIS) is currently required for terminal groin permitting. This should not be a pre-requisite. For example, in South Carolina an EIS is not required for terminal groin permitting.

**General Comments**
The State (DCM and DWR) has recently been making a stronger effort to simplify coastal permitting processes and should be commended. The coastal permitting process can be long, difficult and redundant where State and Federal agencies ask for similar information and then require different permit and monitoring conditions.

Adaptive inlet management is required where an umbrella of coastal management tools (e.g., re-alignment, sand trap dredging, terminal groins, emergency orders) can be used in an expedient manner without overly-restrictive and costly permit and monitoring conditions.

Figure 1: Possibly set up a “sand trap” where can relocate sand back to the beach every few years?
Mr. Matthew Slagel  
NC Division of Coastal Management  
400 Commerce Avenue  
Morehead City, NC 28557  

RE: Written Comments regarding Inlet Management Study

Mr. Slagel:

Please accept the following as written comments submitted by the Town of Ocean Isle Beach in regards to the CRC Inlet Management Study.

1. Beneficial use of dredged materials:
   All dredged materials should be utilized for placement on the adjacent or near shore beach. This makes both economic and ecological sense. The majority of sand that has to be dredged is sand that has eroded from the beach strand. Pumping this sand off-shore should only be used as a last resort.

2. Dredging windows/moratoria:
   Dredging windows should be automatically extended or fluctuate depending on the time of the project and condition of the beach being nourished. Most of these windows focus on sea turtle nesting season. However, if there is no beach then turtles cannot nest. Also, with the limited number of dredges now available, some projects have to be delayed in order to secure the type of dredge needed. Delaying these projects only allows further erosion and threatening of structures to occur and additional damages to critical habitat areas.

3. Dredging depths & sediment criteria rules:
   Dredging should be allowed at a depth that would benefit the area being dredged. There is not a one size fits all solution. For example, the Shallotte Inlet is not recognized as a navigable inlet; however a deeper draft at our inlet is essential to our recreational boaters. A deeper dredging depth could also facilitate commercial traffic at this inlet.
4. **Channel realignment projects:**
   This should remain an option as long as all possible outcomes are thoroughly researched, both pro and con.

5. **Development standards/erosion setbacks:**
   Land masses and environmental conditions change on a daily basis. These standards and setbacks need to be revisited on a regular basis and adjusted accordingly.

6. **Volumetric triggers for beachfront “static lines”:**
   Continue to investigate procedures used for determining static lines. The first line of stable vegetation has always been a moveable line. An arbitrary volumetric number should not automatically enforce a static line. One size does not fit all and all factors, history, science, etc. should be considered when determining the static line.

7. **Emergency permitting: bulldozing & sandbags:**
   Creating new dunes should also be allowed within this area. The statement that new dunes “create a sense of false security” is not the case. Some owners would prefer the creation of new dunes rather than placing sandbags on their property. Also, there is a timeline on sandbags but owners could build dunes on a continuous basis if needed. The notion that you can rebuild old dunes but not create new dunes seems to be arbitrary.

8. **Terminal groins and sand bypassing:**
   Terminal groins across the United States as well as the existing ones in North Carolina, have been shown to be successful as well as a great asset to communities that are experiencing severe erosion and have tried all other methods of reversing the effects of erosion. The cap on the number of these structures in the State should be removed. It seems contradicting that the State allows use of these structures to protect historical areas and structures but will not allow others to use this as a tool as well.

9. **Erosion rate calculations for Inlet Hazard Areas:**
   The erosion rate calculations for IHA’s should be based on the same criteria as the remainder of the beach outside of the IHA.

10. **Monitoring conditions associated with projects:**
    Monitoring of projects is something that can be a useful tool to assess the success of the project. Monitoring should be used to quantify the amount of sand that is gained or lost during the year. However, monitoring should not be so restrictive that it eliminates the chance of using the aforementioned tools. Monitoring should also be for a reasonable time frame for project to prove its effect. Information monitored should be useful and meaningful.
We appreciate the time and effort that is being expended by the CRC and the DENR staff to develop this study and hope that its outcome will yield additional tools to assist our communities in saving our beaches for the continued enjoyment of the general public.

Sincerely,

TOWN OF OCEAN ISLE BEACH

[Signature]
Debbie S. Smith, Mayor

DSS:di
Meeting Summary
N.C. CRC Inlet Management Study:
Regional Public Meeting #4 - Wilmington

April 2, 2014

The N.C. Coastal Resources Commission (CRC) is undertaking a comprehensive review of inlet management in North Carolina to more fully understand and respond to the issues confronted by local governments and stakeholders in these dynamic areas. CRC members in the Wilmington region hosted a public meeting on Wednesday, April 2, 2014, at the New Hanover Government Center in Wilmington, NC to elicit a range of management options and regulatory reforms related to inlet management. These summary notes are not intended to represent a meeting transcript, per se.

CRC Members in Attendance:
Frank Gorham, Chair
Neal Andrew
Marc Hairston
Suzanne Dorsey

DCM Staff in Attendance:
Braxton Davis, Director
Mike Lopazanski, Policy and Planning Section Chief
Tancred Miller, Coastal and Ocean Policy Manager
Matt Slagel, Shoreline Management Specialist
Jonathan Howell, Assistant Major Permits Coordinator
Debbie Wilson, Wilmington District Manager
Heather Coats, Field Officer, Wilmington Regional Office
Robb Mairs, Field Officer, Wilmington Regional Office
Tara MacPherson, Compliance and Enforcement Representative, Wilmington Regional Office

Attendees:
Dan Tuman, Town of North Topsail Beach
Stuart Turille, Town of North Topsail Beach
Carin Faulkner, Town of North Topsail Beach
Larry Bergman, Town of Surf City
Mike Curley, Town of Surf City
Howard Braxton, Town of Topsail Beach
Tom Eggleston, Town of Topsail Beach
Julian Bone, Town of Topsail Beach
Tim Holloman, Town of Topsail Beach
Steven Smith, Town of Topsail Beach
Margo O’Mahoney, Figure 8 HOA
Tim Owens, Town of Wrightsville Beach
Marc Felton, Town of Wrightsville Beach
Margaux Kerr, Town of Wrightsville Beach
Dan Wilcox, Town of Carolina Beach
Michael Cramer, Town of Carolina Beach
Steve Shuttleworth, Town of Carolina Beach
Emilie Swearingen, Town of Kure Beach
Layton Bedsole, New Hanover County
Dennis Barbour, N.C. BIWA
Bill Cleary, UNCW, retired
Spencer Rogers, N.C. Sea Grant
Chris Gibson, TI Coastal
Mike Giles, N.C. Coastal Federation
Welcome
CRC members Frank Gorham, Neal Andrew, Marc Hairston, and Suzanne Dorsey opened the meeting at 6 p.m. and thanked everyone for attending. They emphasized that the inlet management study is a focus of the Commission, and they look forward to receiving input on management options and potential regulatory reforms related to inlet management in North Carolina.

CRC Inlet Management Study
Matt Slagel, DCM Shoreline Management Specialist, introduced the new CRC Inlet Management Study initiative, which was proposed at the December 2013 CRC meeting. This initiative is an offshoot of the Cape Fear Inlet Area of Environmental Concern (AEC) Study that was mandated by the General Assembly. The CRC recognized that there are a number of ongoing inlet related studies including the IHA feasibility study associated with HB819, which the Science Panel has been working on, S.L. 2013-138 which pertains to streamlining permitting of inlet dredging projects, and S.L. 2013-413 which pertains to re-evaluating the merits of all existing rules. In considering the Cape Fear River AEC Feasibility Study, the Commission decided to undertake a comprehensive review of inlet-related issues to examine ways to streamline routine inlet projects, and to collaborate with local governments to ensure equitable and cost-effective inlet management. The CRC Inlet Management Study development began with an inlet dredging panel discussion at the Commission’s February 2014 meeting in Nags Head, and has continued with four regional meetings in Buxton, Beaufort, Ocean Isle Beach, and this meeting in Wilmington to gather input and concerns from affected local governments and other stakeholders. A public comment period for written comments is also open and extends until April 15, 2014. The CRC is especially interested in getting input on the following topics:

1) Beneficial use of dredged materials (beach placement)
2) Dredging windows / moratoria
3) Dredging depths and sediment criteria rules
4) Channel realignment projects
5) Development standards / erosion setbacks / local vs. state authorities
6) Volumetric triggers for beachfront “static lines”
7) Emergency permitting: beach bulldozing and sandbags
8) Terminal groins and sand bypassing
9) Erosion rate calculations for Inlet Hazard Areas
10) Monitoring conditions associated with projects

The CRC inlet study will take place over the course of about one year, and the schedule is as follows:
April 30, 2014: Four regional meetings completed
May 15, 2014: Summary of regional meetings and findings to CRC
July 31, 2014: Final draft findings and recommendations to CRC
September 30, 2014: Submit proposed rulemaking changes for public comment
December 31, 2014: Submit report findings to Governor and General Assembly

Matt Slagel then provided a brief introduction to inlets in North Carolina. There are 12 developed inlets in the State, and seven undeveloped inlets. All of the developed inlets are located south of Cape Lookout, and most of the undeveloped inlets are located north of Cape Lookout. The developed inlets are those with buildings immediately adjacent to the inlets, but the undeveloped inlets face other issues such as channel shoaling and dredging. All of the inlets in New Hanover County are considered developed. There are two broad classes of tidal inlets in North Carolina: oscillating inlets and migrating inlets. Oscillating inlets include Ocracoke, Bogue, and Rich Inlets. They are generally positioned along ancestral river channels. They can swing back and forth, but their throat sections have stayed within a relatively narrow zone over recent history. Migrating inlets include Oregon, Mason, and New Topsail Inlets. Migrating inlets are generally shallow, and migration occurs where the updrift barrier island or spit elongates in the direction of net littoral sand transport and the downdrift shoreline erodes. Although Bogue Inlet is an oscillating-type and Mason Inlet is a migrating-type, both of these inlets had inlet channel realignment projects undertaken to move the channel away from threatened development at Emerald Isle and Wrightsville Beach, respectively.

A distinction can also be made between shallow-draft inlets and deep-draft inlets. Shallow-draft inlets are dredged to depths of about eight feet. There are two deep-draft inlets in the State that are maintained at depths of 45 feet (Beaufort Inlet) and 42 feet (Cape Fear River Inlet). Beaufort Inlet serves the Port of Morehead City, and Cape Fear River Inlet serves the Port of Wilmington.

Overview of Inlet Management & Regulatory Framework
Heather Coats, DCM Field Officer in the Wilmington Regional Office, gave an overview of inlet management strategies and the regulatory framework in North Carolina. The Ocean Hazard designation is a grouping of Areas of Environmental Concern (AECs) created by the CRC with the objective of recognizing risks of erosion associated with the barrier islands that could lead to endangerment of life and property. The purpose of identifying Ocean Hazard Areas and establishing the Rules was to “further goals set out in G.S. 113A-102(b), with particular attention to minimizing losses to life and property resulting from storms and long-term erosion, preventing encroachment of permanent structures on public beach areas, preserving the natural ecological conditions of the barrier dune and beach systems, and reducing the public costs of inappropriately sited development. Furthermore, it is the objective of the CRC to protect present common-law and statutory public rights of access to and use of the lands and waters of the coastal area.” There are four AECs within the Ocean Hazard category, one of which is the Inlet Hazard Area (IHA) designation. Rules establish erosion rates and setbacks, use standards for erosion control structures, and use standards for beach and inlet projects. The graduated setback is based on the long-term erosion rate for the specific project area and the size, or total floor area, of the structure. The larger the structure or greater the erosion rate, the larger the setback.
Exceptions to the setback include elevated beach accessways, sand fencing, driveways/parking areas, up to 500 sq ft of open decking, swimming pools, temporary amusement stands, and small
gazebos and sheds. The setbacks apply to all Ocean Hazard AECs including the IHAs, but erosion rates have only been established for the Ocean Erodible Areas (OEAs), and the erosion rate of the adjacent OEA applies to the IHA. Erosion rates in the IHAs have not been established.

Inlet Hazard Areas are defined as areas that are especially vulnerable to erosion and flooding due to proximity to ocean inlets. The IHA boundaries were originally designated in 1981 by the Commission and have not been updated since. Specific use standards for IHAs include: no more than one commercial/residential unit per 15,000 sq ft land area for lots platted after July 1981; residential structures must be four units or less and non-residential structures less than 5,000 sq ft; and the building of new dunes is prohibited. The rebuilding of an eroded dune is allowed.

Sandbags are meant to be used as temporary protection for threatened structures. They previously were allowed one time only per building, regardless of ownership, for a period of 2-5 years. In 2009, the rule was changed to allow sandbags in the IHA to remain in place up to 8 years for properties within a community pursuing an inlet realignment project. That rule change also allowed sandbags to remain an additional 8 years if the structure became threatened again and if the community was still seeking an inlet realignment project. The rule was then updated again in 2013 to remove the one time only limit for communities seeking a beach nourishment or stabilization project. Sandbags can be used to protect houses, septic systems, and roads. They cannot be used to protect swimming pools, decks, or gazebos. DCM has a General Permit (15A NCAC 7H.1800) for beach bulldozing landward of mean high water, but it currently does not apply to the IHAs. Beach bulldozing in IHAs would have to be authorized under a Minor Permit with agency coordination if confined above normal high water or with a Major Permit for bulldozing below mean high water.

Regarding the timing of projects, 15A NCAC 7H.0308(a)(1)(F) states that “project construction shall be timed to minimize adverse effects on biological activity.” Many of the beach and inlet projects DCM evaluates are considered major development, which requires other state or federal agency permits or authorization. DCM relies on the commenting resource agencies during the Major Permit process to advise on how to comply with this rule. These types of projects also require other permits, often from the U.S. Army Corps of Engineers (USACE), who then has to coordinate with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). The State cannot supersede Federal laws.

DCM works to streamline the permitting process by working with USACE and other agencies. Many State rules were established with Federal regulations in mind. Additionally, DCM General Permits were developed in coordination with USACE, so an applicant generally doesn’t need written concurrence from USACE if DCM issues a General Permit, since it also meets their rules. The Coastal Area Management Act (CAMA) Major Permit application also serves as an application for a permit from the USACE and N.C. Division of Water Resources (DWR) so the applicant can deal directly with DCM, and DCM staff can coordinate the other permits. DCM also coordinates any requests to work within the moratoriums with the relevant agencies after a permit is issued.

DCM staff have been working to make the Sediment Criteria Rules more efficient by reducing unnecessary burdens in cases where there have been previous projects establishing sediment
compatibility or where previous requirements were later discovered to be overly onerous or without benefit. As a result, DCM has reduced costs for applicants without compromising the integrity of the sampling requirements.

There has been a shift in inlet dredging projects towards beneficial use of dredged materials. The Village of Bald Head Island is one example as part of the Wilmington Harbor Sand Management Plan. Federal dredging projects generally fall under either navigation or coastal storm damage reduction projects. If they are navigation projects, the USACE typically has to consider least-cost in terms of disposal. The dredging of Wilmington Harbor/Cape Fear River Inlet is a Federal navigation project, and beach-compatible sand from dredging is placed on either Bald Head Island or Caswell Beach.

A number of inlet channel realignment projects have also been completed in North Carolina. These projects have occurred at Tubbs Inlet, Mason Inlet, Bogue Inlet, and New River Inlet. The Mason Inlet project relocated the channel between the north end of Wrightsville Beach and the sound end of Figure Eight Island. The project occurred in 2002 and has been successful in protecting Shell Island Resort at the north end of Wrightsville Beach.

Senate Bill 151 was passed into law and allows up to four terminal groins to be permitted in North Carolina. Four communities are in various stages of the process of pursuing a terminal groin. Three are in Brunswick County (Bald Head Island, Holden Beach, and Ocean Isle Beach), and one is in New Hanover County (Figure Eight Island).

Local Government & Expert Perspectives on Inlet Management

Dan Tuman, Mayor, Town of North Topsail Beach
- Mayor Tuman gave a presentation (attached), which is summarized below.
- Actual physical monitoring data required for permitted inlet/shoreline projects should be used to calculate erosion rates. Good erosion rate information is needed for setbacks to be valid.
- Sandbags that are allowed to remain buried results in a more resilient shoreline than if sandbags are required to be removed.
- RIVET (River Mouth and Inlet Research Initiative) was a 1-month study by the Office of Naval Research at New River Inlet. The purpose of the study was to measure inlet dynamics and movement of sediments with predictive models. The benefit is that it gives credence to scientific opinion and recommendations. Very little science exists for inlets, so studies like RIVET provide a useful tool for assessing engineering solutions.
- Restored beaches are an important recreational asset and economically attract visitors from all over the country and globe.
- Restored beaches save Federal, State, and Local Governments money and avoid the stress and misery of the destruction of private property and public infrastructure.
- A State shoreline protection program is wise public policy and is needed in NC.

Dan Wilcox, Mayor, Town of Carolina Beach
- Safe and navigable inlets are vitally important to the local and state economy, and Carolina Beach Inlet alone has an economic impact of millions of dollars annually.
• Carolina Beach is interested in stockpiling sands and continuing to marry the Carolina Beach Inlet project with beach renourishment.
• The approach to dredging Carolina Beach Inlet needs to be reconsidered. If the inlet is dredged deeper (12-14 ft), it would allow for bigger dredges, which are more efficient and effective. This approach to dredging deeper would be safer and would have a ripple effect throughout the county and into the state.

Layton Bedsole, New Hanover County Shore Protection Coordinator
• Mr. Bedsole gave a presentation (attached), which is summarized below.
• Mason Inlet was the first channel realignment project in the state; therefore, state and federal resource agencies required significant levels of different types of monitoring. Requirements need to be reduced for these types of projects in the future. If Mason Inlet moves out of its "corridor limit," permitting for the channel realignment project has to start all over again. Initial corridor limits should be as large as possible to meet the purpose and need of a given project.
• As erosion rates are calculated for inlet shorelines, the history of each inlet needs to be considered: who did what, when, and how much?
• Full maintenance of the channel design template should be allowed each time an inlet is dredged.
• The jetties at Masonboro Inlet have moved the wet/dry line further seaward and have helped reduce channel shoaling.
• Sand from Carolina Beach Inlet could be dredged and stockpiled, or put in temporary storage, until needed on the beach.
• Room Occupancy Tax (ROT) funds have been very helpful in funding beach projects.
• The Jones Act has limited the dredge fleet, because all dredges must be American flagged and crewed.

Dennis Barbour, N.C. Beach, Inlet, and Waterway Association
• Local governments raising matching funds for dredging has been and will continue to be difficult to meet the 50/50 match with the State.
• It's difficult for the Federal agencies to alter authorized channel dimensions, but obtaining permits at the local level may allow for more flexibility.
• The USACE now seems to only dredge once emergency conditions exist rather than performing periodic maintenance dredging.
• Dredging the full template each time would result in a wider, more navigable inlet.
• In 2007, Chris Dumas (ECU) calculated the economic value of inlets in NC, and the numbers were staggering. The direct and indirect value of Carolina Beach Inlet alone was about $10 million/year. The benefit-cost ratio of dredging projects is 16:1. Since the study was based on 2007 values, Dumas will be updating the economic impact values soon, and those numbers will be used to lobby for more funding.
• There is also a safety factor involved in these projects. The Coast Guard will remove the buoys at 3 to 3.5 feet of depth and post as a hazard to navigation. Charter boats and head boats then can’t use the channel even at high tide because of insurance liability.
Dr. Bill Cleary, Geology Professor, UNCW (retired)
- Dr. Cleary gave a presentation, which is summarized below.
- The southern inlets are different from the northern inlets. Most inlets in the state are modified to some extent, and two are severely modified (Cape Fear and Beaufort). Each inlet is diverse and unique, so one management scheme cannot be applied to all inlets.
- Migrating inlets are not good candidates for terminal groins. The four inlets/municipalities that are pursuing terminal groins are the four best candidates in NC.
- The orientation of ebb shoals is a primary driver of erosion on adjacent shorelines.
- Increasing the depth of shallow-draft inlets through dredging would increase the tidal prism, change the flood shoal and ebb shoal geometry and orientations, and likely result in increased erosion on adjacent shorelines.

Spencer Rogers, Coastal Construction and Erosion Specialist, N.C. Sea Grant
- Since CAMA implementation in 1978, it is highly likely that inlet-induced shoreline changes have destroyed or threatened more near-ocean buildings than hurricanes or other coastal storms. Inlets are therefore a primary ocean hazard in North Carolina.
- Although the structures at Masonboro Inlet are jetties (not terminal groins) the weir is very important to trap sand and allow it to be placed back on Wrightsville Beach and Masonboro Island.
- Near-inlet management has been ineffective due to multi-year oscillations (~3 to 20 years) that make long-term erosion rates and floating vegetation lines alone, unreliable predictors of the future. The CRC should task the Science Panel to complete the development of methods to define revised Inlet Hazard Areas and potential inlet and near-inlet setback lines for CRC review.
- One benefit of sidecast dredges is that they keep the sediment in the system and the USACE can look for low spots in the bar to straighten out the channel.

Chris Gibson, Coastal Engineer, TI Coastal
- The essence of the NC Beach and Inlet Management Plan (BIMP) is to serve the dual purpose of enhancing navigation and beach management.
- Permitting needs to be proactive. There is a need to be able to react quickly and look longer term versus authorizing single events.
- Long-term inlet management plans need to be adaptive and flexible. Permitting can take 6-9 months or longer, but inlets change rapidly. Most projects were authorized in the 1960s or 1970s, but vessels have changed in 50 years, and the projects are still for boats built at that time. Things have changed and adaptations have not been made in the permits.
- The economic value of inlets should consider tourism, culture, recreation, jobs, and storm damage reduction.
- The state government has been great at updating permitting by combining NEPA & NCEPA.
- The current dredging windows affect costs because all projects in North Carolina are crammed between October and March.
- The "300,000 cubic yard rule" should be reevaluated because one size does not fit all. The static line rule was based on the volumes of typical navigation projects (with beach placement) but shouldn't have been. Projects can be designed more effectively if they are
not restricted by the static line or if we were to go back to the old system of evaluating projects based on the rate of sand placed per linear foot. It’s important that we’re not adversely impacting communities wanting a longer project versus a wider project.

- Different pots of funding for USACE projects (navigation vs. coastal storm damage reduction) is a big concern because this can result in a navigation project and a coastal storm damage reduction project occurring at the same inlet at the same time, using different contractors, with pipes criss-crossed, and a general lack of coordination.

Public Input

Emilie Swearingen, Commissioner, Town of Kure Beach

- Carolina Beach Inlet used to be dredged quarterly, but now there is no maintenance schedule, and the inlet is only dredged reactively instead of proactively. A maintenance schedule is needed again.

Robert Neal, Coastal Engineer, Gahagan and Bryant and Associates

- Consistent, science-based dredging windows throughout the State need to be pursued. The same windows need to be applied consistently statewide from project to project.
Appendix: Agenda

North Carolina
Coastal Resources Commission

N.C. CRC Inlet Management Study:
Regional Public Meeting – Wilmington

The N.C. Coastal Resources Commission (CRC) is undertaking a comprehensive review of inlet management in North Carolina to more fully understand and respond to the issues confronted by local governments and stakeholders in these dynamic areas. The CRC is holding a series of regional public meetings along the coast in order to elicit a range of management options and regulatory reforms related to inlet management.

Date: Wednesday, April 2, 2014
Time: 6:00 – 9:00 P.M.
Place: New Hanover County Gov’t Center, 30 Government Center Dr. Wilmington, N.C.
Contact: Matt Slagel, DCM @ (252) 808-2808 Ext. 233 or Matthew.Slagel@ncdenr.gov

6:00 Welcome
Frank Gorham and Neal Andrew, N.C. CRC

6:05 CRC Inlet Management Study
Matt Slagel, N.C. Division of Coastal Management

6:15 Overview of Inlet Management & Regulatory Framework
Heather Coats, N.C. Division of Coastal Management

6:30 Local Government & Expert Perspectives on Inlet Management
Dan Tuman, Mayor, Town of North Topsail Beach
Dan Wilcox, Mayor, Town of Carolina Beach
Layton Bedsole, New Hanover County Shore Protection Coord.
Dennis Barbour, N.C. Beach, Inlet, and Waterway Association
Dr. Bill Cleary, Geology Professor, UNCW (retired)
Spencer Rogers, Coastal Construct. & Erosion Specialist, N.C. Sea Grant
Chris Gibson, Coastal Engineer, TI Coastal

7:45 Public Input

9:00 Adjourn

Division of Coastal Management
Department of Environment and Natural Resources
400 Commerce Ave., Morehead City, N.C. 28557
Phone 252-808-2808 Fax 252-247-3330
An Equal Opportunity / Affirmative Action Employer – 50% Recycled/10% Post-consumer Paper
• Erosion Rates Adjacent to Inlets
• Planning for Resilient Shorelines & Sea Level Rise
• RIVET
• Advocating for Wise Public Policy
Erosion Rates

- Required for Development Standards in Inlet Areas
- Recommendation: Use actual Physical Monitoring Data required for permitted inlet/shoreline projects
North Topsail Beach
Ocean Inlet/Shoreline Management

Phase One – New River Inlet Channel Realignment Project completed January 2013

Channel dredged to: 17’ deep 500’ wide
Realigned toward NTB
540,000 cubic yards of sand placed on 1.5 miles of shoreline
Project Maintenance: Scheduled every 4-5 years

Phase 5 Beach Restoration Scheduled for Fall 2014
1.5 M cubic yards placed on 3.85 miles of beach at south end of NTB
Permits & Financing in place
North Topsail Beach
Ocean Inlet/Shoreline Management

US Army Corps of Engineers
Hydrographic Survey of New River Inlet Channel (Post Phase 1 Project)

Survey Date: April 17-19, 30
May 17, 2013

Map Date: May 21, 2013
Resilient Shorelines and Sea Level Rise

Photo Taken August 2007

Inlet Hazard Area of North Topsail Beach, NC
Resilient Shorelines and Sea Level Rise

Before Phase 1 Construction

After Construction
Evolving Approaches: Example of Resilient Coastal Risk Reduction

Post-Sandy:

*Design to consider losses due to all potential storms*

*Optimize benefit-to-cost AND system resilience*

Bay
- Potential for breaching from bay
- Stockpile of sand in case of breach
- Living shorelines
- Buried seawall
- Raised infrastructure

Ocean
- Consider climate change

Reef to break waves
Resilient Shorelines and Sea Level Rise
Evolving Approaches to Risk Reduction

Post-Katrina, Pre-Sandy:

Design considering losses with all potential storms
Design to optimize benefit-to-cost (NED approach)
Office of Naval Research and Battelle conducted a month long study of New River Inlet at NTB during Spring 2012.

Purpose of the study was to measure inlet dynamics, the movement of sediments and to tie results with numerical predictive models.

Data collected over a one month period.
RIVET (cont’d)

- Extensive bottom-mounted underwater instrumentation used to measure waves, currents, etc.
- Bathymetric surveys made to monitor change.
- Ground –based, airborne and satellite sensing.
- Unmanned underwater and surface vehicles.
- Scientific Data and Published Reports available.
Advocating for Wise Public Policy

- Restored beaches are an important recreational asset and economically attract visitors from all over the country and globe.
- Restored beaches save Federal, State and Local Governments money and avoid the stress and misery of the destruction of private property and public infrastructure.
- A State shoreline protection program is wise public policy and is needed in North Carolina.
Coastal Infrastructure, Inlet Mgt.
Mason Inlet (~2001)
Mason Inlet Relocation (2013)
Mason Inlet Template

October 2012
Designed Borrow Development
Shallow Draft Inlet Navigation
Coastal Infrastructure, Inlet Mgt.
DETAILED PROJECT REPORT
ON IMPROVEMENT OF NAVIGATION

CAROLINA BEACH INLET
NORTH CAROLINA

UNITED STATES ARMY
Corps of Engineers
Serving the Army
Serving the Nation
WILMINGTON DISTRICT

REVISED
JUL 1981
JUNE 1980
e. House Document No. 515, 89th Congress, 2d Session, 10 October 1966, entitled, "Carolina Beach Harbor, North Carolina" - This report recommended and authorized a turning basin and connecting channel to the AIWW at the town of Carolina Beach. The project called for the maintenance of a channel 6 feet deep at low water and 80 feet in width having a length of 8,000 feet, connecting to a turning basin being 130 feet wide and 180 feet long. Sedimentary materials used to construct the dune and beach fill along the town of Carolina Beach in 1965 were dredged from an area encompassing the authorized turning basin and connecting channel. Since the areal extent and depth of dredging in obtaining beach fill materials far exceeded the dimensions of the navigation project, no initial construction was needed for the navigation improvement. This project is sponsored by the Town of Carolina Beach.

f. "Investigation of Erosion, Carolina Beach, N.C.," 1970 - This report covers a study of excessive erosion experienced by the Federal dune and beach fill project along the 14,000 lineal feet of shore fronting on the town of Carolina Beach. Following placement of the fill at Carolina Beach, excessive erosion was manifested along its northern section and was seen to be a severe phenomenon progressing southward, in time, along the fill area. A study of this problem identified the basic cause as being the influence of Carolina Beach Inlet on the shore processes south thereof. The study also revealed that the initial beach fill was not sufficiently large to account for natural offshore profile adjustments and the loss of certain fractions of the fill material which were not compatible with the nearshore energy levels at the site. The report recommended project restoration with an adequate quantity of beach fill, and a consistent program of beach nourishment to account for erosive processes created by Carolina Beach Inlet. The project restoration fill would be obtained from the shallow waters of the Cape Fear River immediately south of the confluence of Snows Cut and the river. Periodic beach nourishment would be obtained from a sediment trap excavated in the throat of Carolina Beach Inlet. In view of the findings of the report, the Carolina Beach shore protection fill was classified as incompleted in terms of construction, and higher authority approval was given to implement the report recommendations. The fill was partially restored through the placement of material in 1971; however, full project restoration was not completed due to the unavailability of the required non-Federal share (37.9%) of project restoration costs. Accordingly, the project remains in an incompleted category, requiring complete fill restoration and the institution of a beach nourishment program. Project restoration is scheduled for initiation in Fiscal Year 1981 and completion in Fiscal Year 1982.
26. Although the May 1967 survey was made after the Feb - May 1967 and May 1967 fill operations, volume changes since this survey include initial sorting losses from these fills. With respect to the Feb - May 1967 emergency fill at the north end of the Carolina Beach project, the estimated critical ratio of this material was 2 (see reference 2), meaning that only one-half of the material placed actually remained on the active profile. Thus, the estimated initial sorting losses from Segments II and III, as a result of this fill, are computed as 151,000 cu.yds. and 54,000 cu.yds., respectively. The May 1967 fill placed in Segment III was obtained from the initial construction of the deposition basin in Carolina Beach Inlet. Of the total volume dredged, approximately 35,000 cu.yds. (30 percent) was silt and clay and did not settle on the beach profile (winnowing losses), whereas the remaining 80,000 cu.yds. was sandy material. Since a compatibility analysis was not performed on the sandy material removed from the inlet, the critical ratio is not known. Therefore, the assumption was made that all of the 80,000 cu.yds. of sand was suitable beach material.

27. The July - August 1968 fill placed within Segment III was from redredging of the Carolina Beach Inlet deposition basin and consisted of very coarse sand identical to that found on the foreshore (mean low water to the berm crest) of the beaches adjacent to the inlet. Thus, this material was 100 percent compatible and is assumed to have experienced no losses due to sorting.

28. The April - June 1970 nourishment within Segment II was obtained from the enlargement of the sediment trap in Carolina Beach Inlet. Of the total 346,000 cu.yds. removed from the inlet, 120,000 cu.yds. was estimated to be beach material that was trapped by the original deposition basin, whereas the remaining 226,000 cu.yds. that was removed from a previously undisturbed area contained approximately 68,000 cu.yds. (30 percent) of silt and clay. Again, the assumption was made that all of the sandy material removed from the undisturbed area was compatible with the native beach sand. Therefore, the net fill volume obtained from this dredging operation was 278,000 cu. yds. with 68,000 cu.yds. assumed lost to sorting and winnowing.
Floating vegetation lines alone, unreliable predictors of the future. Year oscillations (3 to 20-years) that make long-term erosion rates and
contrast, near-inlet management has been ineffective due to multi-
hurricanes and other storm-induced short-term erosion events.
Coastal management tool, outside of inlet influence, but including
landward from a floating vegetation line, have proven to be an effective
in NC oceanfront setbacks based on long-term erosion rates, measured
caused by the inlet.

An increasingly serious problem is not the migration of the inlet
Induced modifications.
permanently closed. Other inlets have been partially managed by man-
Some of the fastest migrating inlets have at least temporally if not
rates in the state, 10 to 100 times faster than other shorelines.
Inlet migration has historically caused the fastest long-term erosion
a primary ocean hazard in North Carolina.

Since CMAA implementation in 1978, it is highly likely that inlet-induced
Since Spencer Rogers, NC Sea Grant

Inlet Management Study: Public Meeting Comments
Thank you for the opportunity to comment on this issue.

It is recommended that the Science Panel be tasked to complete the development of methods to define revised Inlet Hazard Areas and potential inlet and near-inlet setback lines for CRC review. The beach communities, as yet unfinished and not yet released for public review, appear to be far more reasonable efforts to reflect the inlet risks to existing and future coastal development.

The Science Panel on Coastal Hazards was asked to redefine the IHAs beginning in 2005. The initial drafts released for public review were misinterpreted; inappropriately applied and unexpectedly dislikeded inappropriately applied and unexpectedly disliked in the beach communities. Later revisions, as yet unfinished and not yet released for public review, appear to be far more reasonable efforts to reflect the inlet risks to existing and future coastal development.

Therefore, fixed inlet Hazard Areas and setbacks are more appropriate.

In the simplest terms, the causes involve wave bending and tidal current variations due to the shape and size of the ebb tidal shoals and ocean shorelines compared to other beaches (~ 5-10 times higher) compared to other beaches (~ 5-10 times higher)
April 15, 2014

Via Email: matthew.slagel@ncdenr.gov
Mr. Matt Slagel
400 Commerce Avenue
Morehead City, NC  28557

Dear Matt,

Thank you for the opportunity to provide the CRC with feedback around current IHA regulations and the possibility of eliminating the Inlet Hazard Area of Environmental Concern and incorporating appropriate development standards adjacent to the inlet into the Ocean Erodible Area of Environmental Concern per HB 819. My partners and I own the undeveloped south end of Topsail Island which is bordered by New Topsail Inlet; therefore, we have a keen interest in any potential rule changes in the IHA. We fully support the elimination of the IHA and incorporating these areas into the OEA while applying the same development standards currently utilized in the OEA. My rationale follows.

Dr. Bill Cleary suggested at the Wilmington Regional meeting this month that with all the diverse inlets, the CRC needs a management plan that is specific to each inlet. If the CRC employs this approach, I would further suggest that in the case of New Topsail Inlet, the Topsail Beach migrating side needs to be considered separately from the Lea Island eroding side when evaluating the feasibility of IHA elimination. Interestingly, there is already precedent in place. The Wrightsville Beach side of Masonboro Inlet was never included in an IHA when the boundaries were implemented in 1979, nor did they have a 30 year risk line calculated in the March 2010 Terminal Groin Study. According to the 2010 Inlet Hazard Boundaries Update by Jeff Warren and Ken Richardson, Wrightsville Beach was not included in the IHA at Masonboro Inlet due to jetties. Should factors other than jetties be considered as rationale for IHA exclusion? I certainly hope the CRC will take a hard look at eliminating the IHA as directed by HB 819 Section 5.

New Topsail Inlet is a migrating inlet that has demonstrated consistent southwest accretion which makes it extremely unique and a candidate for removal from the IHA. The migrating side of the inlet doesn’t have the challenges associated with oscillating inlets that build up and then erode. According to the 2010 Inlet Hazard Boundaries Update, New Topsail Inlet in the past 275 years has migrated on average 125 feet per year. This translates into 6.5 miles of migration. To put this into perspective, in the early 1700’s the land that the entire town of Topsail Beach sits on today didn’t exist nor did 2 miles of Surf City. Every home built in the town of Topsail Beach sits on land that accreted and was influenced by inlet processes. Spencer Rogers commented that he felt the Topsail side of the inlet was much safer because it was the accretional side of the inlet and the probability of a reversal of the inlet migration was highly unlikely per the 11/5/08 Science Panel Meeting Summary.

To further solidify the unique nature of the Topsail Beach IHA, analysis of DOT maps from 1995 and 1996 post Fran show there were no homes lost in Topsail Beach’s IHA due to storm surge. According to Ann Green’s article titled “Hurricane Fran: Memories and Lessons” published in Coastwatch Early 2006 Summer Issue, Topsail Beach was hit with a storm surge that reached 12 feet above sea level, a height at or above the 100 year flood level, which resulted in Topsail Island losing a total of 185 oceanfront
buildings across the entire island encompassing 3 incorporated towns. The Topsail Beach IHA was protected from damage due to sand accretion just as the towns of Wrightsville Beach and Carolina Beach experienced limited storm damage due to beach nourishment sand. During this 100 year storm, the Town of Topsail Beach’s IHA risk level was actually lower than the adjacent OEA.

At the Wilmington Regional meeting on 4/2/14, Spencer Rogers indicated that inlet-induced shoreline changes have destroyed more buildings than hurricanes across the state with oscillating inlets being the major problem. However, when the Topsail side of New Topsail Inlet is considered on its own merits, the trend is different. This is due to the consistent, long-term migration of the inlet. No building constructed has been lost to inlet hazard processes after the establishment of the IHA using setbacks from the vegetation line. This exception points to the unique nature of Topsail Beach’s IHA. Another point made at the same meeting by Dr. Bill Cleary is this inlet is not a candidate for a terminal groin or realignment which means it will continue to accrete.

Currently, the erosion rates for the adjacent OEA are used in the IHA. Per the 2/4/14 Science Panel Meeting Summary, the adjacent OEA erosion rates were used because most were higher than those within the IHA. The adjacent OEA erosion rates continue to be higher than those within Topsail Beach’s IHA, as the IHA is actually accreting. Reviewing the interactive tool on DCM’s website, the 23 transects in the IHA all show a long term trend of accreting with a range of 8.9 ft/yr to 19.8 ft/yr. Approximately ½ mile from Trout Ave., the IHA northern border, and 1 ½ miles from the end of the island, there are 28 transects from Smith Ave. to Crews Ave. with the long term trend of eroding with a range of -0.3 ft/yr to -2.1 ft/yr in the OEA. While DCM is evaluating the use of the AMBUR tool to calculate erosion rates in IHA, my feeling is that the current DSAS tool works in this particular inlet due to the migrating nature, so let’s continue to use it. I am skeptical of an unproven tool.

The basis of my skepticism is the 30 year risk line methodology, which was discussed at length from 2009 to 2010 without ever being adopted. Apparently, the concept resurfaced at the Science Panel meeting in February 2014. Based on information provided by the Science Panel at the July 2010 meeting, their assumption is that development in front of the 30 year risk line stands a very high probability of being on the beach in 30 years due to erosion and their recommendation at the time was to use the line as the setback line. My issue with the risk line is how it curves across our property away from the shoreline. Does this indeed accurately reflect future risk? To test the accuracy of a formula or methodology that is used to predict the future all you need to do is apply the methodology to history where the outcome is already known.

You can see where the proposed 30 year risk line is on the attachment labeled New Topsail Inlet 9_16_10 to gain understanding of my concern. Now please review the aerial photo labeled 1962. (See attachment 1962-1972-2003 aerial New Topsail Inlet) For simplicity, let’s apply a 30 year risk line on the 1962 map at Florida Ave. The last road perpendicular to the ocean is Florida Ave. and, as a reference point, Sound Pier was located at the end of the street. Per the Science Panel’s proposal, the 30 year risk line is your setback line so there would be no Southwestward development. Next review the aerial photo labeled 1972. If the 30 year risk line was in place back in 1962, it would have precluded all the development you see on the 1972 map. By the same token in 1972 if the risk line was placed at Godwin Ave by the last canal, all the development that occurred between 1972 and 2002 would have been halted. As you see from the 2003 aerial, in the 40 year period no interior house in the IHA has been lost due to inlet shoreline changes, nor have there been any losses through 2014. I think it is obvious that the formula used isn’t predictive of the future risk at New Topsail Inlet and should not be used to regulate development as it could dramatically take developable property away from the owners.

Aerial photos taken between 1962 and 1972 demonstrate the rapid development that occurred at Topsail Beach’s southern end. As you can see, when the land accreted it was platted and developed. Judging
from the aerials there was very little time allowed for dune structure to build. This type of development continued through the late 80’s and has not been threatened. The property we own just beyond the last development started accreting and showing up on aerial DOT maps in the late 70’s. While the owners chose to hold the land for future development, the dune structure has grown significantly in the last 35 years. As highlighted by the attached Topo aerial, it appears the dunes range from 7.8 – 17.2 feet. Again, this is further evidence that the 30 year risk line is not the appropriate setback line based on historical development results.

To further illustrate the point regarding loss of developable property, DCM delineated the property’s vegetation line in 2005, and such delineation is significantly different than the proposed 30 year risk line, the hybrid vegetation line, or even the estimated 2009/2010 vegetation line as depicted in the first attachment cited.

I strongly advocate that, moving forward, the vegetation line always be used as the basis for setback. It is a line the general public readily understands. In the case of our property in 2005, there were 59.29 acres outside the vegetation line. This acreage would provide a tremendous buffer for development within the vegetation line in addition to the setback requirements. Most likely, there is even more of a buffer today, due to continued accretion over the last nine years. As history has proven the vegetation line would have been a highly effective tool in this example if development occurred in 2005 just as it was effective with all previous development in the IHA. The vegetation line is a valid reference point for setbacks at this particular inlet. (See attachment labeled 2005 Vegetation Line Overlay 2013 Map. The vegetation line’s alignment on top of aerial imagery is approximate and is presented for general information purposes only.)

HB 819 asked that the CRC also consider ongoing beach and inlet management techniques in the feasibility study of eliminating IHA. The Town of Topsail Beach has a 30 year beach nourishment program in place that is recognized by FEMA. FEMA appropriated $6.3 million after Hurricane Irene to rebuild the beach. No sand was needed in the IHA post Irene.

To summarize key points about New Topsail Inlet/Topsail Beach side:

- New Topsail Inlet, Topsail Beach IHA is a migrating inlet that has accreted 6.5 miles in 275 years. The entire Town of Topsail Beach sits on accreted land. It is a strong candidate for exclusion from the IHA due to history.

- No homes were lost in Topsail Beach IHA due to the 100 year storm surge caused by Fran in 1996; it actually performed better than the adjacent OEA. Due to the sand in the IHA area it performed more like Wrightsville Beach and Carolina Beach which had beach nourishment programs in place.

- No homes built since the creation of the IHA has been lost to inlet shoreline changes.

- The 30 year risk line does not accurately predict risk at the Topsail Beach IHA based on applying the methodology to past, known history. There is ample evidence to back this up as noted in my comments.

- The vegetation line, current erosion rate DSAS tool and setback factors have been effective management tools in regulating development in the Topsail Beach IHA. Keep it simple.
• Ocean Hazard/OEA development standards should apply if the CRC eliminates the Topsail Beach IHA or if it doesn’t. There is no need for IHA specific development standards.

• Although the IHA doesn’t need nourishment, The Town of Topsail Beach has a 30 year beach nourishment plan in place that is FEMA qualified.

Based on the CRC and Science Panel meetings I’ve attended over the years, much effort has gone into exploring different methodologies to potentially use in the management of the IHA. The question remains what methodology should the CRC use in regulating development. I hope that you will be able to bring clarity to this issue and provide a set of guidelines that are simple yet appropriate for each individual inlet within the timelines that have been published as this topic has been up for discussion for many years. Thank you for your time and this opportunity to share my feedback.

Sincerely,

Renée McCullen

cc: Coastal Resources Commission Board Members
    Braxton Davis, Director
Proposed Inlet Hazard Area at New Topsail Inlet - Topsail Beach

The "Proposed Inlet Hazard Area" boundaries illustrated in this map represent the conceptual representation of regions adjacent to North Carolina's developed inlets which are subject to inlet processes. These boundaries have been defined by experts following a detailed change analysis of historic shorelines, vegetation, beach width, and geomorphology.

For more information please visit: www.nccoastalmanagement.net
Slagel, Matthew

From: Bedsole, Layton [lbedsole@nhcgov.com]
Sent: Wednesday, April 23, 2014 8:37 AM
To: Slagel, Matthew
Cc: Neal W. Andrew (neal@andrewengineers.com); dennis barbour (dennisbarbour@icloud.com)
Subject: Inlet Mgt. Comments

Good Morning Matt,

After the NHC Inlet Mgt. public meeting, the NHC Port Waterway and Beach Commission met and suggested the Division consider the following:

(1) Umbrella permitting capabilities
(2) Increased major permit lifecycles (inlet mgt. or CSDR projects)
(3) Appropriate dredge material double handling (regional sediment mgt.)
(4) Stipulated environmental window extensions
(5) Maximize inlet mgt. options available to local stakeholders (dredge plant types, seasonal maintenance access, disposal/reuse options, minor template flexibility, historically managed deep water corridors)

Hope all is well.

L.

Layton Bedsole | Shore Protection Coordinator
Engineering | New Hanover County
230 Government Center Drive, Suite 195
Wilmington, NC 28403
(910) 798-7104 p | (910) 798-7051 f
Assessment of Inlet Management Study

Commissioner Priorities

Frank Gorham, Chair

1) Dredging Season- Allow approved dredging year-round under two programs
   - Safe Harbor Dredging- current dredge season
   - Expanded Dredge Program- subject to detailed monitoring, qualifications, and mitigation requirements

2) Beneficial Dredge Material Use Policy
   - New legislation stating: “It shall be the policy of this State that there shall be no net loss of sand from the State’s coastal barrier beaches from dredging activities and associated dredged material management practices to maintain or deepen navigation channels within tidal inlets, harbors, and rivers.
   - With respect to all beach compatible sand, as defined by the Coastal Resources Commission through its rules and policies as set forth in 15A NCAC 7H.0312, resulting from the dredging of navigational channels within tidal inlets, harbors, and rivers where quantities of 100,000 cubic yards or greater are dredged, such sand shall be placed directly on adjacent beaches in a manner that minimizes shoaling and replicates the natural littoral system.”

3) Modify Static Line and 300,000 cubic yard rules
   - Beach renourishment of approved projects may be allowed up to an average of 100 cubic yards per linear foot over the span of the project. No new development seaward may result from this new dredging program beyond the current development line. The setback rules would apply from the point of the vegetation line. The static line would be eliminated.

4) Permit Review Process for Multiyear Projects would be simplified
   - Permitted projects having a multi-year life would receive a greatly reduced review process for any interim permits. If a USACE project is approved for multi-year life, the State permit would mirror the same time period.

5) Monitoring requirements of approved permitted projects beyond the second year would have to be re-justified as being necessary for the original project.

Renee Cahoon

1) Beneficial Use of Dredge Spoil
   - Either use if possible on beaches or as road protection.
   - If not needed right then on beaches, then stockpiling should be considered in coordination with local governments or HOAs.

2) Hatteras Inlet
   - Two permits with two separate contracts are required to dredge Hatteras Inlet. This is ridiculous, totally bureaucratic, and a nightmare for the ferries, commercial fishermen, and recreational boaters to navigate.
   - The two companies stop short of each other so then there is a section that does not get dredged. The agencies should cooperate and be more efficient.

3) Structures / Stabilization
- Inlets need stabilization.

4) Static Lines
- Get rid of static lines that are set in concrete.

**Suzanne Dorsey**
CAMA Major Permit requirements are aligned with USACE permit requirements. If federal agencies are no longer funding shallow water inlet projects, then CAMA Major Permits can be adjusted to reflect the specific needs of Our State. Federal agencies could adjust their permits in response or remove any permit oversight when no funding is offered.

**Bill Naumann**
1) Dredging Proactivity versus Reactivity
- Not only when to dredge and how often, but also how deep to go are issues. We seem to be spinning our wheels with the current focus.

2) Local Funding and Attendant Autonomy
- Should there be more local discretion when local funding is provided?

3) Not Reinventing the Wheel
- Some programs have been effective, and others have been disappointing. A historical perspective is important in looking for the right solution.

4) Respect the Differences Between Inlets
- “One size fits all” doesn’t work.

5) Structures
- The bias against structured solutions versus “natural” solutions needs to be revisited.
MEMORANDUM

TO: Coastal Resources Commission

FROM: Mike Lopazanski

SUBJECT: Science Panel Role, Studies and Vacancies

Science Panel Charge

You will recall from the memo prepared for the February 2014 CRC meeting (CRC-14-08) regarding the origin of the Commission’s Science Panel on Coastal Hazards, the creation of a standing scientific panel stemmed from the Commission’s intent to apply scientific knowledge to problems the CRC faced as regulators. There was interest in enlisting the participation of scientists who had an understanding of the coastal management program, as well as the CRC’s rules, to help apply the current state of knowledge and best available science in the development of CRC regulations. In assembling such a group, the CRC considered the need for a clear charge from the Commission to ensure their direction.

In 2013, the Commission updated the Charge to formalize the appointment of members, outline a consensus-based approach to assignments, enact four-year staggered terms, and clarify officer elections. Two additional membership slots were added, as well as the use of ad hoc members to fill specific study needs.

Since its existence, the Panel has been asked by the Commission to develop recommendations or provide technical advice on a number of issues including:

4. Terminal Groins (Review Feasibility Study 2009)
5. Terminal Groins (Guidance on monitoring for adverse impacts 2011-2012)
6. Sea Level Rise Assessment (2009 to Present)
7. Review results from updated Erosion Rate study (2011)
8. Mad Inlet Assessment (2013)
As the Commission considers the future use of the Science Panel, it will be useful to revisit the Charge to ensure that both the Panel and Commission have a clear understanding of the relationship and what is expected. Attached is the current Science Panel Charge as revised by the Chairman Gorham for your review and to facilitate discussion.

Science Panel Vacancies

Science Panel vacancies have traditionally been filled by recommendations of the Division and Panel members in consultation with and at the discretion of the CRC Chair. There are currently four vacancies on the Science Panel, and there is a need to include “ad hoc” study members for the legislatively-mandated Sea-Level Rise Assessment Update (pursuant to Session Law 2012-212). During 2013, the Division issued a call for Science Panel nominations from CRC, CRAC and current Science Panel members. The call for nominations included two engineers and two geologists, as well as nominees for the ad hoc Sea-Level Rise study group. As of August 2013, DCM had received 12 nominations for the Panel and eight nominations for the sea-level rise study members (several individuals were nominated for both groups).

As the Legislature has directed the Commission to complete a draft of the Sea-Level Rise Update by March 2015, it will be necessary for the Science Panel and the ad hoc members to begin their work by June of this year. The Commission will therefore need to name the ad hoc members shortly after the May CRC meeting. Chairman Gorham has asked that Commissioners and Advisory Council members consider the individuals that have been nominated, AND to nominate any additional individuals that should be considered.

Attached is a list of the current nominees and supporting information for both the Science Panel and the sea-level rise report ad hoc group. Additional names, along with supporting documentation, should be sent to the Division by June 6, 2014 so that Chairman Gorham may name the ad hoc group in time to begin the update. Please contact your potential nominees prior to nominating them in order to confirm their interest in serving. A complete nomination includes a resume, CV, or other qualifying information with respect to their knowledge and experience.
Charge to the Coastal Resources Commission’s Science Panel on Coastal Hazards

Charge

The purpose of the Science Panel on Coastal Hazards (Panel) is to provide the Coastal Resources Commission (CRC) scientific data and recommendations regarding coastal hazards processes including erosion, accretion, sand transport and the interactions of wind, waves and currents with the shoreline. At the specific request of the CRC, the Panel is charged with the following: 1) continually reviewing the current state of knowledge of coastal processes and ecological functions of coastal North Carolina; 2) reviewing the current methodologies being used by North Carolina and others to define and identify coastal hazards areas subject to adverse impacts of coastal processes associated with development in public trust areas of North Carolina; 3) reviewing the scientific basis of the CRC’s rules as applied by the Division of Coastal Management (DCM) to development in the coastal area; and 4) developing recommendations for the CRC on topics that include the following:

1. Opportunities to incorporate current scientific information on North Carolina coastal processes in the CRC rules for Estuarine and Ocean Areas;

2. New coastal engineering technologies or methods;

3. Specific projects as assigned by the CRC or requested by the Panel. When the CRC assigns a project, it should provide the Panel with specific questions it needs answered and any necessary timelines. The Panel should maintain the flexibility to propose projects and scopes of work to the CRC for approval.

Membership and Officers

The membership of the Panel should be no more than 15 individuals having professional expertise in coastal science or engineering, but additional members may be added on an ad hoc basis to expand the expertise of the Panel for specific studies if deemed necessary by the CRC Chair in consultation with the Panel. Nominations for new members and ad hoc members may be made by CRC members, current Science Panel members, DCM staff, or the Coastal Resources Advisory Council at any public meeting of the CRC. New members and ad hoc members will be appointed by the CRC Chair based on a review of the nominee’s relevant expertise and credentials with respect to coastal science or engineering hazards processes. New and replacement members will be appointed as needed. Panel members should serve staggered terms of four years to ensure continuity. New member terms should be for four years, with re-appointments for additional four-year terms when mutually agreed upon by the Panel member and CRC Chair. Regular attendance or participation by other means is important, and a Panel member may be asked to step down after prolonged non-participation, or at the discretion of the CRC Chair.

The officers of the Panel are the Chair and Vice-Chair. Officer terms are for two years, and the Chair and Vice-Chair should be elected biennially by the Panel. The Chair should work with staff to establish meeting agendas, preside over Panel meetings, and appoint subcommittees and subcommittee chairs as necessary to carry out the Panel’s business. The Vice-Chair should preside over Panel meetings in the
absence of the Chair and assume the duties of the Chair if the Chair is unable to complete their term until another Chair is selected by the Panel.

**Panel Meeting Agendas**

Meetings of the Panel will be open to the public and each meeting should include an opportunity for public comments for the Panel to consider. Meeting notes and other records of all Panel meetings will be kept by the Division of Coastal Management. Draft notes will be distributed to Panel members for review, and final notes will be posted on the DCM webpage.

The Chair, Vice-Chair, and DCM staff should work together to prepare meeting agendas, which will be provided to members and to the public at least seven days prior to a scheduled meeting.

**Consensus Building**

Final Panel reports should be developed by consensus whereby (preferably) all Panel members support the general findings and recommendations, and clearly articulate any differences of opinion related to specific findings. In the absence of consensus, a minority opinion section should be included with each recommendation or report, if applicable.

The outline below is a general guideline for larger reports, but not all communications between the Panel and the CRC need to follow this format. Some recommendations, such as those pertaining to new coastal engineering technologies or methods, are as simple as a memo form from the Panel to the CRC.

Larger Panel reports should follow a common outline so the CRC and stakeholders know what to expect in terms of format and content. The goal of Panel reports is to use the best available data to identify common ground and areas of disagreement to help set the context for CRC policy deliberations. To help reach consensus, it is essential for Panel members to participate in discussions, weigh in on draft recommendations, and review final reports. The outlineshould include, at a minimum, the following sections:

- General Issue
- Specific Question(s) to be Answered
- Options Explored by Panel
- Best Available Science
- Key Assumptions, Uncertainties, and/or Data Limitations Associated with Each Option
- Consensus Findings and Recommendations
- Minority Opinions and/or Specific Areas of Disagreement

**Dissemination of Information**

Draft findings and recommendations for which the Commission intends to incorporate public input should only be released for public comment following preliminary review and approval by the Coastal Resources Commission. Division of Coastal Management staff will coordinate the public review process.

Final recommendations of the Panel adopted pursuant to the consensus building and public review procedures described above should be reported in writing to the Division Director and the Chair of the
Coastal Resources Commission. Presentations of Panel recommendations to the CRC should be made by the Panel Chair or their designee.
SCIENCE PANEL NOMINATIONS – AUGUST 2013

Full Membership
• Robert Brown* (Duke) – nominated by Larry Baldwin (CRC)
• David Burton* (NC-20 Science Advisor) – nominated by Larry Baldwin (CRC)
• Reide Corbett* (ECU) – nominated by Rob Young
• David Duane (Geologist) – nominated by Spencer Rogers and Anne Deaton (CRAC)
• Jesse McNinch (USACE FRF) – nominated by Bill Birkemeier (Science Panel)
• Laura Moore (UNC Chapel Hill) – nominated by Tony Rodriguez (Science Panel)
• Greg “Rudi” Rudolph (Carteret Co. Shore Protection Office) – nominated by Spencer Rogers (Science Panel)
• Nicola Scafetta* (Duke) – nominated by Larry Baldwin (CRC)
• J.P. Walsh (ECU) – nominated by Joan Weld (CRC)
• Mike Wutkowski (USACE Wilmington District) nominated by Greg Williams (former Science Panel member, USACE Wilmington District)
• Stan Young* (National Institute of Statistical Sciences) – nominated by Larry Baldwin (CRC)

Ad Hoc SLR Membership
• Larry Atkinson (Old Dominion University) – nominated by Rob Young (Science Panel)
• Robert Brown* (Duke) – nominated by Larry Baldwin (CRC)
• David Burton* (NC-20 Science Advisor) – nominated by Larry Baldwin (CRC)
• Reide Corbett* (ECU) – nominated by Stan Riggs and Pete Peterson (Science Panel)
• Carolyn Currin (NOAA) – nominated by Pete Peterson (Science Panel)
• Dave Mallinson (ECU) – nominated by Stan Riggs and Pete Peterson (Science Panel)
• Nicola Scafetta* (Duke) – nominated by Larry Baldwin (CRC)
• Stan Young* (National Institute of Statistical Sciences) – nominated by Larry Baldwin (CRC)

*Nominated for both full and ad hoc membership
Science Panel Nominees-

Ad Hoc Sea-Level Rise

August 2013
-----Original Message-----
From: Charles H Peterson [mailto:cpeters@email.unc.edu]
Sent: Friday, June 14, 2013 9:51 AM
To: Robert Young
Cc: Miller, Tancred; sbenton45@earthlink.net; William.Birkemeier@gmail.com; Bill Cleary; Jtomjarrett@aol.com; averton@ncsu.edu; rjg55@ecu.edu; Antonio B. Rodriguez; Rogers, Spencer; Beth Sciaudone; Slagel, Matthew; Davis, Braxton C; Lopazanski, Mike
Subject: Re: Interesting new SLR paper

Good idea. Can you ask him and get a CV to forward to Tancred?

This paper is neat, confirming a suspicion that we have had from collecting our water level data at Onslow Beach for several years.

Pete

On 6/14/2013 7:20 AM, Robert Young wrote:
> We might want to get Larry involved in our SLR work since he is just up the road at ODU.
> 
> > Robert S. Young, PhD (Licensed Professional Geologist in NC, SC, FL)
> > Director, Program for the Study of Developed Shorelines Professor,
> > Coastal Geology Western Carolina University Belk 294 Cullowhee, NC
> > 28723 828-227-3822, FAX 828-227-7163 ryoung@email.wcu.edu psds.wcu.edu
Am interested but concerned about level of effort required.

Does the SLR subpanel provide information for the SPCH and they write the report?

I guess question is who spends a lot of time writing etc? I certainly don’t have that kind of time.

My main role could be to provide either information or connections to those that do regarding the latest science on present and future SLR rates.

If answers to the above make sense to me I’ll say yes.

However, I have to check with my administrators as I may be getting involved with similar Virginia issues that might preclude my working with NC.

So give me a short answer on my time commitment and we’ll go from there.

Larry

Larry Atkinson
Climate Change and Sea Level Rise Initiative
Slover Professor
Old Dominion University
Office Phone 757 683 4926
Cell Phone 757 679 8916
Email latkinson@odu.edu
Tancred,

Until last week's 7-11-2013 CRC meeting presentations, I did not fully realize that a separate sea level rise ad-hoc panel had been formally established. The four nominees I've submitted (D.Burton, N.Scalfetta, R.Brown, S.Young) are very well qualified for this ad-hoc sea level rise ad-hoc panel also. I noticed that a couple of individuals are being considered for both the ad-hoc sea level rise panel and the full science panel.

Thus, I would like for the four nominees I've submitted to also be considered for both the ad-hoc sea level rise panel and the full science panel. If there are any questions or clarifications please contact me. Thanks.

Larry F. Baldwin, CPSS/Sc
CRC Commissioner, Coast Land Development
LBaldwin@coa.rnc.com
(910) 471-0304
Hi Matthew,

I'm sorry for not replying sooner, but I'm still in the process of working through my schedule for the fall semester (I'm the course director and primary lecturer for the large intro physics class at Duke) so the availability issue is still a bit open as this is a very demanding course and obviously has the highest priority as far as my available time is concerned.

Can you provide a bit more detail on when and where these meetings occur? Are they usually at the coast, or in or near e.g. Raleigh or Durham? Are they day long affairs or a few hours?

I'm certainly interested in the coast (I'm teaching physics at the Duke Marine Lab at this very moment:-) and am reasonably familiar with the physical science involved (certainly with the physics) and happy to learn more as needed, but it might be another week or two before I will be able to get my prior time commitments straightened out to where I know when I could be available for the CRCSP.

rgb
Curriculum Vitae

Robert G Brown

Contact information

Department of Physics  (919) 280-8443, (919) 660-2567
Box 90305  rgb@phy.duke.edu
Duke University
Durham, NC 27708-0305

Areas of Research

Theoretical Condensed Matter Physics

Professional Service

• Chair, Physics Computing Committee, 2010 - present
• American Journal of Physics, 2007 - present
• Premajor Advisor, Premajor Advising, August 14, 2000 - present
• member, Physics Computing Committee, January 1, 2000 - September 1, 2010

Publications

Books


Papers Published


Papers In Preparation


Other

1. R.G. Brown, *Monthly column in Cluster World Magazine* (June, 2005)(A list of column titles and topics follows. The column itself was initially called "Cluster Kickstart", which explains the focus on topics for the beginner. In January, 2005 the column's name was changed to "Cluster Edge" and topics are more free ranging.).


4. R.G. Brown, *Packets ‘n’ Protocols II*, Monthly column in Cluster World Magazine (October, 2004)(Wrap your data in TCP, pop it into an IP datagram, and insert it into an ethernet envelope...continued and with UDP thrown in for good measure.).


7. R.G. Brown, *Cluster Infrastructure*, Monthly column in Cluster World Magazine (June, 2004) (Location, location, location. Clusters need space, power, cooling, and network access.)

8. R.G. Brown, *PVM, Part II*, Monthly column in Cluster World Magazine (April, 2004) (In this column we continue our exploration of PVM, the parallel computing subroutine library that more or less enabled the current explosion of high-performance parallel compute clusters to happen.)

9. R.G. Brown, *Serious Parallel Computing: PVM*, Monthly column in Cluster World Magazine (March, 2004) (The idea of a homemade parallel supercomputer predates the actual Beowulf project by years if not decades. In this column (and the next), we explore "the" message passing library that began it all and learn some important lessons that extend our knowledge of parallelism and scaling.)

10. R.G. Brown, *Amdahl's Law*, Monthly column in Cluster World Magazine (February, 2004) (Clustering seems almost too good to be true. If you have work that needs to be done in a hurry, buy ten systems and get done in a tenth of the time. If only it worked with kids and the dishes. Also, kids and dishes or cluster nodes and tasks, linear speedup on a divided up task is too good to be true, according to Amdahl's Law, which strictly limits the speedup your cluster can hope to achieve.)

11. R.G. Brown, *Doing Work in Parallel*, Monthly column in Cluster World Magazine (January, 2004) (Last month we started out by learning how to use pretty much an arbitrary Linux LAN as the simplest sort of parallel compute cluster. This month we continue our hands-on approach to learning about clusters and play with our archetypical parallel task on our starter cluster to learn when it runs efficiently and just as important, when it runs inefficiently.)

12. R.G. Brown, *Wulfware* (2004) (Wulfware is a collection of several tools (xmlsysd, libwulf, wulstat, wul ogger) designed to support the monitoring of clusters and grids. xmlsysd is a lightweight daemon that provides xml-wrapped system statistics and other information extracted from /proc and various systems calls. wulstat and wul ogger are ncurses and straight ascii (respectively) tools for connecting to the xmlsysd daemons running on an entire cluster and either presenting it with a user-selectable refresh delay in a tty (xterm) window or printing it in a simple column format to standard out where it can easily be fed to a logfile for eventual ploting or to other tools (e.g. a builder of a web view of the data). This is of obvious and immediate use for monitoring cluster status, tracking particular jobs, determining resource utilization for gridware schedulers or policy engines.)

13. R.G. Brown, *Benchmaster* (2004) (Benchmaster is a microbenchmark program designed to time and test system performance at a low level. It will eventually be added to the wulfware suite as a component of xmlbench, a new project that provides a daemon interface to xml-wrapped drop-in benchmark programs so that applications can be built that can automatically tune their algorithms to the particular hardware they are running on and so that grid tools can be built that can dynamically determine the resources available on an anonymous grid node.)

random number generators for cryptographic purposes), plus various additional tests from Donald Knuth's The Art of Programming Volume II, Seminumerical Algorithms and devised by the authors. It is currently functional with a subset of those tests.

15. R.G. Brown, *Flashcard* (2004)(Flashcard is a program for presenting simple ashcards to students in a standard terminal (e.g. xterm) window. Special features include an xml encoding of ashcard problems and the ability to present auditory cues (e.g. spelling words out loud) from compressed soundfiles.)

16. R.G. Brown, *Building Your First Cluster*, Monthly column in Cluster World Magazine (December, 2003)(The beauty of cluster computing is that it requires little more than a generic workstation LAN to do it. We begin to explore cluster computing with just that: a "Network of Workstations" (NOW) that you may well already have!)


27. R.G. Brown, *Pseudospin-ordered optical bistability for two-level atoms* (November, 1986)(Presented at the meeting of the Southeastern Section of the American...


Nominee to the CRC Science Panel:

David A. Burton for nomination to the CRC Science Panel. He has volunteered to serve. Dave's background and contact information is below. Dave has extensive experience in systems and numbers analysis, which would be an asset for reviewing statistical significance of data and scientific findings (i.e., does the data support the conclusion?). He also serves as an expert reviewer to the U.N. IPCC and is on the NC Emergency Mgt Sea Level Rise Impact Study advisory committee. I've found his various analysis to be professional, quite thorough, and unbiased.

- **David A. Burton**, 109 Black Bear Ct, Cary, NC 27513 / M: 919-244-3316
- NC-20 Science Advisor
- Member, NC Sea Level Rise Impact Study Advisory Committee
- IPCC WG1 Expert Reviewer
- webmaster, [www.sealevel.info](http://www.sealevel.info)


- From Larry Baldwin, CRC Member
Nomination for: Reid Corbett, Dave Mallinson, Carolyn Currin

Slagel, Matthew

From: Charles H Peterson [cpeters@email.unc.edu]
Sent: Tuesday, June 11, 2013 11:20 AM
To: Miller, Tancred; sbenton45@earthlink.net; William.Birkemeler@gmail.com; Bill Cleary; Jtomjarrett@aol.com; overton@ncsu.edu; Antonio B. Rodriguez; Rogers, Spencer; Beth Scaudone; ryoung@wcu.edu; Slagel, Matthew; Davis, Braxton C; Lopazanski, Mike
Cc: Miller, Tancred; sbenton45@earthlink.net; William.Birkemeler@gmail.com; Bill Cleary; Jtomjarrett@aol.com; overton@ncsu.edu; Antonio B. Rodriguez; Rogers, Spencer; Beth Scaudone; ryoung@wcu.edu; Slagel, Matthew; Davis, Braxton C; Lopazanski, Mike
Subject: Re: SLR Assessment Report -- Call for Nominations

Stan-

I agree and have just done the work of emailing both of them plus Carolyn Currin, asking them all if they are willing to rejoin us for this report redrafting committee and asking them for a CV or Resume, which when I get them I will send to Tank. Having extra steps in what was a simple process seems to exemplify government these days.

Pete

On 6/11/2013 10:48 AM, Riggs, Stanley wrote:
Tancred,

The two people who have done the most basic research on NC’s SLR and who know the national and international literature are David Mallinson and Reid Corbett. Both were major contributors to the previous report and must be included as co-authors on the 2015 report.

Cheers,
Stan

From: Miller, Tancred [tancred.miller@ncdenr.gov]
Sent: Monday, June 10, 2013 5:03 PM
To: sbenton45@earthlink.net; William.Birkemeler@gmail.com; Bill Cleary; Jtomjarrett@aol.com; overton@ncsu.edu; Peterson, Charles H; Riggs, Stanley; Antonio B. Rodriguez; Rogers, Spencer; Beth Scaudone; ryoung@wcu.edu
Cc: Slagel, Matthew; Davis, Braxton C; Lopazanski, Mike
Subject: SLR Assessment Report -- Call for Nominations

Science Panel,

We are opening a call for nominations for co-authors for the 2015 SLR Assessment Report. Please see the attached and submit any nominations by July 5th.

Thanks,
Tancred

Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel. 252-808-2808, Ext. 224

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.
Nomination for Reide Corbett

From: Charles H Peterson [mailto:cpeters@email.unc.edu]
Sent: Tuesday, June 11, 2013 5:44 PM
To: Miller, Tencred

Tank-

Here is the first of what I hope will be the three people from the first go-round of the sea-level report.

Pete

-------- Original Message --------
Subject: RE: 2015 update of CRC Science Hazards Panel Sea-level report
Date: Tue, 11 Jun 2013 19:17:55 +0000
From: Corbett, D. Reide <CORBETTD@ecu.edu>
To: Charles H Peterson <cpeters@email.unc.edu>

Pete-

I'll talk with Dave...get him onboard. See attached 2page CV. Let me know if it looks sufficient. Thanks for keeping me involved.

Cheers,

Reide

-------- Original Message --------
From: Charles H Peterson [mailto:cpeters@email.unc.edu]
Sent: Tuesday, June 11, 2013 2:18 PM
To: Corbett, D. Reide
Subject: Re: 2015 update of CRC Science Hazards Panel Sea-level report

Reide-

Short NSF version should do fine. And what a relief. Talk to Mallinson to get him aboard too.

Pete

On 6/11/2013 12:16 PM, Corbett, D. Reide wrote:
> Pete-
> >
> > Good to hear from you. I am happy to participate again...should be as much fun as the first round!
> >
> > Regarding the CV...do you want my full CV or just a NSF style that has some SLR related research/papers?
> >
> > Reide
> >
> > ----Original Message-----
> > From: Charles H Peterson [mailto:cpeters@email.unc.edu]
> Sent: Tuesday, June 11, 2013 10:42 AM  
> To: Mallinson, David J; Corbett, D. Reid; Carolyn Currin  
> Cc: Rodriguez, Antonio P  
> Subject: 2015 update of CRC Science Hazards Panel Sea-level report  
>  
> > Dear Dave, Reid, and Carolyn:  
> > For some reason, the Science Panel now needs to undergo time-wasting paper work to do what an email once did. Specifically, we need to invite (which means BEG!) you three to rejoin us for doing the 5-yr update of the sea-level report. This is not an invitation to (re)join the Science Panel itself but just the sea-level report team. We desperately need you, and moreover want your help. I cannot imagine doing this task without all three of you participating.  
> > To do that, you must respond by expressing your willingness and send me a resume or CV that includes something within it about SLR to support the notion that you have relevant experience to bring to the task. I will forward that to the DCM staff, who will give it to Bob Emory (CRC Chair at the moment), who will then name you officially as members of the sea-level report writing team.  
> > Thanks,  
> > Pete Peterson
D. Reide Corbett  
East Carolina University  
Department of Geological Sciences/Institute for Coastal Science & Policy  
Greenville, NC 27858 252-328-1367 corbettD@ecu.edu

Research Interests
Sedimentary and geochemical processes in coastal environments; Naturally-occurring radionuclides as tools for quantifying rates of sedimentary and biogeochemical processes; Investigations of the discharge of groundwater into the coastal zone; Deposition, remineralization and burial of carbon and nutrients in coastal margins; Coastal Hazards.

Professional Preparation
1994  B. S.  Chemistry, Florida State University  
1996  M.S.  Chemical Oceanography, Florida State University  
1999  Ph.D.  Chemical Oceanography/Geochemistry, Florida State University. Dissertation: Tracing groundwater flow into surface waters by application of natural and artificial tracers

Appointments
2012-present  Coastal Processes Program, UNC Coastal Studies Institute  
Co-Program Head  
2011-present  Department of Geological Sciences, East Carolina Univ  
Professor  
2007-2011  Department of Geological Sciences, East Carolina Univ  
Asst. Chair  
2006-2011  Department of Geological Sciences, East Carolina Univ  
Assoc. Professor  
2005-present:  Department of Marine, Earth & Atmospheric Sciences  
Professor North Carolina State University  
Adjunct Assoc.  
2000-2006  Department of Geology, East Carolina Univ  
Asst. Professor  
1999-2000  Department of Geology, Tulane Univ  
Postdoctoral Fellow  

Publications
(i) Five publications closely related to the proposed project

(ii) Five other significant publications

State-focused Research and Public Engagement
2012 to present: Albemarle-Pamlico National Estuary Program – Chair, Science & Technical Advisory Council
2011 – present: Advanced Regional and Decadal Predictions of Coastal Inundation for the U.S. Atlantic and Gulf Coasts. NOAA
2009: Invited participant in NC Beach Management Summit, Morehead City, NC
2009 – present: RENCI @ East Carolina University: Regional Engagement Center; Attacking Coastal Hazards of North Carolina.
2008: Presented to the State of North Carolina Climate Change Commission
2007 to present: Department of Marine Fisheries Strategic Habitat Area Advisory Committee
2006-2009: RENCI @ East Carolina University: Regional Engagement Center for Coastal Systems Informatics and Modeling (C-SIM). Focused on morphologic changes of coastal zone associated with sea level rise.
2005-2009: Shore-Zone Dynamics in Response to Sea level Rise. NOAA COP funded program that included disseminating data to several NC stakeholders
2006 to present: UNC – Coastal Studies Institute Science Coordinating Committee, member
2001 to 2013: Duke/University of North Carolina Oceanographic Consortium Advisory Board
One more on board.

Pete

-------- Original Message --------
Subject: Re: 2015 update of CRC Science Hazards Panel Sea-level report
Date: Wed, 12 Jun 2013 13:10:56 -0400
From: Carolyn Currin - NOAA Federal <carolyn.currin@noaa.gov>
To: Charles H Peterson <cpeters@email.unc.edu>

Pete,
Thanks for including me in this group. Attached is my CV, though most of the SLR work is still in review.

It should be a very interesting process this time around.

cc

Carolyn A. Currin
NOAA NCCOS Center for Coastal Fisheries and Habitat Research
101 Pivers Island Rd.
Beaufort, NC 28516
252-728-8749

On Wed, Jun 12, 2013 at 8:12 AM, Charles H Peterson <cpeters@email.unc.edu> wrote:
Wonderful - thank you so much. I will forward your CV on to DCM. I think a short NSF-style CV will do fine.

Pete

On 6/12/2013 8:08 AM, Mallinson, David J wrote:
Hi Pete,

I'll participate. I'll send along my cv today.

Dave
From: Charles H Peterson [cpeters@email.unc.edu]
Sent: Tuesday, June 11, 2013 10:42 AM
To: Mallinson, David J; Corbett, D. Reide; Carolyn Currin
Cc: Rodriguez, Antonio B
Subject: 2015 update of CRC Science Hazards Panel Sea-level report

Dear Dave, Reide, and Carolyn:

For some reason, the Science Panel now needs to undergo time-wasting paperwork to do what an email once did. Specifically, we need to invite (which means BEG!) you three to rejoin us for doing the 5-yr update of the sea-level report. This is not an invitation to (re)join the Science Panel itself but just the sea-level report team. We desperately need you, and moreover want your help. I cannot imagine doing this task without all three of you participating.

To do that, you must respond by expressing your willingness and send me a resume or CV that includes something within it about SLR to support the notion that you have relevant experience to bring to the task. I will forward that to the DCM staff, who will give it to Bob Emory (CRC Chair at the moment), who will then name you officially as members of the sea-level report writing team.

Thanks,

Pete Peterson
VITAE

Address:
NOAA/National Ocean Service,
Center for Coastal fisheries and Habitat Research (CCFHR), Coastal Branch
101 Pivers Island Rd., Beaufort, NC 28516-9722, USA
Phone: 252 728 8749; fax 252 838 0809 carolyn.currin@noaa.gov

Education:
1982 B. S., Zoology, Summa cum Laude, North Carolina State University
1994 Ph.D., Marine Sciences, University of North Carolina at Chapel Hill

Professional Employment:
1986-1988 Research Assistant, UNC Institute of Marine Sciences
1988-1990 Research Technician, NMFS/NOAA, Beaufort, NC
1990-present Microbiologist, NOAA CCFHR Laboratory, Beaufort, NC

Research: Team leader of Coastal and Estuarine Ecology team investigating ecosystem structure, function and response to environmental change. Recent work has investigated the response of salt marshes to sea level rise, and the effect of shoreline stabilization on estuarine intertidal habitats. Food web research has emphasized use of stable isotopes to determine trophic relationships in natural and restored estuarine systems, and to delineate the role of benthic primary producers in supporting fishery production in coastal and reef ecosystems, including Marine Protected Areas.

Peer-reviewed Publications (selected 15 of 30 total):


Dear Mr. Tancred,

thank you very much for the invitation to serve as a nominee to be added to the CRC's Science Panel on Coastal Hazards. And for the trust that you have in my expertise. I am pleased and I confirm my interest.

However, I will be in Europe for a couple of months. I will be back in September.
I can be contacted by email

Best Regards,

Nicola Scafetta, Ph.D.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Duke University
email1: ns2002@duke.edu
email2: nicola.scafetta@gmail.com
web: http://people.duke.edu/~ns2002/

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Miller, Tancred
Hello Dr. Scafetta,

Larry Baldwin, a member of the Coastal Resources Commission, submitted your name as a nominee to be added to the CRC’s Science Panel on Coastal Hazards. I am writing to confirm your interest and availability and provide a little more information.

The Science Panel (http://www.nccoastalmanagement.net/Hazards/scipanel.htm) is a voluntary panel of coastal experts who are appointed by the CRC chair and charged with the following: 1) continually review the current state of knowledge of coastal processes and ecological functions of coastal North Carolina; 2) review the current methodologies being used by North Carolina and others to define and identify coastal hazard areas and impacts associated with development in public trust areas of North Carolina; 3) review the scientific basis of the CRC’s rules as applied by the Division of Coastal Management (DCM) to development in the coastal area; and 4) develop recommendations for the CRC on relevant topics.

The Panel meets approximately six times per year and performs additional work outside of meetings in subcommittees. Mileage is reimbursed for travel to Panel meetings, and lunches are provided. The initial term of appointment is four years.

We expect the CRC chair to make the appointments at the CRC’s September meeting.

Please let me know if you have any questions.

Best regards,
Tancred

Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel. 252-808-2808, Ext. 224

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.
Curriculum Vitae: Nicola Scafetta, Ph. D.

May 13, 2013

Education

- 2001: Ph. D. in Physics, University of North Texas (Denton, TX, USA). Dissertation: *An entropic approach to the analysis of time series*. ARK: ar/87531/metadc3033. PDF


Address

1) ACRM: Active Cavity Radiometer Solar Irradiance Monitor, Coronado, CA (website)
2) Department of Anesthesiology: Hyperbaric Medicine and Environmental Physiology (website), Duke University

1690 Anderson St., C5
Durham, NC 27710
Office Phone: +1 (919) 225-7799

Email Address 1: ns2002@duke.edu
Email Address 2: nicola.scafetta@gmail.com
Personal Website: http://www.duke.edu/~ns2002

Research Interests


Academic Appointments

<table>
<thead>
<tr>
<th>Time</th>
<th>Position</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-date</td>
<td>Research Scientist</td>
<td>ACRM Science Team, (Coronado, CA)</td>
</tr>
<tr>
<td>2012-date</td>
<td>Research consultant</td>
<td>Anesthesiology Dept., Duke University</td>
</tr>
<tr>
<td>2010-2012</td>
<td>Assistant Adjunct Professor</td>
<td>Anesthesiology Dept., Duke University</td>
</tr>
<tr>
<td>2010-fall</td>
<td>Visiting Lecturer</td>
<td>Physics Dept., University of North Carolina Chapel Hill</td>
</tr>
<tr>
<td>2010-spring</td>
<td>Adjunct Professor</td>
<td>Physics Dept., Elon University</td>
</tr>
<tr>
<td>2008-fall</td>
<td>Visiting Lecturer</td>
<td>Physics Dept., University of North Carolina Chapel Hill</td>
</tr>
<tr>
<td>2008-2009</td>
<td>Visiting Lecturer</td>
<td>Physics Dept., University of North Carolina Greensboro</td>
</tr>
<tr>
<td>2002-2004</td>
<td>Research Associate</td>
<td>Physics Dept., Duke University</td>
</tr>
<tr>
<td>1998-2001</td>
<td>Teacher Assistant</td>
<td>Physics Dept., University of North Texas</td>
</tr>
</tbody>
</table>

Professional society memberships

American Physical Society (APS); American Geophysical Union (AGU).
Teaching Interest and Experience

Conceptual Physics, Astronomy, Classical Mechanics, General Physics I, General Physics II, Modern Physics, Quantum Mechanics, Statistical Mechanics. In addition, my research background allows me to teach Time series analysis, Nonlinear Dynamics, Chaotic Systems and Fractals with computer programming assignments.

2010-Fall: Phys 104 General Physics, UNCG, Physics Dept.
2010-Spring: Introduction to Astronomy, Elon University, Physics Dept.
2011-Spring: Conceptual Physics, theory and lab. Elon, Physics Dept.
2006-Summer: Introduction to Astronomy, Duke University, Physics Dept.
2008-Spring: Conceptual Physics, theory and lab. UNCG, Physics Dept.
2009-Spring: Introduction to Astronomy, Duke University, Physics Dept.
2008-Fall: Conceptual Physics, theory and lab. UNCG, Physics Dept.
2008-Fall: Classical Mechanics, (Graduate Course) UNCG, Physics Dept.
2008-Summer: Introduction to Astronomy, Duke University, Physics Dept.
2008-Spring: Conceptual physics, theory and lab. UNCG, Physics Dept.
2007-Summer: Introduction to Astronomy, Duke University, Physics Dept.

Research Activities

My research is multidisciplinary and has covered numerous fields: theoretical and applied physics, statistical physics, computational physics, physics of complex systems, nonlinear stochastic techniques for analyzing and modeling of complex systems, condensed matter, stochastic processes, fractal systems, solar physics, sun-earth interaction, global climate change, earthquake occurrence, forecast methodologies, econophysics, biophysics and mathematical physiology. I have developed novel techniques of time series analysis for studying the scaling exponents and the fractal statistical properties of time series such as the Diffusion Entropy Analysis, which together with more traditional variance based techniques allows the discrimination between fractal Brownian motion and Lévy walk signals. Fractal-multifractal stochastic methodologies has been used also for modeling and evaluating the dynamical evolution of a variety of physical signals under normal, stress and drug conditions, which can be used for developing novel clinical monitoring methodologies and computerized machines. I have studied and proposed physical models for interpreting the Inverse power law distributions found in wealth distribution as well as in human mobility. I have also extensively studied solar physics and solar-climate interactions. The purpose of the latter research is interpreting and explaining the solar and climate natural oscillations, to study their physical origin and their interconnection. I am developing stochastic and physical models to hindcast and forecast both solar activity and climate change throughout the Holocene by determining the harmonic and non-harmonic constituents of their dynamics. Visit my website.

Publications

From SCOPUS: Results found = 52; Average Citations per Item = 15; H-Index = 16.

Scientific Books

ISBN-10: 3639257952

ISBN-10: 9814304301

ISBN-10: 1934791288, PDF
Free Web-Booklets

   Web: PDF

   Web: PDF

   Web: PDF

10.5194/prp-1-37-2013

Scientific papers in Journals and Books


   DOI:10.1016/j.astp.2013.03.007. PDF

64. Scafetta, N., 2013. Multi-scale dynamical analysis (MSDA) of sea level records vs. PDO, AMO, and NAO indexes. Climate Dynamics. in press.
   DOI:10.1007/s00382-013-1771-3. PDF

   DOI: 10.1016/j.jastp.2013.03.007. PDF

   DOI:10.1016/j.pss.2013.01.005. PDF

61. Mezzarella A., A. Giuliani and N. Scafetta, 2013. Quantifying the Multivariate ENSO Index (MEI) coupling to CO2 concentration and to the length of day variations. Theoretical and Applied Climatology 111, 601-607.
   DOI:10.1007/s00704-012-0998-9. PDF

   DOI: 10.2110/jsr.2012.81. PDF

   DOI: 10.1016/j.jastp.2012.04.002. PDF

   DOI: 10.1016/j.jastp.2012.02.016. PDF - Supplement
DOI: 10.1016/j.jastp.2011.12.005. PDF - Supplement

DOI: 10.1016/j.jastp.2011.10.013. PDF

DOI: 10.1007/s00704-011-0499-4. PDF


DOI: 10.1063/1.3645184. PDF

DOI: 10.2174/1874282301105010074. PDF - Supplement


DOI: 10.1103/PhysRevLett.105.219801. PDF

DOI: 10.1016/j.jastp.2010.04.015. PDF

Journal: PDF

47. Scafetta N., 2010. I cambiamenti climatici sono regolati da cicli naturali di origine astronomici (Climate change is regulated by natural cycles with an astronomical origin). *Il 21mo Secolo, Scienza e Tecnologia* 1, 5-10 (2010). 
Journal: PDF

46. Scafetta N., 2010. I cambi climatici e le loro cause, una discussione su alcuni punti chiave (Climate Change and its Causes, A Discussion About Some Key Issues). *La Chimica e l'Industria* 1, 70-75. 
Journal: PDF

DOI: 10.1016/j.jastp.2009.07.007. PDF

DOI: 10.1063/1.3265248. PDF


DOI: 10.1029/2005GL023531. PDF

DOI: 10.1016/j.physa.2005.03.052. PDF

ISBN: 10 - 0-9717860-8-1. PDF


DOI: 10.1029/2005GL023649. PDF

DOI: 10.1002/cplx.20078. PDF

DOI: 10.1007/3-7643-7412-8-12. PDF

Proceedings: PDF

DOI: 10.1080/00222500490516680. PDF

DOI: 10.1114/1.BABME.000003654.69559.ad. PDF

DOI: 10.1016/j.physd.2004.01.031. PDF

DOI: 10.1088/1469-7688/4/3/010. PDF

DOI: 10.1103/PhysRevLett.92.138501. PDF

DOI: 10.1016/S0960-0779(03)00434-X. PDF


DOI: 10.1016/S0960-0779(03)00442-9. PDF


DOI: 10.1103/PhysRevE.69.026303. PDF


DOI: 10.1016/S0378-4371(03)00527-2. PDF


DOI: 10.1103/PhysRevLett.90.248701. PDF


DOI: 10.1103/PhysRevE.67.051917. PDF


DOI: 10.1080/10443860390196932. PDF


DOI: 10.1016/S0960-0779(02)00136-4. PDF


DOI: 10.1103/PhysRevE.66.036130. PDF


DOI: 10.1103/PhysRevE.66.031906. PDF


DOI: 10.1016/S0378-4371(02)00730-2. PDF


DOI: 10.1103/PhysRevE.65.046203. PDF


DOI: 10.1016/S0960-0779(00)00162-4. PDF


DOI: 10.1142/S0218348X0100052X. PDF
Scientific Meetings and Presentations

Organized conference sessions


2. Total Solar Irradiance Variations and Their Impact on Climate I (joint with GC). Presiding: R. Willson, Columbia University; N. Scafetta, Duke University. AGU Joint Assembly, San Francisco, CA, USA. December 2006. URL to SH41A


Selection of recent presentations (also on video)


- Multi-scale harmonic model for solar and climate cyclical variation throughout the Holocene based on Jupiter-Saturn tidal frequencies plus the 11-year solar dynamic cycle. Presented at 2012 SORCE Science Meeting — Annapolis, MD, 18-19 Sept., 2012.


All presentations


34. Scafetta, N., B.J. West (2006). Is the Sun Warming the Earth and is its Contribution to Climate Change Underestimated by Climate Models? A Phenomenological Study on Global Warming. Presented at Eion University, depart. of Physics. 8 Apr.


2. West B.J., N. Scafetta, L. Griffin (2002). Fractal Physiology and Chaos in Medicine. Presented at University of Texas Medical Branch, Galveston, TX, 16 Dec.


Scientific Reviewer for:

Advances in Atmospheric Sciences
Astrophysics and Space Science
Atmospheric Chemistry and Physics
Biomathematics
Biological Cybernetics
Climate Change
Climate Dynamics
Communications in Nonlinear Science and Numerical Simulations
Computers and Mathematics with Applications
Complexity
Energy & Environment
EOS
Europysics Letters
Geophysical Research Letters
Global and Planetary Change
IEEE Transactions on Biomedical Engineering
International Journal of Climatology
Journal of Applied Mathematics and Computing
Journal of Atmospheric and Solar-Terrestrial Physics
Journal of Biomechanics
Journal of Geophysical Research - Space Physics
Journal of Physics A: Mathematical and Theoretical
Journal of Physics D: Applied Physics
Journal of Signal Processing Systems
Journal of Space Weather and Space Climate
Journal of Statistical Mechanics: Theory and Experiment
Journal of Vibration and Control
Mathematical Biosciences
New Journal of Physics
Nonlinear Dynamics
Pattern Recognition in Physics
Physica A: Statistical Mechanics and Its Applications
Physica Letter A
Physical Review E
Physical Review Letters
PLoS ONE
Remote Sensing of Environment
Quantitative Finance
Social Biology
Solar Physics
Theoretical and Applied Climatology
Theory in Biosciences
Water Resources Research

Member of the editorial board of:
Dataset Papers in Geosciences (Geophysics)

Additional Information

- Citizenship: Italian
- Residency: US Permanent Resident (Green Card Holder)
- Spoken Languages: Italian, English
- Computer Knowledge: OS: Linux and Microsoft Operating Systems and Office.
- Computer Languages: C, C++, Matlab, Mathematica, Maple, Basic.
- Networking: General knowledge of Internet.
Selected Press-News & Web-Articles

- Forget global warming - it's Cycle 25 we need to worry about. MailOnline, Jan/29/2012.
- Dr. Nicola Scafetta summarizes "why the anthropogenic theory proposed by the IPCC should be questioned". Watts Up With That?, Mar/14/2010.
- Riscaldamento globale, nuovi dati "Sottovalutato il ruolo del sole. La Repubblica, Oct/05/2005.
Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel. 252-808-2808, Ext. 224

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.

From: Stan Young [mailto:young@ncesch.org]
Sent: Wednesday, July 03, 2013 10:36 PM
To: Miller, Tancred
Cc: Stan Young
Subject: Re: CRC Science Panel

Dear Mr. Miller:

I am indeed interested in becoming a member of CRC. Attached find a short bio as well as a CV. I live in Raleigh, along with family members, own property on the NC coast.

Let me know if you need anything more.

Stan Young

On 7/3/2013 5:25 PM, Miller, Tancred wrote:
Hello Dr. Young,

Larry Baldwin, a member of the Coastal Resources Commission, submitted your name as a nominee to be added to the CRC's Science Panel on Coastal Hazards. I am writing to confirm your interest and availability and provide a little more information.

The Science Panel (http://www.nccostalmanagement.net/Hazards/scipanel.htm) is a voluntary panel of coastal experts who are appointed by the CRC chair and charged with the following: 1) continually review the current state of knowledge of coastal processes and ecological functions of coastal North Carolina; 2) review the current methodologies being used by North Carolina and others to define and identify coastal hazard areas and impacts associated with development in public trust areas of North Carolina; 3) review the scientific basis of the CRC's rules as applied by the Division of Coastal Management (DCM) to development in the coastal area; and 4) develop recommendations for the CRC on relevant topics.
The Panel meets approximately six times per year and performs additional work outside of meetings in subcommittees. Mileage is reimbursed for travel to Panel meetings, and lunches are provided. The initial term of appointment is four years.

If you wish to be considered please send me a current copy of your CV. We expect the CRC chair to make the appointments at the CRC’s September meeting.

Please let me know if you have any questions.

Best regards,
Tancred

Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel. 252-808-2808, Ext. 224

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.
Dr. S. Stanley Young is the Assistant Director for Bioinformatics at the National Institute of Statistical Sciences (NISS) in Research Triangle Park, North Carolina. NISS' mission is to identify, catalyze and foster high-impact, cross-disciplinary research involving the statistical sciences. He is also the CEO of Onicsoft Corporation.

Dr. Young graduated from North Carolina State University, BS, MES and a PhD in Statistics and Genetics.

He worked in the pharmaceutical industry on all phases of pre-clinical research, first at Eli Lilly and then at GlaxoSmithKline. He has authored or co-authored over 50 papers including six "best paper" awards, and a highly cited book, *Resampling-Based Multiple Testing*. He has two issued patents. He is interested in all aspects of applied statistics, with special interest in chemical and biological informatics. He conducts research in the area of data mining.

Dr. Young is a Fellow of the American Statistical Association and the American Association for the Advancement of Science. He is an adjunct professor of statistics at North Carolina State University, the University of Waterloo and the University of British Columbia where he co-directs thesis work.
S. Stanley Young
3401 Caldwell Drive
Raleigh, NC 27607-3326
919 782 2759
genetcee@bellsouth.net

Current Positions:
Assistant Director for Bioinformatics
National Institute of Statistical Sciences

CEO OmicSoft
CGStat LLC

Education
BS, MES, PhD, 1966, 1968, 1974, North Carolina State University, Raleigh, NC

Positions
1987-2000 Principle Consultant, GlaxoWellcome
2000-2002 Director, Statistical Research, GlaxoSmithKline
1996- Adjunct Professor of Statistics, NCSU
1998- Adjunct Professor of Statistics, University of Waterloo
2002- CEO, CGStat, LLC
2002- Assistant Director for Bioinformatics, NISS
2004- Adjunct Professor of Statistics, University of British Columbia

Other Experience and Professional Memberships
1972- American Statistical Association
1972- Biometrics Society
2004 Program Chair, ASA's Section on SPES
2003 Program Chair, Midwest Biopharmaceutical Statistics Workshop

Honors
1980 Best Statistics Paper, SAS Users' Group International
1989 Best Statistics Paper, SAS Users' Group International
1990 Fellow of the American Statistics Association
1991 Best Statistics Application Paper, ASA
1998 Statistics in Chemistry Award, ASA
1999 Virtual Screening Conference, Marburg Germany
2000 Statistics in Chemistry Award, ASA
2000 Participant of "Biostatistics Workshop" at the Oberwolfach Institute in Germany
2000 Participant of "Computational Chemistry Workshop" Beilstein Institute of Germany
2006 Statistics in Chemistry Award, ASA

Book
Peter H. Westfall and S. Stanley Young (1993) Resampling-based Multiple Testing, John Wiley & Sons

Book Chapters


Patents


Young SS, Barrett, Jr. TH, Beescher CW. System, method, and computer program product for analyzing spectrometry data to identify and quantify individual components in a sample. US Patent 7,561,975 (2009)

Papers


Zaykin, D.V., Young, S.S. (2005) Recursive partitioning as a tool for pharmacogenetic studies of
complex diseases: II. Statistical considerations. Pharmacogenomics. 6, 77-89.


Beasley CM, Benson C, Xia JQ, Young SS, Haber H, Mitchell MI, Loghin C. (2011) Systematic decrements in QTc between the first and second day of contiguous daily ECG recordings under controlled conditions. PACE 34, 1116-1127.

Science Panel Nominees-

Full Membership

August 2013
Matt,
I'd like to nominate Mike Wutkowski. A brief bio is attached. Let me know if this is sufficient.

Thanks,
Greg

Gregory L. Williams, Ph.D., P.E.
Engineering Branch
Wilmington District
U.S. Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC  28403-1398
Ph:  910-251-4767
Cell:  910-508-7926
Fax:  910-251-4965
greg.l.williams@usace.army.mil
Bio

Mike Wutkowski is a coastal engineer in the U.S. Army Corps of Engineers, Wilmington District. He has 36 years of experience in the design of breach closures, storm damage reduction studies, beach fill design, navigation channel impacts on adjacent beaches, breakwater design, groin design, revetment design, deep draft navigation, sedimentation and circulation studies. He has performed hydrologic and hydraulic studies. Mike developed the computer programs COSTDAM and GRANDUC, which analyze beach nourishment projects. He has served as the South Atlantic Division’s regional technical specialist for coastal projects. Mike is a P.E. and has a B.S. and M.S. from the University of Wisconsin, Milwaukee with a year of post-graduate study at Northwestern University.

Publications:
Wutkowski, M. 2004, Hatteras Breach Closure, Shore and Beach 72(2) pp 20-24;
Herman C. Miller, Member, ASCE, William A. Dennis, Member, ASCE, and Michael J. Wutkowski 1996 A Unique Look at Oregon Inlet, NC, USA, Conference Proceeding, Coastal Engineering pp. 4517-4530;
Nomination for: Dave Burton, Nicola Scafetta, Stan Young, Robert Brown

Tancred,

Sorry for the delay in getting back to you as I was out-of-town last week.

Your assessment of the nominees for the science panel are correct.

As to individuals that have expressed interest in serving on the panel are:
---Mr. Dave Burton, Systems & modeling
---Dr. Nicola Scafetta, Duke Univ.
---Mr. Stan Young, Biostatistics

You should directly contact them individually to confirm, as I have seen you have done with Dave Burton.

Another that should be considered as a nominee to the science panel, but I do not know his availability, but would be an excellent addition:
---Dr. Robert Brown, Duke Univ.

The remainder of the names submitted have prominent scientific backgrounds and will bring much balance to the science panel, but their locations and distance will likely preclude them from being actual members to the science panel. Their reviews, inputs, and knowledge should be strongly solicited.

Lastly, I've sent in numerous scientific studies and articles from other researchers that should be included in the science panel's future deliberations and included in their references, in order to comprehensively assess the issues. If you need these I'll be glad to resend them.

Call or email if you have any other questions. Thanks.

Larry P. Baldwin, CPSS/Sc
CRC Commissioner, Coastal Development
(910) 471-0804
Hi Matthew,

I'm sorry for not replying sooner, but I'm still in the process of working through my schedule for the fall semester (I'm the course director and primary lecturer for the large intro physics class at Duke) so the availability issue is still a bit open as this is a very demanding course and obviously has the highest priority as far as my available time is concerned.

Can you provide a bit more detail on when and where these meetings occur? Are they usually at the coast, or in or near e.g. Raleigh or Durham? Are they day long affairs or a few hours?

I'm certainly interested in the coast (I'm teaching physics at the Duke Marine Lab at this very moment:-) and am reasonably familiar with the physical science involved (certainly with the physics) and happy to learn more as needed, but it might be another week or two before I will be able to get my prior time commitments straightened out to where I know when I could be available for the CRCSP.

rgb
Curriculum Vitae

Robert G Brown

Contact Information

Department of Physics
Box 90305
Duke University
Durham, NC 27708-0305

(919) 280-8443, (919) 660-2567
rgb@phy.duke.edu

Areas of Research

Theoretical Condensed Matter Physics

Professional Service

• Chair, Physics Computing Committee, 2010 - present
• American Journal of Physics, 2007 - present
• Premajor Advisor, Premajor Advising, August 14, 2000 - present
• member, Physics Computing Committee, January 1, 2000 - September 1, 2010

Publications

Books


Papers Published


(Presented at the 1991 Materials Research Society Fall Symposium (session V) in Boston, MA; published in the symposium proceedings.)


Papers In Preparation


Other

1. R.G. Brown, Monthly column in Cluster World Magazine (June, 2005)(A list of column titles and topics follows. The column itself was initially called "Cluster Kickstart", which explains the focus on topics for the beginner. In January, 2005 the column's name was changed to "Cluster Edge" and topics are more free ranging.)


4. R.G. Brown, Packets 'n' Protocols II, Monthly column in Cluster World Magazine (October, 2004)(Wrap your data in TCP, pop it into an IP datagram, and insert it into an ethernet envelope...continued and with UDP thrown in for good measure.)

5. R.G. Brown, Packets 'n' Protocols, Monthly column in Cluster World Magazine (September, 2004)(Wrap your data in TCP, pop it into an IP datagram, and insert it into an ethernet envelope.)

7. R.G. Brown, *Cluster Infrastructure*, Monthly column in Cluster World Magazine (June, 2004) (Location, location, location. Clusters need space, power, cooling, and network access.)

8. R.G. Brown, *PVM, Part II*, Monthly column in Cluster World Magazine (April, 2004) (In this column we continue our exploration of PVM, the parallel computing subroutine library that more or less enabled the current explosion of high-performance parallel compute clusters to happen.)

9. R.G. Brown, *Serious Parallel Computing: PVM*, Monthly column in Cluster World Magazine (March, 2004) (The idea of a homemade parallel supercomputer predates the actual Beowulf project by years if not decades. In this column (and the next), we explore "the" message passing library that began it all and learn some important lessons that extend our knowledge of parallelism and scaling.)

10. R.G. Brown, *Amdahl's Law*, Monthly column in Cluster World Magazine (February, 2004) (Clustering seems almost too good to be true. If you have work that needs to be done in a hurry, buy 10 systems and get done in a tenth of the time. If only it worked with kids and the dishes. Alas, kids and dishes or cluster nodes and tasks, linear speedup on a divvied up task is too good to be true, according to Amdahl's Law, which strictly limits the speedup your cluster can hope to achieve.)

11. R.G. Brown, *Doing Work in Parallel*, Monthly column in Cluster World Magazine (January, 2004) (Last month we started out by learning how to use petty much an arbitrary Linux LAN as the simplest sort of parallel compute cluster. This month we continue our hands-on approach to learning about clusters and play with our archetypical parallel task on our starter cluster to learn when it runs efficiently and just as important, when it runs inefficiently.)

12. R.G. Brown, *Wulware* (2004) (Wulware is a collection of several tools (xmlsysd, libwulwulfwulstat, wul ogger) designed to support the monitoring of clusters and grids. xmlsysd is a lightweight daemon that provides xml-wrapped system statistics and other information extracted from /proc and various systems calls. wulstat and wul ogger are curses and straight ascii (respectively) tools for connecting to the xmlsysd daemons running on an entire cluster and either presenting it with a user-selectable refresh delay in a tty (xterm) window or printing it in a simple column format to standard out where it can easily be fed to a logfile for eventual plotting or to other tools (e.g. a build of a web view of the data). This is of obvious and immediate use for monitoring cluster status, tracking particular jobs, determining resource utilization for gridware schedulers or policy engines.)

13. R.G. Brown, *Benchmaster* (2004) (Benchmaster is a microbenchmark program designed to time and test system performance at a low level. It will eventually be added to the wulware suite as a component of xmlbenchd, a new project that provides a daemon interface to xml-wrapped drop-in benchmark programs so that applications can be built that can automatically tune their algorithms to the particular hardware they are running on and so that grid tools can be built that can dynamically determine the resources available on an anonymous grid node.)

14. R.G. Brown, *Dieharder* (2004) (Dieharder is a fully GPL random number generator tester, under development by Robert G. Brown and Dan Summerhayes. When complete it will incorporate all of George Marsaglia's diehard battery of tests for random number generators, plus the NIST Statistical Test Suite (intended to test
random number generators for cryptographic purposes), plus various additional tests from Donald Knuth's The Art of Programming Volume II, Seminumerical Algorithms and devised by the authors. It is currently functional with a subset of those tests.)

15.R.G. Brown, Flashcard (2004)(Flashcard is a program for presenting simple ashcards to students in a standard terminal (e.g. xterm) window. Special features include an xml encoding of ashcard problems and the ability to present auditory cues (e.g. spelling words out loud) from compressed soundfiles.)

16.R.G. Brown, Building Your First Cluster, Monthly column in Cluster World Magazine (December, 2003)(The beauty of cluster computing is that it requires little more than a generic workstation LAN to do it. We begin to explore cluster computing with just that: a “Network of Workstations” (NOW) that you may well already have!).


27.R.G. Brown, Pseudospin-ordered optical bistability for two-level atoms (November, 1986)(Presented at the meeting of the Southeastern Section of the American
Physical Society in Williamsburg, VA.


Last modified: 2011/06/30
(Nominee to the CRC Science Panel:)
David A. Burton for nomination to the CRC Science Panel. He has volunteered to serve. Dave's background and contact information is below. Dave has extensive experience in systems and numbers analysis, which would be an asset for reviewing statistical significance of data and scientific findings (i.e. does the data support the conclusion?). He also serves as an expert reviewer to the U.N. IPCC and is on the NC Emergency Mgt Sea Level Rise Impact Study advisory committee. I've found his various analysis to be professional, quite thorough, and unbiased.

- David A. Burton, 108 Black Bear Ct, Cary, NC 27513 / M: 919-244-3316
- NC-20 Science Advisor
- Member, NC Sea Level Rise Impact Study Advisory Committee
- IPCC WG1 Expert Reviewer
- webmaster, www.sealevel.info


- From Larry Baldwin, CRC Member
Reide Corbett Nomination

-----Original Message-----
From: Robert Young [mailto:ryoung@email.wcu.edu]
Sent: Wednesday, June 19, 2013 5:06 AM
To: Davis, Braxton C
Subject: FW: Science Panel

Braxton: I would like to nominate Reide Corbett to serve as a geologist on the science panel.

Please acknowledge the receipt of this nomination.

Thanks
Rob

Robert S. Young, PhD (Licensed Professional Geologist in NC, SC, FL) Director, Program for the Study of Developed Shorelines Professor, Coastal Geology Western Carolina University Belk 294 Cullowhee, NC 28723 828-227-3822, FAX 828-227-7163 ryoung@email.wcu.edu psds.wcu.edu
D. Reide Corbett  
East Carolina University  
Department of Geological Sciences/Institute for Coastal Science & Policy  
Greenville, NC  27858  252-328-1367  corbett@ecu.edu

Research Interests
Sedimentary and geochemical processes in coastal environments; Naturally-occurring radionuclides as tools for quantifying rates of sedimentary and biogeochemical processes; Investigations of the discharge of groundwater into the coastal zone; Deposition, remineralization and burial of carbon and nutrients in coastal margins; Coastal Hazards.

Professional Preparation
1994  B. S.  Chemistry, Florida State University  
1996  M.S.  Chemical Oceanography, Florida State University  
1999  Ph.D.  Chemical Oceanography/Geochemistry, Florida State University. Dissertation:  
\textit{Tracing groundwater flow into surface waters by application of natural and artificial tracers}

Appointments
\begin{tabular}{ll}
2012-present & Coastal Processes Program, UNC Coastal Studies Institute  
2011-present & Department of Geological Sciences, East Carolina Univ  
2007-2011 & Department of Geological Sciences, East Carolina Univ  
2006-2011 & Department of Geological Sciences, East Carolina Univ  
2005-present & Department of Marine, Earth & Atmospheric Sciences  
& Professor North Carolina State University  
2000-2006 & Department of Geology, East Carolina Univ  
1999-2000 & Department of Geology, Tulane Univ  
\end{tabular}

\begin{tabular}{ll}
 & Co-Program Head  
 & Professor  
 & Asst. Chair  
 & Assoc. Professor  
 & Adjunct Assoc.  
 & Asst. Professor  
 & Postdoctoral Fellow  
\end{tabular}

Publications
\begin{enumerate}
\item \textit{Five publications closely related to the proposed project}
\end{enumerate}

(ii) Five other significant publications

State-focused Research and Public Engagement
2012 to present: Albemarle-Pamlico National Estuary Program – Chair, Science & Technical Advisory Council
2011 – present: Advanced Regional and Decadal Predictions of Coastal Inundation for the U.S. Atlantic and Gulf Coasts. NOAA
2009: Invited participant in NC Beach Management Summit, Morehead City, NC
2009 – present: RENCI @ East Carolina University: Regional Engagement Center: Attacking Coastal Hazards of North Carolina.
2008: Presented to the State of North Carolina Climate Change Commission
2007 to present: Department of Marine Fisheries Strategic Habitat Area Advisory Committee
2006-2009: RENCI @ East Carolina University: Regional Engagement Center for Coastal Systems Informatics and Modeling (C-SIM). Focused on morphologic changes of coastal zone associated with sea level rise.
2005-2009: Shore-Zone Dynamics in Response to Sea level Rise. NOAA COP funded program that included disseminating data to several NC stakeholders
2006 to present: UNC – Coastal Studies Institute Science Coordinating Committee, member
2001 to 2013: Duke/University of North Carolina Oceanographic Consortium: Advisory Board
Please consider this a nomination for David Duane to fill one of the vacant geologist positions on the Science Panel on Coastal Hazards. He will be sending his CV to you by mail. He is a registered geologist and presently a member of the N.C. MARINE FISHERIES COMMISSION HABITAT AND WATER QUALITY ADVISORY COMMITTEE.

Spencer

Spencer Rogers
NC Sea Grant
5600 Marvin Moss Lane
Wilmington NC 28409
910-862-2491
rogerssp@uncw.edu
From: Deaton, Anne  
Sent: Friday, June 21, 2013 9:53 AM  
To: Lopozanski, Mike  
Subject: Science Panel

Mike,

I would like to nominate David Duane for the Science Panel. I believe Spencer already did this, just letting you know I agree. David Duane has served on MFC’s Habitat and Water Quality Committee for as long as I remember. MFC has restructured the committees with budget cuts, and we don’t meet much anymore. So I don’t think the time commitment due to that is a problem at all. In my experience, David has the appropriate background, reviews material, speaks up as needed, and is very professional. Let me know if you need anything else.

Anne
June 19, 2013

Mike Lopazanski
Coastal & Ocean Policy Manager
NC Division of Coastal Management
NC DENR
400 Commerce Avenue
Morehead City, NC 28557

Hello Mike,

Spencer Rogers, by e-message to you, nominated me for one of the geology positions on the Science Panel of the Coastal Resources Commission and stated I would send you a CV. Enclosed are materials addressing my education and experience. Admittedly these papers were prepared for other purposes and may not be in the format you prefer, but I am comfortable believing they present enough information for the reviewing panel to evaluate me for the vacancy.

The three themed packets identify, and synthesize, what I consider to be my major papers fit into the titled themes. The packet titled Marine Mineral Resources may seem a strange fit for coastal geology, but it addresses offshore sources of sand for beach nourishment, the sand being considered a “mineral”. I did not include a chronologic listing of all my publications but one is available if you request it. The one-page summary notes that following retirement I have retained interest in coastal science applied to coastal issues by pro bono service on other advisory groups and consider it a pay-back to my community and adopted state. I hope to be able to continue to serve, this time on the Science Panel of the CRC.

In the interest of transparency, I disclose here that I continue to rent a seasonal trailer site in Atlantic Beach.

Sincerely yours,

Encl: CV
Name: David B. Duane

Address: 18 Pier Pointe, New Bern, NC 28562-8856
(relocated from Bethesda, MD, 4.1996)

Education, training, experience

Geologist, registered professional geologist in North Carolina, #549, 1986 to date
Consultant, 1.1995 to date

Member, Advisory Committee, U of NH, U of ME Marine Programs, 7.1995-6.1998
Member, Performance Review Committee, South Carolina Sea Grant Consortium 6.1997-5.1998

Retired Senior Executive in US Civil Service 2.1995 after 31 years serving as:
  Director, National Sea Grant College Program (NOAA, Dept. Commerce) 3.1992-2.1995
  Director, National Undersea Research Program (NOAA, Dept. Commerce) 8.1987-3.1992
  Division Director, National Sea Grant College Program 8.1974-8.1987
  Staff Member, US Senator, 7.1979-6.1980 (leave of absence from Sea Grant Program)
  Chief, Geology Branch, Coastal Engineering Research Center (Army Corps of Engineers)
    10.1966-8.1974
  Chief, Shore Processes Section, Lake Survey District (Army Corps of Engineers) 1.1964-10.1966

Exploration Geologist, Mobil Oil Corporation 1.1957-12.1963

Author, co-author or contributing author to 42 scientific/technical publications including 3 books

Senior Fellow, Geological Society of America

Graduate of Dartmouth College, AB; Univ. Kansas, MS and PhD

Member, Centenary United Methodist Church, serving several committees, 9.1996 to date


Member, Cosmos Club, Washington, DC (resigned in good standing after moving to New Bern)

Member, Environment and Waterways Advisory Board, River Bend Town Council & Mayor,
River Bend, NC 6.2002 - 4.2007

Member, Habitat and Water Quality Advisory Board, Marine Fisheries Commission, Department of Environment and Natural Resources, 3.2007 - present
Candidate David B. Duane

Significant Papers

Processes of Sediment Transport
(group 1 of 3)


In the field of sediment transport processes these four papers stand out. The paper characterizing transport in the St. Clair River (1967) was unique and demonstrated the non-alluvial nature of the load, cross-stream zonal differences, and correlated load to storm conditions at the source, southern Lake Huron.

For a number of years Dave led a multi-agency program to develop technology for tracing in real time, radioactive labeled sand movement in the nearshore zone. The technology was developed and used in a number of qualitative experiments. It was also used in conjunction with fluorescent tracers in the only successful Eulorian sand tracer experiment in the littoral zone (1980). The radioactive tracer technique was used to determine, in real time, that conditions of stationarity had been met and therefore that data provided by the fluorescent tagged sand would be accurate. That experiment clearly and quantitatively demonstrated different rates of transport for discrete grain sizes. The transport sum for that experiment became a limiting data point in the empirical curve used by the Corps of Engineers for estimating longshore sediment transport knowing longshore wave energy.

After nearly a decade of conducting and directing a field program and subsequent data analysis of continuous seismic profiling and vibrocoring to inventory sand and gravel on the US Atlantic continental shelf, Dave led the analysis and preparation of a paper (1972) synthesizing the results of that study which extended from Miami at the south to Portland, Maine on the north. Three families of shoals were identified on the inner continental shelf. The most unique features were finger-like linear shoals which were determined to have a characteristic angular relationship to the adjacent coastline, regardless of the compass orientation of that coastal section. Interestingly, this paper has been used as a conceptual
model for features found in the stratigraphic record and hence used for petroleum exploration.

Dave and one of his staff pursued the study of inner shelf shoals and concluded the linear finger-like groups were features formed near shore by the interplay of incident storm waves and longshore currents. They concluded and wrote (1976) that the morphology of the US continental shelf is largely relict with the features having developed near shore at lower stands of sea-level -- stranded in place as the post Pleistocene sea level rose and the barrier islands retreated.
Beach and Nearshore Processes
Related to Coastal Engineering
(group 2 of 3)


Regarding his contribution to coastal engineering three papers stand out, two for research and one for education. Dave planned and directed a field study of shoaling at a small boat harbor built and maintained by the Corps of Engineers on Lake Superior. Dave’s work and that of a physical oceanographer clearly demonstrated processes and circumstances (1967). Results of those studies led to remedial actions by the Corps, but it also demonstrated shoreward movement through time of inner bars coupled to changes in beach geometry as well as geometric relationships of deeper water bars to harbor entrance structures. The paper was deemed a “classic” by Dr. M. Schwartz and reprinted (with permission) in his monograph on spits and bars.

Perhaps the most significant paper from a coastal engineering standpoint was that which discussed the effect of sand particle size on the stability of an artificially filled beach. Observation shows (other factors being equal) that coarser beach material is more stable over time. In the experiment carried out and reported on by Dave and his co-author (1968; Dave was responsible for the sedimentation part and his co-author for the engineering operations) coarse fill material was used to fill one of several compartments in a groin field. Careful post fill monitoring measured adjustment and compared stability to adjacent compartments nourished with "normal" fill. That coarse fill compartment remained stable for years; the others did not. Success of that experiment led Dave to the concept of “designing” sand for use in beach nourishment projects. A consultant to the Corps (and former member of the Club now deceased, W.C. Krumbein) took on the subject under Dave’s direction. Working with two of Dave’s staff, a sequence of mathematical methods was developed for specifying fill characteristics as well as how much fill was required to build to such characteristics. The methods are incorporated in the Corps’ Shore Protection Manual and thus are in world wide use.
At the invitation of Dr. D. J. Stanley (an active Club member and co-sponsor) Dave prepared two papers for a book Stanley was organizing and editing dealing with marine sediment transport and environmental management. One of Dave's papers (1976) addressed the topic of sedimentation and coastal engineering - beaches and harbors. This paper, while incorporating a synthesis of the work of many (including Dave and his staff) it was important because it reached an entirely different community and so served as an excellent tutorial. Dave still receives an occasional request for reprints, long since exhausted.
Candidate David B. Duane,
Significant Papers

Marine Mineral Resources
(group 3 of 3)


The placer mineral paper is a marine minerals parallel to the beaches and harbors paper previously discussed. This paper too, while relying heavily on Dave's own work and that of his staff, also included a synthesis of what was then known about the actual, and potential for, marine placer mineral exploration technology, geology of occurrence, technology of recovery, and political considerations. It has served as a useful tutorial and teaching tool.

The second paper concerns sand and gravel resources on the US Atlantic continental shelf. In celebration of its Centennial, the Geological Society of America (of which Dave is a Fellow) embarked on a decade long project to summarize geologic knowledge of North America. Dave was invited to prepare a paper on marine sand and gravel. The bulk of the paper synthesizes and summarizes a decade of research and assorted papers by Dave and his former staff which covered the inner shelf from Miami to the Gulf of Maine. With the help of his co-author (whom Dave invited to work on this piece) the coverage makes use of all known work on the US Atlantic shelf. This paper, if not the final one on sand and gravel, clearly is the penultimate. Work leading up to this paper has served the nation well as the Corps of Engineers and others use the work as the starting point for sand resources used in beach nourishment projects. Some examples of projects built using the base line exploration programs (and the beach fill specifications work mentioned previously) include: Bal Harbour and Miami Beach, Florida, Ocean City, Maryland, and Rockaway Beach, Long Island, New York.
Slagel, Matthew

---Original Message-----
From: William Birkemeier [mailto:william.birkemeier@gmail.com]
Sent: Thursday, June 27, 2013 5:57 PM
To: Davis, Braxton C
Cc: Miller, Tancred; McNinch, Jesse E ERDC-CHL-MS
Subject: Dr. Jesse McNinch Nomination with CV

Hi Braxton - Dr. Jesse McNinch is one of the names we've discussed as a possible science panel member. He's interested and his CV is attached. He would serve as one of the coastal geologists. His CV is attached, as you will see he is well qualified.

I'm traveling so if you need to contact Jesse, please do so directly - he can be reached at (252) 305-3729 and I've cc:d him to this email.

Bill

Bill Birkemeier
252-256-2743
William.Birkemeier@gmail.com
Dr. Jesse E. McNinch
Field Research Facility
Coastal Observation and Analysis Branch
Coastal and Hydraulics Laboratory
Engineering Research and Development Center
Duck, North Carolina
jesse.mcنينچ@usace.army.mil; (252)261-6840x243

EDUCATION

Ph.D., Marine Sciences, University of North Carolina, Chapel Hill, NC, 1997
M.S., Marine Sciences, University of North Carolina, Chapel Hill, NC, 1989
B.S., Geology, University of Southwestern Louisiana, Lafayette, LA, 1987

PROFESSIONAL AND ACADEMIC POSITIONS

2013-present  Research Oceanographer, Field Research Facility, Coastal Observation and Analysis Branch, Engineering Research and Development Center, Duck, NC
2008-2013    Director, Field Research Facility, Field Data Collection and Analysis Branch - CHL, Engineering Research and Development Center, Duck, NC
2007-present  Associate Professor (tenured – adjunct status), College of William and Mary, Virginia Institute of Marine Science, Gloucester Point, VA
2001-2006    Assistant Professor, College of William and Mary, Virginia Institute of Marine Science, Gloucester Point, VA
2001-2005    Adjunct Professor, North Carolina State University, MEAS Department, Raleigh, NC
2000-2004    Visiting Research Assistant Professor, University of North Carolina at Chapel Hill, Institute of Marine Sciences, Morehead City, NC
1997-1998    Post-doctoral Research Associate, University of North Carolina at Chapel Hill, Institute of Marine Sciences, Morehead City, NC

HONORS, PRIZES AND AWARDS

2011    ERDC Research and Development Achievement Award
2007    Robert and Sarah Boyd Term Distinguished Associate Professor
2002    Office of Naval Research-Army Research Office Young Investigator
1998    National Research Council Post-doctoral Fellow
FELLOWSHIPS, GRANTS, AND SERVICE AWARDS

Remote sensing of coastal environmental conditions for Force Projection, ROAMS, Department of Defense, $1,700,000, 2010-2014.


Inner Shelf Processes—Defense Research Initiative, Office of Naval Research, $250,000 2013-2016.


Long-term and storm observations of oceanographic and morphology conditions at the Field Research Facility, USACE; $2,200,000, 2013.

Radar Inlet Observing System, Regional Sediment Management, USACE; $150,000, 2010-2012.

Tidal Inlets DRI — New River Inlet, Office of Naval Research, $180,000 2010-2012.

Sedimentary and physical processes at Cape Hatteras; US Geological Survey; $90,000; 2009-2010.

Morphodynamics of coastal barriers, Defense Coastal Estuarine Research Program, SERDP; $1,743,197 total project; Lead PI — J. McNinch ($240,000), 2008-2011.

Integrating Remotely-sensed surf zone bathymetry and beach topography, IRIPS, Lead PI — J. McNinch ($145,000), 2009-2010.

Monitoring of bathymetry and oceanographic conditions associated with the Wilmington Harbor Channel Re-alignment Project, Wilmington District (SAW), ($647,000), 2008-2009.


Margins Source to Sink: Collaborative research of shoreline progradation between the coastal plain and inner shelf, Waipapa Sedimentary System; National Science Foundation MARGINS; $640,019; Lead PI — J. McNinch; Co-PI’s — C. Harris, J. Swenson; 2005-2008.

Nearshore morphodynamics and geological framework; US Geological Survey; $70,000; 2005-2006.
Collaborative research: A real-time and rapid response observing system for the study of physical and biological controls on muddy seabed deposition, reworking, and resuspension; National Science Foundation - Ocean Technology; $1,946,490; Lead PI - C. Friedrichs, Co-PI's - J. McNinch, S. Kuehl, R. Diaz, L. Schaffner, C. Harris; 2005-2008.

Sediment Dispersal off a High-yield River; Observations and Modeling of Gravity-driven Transport and Deposition; National Science Foundation - MG&G; $646,519; Lead PI - S. Kuehl; Co-PI’s – J. McNinch, C. Friedrichs, L. Wright, C. Harris; 2003-2006.

Geological Influences on Nearshore Dynamics; ONR-ARO Young Investigator Award; Army Research Office; $125,642; 2002-2005.


Seafloor and Habitat Assessment of NOAA NERRS sites in the York River, VA; NOAA; $168,000; Co-PI's – J. McNinch and R. Diaz; 2002-2004.

Observations and Modeling of Scour and Burial at Queen Anne's Revenge; NC Underwater Archaeology Unit; NC Sea Grant; $8,000; 2003.

Nearshore Morphodynamics and Underlying Geology – Surveying and Coring; Outer Banks, NC; US Geological Survey; $112,000; 2002-2003.

Documenting the Regional and Global Importance of Halimeda Biomes in the Calcium Carbonate Budget: a small grant for exploratory research; National Science Foundation - SGER; $35,897; Co-PI’s – J. McNinch and J. Milliman; 2002-2003.


Characterization of Bathymetric and Hydrodynamic Changes Associated with Channel Realignment at Cape Fear, NC; US Army Corps of Engineers; $180,000; 2002-2003.

Acquisition of a Sediment Coring System for Nearshore Research and Education; Defence University Research Instrumentation Program (DURIP); Department of Defense; $71,510; 2002.


Scour and Burial Investigations at Queen Anne's Revenge; NC Sea Grant; Co-PI's – J. McNinch and J. Wells; $5,200; 2003.


Tidal Currents at Oregon Inlet: an investigation of flow patterns in a migrating inlet; US Army Corps of Engineers; Field Research Facility; $32,996; 2001.


Monitoring Currents and Seafloor Morphology Associated with Channel Dredging: Cape Fear River; US Army Corps of Engineers; Field Research Facility; Co-PI's – J. McNinch and J. Wells; UNC-CH; $54,000; 2000-2001.

Storm-related Scour at the Wreck Site of Queen Anne's Revenge; North Carolina Underwater Archaeology Unit; $9,000; 2000.

Observational Investigation of Short-term Shoreline and Shoreface Response to Pre-Holocene Substrates Outcropping in the Surf zone; National Research Council; Supported by Army Research Office; Post-doctoral Associate: J. McNinch; $80,000; 1999-2000.


RESEARCH PUBLICATIONS

Peer-reviewed Publications (notes authorship with mentored graduate student)


McNinch, J.E. and J.L. Milsis, 2010, Geology metrics for predicting shoreline change: using seabed and sub-bottom observations from the surf zone, Journal of Sedimentology,
International Association of Sedimentologists special publication, editors: C. Sherwood, P. Hill, and M. Li.


Refereed Conference Proceedings


Brodie, KL and McNinch, JE, 2011, Beach change during a nor'easter: relationships to wave steepness and inner surf zone dissipation. Coastal Sediments '11.

List, JH; Warner, JC; Thielor B; Haas, K; Voulgaris, G; McNinch, JE; Brodie, KL 2011, A Nearshore Processes Field Experiment at Cape Hatteras, North Carolina, U.S.A. Coastal Sediments '11.


Professional Meetings and Abstract Publications (*notes authorship with mentored graduate student) – past decade only


Brodie, K.L.; McNinch, J.E; Forte, MP; Slocum, R; 2010, Low-grazing angle laser scans of foreshore topography, swash and inner surf-zone wave heights, and mean water level: validation and storm response, AGU Fall Meeting.

List, JH; Warner, JC; Thieler R; Haas, K; Voulgaris, G; McNinch, JE; Brodie, KL; 2010, Sediment Delivery to Diamond Shoals: a Field Experiment at Cape Hatteras Point, North Carolina, AGU Fall Meeting.


Harris, C.K., J.E. McNinch, A. Bever, 2006, Sediment dispersal within Poverty Bay, offshore of the Waipaoa River, New Zealand, American Geophysical Union, MARGINS Source-to-Sink Session, Fall Meeting 11-15 Dec.


McNinch, J.E., 2005, Development of sorted bedforms in the nearshore: geology or hydrodynamics?, *American Geophysical Union, Ocean Sciences*, New Orleans, LA.


McNinch, J.E., 2004, Evidence of the maintenance or recurrence of shore-oblique sandbars during Hurricane Isabel using Bar And Swash Imaging Radar (BASIR), *American Geophysical Union, Ocean Sciences*, Portland OR.


Miselis, J.L. and J.E. McNinch, 2003, Shoreline change and surf zone sand thickness, Assateague Shore and Shelf Conference, George Mason University.

*Non-Refereed publications and technical reports*


PROGRAM DEVELOPMENT

Invited presentations and program reviews

Queens University, “Predicting beach erosion and overwash during storms”, June, 2013, Kingston, Ontario.


North Carolina State University – MEAS seminar series, “Relationship of shoreline change to nearshore bathymetry and geology, April, 2013, Raleigh, NC.

University of Puerto Rico – Mayaguez, “Predicting beach erosion and overwash during storms: recent technology for storm observations”, April, 2013, Mayaguez, Puerto Rico.

ONR Remote Sensing, invited panelist for Program Review, April 2013, Washington, DC.

ONR Internal Program Review, Morphodynamics of tidal inlet channels and shoals, September 2012, Denver, Co.

National Academy of Sciences, “Importance of sustained coastal observations for model development and climate research”, May, 2011, Taiwan.


USACE -Wilmington District, 2010, addressed representatives from regional and national resource agencies investigating the proposal to use cape-associated shoals for beach placement material, “Sedimentary and physical processes at Cape Fear”, Wilmington, NC.
University of East Carolina, Geology Department: ‘Chasing Storms: unraveling the physics behind coastal vulnerabilities’. April, 2011, Greenville, NC.

University of Kansas, Geology Department: ‘Chasing Storms: unraveling the physics behind coastal vulnerabilities’, March, 2011, Lawrence, KS.

University of Texas – Corpus Christi, Marine Sciences Department: ‘Chasing Storms: unraveling the physics behind coastal vulnerabilities’, February, 2011, Port Aransas, TX.

University of Texas – Austin, School of Geophysics: ‘Chasing Storms: unraveling the physics behind coastal vulnerabilities’, January, 2011, Austin, TX.


NORAD and NORTHCOM, “Shortfalls in mine detection techniques for ports and harbors”, 7-9 October, 2010, Colorado Springs, CO.

Coastal Carolina University, “Geology metrics for predicting shoreline change, invited speaker and participant in Coastal Stratigraphy Workshop”, June 2009, Myrtle Beach, SC


Office of Naval Research, “Spatial variability of seafloor sediment and implications to light transmission in the surf zone”, May 2009, Duck, NC.

Duke University seminar series, “In search of a 500-year record of hurricane activity in the North Atlantic”, Fall 2007, Durham, NC.

University of Texas - Galveston, Departmental Seminar Series, “Predicting shoreline change from geologic parameters”, Fall 2006, Galveston, TX.

University of Delaware, Geology Department Seminar Series, “Spatiotemporal changes in the nearshore and beach: geology-based predictions”, Spring 2006, Newark, DE.

East Carolina University, Geology Department Seminar Series, “Linking framework geology with shoreline change”, Spring 2005, Greenville, NC.

East Carolina University, “Processes of scour and burial in shallow, marine settings”, Marine Archaeology Symposium – Science, Mystery, and the Pirate Era in North Carolina, Spring 2005, Greenville, NC

North Carolina State University MEAS Seminar Series, “Nearshore morphodynamics and framework geology”, Fall 2004, Raleigh, NC.
Zhongshan University, “Recent advances and tools in shallow-water acoustics, Invited lecture: Institute of Coastal and Estuarine Studies”, Fall 2002, Guangzhou, China.

Duke University Geology Department Seminar Series, “Framework geology and shoreline behavior: Is there a link?”, Fall, 2002, Durham, NC.

Old Dominion University Departmental Seminar Series, Ocean, Earth & Atmospheric Sciences, “Influences of underlying geology on nearshore and shoreline processes”, 2001, Norfolk, VA.

Virginia Institute of Marine Science, “Cape-associated shoals and evolution of nearshore morphology”, 2000, Gloucester Point, VA.

Naval Research Laboratory, “Modeling shoreline evolution in response to underlying geology and recognizing buried objects by bedform signatures”, 2000, Stennis Space Center, MS.


Public outreach – film or publications

German TV Documentary on US East Coast,Film feature highlighting the Field Research Facility, June, 2013.

NY Times Science, C. Dean, interview and publication promoting Field Research Facility and research program, June, 2012.

Our State, Interview resulting in publication in May 2011 that promoted the Field Research Facility and research program.


Discussion of research in National Geographic Online article, Summer 2005.

Blackboard's shipwreck; Daily Press news article; Fall 2003.

Special guest on Discovery Channel, NASA Science Files; TV episode addressing beach erosion; Fall 2003.

Beach erosional hotspot article in Daily Press (Regional newspaper), Spring 2003.


CONTRIBUTIONS TO EDUCATION
Courses Taught

Federal Agencies
Interpretation of coastal processes from remote sensing assets (Marine Corps Intelligence Activity)
Graduate Level (William & Mary – VIMS)
Spatial Analyses with Matlab (MS698)
*Coastal and Estuarine Processes – Laboratory (MS302L)
Geophysics in the Coastal Zone (MS698)
Remote Sensing in the Nearshore Environment (MS698)
Coastal Sedimentary Environments (MS 552)
Guest Lecturer (MS501; GEO238; MS501L)
Marine Geology (MS 522)
Marine Tools and Techniques (MS 568)

Undergraduate Level
Marine Geology (GEO306)

Students Mentored (* indicates graduation; † indicates graduation over past year)

Major Advisor:
*Kate Brodie (Ph.D.): Wind-driven circulation in the nearshore
*Amy Foxgrover (M.S.): Geologic controls on shoreline change
*Lindsey Kraatz (Ph.D.): Acoustic signatures of bioturbation – York River
*Heidi Wadman (Ph.D.): Dispersal/capture of coarse sediment – Waiapu, New Zealand
*Jun Yong Park (Post-doctoral Associate): Beach and nearshore dynamics
*Alicia Browder (M.S., 2005): Influences of shelf sand mining on shoreline change
*Jennifer Misolis (Ph.D.): Influences of underlying geology on shoreline behavior
*Courtney Schupp (M.S., 2005): Geological controls on shoreline rhythmic topography

Research Committee:
*Adam Starke (Ph.D., U Delaware)
*Jesse Baldwin (M.S., UNC-Wilmington)
*Chris Magel (M.S., VIMS)
*Ha Ho Kyong (Ph.D., VIMS)
*Eli Lazeras (Ph.D., Duke)
*Aaron Beyer (Ph.D., VIMS)
*Curtis Smith (M.S., ECU)
*Kevin Xu (Ph.D., VIMS)
*Lisa Addington (M.S., VIMS)
*Tara Knistern (Ph.D., VIMS)
*Daniel Doolittle (M.S., VIMS, 2004; Ph.D., UM-RSMAS)
*Eleanor Camsan (Ph.D., UNC-Chapel Hill, 2005)
*Dave Bernstein (M.S., North Carolina State University, 2002)
*Jun-Yong Park (Ph.D., UNC-Chapel Hill, 2000)
*Mark Borrelli (M.S., UNC-Chapel Hill, 2002)
*Kristi Hess (M.S., UNC-Chapel Hill, 2000)
*William Sweet (M.S. North Carolina State University, 2000)

Undergraduate Student Mentoring
Bhan Theuerkoff (College of William and Mary, Senior Thesis, 2008-2009)
Dandra Henderson (College of William and Mary, Senior Thesis, 2008-2009)
Nyssa Perryman (College of William and Mary, Senior Thesis, 2007-2008)
Lauren A. Frank (University of Miami, Summer Volunteer, 2006)
Katie Korocky (Boston University, REU Summer Intern Program, 2006)
Kelly Gibson (College of William and Mary, Senior Thesis, 2003)
Michael Cerf (Texas A&M, VIMS Summer Intern Program, 2003)
Joel Nebauer (College of William and Mary, VIMS Summer Intern Program, 2002)
Roland Robertson (College of William and Mary, Senior Thesis, 2002)
Melissa Garner (Western Carolina University, VIMS Summer Intern Program, 2001)
Jesse Baldwin (College of William and Mary, Senior Thesis, 1999-2001)
Chris Freeman (UNC-Wilmington, Summer, 1994)
Steve Stanford (UNC-Chapel Hill, Summer, 1994)
Vincent Thomas (Elizabeth City State University, Summer, 1993)
Slagel, Matthew

From: Miller, Tancred
Sent: Thursday, June 20, 2013 8:42 AM
To: Lopazanski, Mike; Slagel, Matthew; Richardson, Ken
Subject: FW: Nominations & Panel recommendations
Attachments: CV_Moore_June_2013.pdf

FYI

Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel. 252-808-2808, Ext. 224

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.

From: Rodriguez, Antonio B [mailto:abrodrig@email.unc.edu]
Sent: Wednesday, June 19, 2013 1:42 PM
To: Miller, Tancred
Cc: Peterson, Charles H
Subject: RE: Nominations & Panel recommendations

Hi Tancred,

I just realized that I still need to do the doodle poll, but first...

I nominate Laura Moore for regular Panel membership. Her CV is attached. I truly think she will be an excellent addition, and is well versed with the problems we spend time discussing at our meetings.

All the best,
Tony

Antonio B. Rodriguez  http://rodriguez.web.unc.edu
Assoclate Professor
University of North Carolina at Chapel Hill
Instituto of Marine Sciences
3431 Arendell St.
Morehead City, NC 28557

Phone:252-726-6941 x-140
Fax: 252-726-2426

From: Miller, Tancred [tancred.miller@ncdennr.gov]
Sent: Monday, June 17, 2013 3:06 PM
To: sbenton45@earthlink.net; William.Birkemeier@gmail.com; Bill Ceary; Jtomjarrett@aol.com; overton@ncsu.edu; Peterson, Charles H; rigges@ecu.edu; Rodriguez, Antonio B; Rogers, Spencer; Beth Slaudone; nyoung@wcu.edu
Cc: Slagel, Matthew; Davis, Braxton C; Lopazanski, Mike; Richardson, Ken
Subject: Nominations & Panel recommendations

Panel,
Here are the nominations we've received so far for regular Panel membership:

1. David Burton (NC-20 Science Advisor)
2. Greg Rudolph (Carteret County Shore Protection)

These other folks have been mentioned but not formally nominated, meaning their interest in serving has not been confirmed and no CV has been provided: Reid Corbett (ECU & CSI), J.P. Walsh (ECU & CSI), Rick Leuttich (UNC-IVS), Jesse McNinch (USACE), Billy Edge (NCSU & CSI), Brad Murray (Duke), Jeff Sheldon (Moffat & Nichol). Remember that nominations close at the end of June.

Here are the nominations so far for the SLR report:

1. Robert Dean (U. of FL)
2. Nicola Scafetta (Duke U.)
4. Greg Rudolph (Carteret County)
5. Dave Mallinson (ECU)
6. Reid Corbett (ECU & CSI)
7. Carolyn Currin (NOAA)

These folks have been mentioned but not formally nominated, meaning their interest in serving has not been confirmed and no CV has been provided: Larry Atkinson (ODU), Jim Houston (USACE MS?). Nominations close at the end of July.

We have other names from a CRC member and are trying to clarify what they are being nominated for, and to get their CVs and expressions of interest: Robert Brown (Duke), Stanley Young (National Institute of Statistical Sciences), Jeff Warren (Senate Pro Tem's office), David Legates (U. of DE), J. Scott Armstrong (U. of PA), Jim O'Brien (FSU), Fred Singer (UVa emeritus), John Christy (U. of AL).

We don't have a lot of time between the end of the nomination period for regular membership and the July CRC meeting. If possible, let's try to have a conference call on July 8th so that you all can decide who you would like to recommend be appointed to the 2 new slots. If you are available on the 8th please indicate your time preference http://www.doodle.com/a94pxbquggk8vuu5.

If you have any questions please ask.

Thanks,
Tancred

Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel. 252-808-2808, Ext. 224

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.
Laura J. Moore  
Updated June 19, 2013

University of North Carolina  
Department of Geological Sciences  
104 South Road  
Chapel Hill, NC 27599  
phone: (919) 962-5960  
laura.moore@unc.edu

Education  
Ph.D.  Earth Sciences, University of California Santa Cruz, March 1998. Advisor, Gary Griggs  

Professional Experience  
Assistant Professor  
University of North Carolina-Chapel Hill, Department of Geological Sciences  
Curriculum for the Environment and Ecology  
AY2009-2010

Visiting Assistant Professor  
Duke University, Earth and Ocean Sciences Division  
University of North Carolina-Chapel Hill, Department of Geological Sciences  
AY2005-2006*

Assistant Professor  
University of Virginia, Department of Environmental Sciences  
2008 – 2010†

Visiting Scientist  
U.S. Geological Survey, Woods Hole Science Center, Woods Hole, MA  
AY2005-2006*

Assistant Professor  
Oberlin College, Department of Geology, Oberlin, OH  
2002 - 2007

Research Associate  
University of South Florida, College of Marine Science/USGS Center for Coastal Geology,  
St. Petersburg, FL  
2000 - 2002

Postdoctoral Scholar  
Woods Hole Oceanographic Institution, Department of Geology and Geophysics,  
Woods Hole, MA  
1998 - 2000

Instructor  
University of California Santa Cruz, Department of Earth Science, Santa Cruz, CA  
1998

Graduate Student Researcher/Research Assistant  
University of California Santa Cruz, Department of Earth Science, Santa Cruz, CA  
1993 - 1998

Honors and Awards  
W.M. Keck Foundation Fellowship in the Natural Sciences, May 2005.  
*parental leave Fall 2011  
†parental leave Fall 2008  
*Junior sabbatical at Oberlin College—spent learning and developing computational modeling  
techniques to expand the approaches used in my research and teaching.
Nominated to Project Kaleidoscope Faculty for the 21st Century, July 2004.  
Meyers Oceanographic Trust Research Award, April 1997.  
ARCS Scholarship, Achievement Rewards for College Scientists Foundation, June 1996.  
Meyers Oceanographic Trust Research Award, March 1995.  
William Beye Heald Scholarship, Long Marine Laboratory, UC Santa Cruz, April 1994.  
Norma Vengo Prize in Geology, Department of Geology, Colgate University, May 1993.

Publications

Peer-Reviewed Journal Articles


**Journal Articles Submitted and in Revision**


*Duran Vincent, O., Moore, L.J. and Young, D., in review. Numerical evidence that plant zonation determines maximum dune size. PNAS.

**Journal Articles Nearing Submission**

*Brenner, O.T., and Moore, L.J., in preparation for submission to Geomorphology by July 2013. The complex influences of backbarrier deposition, substrate slope and underlying stratigraphy in barrier island response to sea level rise: Insights from the Virginia Barrier Islands, Mid-Atlantic Bight, U.S.A.

*Duran Vincent, O., Moore, L.J. and Young, D., in preparation for submission to Nature Climate Change. Numerical evidence that changes in storm frequency may trigger rapid changes in barrier island state.


*Oster, D., Moore L.J. and Stockdon, H., in preparation for submission to Marine Geology by September 2013. The Influence of Morphology on Barrier Island Recovery Following Storms: Insights from the Virginia Barrier Islands, Mid-Atlantic Bight, USA.
Other Refereed Contributions


Books and Chapters


Reports, Book Reviews, Data Compilations and Model Contributions (non-refereed)


Published Abstracts


- 5 -

response to climate change. AGU, Fall Meet. Suppl.

Moore, L.J., *Duran Vinent, O., and D. Young, Department of Biology, The role of ecomorphodynamics in barrier island response to climate change. 2012, AGU, Fall Meet. Suppl.

*Duran Vinent, O., Moore L.J., and Young, D., in press (Invited), 2012. The role of vegetation in shaping dune morphology. AGU, Fall Meet. Suppl.


Moore, L.J., Harris, M., Brock, J., Schirokauer, D., and McIntyre P. 2002. Coastal dune habitat, morphology and restoration at Point Reyes National Seashore: Applications of historical
aerial photography, DEMs and lidar. Coastal and Marine Remote Sensing, Miami, May 22.


Moore, L.J., 1997. Application of digital softcopy photogrammetry to the measurement of shoreline erosion rates along the California Coast. EOS Supplement, American Geophysical Union Fall Meeting.


Teaching Record

Courses Taught

University of North Carolina
Advanced Coastal Environmental Change (GEOL 710), Spring 2013, 6 students, 1 auditor
Introduction to Geology (GEOL 101), Spring 2013, 114 students
Coasts in Crisis First Year Seminar (GEOL 079), Fall 2012, 20 students
Coastal Sedimentary Environments (GEOL 430), Spring 2012, 3 students
Introduction to Earth and Climate for Science Majors (GEOL 110), Spring 2012, 27 students, 1 auditor.
Introduction to Earth and Climate for Science Majors (GEOL 110), Spring 2011, 23 students.
Independent Study (Geol 390), Spring 2011, Marcelaine Tanner, 1.0 credit.

University of Virginia
Independent Study (EVSC 494), Fall 2010, Nicholas Brockemeier, co-advised with R. Davis
Coastal Processes (EVSC 485), Spring 2009, 14 students and 1 auditor, 1 TA, team-taught with R. Dolan
Independent Study (EVSC 494), Spring 2009, Danielle LaRock, co-advised with P. Wiberg,
Independent Study (EVSC 494), Spring 2009, Caleb Buller, co-advised with M. Reidenbach,
Climate Change Impacts on Coastal Processes (EVSC 493/793), Fall 2008, 3 students and 2 auditors
Independent Study (EVSC 494), Fall 2008, Danielle LaRock, co-advised with P. Wiberg,

Oberlin College
Geographic and Geologic Mapping and Analysis, Spring 2003, 2004

University of California Santa Cruz

Current Postdoctoral Associates and Graduate Students
Orencio Duran Vinent (Postdoctoral Associate), August 2011 – present (UNC-CH)
J.I. Johnson (M.S. student), August 2011 – present (UNC-CH)
David Wallers (M.S. student), August 2011 – present (UNC-CH)
Amy Grady (Ph.D. student), September 2010 - present (UVA)

Previous Postdoctoral Associates, Graduate Students and Research Assistants
Owen Brenner, (M.S. student- UVA), September 2010 – April 2012
  Thesis: The Complex Influences of Backbarrier Deposition, Substrate Slope and Underlying Stratigraphy in Barrier Island Response to Sea Level Rise: Insights from the Virginia Barrier Islands, Mid-Atlantic Bight, U.S.A.
  Employment: Geologist, U.S. Geological Survey, St. Petersburg Coastal and Marine Science Center, St. Petersburg, FL
Dana Oster, (M.S. student- UVA), September 2010 – April 2012
  Thesis: The Influence of Morphology on Barrier Island Recovery Following Storms: Insights from the Virginia Barrier Islands, Mid-Atlantic Bight, USA
Employment: Coastal Geoscience Specialist, Golder and Associates, Vancouver, BC
Catherine Wolner, (M.S. student-UVA), September 2009 - July 2011
Thesis: Ecomorphodynamic feedbacks and barrier island evolution, Virginia Coast Reserve, USA.
Employment: Program Assistant, National Science Foundation, Washington DC
Kiersten Patsch (Postdoctoral Associate- UVA) October 2009 - December 2010
Employment: Lecturer, Lynchburg College, Lynchburg, VA; Independent Consultant
Owen Brenner (Research Assistant, full-time-UVA), September 2008 - August 2009

Graduate Student Awards and Honors
J.J. Johnson, Best Graduate Student Talk, 3rd Place, Anadarko Symposium, April 2013
J.J. Johnson, Best First-year Graduate Student Poster, Anadarko Symposium, April 2012
Amy Grady, NSF Graduate Fellowship, August 2011 – July 2016
Amy Grady, NSF Graduate Fellowship Honorable Mention, August 2010
Catherine Wolner, Best Poster Award, UVA EnviroDay, January 2011
Dana Oster, Best Poster Award runner-up, UVA EnviroDay, January 2011

Graduate Student Committees
Sierra Schelegie (Ph.D. student), Curriculum for the Environment and Ecology, University of North Carolina Chapel Hill April 2013-present.
Katherine Murray (Ph.D. student), Earth and Ocean Sciences Division, Duke University, May 2013-present.
George Allen (Ph.D. student), Department of Geological Sciences, University of North Carolina Chapel Hill, January 2012-present.
Evan Goldstein (Ph.D. student), Earth and Ocean Sciences Division, Duke University, January 2011-present.
Emily Timmons (Ph.D. student), Department of Marine Sciences, University of North Carolina-Chapel Hill, January 2012-present.
Jodi Smith (Ph.D. student), Department of Environmental Sciences, May 2008 - June 2010

Previous Undergraduate Research Assistants and Honors Students
Nicholas Brockemeyer, University of Virginia, Environmental Sciences Major
Michael Ross, Oberlin College, Geology Major
Margaret Reitz, Oberlin College, Geology Major
Ting Fong Lee, Oberlin College, Environmental Studies Major, Honors Student
Andrew Donnelly, Oberlin College, Geology Major
Susan Powell, Oberlin College, Geology Major
Benjamin Stanley, Oberlin College, Geology Major
Lindsey Kraatz, Eckerd College, USGS Research Assistant
Charlene Sullivan, WHOI Summer Student Fellow
Carrie Randolph, UCSC, Earth Sciences Major

Grants

Funded External Grants
ITER (Long-term Ecological Research): Drivers, dynamics and consequences of non-linear change in coastal barrier systems, National Science Foundation, Division of Environmental Biology, $5,880,000 (total)/$215,000 (UNC-CH), Lead-PI: K.McGlathery, PIs; P. D’Odorico (UVA), S. Fagharazzi (BU), L.Moore (UNC), M. Pace
(UVA), J. Porter (UVA), M. Reidenbach (UVA), P. Wiberg (UVA), D. Young (VCU), November 1 2012 - October 31, 2018.

Collaborative Research: Coastal Geomorphic Consequences of Wave Climate Change, National Science Foundation, Geomorphology and Land Use Program, $515,000 (total)/$155,071 (UNC-CH). Lead PI: P. Adams (UF), Co-PIs: L. Moore, D. McNamara (UNC- W) and A.B. Murray (Duke), September 15 2011 - September 14, 2014.


Collaborative Research: Biogeomorphic Controls on Barrier Island Evolution in Response to Climate Change, National Institute for Climatic Change Research, Department of Energy, $249,000 (total)/$142,000 (UVA). Lead PI: L. Moore, Co-PI: D. Young (VCU), August 2009 - August 2012.

Seismic Data Collection, National Science Foundation Subcontract via Randolph Macon College in support of collaborations with Michael Fenster, $8,700 (UVA). Lead PI: L. Moore.


Pending External Proposals
Belmont Forum Coastal Vulnerability Pre-proposal (French-led), Progressing in regional Ocean level scenarios & Shoreline Evolution approaches for Informed Decision making, 2,385,000 Euro or $2,946,000 currently(total)/139,000 Euro or ~$171,715 (UNC-CH), 19 PI institutions from 7 countries (France, US (including PI L. Moore), Italy, Spain, UK, Germany, Japan). Submitted December 20, 2012.
Belmont Forum Coastal Vulnerability Pre-proposal (UK-led), Adaptive Management of Coastal Geomorphic Systems, 1,878,000 or $2,320,000 currently (total)/168,000 Euro or $133,421 (UNC-CH), 17 PI institutions from 7 countries (UK, US (including PI L. Moore), Netherlands, Australia, Germany, India, Russian Federation) (UNC). Submitted December 29, 2012.


Selected Internal Grants

Professors as Writers Program, University of Virginia, $1000, Fall 2009 - Spring 2010.


Using Oxygen isotopes to identify hurricane overwash deposits, St. Croix, USVI Oberlin College-University of Michigan Cooperative, $10,000, 2005-2006.

Interdisciplinary collaborations: Campus visit by coastal geologist Dr. Orrin Pilkey and American artist Mary Edna Fraser, Mead-Swing Lecture Fund, Oberlin College, $3500, 2004.


Exploring linkages between coastal progradation and climate variability, University of South Florida Travel Grant Program, $5000, 2001.

Professional Service to Discipline

Proposal Reviewer and Panelist: National Science Foundation, National Institute for Climate Change Research- Department of Energy, American Chemical Society Petroleum Research Fund, National SeaGrant.


Core Coastal Working Group Member, Community Surface Dynamics Modeling System (CSDMS), Multi-year NSF-funded Community Modeling Effort, March 2008 - present.

Proposal Writing Team Member, Long-term Ecological Research (LTER)-Virginia Coast Reserve (VCR). Member of multi-PI writing team that prepared multi-million dollar, 5-year grant proposal for the VCR LTER-site for submission (in March 2012) to the National Science Foundation, January 2011 - March 2012.


Invited Panelist, Shifting Shorelines: Combining Insights from Biological, Physical and Social Sciences, October 27-29, 2010, Duke University Marine Lab. Workshop to present results of National Science Foundation Biocomplexity Project, "Coupling Human and Natural Influences on Coastline Evolution as Climate Changes" and to discuss further scientific work and future policy and management applications.

Facilitator, Community Surface Dynamics Modeling System (CSDMS) Meeting: Modeling for Environmental Change, October 14-17, 2010. Facilitator for multi-session breakout group titled “Couplings between physical, biological and human processes in earth surface and ocean dynamics.”

NASA Wallops Independent Review Team Member, Four-person team reviewed scientific studies and Draft EIS chapters for shoreline protection project at NASA Wallops, June 2009 – December 2010.

Climate Change Workshop Participant (Invited), The Nature Conservancy, February 11-12, 2009 Virginia Beach, VA.


Coastal Advisory Board Member, Southeastern University Research Association, May 2008 -present.

Workshop Co-convener (Invited), “Teaching Geomorphology in the 21st Century.” Four-day teaching workshop for geomorphologists from across the country and from abroad, sponsored by Cutting Edge with funding from the National Science Foundation and the National Association of Geoscience Teachers, July 2008.


Session Co-Convener, Coastal Geomorphology and Morphodynamics, American Geophysical Union Fall Meeting, San Francisco, December 2006.


Session Co-Chair, Coastal Processes and Hazards along Active Margin and Low Latitude Coasts, Special Session, Geological Society of America Annual Meeting, Seattle, November 2003.

Technical Reviewer, U.S. Clifled Coasts: Status and Trends, Fall 2002

Session Co-Chair, Linking Climate Variability and Coastal Processes, Special Session, American Geophysical Union Fall Meeting, San Francisco, December 2000.

Non-Resident Director, California Shore and Beach Preservation Association, November 1998-present.

Session Chair, Science and Engineering for Coastal Hazard Reduction, California’s Coastal Natural Hazards Conference, November 12 - 14, 1997.
Director, California Shore and Beach Preservation Association, April 1997 - November 1998.

**Academic Service**

*University of North Carolina*
Executive Committee, Department of Geological Sciences, September 2012 - present.
Hydrology Search Committee, Department of Geological Sciences October 2012 - present.
Colloquium Series Organizer, Department of Geological Sciences, August 2012 – present.
Coastal Environmental Change Field Trip (developed and led) for 36 introductory geoscience students, Saturday, March 31, 2012 and Sunday, October 7, 2012.

*University of Virginia*

*Department of Environmental Sciences, University of Virginia*
Climate Dynamics Faculty Search Committee, September 2008 - May 2009.
Moore Lectureship Committee, September 2008 - May 2009
Seminar Speaker Host, Dr. Abby Salvenger (U.S. Geological Survey), December 2010.
Undergraduate Seminar Speaker, *Climate Change Impacts on Coastal Barriers: Field Observations and Model Insights*, April 2009.

*Oberlin College*
Petrology Faculty Search Committee, Oberlin College Department of Geology, Fall 2006;
Visiting Faculty Search Committee, Oberlin College Environmental Studies Program, Fall 2006;
Center for Instructional Technology Science Specialist Search Committee, Summer 2005;
Visiting Petrology Faculty Search Committee, Oberlin College Department of Geology, Spring 2004;

Oberlin Center for Computation and Modeling (OCCaM), Co-founder and Steering Committee Member, Oberlin College, March 2005 - December 2007.
Oberlin Center for Computation and Modeling (OCCaM), Conference Planning Committee, 2005.

*Woods Hole Oceanographic Institution*

*University of California Santa Cruz*
Graduate Commons Building Committee Co-Chair, UCSC, January 1997 - August 1998.
Graduate Student Association President, UCSC, June 1995 - June 1996.
Graduate Council Academic Senate Committee Ex-Officio Member, UCSC, October 1995 – June 1996.
Graduate Student Association Secretary, UCSC, October 1994 - June 1995.

Selected Invited Presentations

Joint Penrose/Chapman Conference on Coastal Impacts of Climate Change, Sponsored by the American Geophysical Union and the Geological Society of America, April 2013.
American Geophysical Union Fall Meeting, Biogeodynamics and Earth System Sciences I (Session B51H), December 2012.
University of North Carolina, Department of Geological Sciences, February 2010.
American Geophysical Union Fall Meeting, Coastal Geomorphology and Morphodynamics (Session EP13), December 2009.
USGS Coastal and Marine Geology Program, St. Petersburg, FL, November 2009
Virginia Institute of Marine Science, October, 2008.
Duke University, Earth and Ocean Sciences Division, March 2007.
Press Conference at the American Geophysical Union Fall Meeting, December 2006.
Woods Hole Oceanographic Institution, July 2006.
USGS Pacific Science Center, Santa Cruz, CA June 2006.
University of Toledo, Department of Earth and Environmental Sciences, February 2004.
Bowling Green State University, Geology Department, April 2004.

Affiliations

American Geophysical Union, Coastal Education and Research Foundation, Geological Society of America

*student or postdoctoral associate author
From: Miller, Tancred
Sent: Thursday, June 27, 2013 4:17 PM
To: Slagel, Matthew
Subject: FW: Science Panel on Coastal Hazards nomination
Attachments: RES_rudolph.doc

Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel: 252-808-2808, Ext. 224

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From: Davis, Braxton C
Sent: Friday, June 07, 2013 8:51 AM
To: Miller, Tancred
Subject: FW: Science Panel on Coastal Hazards nomination

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Braxton Davis
Director, NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557
(252) 808-2808 ext. 202

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

From: Rogers, Spencer [mailto:rogerssp@uncw.edu]
Sent: Monday, June 03, 2013 10:52 AM
To: Davis, Braxton C
Cc: nclk@career重心courtnay.org; harry.simmons@nctiwa.org
Subject: Science Panel on Coastal Hazards nomination

Braxton,

Please consider this a formal nomination of GREG L. RUDOLPH for one of the open geology seats on the Science Panel on Coastal Hazards. As a practicing geologist with a dozen years of local government experience, his perspective would be a useful addition to the Panel. He has expressed an interest in serving on the Panel. His CV is attached.

Spencer

Spencer Rogers
NC Sea Grant
EDUCATION:

East Carolina University, Greenville, North Carolina
M.S. in Coastal Geology (4.0 GPA) 1996-99
Thesis – Holocene Evolution of a Drowned Tributary Estuary, Croatan Sound, N.C.

East Carolina University, Greenville, North Carolina 1996-97
B.S. in Geology (4.0 GPA)

UNC - Charlotte, Charlotte, North Carolina 1988-92
B.A. in Biology

PROFESSIONAL EXPERIENCE:

Shore Protection Manager 2001-present
Carteret County, Beaufort, North Carolina
(1) Serves as main point-of-contact and coordinator for all shore protection and beach nourishment activities in Carteret County, and lead liaison/representative with the U.S. Army Corps of Engineers, N.C. State Ports Authority, N.C. Division of Water Resources, N.C. Division of Coastal Management, other resources agencies and stakeholders.
(2) Oversees and coordinates County lobbying efforts and communications with Federal and State elected and appointed officials; serves as liaison with other groups sponsoring lobbying efforts.
(3) Prepares RFQs, project oversight, and accounting verification for all shore protection/beach nourishment projects retained by the County.
(4) Collects, maintains, and analyzes financial data relative to the impact of the beaches and other shorelines to the Carteret County tourism economy, and performance data regarding shore protection and beach nourishment efforts in Carteret County and other coastal communities.
(5) Prepares and distributes public education and awareness materials for shore protection and beach nourishment activities; serves as a public information clearinghouse/coordinate.

Hydrogeologist I 1999-2001
Division of Water Resources - NC Department of Environment & Natural Resources, New Bern, North Carolina
(1) Provides technical guidance in developing an aquifer framework model, rule development and a water management plan for the regulation of the Central Coastal Plain Capacity Use Area. Duties included aquifer tests, hydrograph and geophysical log (e-log and gamma ray) analyses.
(2) Field supervisor for pilotfinal well borehole drilling, geophysical and downhole camera analyses.
(3) Technical review of State mining permits regarding potential effects upon groundwater supply and quality.

Project Scientist 1993-96
Shield Environmental Associates, Inc., Charlotte, North Carolina
(1) Responsible for project proposals, budgets, and report preparation for 23 chlorinated solvent and petroleum hydrocarbon impacted sites including Phase I environmental audits, monitoring reports, comprehensive site assessments and corrective action plans. Clients - Dow Coming (Mi.), Petroleum World, Inc. (N.C.), Estos Trucking (S.C.) and NationsBank (N.C.).
(2) Field Supervisor of subsurface investigations using mud-rotary, hollow stem auger, air compression hammer and geoprobe drilling techniques.
(3) Coordinate and conduct and evaluate air-scape, soil vent and aquifer pilot studies.

PROFESSIONAL SOCIETIES AND HONORS:

American Shore and Beach Preservation Association - Board of Directors
Coastal Elevations & Sea Level Advisory Committee – U.S. Environmental Protection Agency Appointment
N.C. Coastal Resources Law, Planning, and Policy Center – Board of Advisors
North Carolina Sea Grant - Outreach Advisory Board
N.C. Marine Science Education Partnership
Eastern Carolina Council 2006 Regional Leadership Award
N.C. Beach, Inlet, & Waterway Association
Phi Kappa Phi - national academic honor society
Sigma Gamma Epsilon - geological honor society (president 1997-98)
CQ Brown Scholarship Recipient – East Carolina University Departmental Award
Nomination for: Dave Burton, Nicola Scafetta, Stan Young, Robert Brown

Tancred,

Sorry for the delay in getting back to you as I was out-of-town last week.

Your assessment of the nominees for the science panel are correct.

As to individuals that have expressed interest in serving on the panel are:
---Mr. Dave Burton, Systems & modeling
---Dr. Nicola Scafetta, Duke Univ.
---Mr. Stan Young, Biostatistics
You should directly contact them individually to confirm, as I have see you have done with Dave Burton.

Another that should be considered as a nominee to the science panel, but I do not know his availability, but would be an excellent addition:
---Dr. Robert Brown, Duke Univ.

The remainder of the names submitted have prominent scientific backgrounds and will bring much balance to the science panel, but their locations and distance will likely preclude them from being actual members to the science panel. Their reviews, inputs, and knowledge should be strongly solicited.

Lastly, I've seen in numerous scientific studies and articles from other researchers that should be included in the science panel's future deliberations and included in their references, in order to comprehensively assess the issues. If you need these I'll be glad to resend them.

Call or email if you have any other questions. Thanks.

Larry P. Baldwin, CPS8/Sc
CRC Commissioner, Coastal Development
(910) 471-0504
Dear Mr. Tancred,

thank you very much for the invitation to serve as a nominee to be added to the CRC's Science Panel on Coastal Hazards. And for the trust that you have in my expertise. I am pleased and I confirm my interest.

However, I will be in Europe for a couple of months. I will be back in September.
I can be contacted by email

Best Regards,

Nicola Scafetta, Ph.D.

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Duke University
Email 1: ns2002@duke.edu
Email 2: nicola.scafetta@gmail.com
Web: http://people.duke.edu/~ns2002/

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Hello Dr. Scafetta,

Larry Baldwin, a member of the Coastal Resources Commission, submitted your name as a nominee to be added to the CRC's Science Panel on Coastal Hazards. I am writing to confirm your interest and availability and provide a little more information.

The Science Panel (http://www.nccoastalmanagement.net/Hazards/scipanel.htm) is a voluntary panel of coastal experts who are appointed by the CRC chair and charged with the following: 1) continually review the current state of knowledge of coastal processes and ecological functions of coastal North Carolina; 2) review the current methodologies being used by North Carolina and others to define and identify coastal hazard areas and impacts associated with development in public trust areas of North Carolina; 3) review the scientific basis of the CRC's rules as applied by the Division of Coastal Management (DCM) to development in the coastal area; and 4) develop recommendations for the CRC on relevant topics.

The Panel meets approximately six times per year and performs additional work outside of meetings in subcommittees. Mileage is reimbursed for travel to Panel meetings, and lunches are provided. The initial term of appointment is four years.

We expect the CRC chair to make the appointments at the CRC's September meeting.

Please let me know if you have any questions.

Best regards,

Tancred

Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel. 252-808-2508, Ext. 224

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.
Curriculum Vitae: Nicola Scafetta, Ph. D.

May 13, 2013

Education

- 2001: Ph. D. in Physics, University of North Texas (Denton, TX, USA). Dissertation: *An entropic approach to the analysis of time series*. ARK: arki/67531/metadc3033. PDF

Address

1) ACRIM: Active Cavity Radiometer Solar Irradiance Monitor, Coronado, CA (website)
2) Department of Anesthesiology: Hyperbaric Medicine and Environmental Physiology (website), Duke University

1600 Anderson St., C5
Durham, NC 27707
Office Phone: +1 (919) 225-7799

Email Address 1: ns2002@duke.edu
Email Address 2: nicola.scafetta@gmail.com
Personal Website: http://www.duke.edu/~ns2002

Research Interests


Academic Appointments

2010-date: Research Scientist, ACRIM Science Team, (Coronado, CA)
2012-date: Research consultant, Anesthesiology Dept., Duke University
2010-2012: Assistant Adjunct Professor, Anesthesiology Dept., Duke University
2010-fall: Visiting Lecturer, Physics Dept., University of North Carolina Chapel Hill
2010-spring: Adjunct Professor, Physics Dept., Elon University
2008-fall: Visiting Lecturer, Physics Dept., University of North Carolina Chapel Hill
2008-2009: Visiting Lecturer, Physics Dept., University of North Carolina Greensboro
2002-2004: Research Associate, Physics Dept., Duke University
1998-2001: Teacher Assistant, Physics Dept., University of North Texas

Professional society memberships

American Physical Society (APS); American Geophysical Union (AGU).
Teaching Interest and Experience

Conceptual Physics, Astronomy, Classical Mechanics, General Physics I, General Physics II, Modern Physics, Quantum Mechanics, Statistical Mechanics. In addition, my research background allows me to teach Time series analysis, Nonlinear Dynamic, Chaotic Systems and Fractals with computer programming assignments.

2010-Fall: Phys 104 General Physics, UNC, Physics Dept.
2010-Spring: Introduction to Astronomy, Elon University, Physics Dept.
2010-Spring: Conceptual Physics, theory and lab. Elon, Physics Dept.
2009-Summer: Introduction to Astronomy, Duke University, Physics Dept.
2009-Spring: Conceptual Physics, theory and lab. UNCG, Physics Dept.
2008-Spring: Introduction to Astronomy, Duke University, Physics Dept.
2008-Fall: Conceptual Physics, theory and lab. UNCG, Physics Dept.
2008-Fall: Classical Mechanics, (Graduate Course) UNC, Physics Dept.
2008-Summer: Introduction to Astronomy, Duke University, Physics Dept.
2008-Spring: Conceptual physics, theory and lab. UNCG, Physics Dept.
2007-Summer: Introduction to Astronomy, Duke University, Physics Dept.

Research Activities

My research is multidisciplinary and has covered numerous fields: theoretical and applied physics, statistical physics, computational physics, physics of complex systems, nonlinear stochastic techniques for analyzing and modeling of complex systems, condensed matter, stochastic processes, fractal systems, solar physics, sun-earth interaction, global climate change, earthquake occurrence, forecast methodologies, econophysics, biophysics and mathematical physiology. I have developed novel techniques of time series analysis for studying the scaling exponents and the fractal statistical properties of time series such as the Diffusion Entropy Analysis, which together with more traditional variance based techniques allows the discrimination between fractal Brownian motion and Levy-walk signals. Fractal-multifractal stochastic methodologies has been used also for modelling and evaluating the dynamical evolution of a variety of physiological signals under normal, stress and drug conditions, which can be used for developing novel clinical monitoring methodologies and computerized machines. I have studied and proposed physical models for interpreting the inverse power law distributions found in wealth distribution as well as in human mobility. I have also extensively studied solar physics and solar-climate interactions. The purpose of the latter research is interpreting and explaining the solar and climate natural oscillations, to study their physical origin and their interconnection. I am developing stochastic and physical models to hindcast and forecast both solar activity and climate change throughout the Holocene by determining the harmonic and non-harmonic constituents of their dynamics. Visit my website.

Publications

From SCOPUS: Results found = 52; Average Citations per Item = 15; H-Index = 16.

Scientific Books

ISBN-10: 3639257952

ISBN-10: 9814304301

ISBN-10: 1934791288. PDF
Free Web-Booklets

Web: PDF

Web: PDF

Web: PDF

10.5194/prp-1-37-2013

Scientific papers in Journals and Books


DOI:10.1016/jапрф.2013.03.007. PDF

64. Scafetta, N., 2013. Multi-scale dynamical analysis (MSDA) of sea level records vs. PDO, AMO, and NAO indexes. Climate Dynamics. in press.
DOI:10.1007/s00382-013-1771-3. PDF

DOI: 10.1016/j.jastp.2013.03.007. PDF

DOI: 10.1016/j.pss.2013.01.005. PDF

61. Mazzarella A., A. Giuliani and N. Scafetta, 2013. Quantifying the Multivariate ENSO Index (MEI) coupling to CO2 concentration and to the length of day variations. Theoretical and Applied Climatology 111, 601-607.
DOI: 10.1007/s00704-012-0696-9. PDF

DOI: 10.2110/jsr.2012.81. PDF

DOI: 10.1016/j.jastp.2012.04.002. PDF

DOI: 10.1016/j.jastp.2012.02.016. PDF - Supplement
DOI: 10.1016/j.jastp.2011.12.005. PDF - Supplement

DOI: 10.1016/j.jastp.2011.10.013. PDF

DOI: 10.1007/s00704-011-0499-4. PDF

ISBN-10: 3455502504

DOI: 10.1063/1.3645164. PDF

DOI: 10.2174/1874222201105010074. PDF - Supplement


DOI: 10.1103/PhysRevLett.105.219801. PDF

DOI: 10.1016/j.jastp.2010.04.015. PDF

Journal: PDF

47. Scafetta N., 2010. I cambiamenti climatici sono regolati da cicli naturali di origine astronomica (Climate change is regulated by natural cycles with an astronomical origin). Il 21mo Secolo, Scienza e Tecnologia 1, 5-10 (2010).
Journal: PDF

46. Scafetta N., 2010. I cambi climatici e le loro cause, una discussione su alcuni punti chiave (Climate Change and Its Causes, A Discussion About Some Key Issues). La Chimica e l’Industria 1, 70-75.
Journal: PDF

DOI: 10.1016/j.jastp.2009.07.007. PDF

DOI: 10.1063/1.3265248. PDF


DOI: 10.1029/2006GL025563, PDF

DOI: 10.1029/2005GL025539, PDF

DOI: 10.1016/j.physa.2005.03.052, PDF

ISBN-10: 0-9717860-8-1. PDF

DOI: 10.1029/2005GL023849, PDF

DOI: 10.1002/cplx.20076, PDF

DOI: 10.1007/3-7643-7412-8-12. PDF

Proceedings: PDF

DOI: 10.1080/00222500490516689, PDF

DOI: 10.1114/B:ABME.0000096544 69559.ad, PDF

DOI: 10.1016/j.physd.2004.01.031, PDF

DOI: 10.1088/1469-7688/4/3/010. PDF

DOI: 10.1103/PhysRevLett.92.138501. PDF
DOI: 10.1016/S0960-0779(03)00434-X. PDF

DOI: 10.1016/S0960-0779(03)00442-9. PDF


DOI: 10.1103/PhysRevE.69.026303. PDF

DOI: 10.1016/S0378-4371(03)00527-2. PDF

DOI: 10.1103/PhysRevLett.90.248701. PDF

DOI: 10.1103/PhysRevE.67.051917. PDF

DOI: 10.1080/19485565.2003.9959082. PDF

DOI: 10.1016/S0960-0779(02)00136-4. PDF

DOI: 10.1103/PhysRevE.66.036130. PDF

DOI: DOI: 10.1103/PhysRevE.66.031908. PDF

DOI: 10.1016/S0375-9601(02)00730-2. PDF

DOI: 10.1103/PhysRevE.65.046203. PDF

DOI: 10.1016/S0960-0779(00)00182-4. PDF

DOI: 10.1142/S0218348X0100052X. PDF
Scientific Meetings and Presentations

Organized conference sessions


2. Total Solar Irradiance Variations and Their Impact on Climate I (joint with GC). Presiding: R. Willson, Columbia University; N. Scafetta, Duke University. AGU Joint Assembly, San Francisco, CA, USA. December 2006. URL to GC141A


Selection of recent presentations (also on video)


- Multi-scale harmonic model for solar and climate cyclical variation throughout the Holocene based on Jupiter-Saturn tidal frequencies plus the 11-year solar dynamo cycle. Presented at 2012 SORCE Science Meeting — Annapolis, MD, 18-19 Sept., 2012.

- Heliospheric oscillations and their implication for climate oscillations and climate forecast. At the 3rd Santa Fe Conference on 'Global and Regional Climate Change'. Santa Fe, New Mexico, Oct. 31 — Nov. 4, 2011.


- Heliospheric Oscillations and Their Implication for Climate Oscillations and Climate Forecast. At the conference on 'Decadal Cycles In the Sun, Sun-like Stars, and Earth’s Climate System'. SCRCE Science Meeting. Sedona, Arizona, Sep. 13-16, 2011.

All presentations


56. Scaletta, N. (2009). The three-tiered science of complex systems: Data, Knowledge and Information. A multidisciplinary overview about the challenges of interpreting complex systems. Presented at the Northeastern University, Boston, 26 Mar.


Scientific Reviewer for:

Advances in Atmospheric Sciences
Astrophysics and Space Science
Atmospheric Chemistry and Physics
Bioinformatics
Biological Cybernetics
Climate Change
Climate Dynamics
Communications in Nonlinear Science and Numerical Simulations
Computers and Mathematics with Applications
Complexity
Energy & Environment
EOS
Europhysics Letters
Geophysical Research Letters
Global and Planetary Change
IEEE Transactions on Biomedical Engineering
International Journal of Climatology
Journal of Applied Mathematics and Computing
Journal of Atmospheric and Solar Terrestrial Physics
Journal of Biomechanics
Journal of Geophysical Research - Space Physics
Journal of Physics A: Mathematical and Theoretical
Journal of Physics D: Applied Physics
Journal of Signal Processing Systems
Journal of Space Weather and Space Climate
Journal of Statistical Mechanics: Theory and Experiment
Journal of Vibration and Control
Mathematical Biosciences
New Journal of Physics
Nonlinear Dynamics
Pattern Recognition in Physics
Physica A: Statistical Mechanics and its Applications
Physics Letter A
Physical Review E
Physical Review Letters
PLoS ONE
Remote Sensing of Environment
Quantitative Finance
Social Biology
Solar Physics
Theoretical and Applied Climatology
Theory in Biosciences
Water Resources Research

Member of the editorial board of:
Dataset Papers in Geosciences (Geophysics)

Additional Information

- Citizenship: Italian
- Residency: US Permanent Resident (Green Card Holder)
- Spoken Languages: Italian, English
- Computer Knowledge: OS: Linux and Microsoft Operative Systems and Office.
- Computer Languages: C, C++, Matlab, Mathematica, Maple, Basic.
- Networking: General knowledge of Internet.
Selected Press-News & Web-Articles

- Forget global warming - it's Cycle 25 we need to worry about. MailOnLine, Jan/29/2012.
- Deux analyses récentes mettent en évidence les graves lacunes des modèles du GIEC. Le Huffington Post (le Group Le Monde), Jul/08/2010.
- Dr. Nicola Scafetta summarizes "why the anthropogenic theory proposed by the IPCC should be questioned". Watts Up With That?, Mar/14/2010.
- Riscaldamento globale, nuovi dati "Sottovalutato il ruolo del sole. La Repubblica, Oct/05/2005.
Slagel, Matthew

From: Lopazanski, Mike
Sent: Friday, June 28, 2013 8:59 AM
To: Slagel, Matthew
Cc: Miller, Tancred; Richardson, Ken; Davis, Braxton C
Subject: FW: JP_WALSH_CV_MASTER.pdf
Attachments: JP_WALSH_CV_MASTER.pdf

FYI

From: Griff & Joan Weld [mailto:jweld@gmail.com]
Sent: Friday, June 28, 2013 8:58 AM
To: Lopazanski, Mike
Cc: ’Nancy M. White’
Subject: JP_WALSH_CV_MASTER.pdf

Mike,

I am now formally nominating JP Walsh for the Science Panel.
Please find attached his CV.

Thanks.

Joan
John Patrick (J.P.) Walsh II
Associate Professor
Department of Geological Sciences & the
Institute for Coastal Science and Policy
301B Graham Building
East Carolina University
Greenville, NC 27858
Phone: (252) 328-5431
Fax: (252) 328-4391
walshj@ecu.edu

Interim Co-Program Head
Coastal Processes Program
UNC Coastal Studies Institute
850 NC 345, P.O. Box 699
Wenchese, NC 27981
Work: (252) 475-5429
Cell: (252) 258-7683

Education

Ph.D. October 2001, Geological Oceanography, University of Washington, Seattle, WA
Dissertation Title: Continental-margin sedimentation: a wet-tropical perspective from New Guinea.

M.S. 1997, Marine Science, State University of New York, Stony Brook, NY
Masters Thesis Title: Observations of sediment flux to the Eel continental slope, northern California.

B.A. 1995, Geology, Colgate University, Hamilton, NY

Employment

Aug 2010-present Associate Professor, East Carolina University

Jan 2010-present Interim Coastal Process Co-Program Head, UNC Coastal Studies Institute

Jul 2009-June 2013 Associate Director of RENCI Engagement Center at ECU.
Providing assistance with grant management, web development, report writing, and research.

May 2010-Dec 2012 Undergraduate Studies Director, Department of Geological Sciences, East Carolina University

Jan 2004 - 2010 Assistant Professor, East Carolina University

Scripps Institution of Oceanography
University of California, San Diego

1998- Sept. 2001 Research Assistant, Sedimentology (Supervisor: C.A. Nittrouer)
School of Oceanography
University of Washington

J.P. Walsh CV
1995-1998
Research Assistant, Sedimentology (Supervisor: C.A. Nittouer)
Marine Sciences Research Center
State University of New York, Stony Brook

1995-1996
Teaching Assistant
Marine Sciences Research Center
State University of New York, Stony Brook

1994-1995
Research Assistant, Structural Geology (Supervisor: A. Goldstein)
Geology Department
Colgate University

1992-1995
Outdoor Education Instructor/Trip Leader
Colgate University

Summer 1993
Coastal Geology Environmental Consultant
First Coastal Corporation
Westhampton, NY

Research Interests
Coastal landscape and seascape evolution
Continental-margin sediment transport, deposition and accumulation
Sedimentation in salt marshes, mangroves, estuaries and coral reef areas
Climate change and human impacts on coastal processes
Coastal hazards, especially erosion, overwash and inlet opening
Effects of sediment dynamics on ecosystems
Storm and tsunami coastal impacts and records

Membership in Professional Societies
American Geophysical Union
Coastal Education & Research Foundation
Coastal & Estuarine Research Federation
Geological Society of America
International Association of Sedimentologists
Society for Sedimentary Geology

Awards and Other Notable Activities
2011 NSF Panelist for Polar Programs
Nov 2010 – Jan 2011 Worked as a Visiting Scientist at the National Institute for Water
and Atmospheric Research, Wellington, NZ
2010 Served as scientist on NOAA R/V Pisces cruise to study impact of MC252 spill
2010 Inducted into the Servire Society at East Carolina University

J.P. Walsh CV
2010  Inducted into Sigma Xi
2009  Inducted into Phi Kappa Phi.
2009  Invited participant in NC Beach Management Summit, Morehead City, NC.
2009  Selected participant in NSF-MARGINS Source to Sink Workshop, Gisborne, NZ.
2009  Early Career Travel Award for ASLO Meeting in Nice, France.
2009  Calendar Feature - Perspective view of megaripples and Civil War wreckage in the Roanoke River selected for Carls Calendar (Carls makes software for multibeam data processing and GIS). The multibeam data collection, processing, integration with LiDAR, and visualization were completed for NOAA-funded maritime history research.
2008  Selected participant and invited speaker in SEPM Conference on Clinoforms.
2008  Most-Cited Paper Award, last 5 years (2003-2007), Continental Shelf Research.
2008  Coordinator for ECU’s first Visualization Challenge Competition.
2005  NSF Panelist for MG&G.
2003  Selected participant in NSF-MARGINS Workshop on the Waipaoa Focus Area.
1997  Boudewijn H. Brinkhuis Award, State University of New York, Stony Brook.

**Funded Research Grants and Contracts**

NOAA, 12/2012 – 10/2013, Hazard Vulnerability Assessment II: Designing a Multi-State and Regional Framework For CMSP and Decision-Making: A South Atlantic Alliance Initiative - Phase 2, Sub-contract to Skidaway Institute of Oceanography, Co-PI with Corbett; and many outside of ECU. $325,000 ($14,334 ECU Portion).

NOAA, 12/2012 – 10/2013, NC Coastal Atlas Prototype: Designing a Multi-State and Regional Framework For CMSP and Decision-Making: A South Atlantic Alliance Initiative - Phase 2, NOAA, Sub-contract to SECUORA, Lead PI with Allen; and many outside of ECU. $325,000 ($10,092 ECU Portion).

NOAA, 10/12-9/14, Restoring access to diatomaceous fish habitat and linkages to forage-fish biomass in the North Atlantic Large Marine Ecosystem, Co-PI with R. Rulifson. $40,030.

NC Division of Coastal Management, 12/12-9/1, Estuarine Shoreline Mapping Analysis: Evaluating the Digital Shoreline for the Albermarle-Pamlico Estuarine System, Lead PI with Corbett. $20,000.


NOAA, Hazard Vulnerability Assessment: Designing a Multi-State and Regional Framework For CMSP and Decision-Making: A South Atlantic Alliance Initiative - Phase 1, Sub-contract to Skidaway Institute of Oceanography, Co-PI with
Corbett; and many outside of ECU. $1,500,000 ($73,479 ECU Portion), 3/1/2012 - 6/30/2013


NC-Renaissance Computing Institute, 7/1/2011-6/30/12, Coastal Erosion Hazards in North Carolina: Spatially Integrated Scientific Measurement, Modeling, and Visualization. Co-PI and Associate Director with several others at ECU. $200,000.

NSF, 7/1/2011-6/30/2012., RAPID: Collaborative Research: Signature of the 2011 Flooding Lead-PI with D.R. Corbett, S. Mitra and K. Xu, $58,498 to ECU.

NC-Renaissance Computing Institute, 7/1/2010-6/30/11, Coastal Erosion Hazards in North Carolina: Spatially integrated Scientific Measurement, Modeling, and Visualization. Co-PI and Associate Director with several others at ECU. $200,000.


National Science Foundation MARGINS Program, 7/1/2009-6/30/2012, Collaborative Research: Formation, Reworking and Accumulation of Sedimentary Deposits, Waipaoa River Shelf, New Zealand, Lead-PI with D.R. Corbett. Total collaborative proposal with C. Harris, A. Ogston, A. Orpin of $887,180; $384,874 to ECU.

NC-Renaissance Computing Institute, 7/1/2009-6/30/12, Attacking Coastal Hazards of North Carolina Renewal Proposal for 2009-2012. Co-PI and Associate Director with several others at ECU. Originally funded at $390,000 for 3 years; a total of $1,170,000; The State of NC subsequently cut the RENCI budget, so RENCI@ECU was reduced to $200,000 for 7/1/09-6/30/10.

UNC Competitiveness (State of NC), 12/3/08-6/30/09, Towards integration of estuarine observing, Co-PI with many researchers, lead by S. Culver and L. Leonard, $150,000, $73,500 to ECU.


US Army Corps of Engineers, 8/1/08-12/30/08, Albemarle Sound Observing System, Lead-PI with D.R. Corbett, $11,500.

J.P. Walsh CV
UNC Competitiveness (State of NC), 12/3/07-6/30/08, North Carolina Coastal Hazards: Economic Implications of Severe Storms and Sea-Level Rise. Co-PI with many researchers, lead by S. Culver and S. Riggs, $320,772, funded at $288,694.


US Army Corps of Engineers, 5/30/07-12/31/07, Wave and Current Observing Measurements. Co-PI with N. White (CSI) and D.R. Corbett, $80,000.

NC-Renaissance Computing Institute, 10/31/06-8/1/09, RENCI @ East Carolina University: Regional Engagement Center for Coastal Systems Informatics and Modeling (C-SIM). Co-PI with several researchers at ECU, $1,700,000.

USGS, 7/16/07-7/15/08, North Carolina Quaternary Stratigraphy and Regional Geologic Synthesis. Co-PI with Riggs, Culver, Corbett, Mallinson, $122,000.

NOAA-Ocean Exploration, 3/15/06-3/14/07, Exploring Two Albemarle Sound Rivers. Co-PI with L. Babis (Maritime History), N. Richards (Maritime History), and F. Cantelas (Maritime History), $55,703.

National Science Foundation SGER grant, 10/15/05-10/15/07, Seabed and Geochemical Deltaic Changes Induced by Hurricane Katrina. Co-PI with DR Corbett and Dave Mallinson, $150,626.

Duke/UNC Oceanographic Consortium, 06/05-08/05, Investigation of a Decapitated Paleo-River System on the Mid-Atlantic Continental Shelf. Lead-PI with D. Corbett and D. Mallinson; 5 days ship time, ~$40,000 equivalent.


ECU Research/Creative Activity Grant, Sediment Dynamics in Small Tributaries of Pamlico Sound, Solo PI, month stipend, $9800.

USGS Contract, 6/1/05-5/31/06, Radionuclide analysis of samples from the USGS. Lead-PI with D.R. Corbett, $6,000.

USGS, 7/16/05-7/15/06, North Carolina Quaternary Stratigraphy and Regional Geologic Synthesis. Co-PI with S. Riggs, S. Culver, D. Corbett, and D. Mallinson, $200,000.

National Science Foundation, 7/1/04-6/30/06, Acquisition of Instrumentation to Enhance Research and Teaching of the Coastal Processes Research Group at East Carolina University. Co-PI with D.R. Corbett and D.J. Mallinson, $443,971.

National Science Foundation, 10/1/2004-9/30/2007, Collaborative Research: Sediment Dynamics on the Actively Deforming Waipaoa Continental Slope: An Examination of a Dispersal System Sink. Solo PI. Total collaborative proposal of $563,356 with C. Alexander, $185,728 to ECU.

J.P. Walsh CV
University of Puerto Rico, Mayaguez NOAA Sub-contract, 6/1/05-5/31/06. Terrestrial Sediment Accumulation in La Parguera Reef and Mangrove Environments. Lead-PI with D.R. Corbett, $38,000.

**Peer-Reviewed Publications**

*Student is first-author, and I served as advisor, co-advisor or committee member.*


J.P. Walsh CV


Non-Peer-Reviewed Publications


J.P. Walsh CV


**Works in Progress**


**Published Abstracts, Conference Presentations and Posters**


J.P. Walsh CV


Orpin, A. & Walsh, J. P. (2013). Floods, ocean storms and stratigraphic variability over a year-long experiment on the muddy and energetic Waipaoa River margin. Integrated Coastal Zone and Shelf-Sea Research meeting.


J.P. Walsh CV


J.P. Walsh CV


Selected to be made into a lay-person’s abstract and featured for the press.


*Burgess, B., Eulie, D., Walsh, J., and D. Corbett. 2010. Testing the accuracy of heads-up-digitizing and estuarine shoreline characterization, Ocracoke, NC. ECU Research and Creative Activity Week, Greenville, NC.


J.P. Walsh CV
compared with island narrowing on the humand modified northern Outer Banks, NC. OSA Annual Meeting.


J.P. Walsh CV
Milliman, J.D., Driscoll, N.W., Slingerland, R., Babcock, I., and J.P. Walsh. 2004. Isotopic stage 3 deposition and stage 2 erosion of a clinoform in the Gulf of Papua: Regional tectonics versus eustatic sea-level change. Fall AGU, San Francisco.


Oceanographic Research Cruises
12/12 R/V L.M. Gould, collected CTDs, grabs, Southern Ocean and Antarctica (14d)
8/11 R/V Cape Hatteras, Chief scientist, collected cores, CTDs, Gulf of Mexico (6d)
2/11 R/V Kaharoa, Chief scientist, collected cores, recovered pods, New Zealand (12d)
10/10 R/V Pisces, Oil spill response, led multicore operations, Gulf of Mexico (10d)
9/10 R/V Kaharoa, Chief scientist, collected cores, deployed tripods, New Zealand (9d)
5/10 R/V Kaharoa, Chief scientist, collected cores, deployed tripods, New Zealand (9d)
1/10 R/V Revelle, Co-chief, collected cores, deployed tripods, New Zealand (9 days)
3/06 R/V Cape Hatteras, Chief scientist, Multibeam, seismics, radio, NC (4 days)
2/06 R/V Marion Dufrene, collected giant piston cores around New Zealand (12 days)
10/05 R/V Cape Hatteras, Multibeam and core collection on Mississippi shelf (10 days)
2/05 R/V Kilo Moana, Chirp data and core collection on Waipaoa slope (12 days)
1/04 R/V Melville, Chirp data and core collection on Fly River clinoform (1.5 months)
7/03 R/V Pezmar, Chief scientist, core collection among coral reefs (2 days)
6/02 USCG Cutter Healy, seismic reflection and palaeoclimate research (3 weeks)
2/02 R/V Sprotl, seismic reflection investigation of the Rose Canyon Fault (2 days)
11/01 R/V Thomas Thompson, Co-chief scientist, Eel margin research (3 days)
4/00 R/V Weesma, Eel margin sedimentological research (7 days)
2/00 R/V Franklin, Gulf of Papua sedimentological research (2 weeks)
3/99 R/V Thomas Thompson, PROD drill/corer test cruise (2 days)
3/99 R/V Natashima, Sissano Lagoon tsunami offshore ROV survey (1 week)
2/99 R/V Harry Messel, Co-chief scientist, Gulf of Papua mangrove research (1 week)
7/98 R/V Weesma, Eel margin sedimentological research (7 days)
3/98 R/V James Kirby, Bowling Green Bay class research trip (1 day)
9/97 R/V Harry Messel, Gulf of Papua mangrove sedimentological research (1 week)
7/97 R/V Melville, Eel margin sedimentological research (7 days)
5/97 R/V Franklin, Sepik and Gulf of Papua sedimentological research (2 weeks)
1/97 R/V Weesma, Co-chief scientist, Eel margin sedimentological research (1 week)
1/97 R/V Pacific Hunter, Eel margin sedimentological research (1 day)
10/96 R/V Onrust, Long Island Sound sedimentological research (2 day trips)
7/96 R/V Weesma, Eel margin sedimentological research (7 days)
5/96 M/V Pacific Hunter, Eel margin mooring work (1 day)
1/96 M/V Pacific Hunter, Eel margin mooring work (1 day)
10/95 R/V Onrust, Long Island Sound sedimentological research (2 day trips)
9/95 R/V Weesma, Eel margin (CA, USA) sedimentological research (10 days)
7/95  R/V Alpha Helix, Gulf of Alaska sedimentological research (3 weeks).
11/93  SS/V Corwith Cramer, Caribbean Sea oceanographic research (3 months).

- Not included in the above list are the countless day trips made on smaller vessels and for land-based work.

- On most of these cruises (as specified), the fieldwork has included a considerable amount of coring (box to giant piston coring) and geophysical surveying (seismic reflection and multibeam). Also, the collection of CTD profiles and the deployment and recovery of tripods and moorings has been undertaken to obtain water-column characteristics and sediment-transport information.

**Lab and Computer Skills**

Standard sedimentological methods, e.g., grain-size analysis, X-radiography
Radiochemical skills – alpha (210Pb) and gamma spectroscopy
Geochemical labwork – compositional and trace metal investigations
Data processing – ArcGIS, Matlab, CARIS (multibeam), Kingdom Suite (seismic)
Data presentation – Fledermaus, Adobe Photoshop, Corel Suite, Sigmaplot, MS Office

**Teaching Experience**

**Summer 2013**  Summester at the Coast (GEOL2500/2501)

**Fall 2010-2012**  Coastal Geoscience (GEOL 7002), East Carolina University. Class is designed primarily for doctoral students in the Coastal Resource Management Program. Class uses lectures, labs and field trips to teach coastal geological and physical oceanographic processes.

**2007-2013**  Oceanography (GEOL 1550), East Carolina University. An introductory-level class with typical enrollment of ~100.

**Spring 2005-8, 2010**  Land-Sea Interactions (GEOL 6705), East Carolina University. Created and orchestrated graduate-level class with an overnight field trip. Class is designed to educate students on quantifying sediment and solute dynamics; the Pamlico-Albemarle dispersal system is used as a focus.

**Fall 2004-2006**  Sedimentology (GEOL 4010/4011), East Carolina University. Lecture and lab class. Prepared and presented lectures for undergraduate class. Also, graded materials and coordinated exams, labs and field trips.

**1995-1996**  Teaching Assistant, State University of New York, Stony Brook. Aided professors in classroom, laboratory and field activities for an undergraduate marine-science class focused on Long Island Sound.

J.P. Walsh CV
Educated students during labs and day trips at sea. Instructed students in laboratory analyses and guided them in science report writing.


Advising and Mentoring Experience

Graduate Students
Advised or Co-Advised
David Hawkins, ECU, Geological Sciences MS Student, Co-advisor, active
David Young, ECU, Geological Sciences MS Student, Co-advisor, active
Ian Conery, ECU, Geological Sciences MS Student, Co-advisor, active
Steve Anstine, ECU, Geological Sciences MS Student, Co-advisor, active
Devon Enloe, ECU, CRM Ph.D., Co-advisor, active
Joey Kiker, ECU, Geological Sciences MS Student, Co-advisor, Summer 2012
Dimitri Quaefi, ECU, Geological Sciences MS Student, Co-advisor, Fall 2010
Reanna Camp, ECU, Geological Sciences MS Student, Co-advisor, Fall 2009
David Lagomasino, ECU, Geological Sciences MS Student, Co-advisor, Spring 2009
Lisa Covart, ECU, Geological Sciences MS Student, Co-advisor, Summer 2009
Sophie Dillard, ECU, Geological Sciences MS Student, Co-advisor, Fall 2008
Kat Marcinak, ECU, Geological Sciences MS Student, Co-advisor, Fall 2007
Katie Ryan, ECU, Geological Sciences MS Student, Advisor, Spring 2007
Ben Summers, ECU, Geological Sciences MS Student, Advisor, Fall 2007

Committee Member
Ray Tichener, ECU, Geological Sciences MS student, active
Robert Howard, ECU, Geological Sciences MS Student, active
Terry Reynolds, ECU, CRM Ph.D., Committee Member, active
Katrina Rablen, ECU, Geological Sciences MS student, Fall 2012
Jeanette Hayman, ECU, Maritime History MS Student, Fall 2011
Wes Patrick, ECU, CRM Ph.D. Student, Committee Member, Fall 2010
Cecilia Krahforst, ECU, Biology MS Student, Spring 2010
Kelly Best, ECU, Geological Sciences MS Student, Fall 2009
Katie McDowell, ECU, Geological Sciences MS Student, Fall 2009
Dave VanDeVelde, Geological Sciences MS Student, Fall 2009
Dave Kunz, ECU, Biology MS Student, Summer 2009
Paul Hindsley, ECU, CRM Ph.D., Committee Member, Spring 2008
Michael Dail, ECU, Geological Sciences MS Student, 2006
Clay McCoy; ECU, CRM Ph.D. Student, 2006

Undergraduate Research Students
Stephanie Balbuena, ECU Geological Sciences, 2011-2012

J.P. Walsh CV
Anne Dittevson, ECU Geological Sciences, 2011-2012
Eric Thornton, ECU Geological Sciences, 2011
Brian Burgess, ECU Geological Sciences, 2008-2010
Scott Elkins, ECU, 2009-2010
William Rouse, ECU, 2009-2010
Brandon Hill, ECU, 2009-2010
Jamie Armencout, ECU, 2008-2009
Phillip Harrison, ECU, 2009
Stephen Sanchagrin, 2008
Haley Claekner, 2007-2008
Brion Byers, 2005-2006
Andrew Marciniak, ECU, 2005
Troy Thompson, ECU, 2004-2005
Wilson Wong, University of California, San Diego, 2002
Christie Lindeman, University of California, San Diego, 2002
John Staly, University of Washington, 2002
Kari Sauer, University of Washington, 2001

Extended Service Efforts
Since July 2012 Director Summester at the Coast, UNC CSI
Since Spring 2008 ECU representative for SURA and SECOORA
Since May 2006 Duke-UNC Oceanographic Consortium Advisory Board
Since Fall 2006 ECU Boating Safety Control Board
2009-2013 Associate Director, RENCI@ECU
2009-2011 Judge for natural science posters, ECU Research Week
2010-2011 Geological Sciences Undergraduate Studies Director
2010-2012 Bike and Pedestrian Commission, City of Greenville, NC
2008-2011 CRM Advisory Committee
2008-2011 Bike Friendly City Task Force, City of Greenville, NC
2008-2010 Designed, developed and conducted Department Alumni web survey
2008-2009 Assist with the Visualization Challenge at ECU
2005-2010 Assist in management of Geological Sciences server
Fall 2009 Coordinated strategic plan for Department of Geological Sciences
2004-2009 CRM Admissions Committee
2008-2009 Chair of Search Committee for Coastal Ocean Dynamics position
2008-2009 Search Committee Member for Sea-level Rise position
2006-2008 Search Committee Member for ICSP Director position
2006-2007 Geological Sciences Seminar Coordinator
2005-2006 Search Committee Member for Landscape Ecologist position
2004-2005 Geological Sciences Seminar Coordinator

Invited Presentations
APNEP STAC, Greenville, NC March 2013
International Geological Congress, Brisbane, Australia, August 2012
Univ. of Rhode Island, Feb 2012

J.P. Walsh CV
SC Dept. of Environment, Beaufort, NC, May 2011
Skidaway Institute of Oceanography, Savannah, GA, May 2011
Gifted Child Summer Camp, Greenville, NC, July 2010
Pamlico Sound Sail and Power Squadron, Washington, NC, July 2010
GoScience Center, Greenville, NC, June 2010
ThinkTank 2009, Chapel Hill, NC, June 2009
UNC Chapel Hill, Marine Sciences, Spring 2009
RENCI Sensor Workshop, Chapel Hill, NC, Feb 2009
NC GIS Meeting, Raleigh, NC, Feb 2009
Coral Reef Ecosystem Studies Final Workshop, Spring 2009
SEPM Clinoform Workshop, Rock Springs, WY, Fall 2008
Albemarle-Pamlico National Estuarine Program Science & Technology Advisory Council, Fall 2008
State of North Carolina Climate Commission, Fall 2008
University of Maryland, Horn Point Marine Lab, Summer 2008
French 2 (TV Interview), Fall 2007
UNC Chapel Hill, Geology, Fall 2007
UNC Institute of Marine Science, Fall 2006
Florida State University, Geology, Fall 2005
NC State University, Winter 2003
Southampton College, 2001

Reviewing of Journal Articles, Book Chapters, Proposals and Dissertations

Ambio-A Journal of the Human Environment (1, as of 9/09)
Continental Shelf Research (5, as of 4/09)
Estuarine and Coastal Shelf Science (1, as of 9/09)
Journal of Geophysical Research — Earth Surface (1, as of 9/09)
Marine Geology (5, as of 9/09)
National Science Foundation (14 including panel, as of 9/09)
Petroleum Research Fund (2, as of 4/09)
Springer-Verlag Publishers, Book chapter (1, as of 9/09)
Duke-UNC Oceanographic Consortium (21, as of 4/10)
Australian Dissertation (1, as of 9/09)

Web Outreach and Education

- Since their creation, I have managed the NCCOHAZ and SSTORM web sites.

- 2011, Created SSTORM Research Blog http://ecusstorm.blogspot.com/

- 2009, Conceived and directed the development of the Storms to Life outreach and education web site. http://www.ecu.edu/rencl/StornsToLife/
- 2008, Conceived, directed the development of and produced much content for the North Carolina COAstal HAZards (NC COHAZ) Decision Portal, a web site designed to bring related research and information to one location: http://coastal.geology.ecu.edu/NC_COHAZ. The main page alone has received over 50,000 hits since September 2008 from visitors around the world.

- 2007, Constructed and produced content for an education/outreach website for the Sediment and Solute Transport on Rivers and Margins (SSTORM) research group at ECU: www.coastal.geology.ecu.edu/.

- 2005, Coordinated the construction of and created content for an outreach and education website for NSF-Marglas New Zealand research: www.coastal.geology.ecu.edu/nz.

- 2003, Produced content for and helped coordinate the construction of an outreach and education website for NSF-Margins Papua New Guinea research: http://sio.ucsd.edu/pnpg/.

**Media Attention for Work**

Milepost Magazine on the Outer Banks, June 2012
Featured scientist, Exploration & Discovery RG&S publication, March 2011.
NZ Coastal Society, article featuring research, January 2011.
NOAA Mission Log and main web page in Sept-Oct 2010 for NOAA Pisces cruise
Daily Reflector, news article on New Zealand research, July 17.
Daily Reflector, NPR Radio in June 2010 on Gulf oil spill
WCTI TV12, feature aired on 10/21/2009 on Storms to Life web site.
WCTI TV12, feature aired on 7/10/2009 on storm history research on Ocracoke.
WCTI TV12, feature aired on 6/19/2009 on estuarine shoreline mapping,
Coastwatch Magazine of NC Sea Grant, Spring 2009 article on NC COHAZ.
WCTI TV12, feature aired on 5/10/2009 on NC COAstal HAZards Decision Portal
The Virginian Pilot, 10/24/2008 on NC COAstal HAZards Decision Portal
ECU News & Events, 10/2008 on NC COAstal HAZards Decision Portal
The East Carolinian, 10/23/2008 on NC COAstal HAZards Decision Portal
Outer Banks Free Press 10/19/2008 on NC COAstal HAZards Decision Portal
GISdevelopment.net, 10/16/2008 on NC COAstal HAZards Decision Portal
SURA Newsletter, 10/13/2008 on NC COAstal HAZards Decision Portal
ECU News Bureau, 10/6/2008 on NC COAstal HAZards Decision Portal
The Virginia Pilot, 1/21/2008 on Albemarle Sound monitoring
Pieces of Eight, 1/25/2008 NC Coastal Hazards research
NIWA Water & Atmosphere, Issue 15(4), 2007 on New Zealand research
ECU RGS, Exploration & Discovery July 2007 on post-Katrina Gulf of Mexico research
Scoop Independent News and other attention on New Zealand Marion Dufresne coring
ECU Football Program, Fall 2005 on post-Katrina Gulf of Mexico research
WCTI TV12, 10/2005 on post-Katrina Gulf of Mexico research

J.P. Walsh CV
Nomination for: Dave Burton, Nicola Scafetta, Stan Young, Robert Brown

Tancred,

Sorry for the delay in getting back to you as I was out-of-town last week.

Your assessment of the nominees for the science panel are correct.

As to individuals that have expressed interest in serving on the panel are:
---Mr. Dave Burton, Systems & Modeling
---Dr. Nicola Scafetta, Duke Univ.
---Mr. Stan Young, Biostatistics
You should directly contact them individually to confirm, as I have seen you have done with Dave Burton.

Another that should be considered as a nominee to the science panel, but I do not know his availability, but would be an excellent addition:
---Dr. Robert Brown, Duke Univ.

The remainder of the names submitted have prominent scientific backgrounds and will bring much balance to the science panel, but their locations and distance will likely preclude them from being actual members to the science panel. Their reviews, inputs, and knowledge should be strongly solicited.

Lastly, I've seen in numerous scientific studies and articles from other researchers that should be included in the science panel's future deliberations and included in their references, in order to comprehensively assess the issues. If you need these I'll be glad to resend them.

Call or email if you have any other questions. Thanks.

Larry P. Baldwin, CP8/Sc
CRC Commissioner, Coastal Development
(910) 471-0504
Tancred Miller
Coastal and Ocean Policy Manager
NC Division of Coastal Management
Dept. of Environment & Natural Resources
400 Commerce Ave, Morehead City NC 28557
Tel. 252-808-2808, Ext. 224

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.

From: Stan Young [mailto:young@niss.org]
Sent: Wednesday, July 03, 2013 10:36 PM
To: Miller, Tancred
Cc: Stan Young
Subject: Re: CRC Science Panel

Dear Mr. Miller:

I am indeed interested in becoming a member of CRC. Attach a short bio as well as a CV. I live in Raleigh, I, along with family members, own property on the NC coast.

Let me know if you need anything more.

Stan Young

On 7/3/2013 5:25 PM, Miller, Tancred wrote:

Hello Dr. Young,

Larry Baldwin, a member of the Coastal Resources Commission, submitted your name as a nominee to be added to the CRC's Science Panel on Coastal Hazards. I am writing to confirm your interest and availability and provide a little more information.

The Science Panel (http://www.nccoastalmanagement.net/Hazards/scipanel.htm) is a voluntary panel of coastal experts who are appointed by the CRC chair and charged with the following: 1) continually review the current state of knowledge of coastal processes and ecological functions of coastal North Carolina; 2) review the current methodologies being used by North Carolina and others to define and identify coastal hazard areas and impacts associated with development in public trust areas of North Carolina; 3) review the scientific basis of the CRC's rules as applied by the Division of Coastal Management (DCM) to development in the coastal area; and 4) develop recommendations for the CRC on relevant topics.
The Panel meets approximately six times per year and performs additional work outside of meetings in subcommittees. Mileage is reimbursed for travel to Panel meetings, and lunches are provided. The initial term of appointment is four years.

If you wish to be considered please send me a current copy of your CV. We expect the CRC chair to make the appointments at the CRC’s September meeting.

Please let me know if you have any questions.

Best regards,
Tancred

Tancred Miller  
Coastal and Ocean Policy Manager  
NC Division of Coastal Management  
Dept. of Environment & Natural Resources  
400 Commerce Ave, Morehead City NC 28557  
Tel. 252-808-2808, Ext. 224

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.
Dr. S. Stanley Young is the Assistant Director for Bioinformatics at the National Institute of Statistical Sciences (NISS) in Research Triangle Park, North Carolina. NISS' mission is to identify, catalyze and foster high-impact, cross-disciplinary research involving the statistical sciences. He is also the CEO of Omicsoft Corporation.

Dr. Young graduated from North Carolina State University, BS, MES and a PhD in Statistics and Genetics.

He worked in the pharmaceutical industry on all phases of pre-clinical research, first at Eli Lilly and then at GlaxoSmithKline. He has authored or co-authored over 50 papers including six "best paper" awards, and a highly cited book, *Resampling-Based Multiple Testing*. He has two issued patents. He is interested in all aspects of applied statistics, with special interest in chemical and biological informatics. He conducts research in the area of data mining.

Dr. Young is a Fellow of the American Statistical Association and the American Association for the Advancement of Science. He is an adjunct professor of statistics at North Carolina State University, the University of Waterloo and the University of British Columbia where he co-directs thesis work.
Young CV 2011

S. Stanley Young
3401 Caldwell Drive
Raleigh, NC 27607-3326
919 782 2759
genetree@bellsouth.net

Current Positions:
Assistant Director for Bioinformatics
National Institute of Statistical Sciences

CEO OmicSoft
CGStat LLC

Education
BS, MES, PhD, 1966, 1968, 1974, North Carolina State University, Raleigh, NC

Positions
1987-2000  Principle Consultant, GlaxoWelcome
2000-2002  Director, Statistical Research, GlaxoSmithKline
1996-      Adjunct Professor of Statistics, NCSU
1998-      Adjunct Professor of Statistics, University of Waterloo
2002-      CEO, CGStat, LLC
2002-      Assistant Director for Bioinformatics, NISS
2004-      Adjunct Professor of Statistics, University of British Columbia

Other Experience and Professional Memberships
1972-      American Statistical Association
1972-      Biometrics Society
2004      Program Chair, ASA's Section on SPES
2003      Program Chair, Midwest Biopharmaceutical Statistics Workshop

Honors
1980      Best Statistics Paper, SAS Users' Group International
1989      Best Statistics Paper, SAS Users' Group International
1990      Fellow of the American Statistics Association
1991      Best Statistics Application Paper, ASA
1998      Statistics in Chemistry Award, ASA
1999      Virtual Screening Conference, Marburg Germany
2000      Statistics in Chemistry Award, ASA
2000      Participant of "Biostatistics Workshop" at the Oberwolfach Institute in Germany
2000      Participant of "Computational Chemistry Workshop" Beilstein Institute of Germany
2006      Statistics in Chemistry Award, ASA

Book
Peter H. Westfall and S. Stanley Young (1993) Resampling-based Multiple Testing, John Wiley&sons

Book Chapters


Patents


Young SS, Barrett, Jr. TH, Beccher CW. System, method, and computer program product for analyzing spectrometry data to identify and quantify individual components in a sample. US Patent 7,561,975 (2009)

Papers


Young SS, Brannon DR. (1986) Dose selection for long-term rodent carcinogenicity studies. Fundam Appl Toxicol. 6, 185-188.


Zaykin, D.V., Young, S.S. (2005) Recursive partitioning as a tool for pharmacogenetic studies of


Beasley CM, Benson C, Xia JQ, Young SS, Haber H, Mitchell MI, Loghin C. (2011) Systematic decrements in QTc between the first and second day of contiguous daily ECG recordings under controlled conditions. PACE 34, 1116-1127.

MEMORANDUM

TO: Coastal Resources Commission

FROM: Tancred Miller

SUBJECT: Sea-Level Rise Assessment Update -H819 Requirements, CRC Science Panel Involvement and Timeframe

Section 2.(c) of House Bill 819 (Session Law 2012-202, attached) directs the Commission and the CRC Science Panel to complete a sea-level rise (SLR) assessment study that must include specific analyses and meet certain deadlines. There are two major components to the required study: an update to the 2010 NC SLR Assessment Report regarding the science; and an economic & environmental study of the costs versus benefits of adopting SLR-related rules and policies. The two components will be conducted as separate (but related) studies.

The legislation requires the Science Panel to complete certain parts of the study. Other parts of the study, such as the economic analysis, will not be assigned to the Science Panel. Additional ad hoc members to work with the Science Panel on the scientific assessment will be appointed by the CRC Chair. Mike Lopazanski’s memo CRC-14-14 explains the process for identifying ad hoc members. Staff proposes that the CRC recruit a volunteer ad hoc panel to perform the economic and environmental cost-benefit study.

The first legislative deadline is **March 31, 2015**, when the Science Panel must deliver a draft of the SLR assessment report to the CRC. The final study, including the assessment report and the cost-benefit study, is due to the General Assembly on or before **March 1, 2016**.

At your May meeting, Chairman Gorham will present you with a draft charge to the Science Panel for the SLR Assessment report, for discussion and approval. The approved charge, along with the legislation, should clearly describe what the Science Panel is being asked to do. Staff has drafted a timeline for the study that shows the major milestones that must be met to comply with the legislative mandate:

**2014**

May 1  CRC receives the 2013 list of nominees for ad hoc additions to the Science Panel for the SLR Assessment Report, and is invited to submit additional nominations.

May 14-15  1.CRC considers a charge to the Panel for approval.
2. CRC discusses nominees for the assessment report update. Chairman appoints ad hoc members following the May CRC meeting.

3. CRC initiates call for nominees for a volunteer panel for the SLR cost-benefit study.

June xx  
Staff contacts assessment report authors to schedule an in-person meeting.

July xx  
Science Panel and ad hoc members meet to review the scope of work and develop a process for conducting the study (including report outline, methodology, individual assignments, standards for consensus, deadlines, minority opinion, etc.)

July 30-31  
1. CRC finalizes scope of work for cost-benefit study.
2. CRC considers nominees for the cost-benefit study. Chairman makes appointments after the July CRC meeting.

Sept/Oct xx  
Prior to the October 22-23 CRC meeting, Science Panel and ad hoc members meet to review progress on assessment report, and the cost-benefit panel will meet to develop their study charter. Staff will report on progress at the CRC meeting.

December 31  
Science Panel meets to finalize first order draft of assessment report.

2015

February xx  
Science Panel meets to finalize second order draft. Staff includes draft in meeting materials for March 2015 CRC meeting (date TBD), and sends to cost-benefit panel.

March xx  
Science Panel presents the draft assessment report to the CRC. Draft report becomes public and CRC invites public comments.

May xx  
CRC holds a public hearing on the draft assessment report at their first meeting after March 31st. CRC requests revisions to the draft assessment report, if desired. Draft remains open for public comment.

June xx  
Cost-benefit panel meets to finalize first order draft and staff forwards to the CRC for review. CRC requests revisions, if desired.

September xx  
Cost-benefit panel meets to finalize second order draft; CRC releases for public input.

December 31  
Public comment closes on assessment report and cost-benefit study.

2016

January  
Staff forwards all public comments to Science Panel and cost-benefit panel for them to consider amendments to the draft reports. Staff includes final reports in meeting materials for the February CRC meeting.

February xx  
Study panels present final reports to the CRC. CRC delivers final reports, including public comments and any adopted or under-consideration SLR policies to the Environmental Review Commission.
Session law 2012-202, SECTION 2.(c)


The Commission shall direct the Science Panel to include in its five-year updated assessment a comprehensive review and summary of peer-reviewed scientific literature that address the full range of global, regional, and North Carolina-specific sea-level change data and hypotheses, including sea-level fall, no movement in sea level, deceleration of sea-level rise, and acceleration of sea-level rise.

When summarizing research dealing with sea level, the Commission and the Science Panel shall define the assumptions and limitations of predictive modeling used to predict future sea-level scenarios.

The Commission shall make this report available to the general public and allow for submittal of public comments including a public hearing at the first regularly scheduled meeting after March 31, 2015.

Prior to and upon receipt of this report, the Commission shall study the economic and environmental costs and benefits to the North Carolina coastal region of developing, or not developing, sea-level regulations and policies.

The Commission shall also compare the determination of sea level based on historical calculations versus predictive models.

The Commission shall also address the consideration of oceanfront and estuarine shorelines for dealing with sea-level assessment and not use one single sea-level rate for the entire coast. For oceanfront shorelines, the Commission shall use no fewer than the four regions defined in the April 2011 report entitled "North Carolina Beach and Inlet Management Plan" published by the Department of Environment and Natural Resources. In regions that may lack statistically significant data, rates from adjacent regions may be considered and modified using generally accepted scientific and statistical techniques to account for relevant geologic and hydrologic processes.

The Commission shall present a draft of this report, which shall also include the Commission's Science Panel five-year assessment update, to the general public and receive comments from interested parties no later than December 31, 2015, and present these reports, including public comments and any policies the Commission has adopted or may be considering that address sea-level policies, to the General Assembly Environmental Review Commission no later than March 1, 2016.
MEMORANDUM

TO: Coastal Resources Commission  
FROM: David Moye, District Manager – Washington Regional Office  
SUBJECT: Amendments to 7K.0208 Exemption for Single Family Residences  
DATE: April 28, 2014

At the February CRC meeting, the Commission heard a presentation on DCM’s annual rules review and our 2014 proposals for changes to rules and procedures in accordance with NCGS 150B-19.1(b) (the NC Administrative Procedures Act). One of the focus areas in that presentation was to provide greater flexibility in the use of a permitting “Exemption” for single family residences.

As staff explained during the meeting, currently under your rules, issuance of a no-fee Exemption for a single family residence requires a signed statement of no objection from the adjacent riparian property owners. The inability to obtain these signoffs results in the applicant being required to obtain a Minor CAMA Permit, which has a fee of $100 but does not require signed statements of no objection, only proof of notification of adjacent property owners. Additionally, staff pointed out that the Exemption was only valid for 1 year. To make it consistent with the Minor and Major Permits, it was recommended to extend the time frame to 3 years. A third component of the Exemption that was discussed was the allowance of a 6’ wide accessway to the water providing it is elevated, slatted, and wooden as per 7H.0209(D)(10). At the meeting, staff recommended modifying the language in your rule to allow materials other than wood be allowed for this accessway from house-to-water, as well as removing an incorrect reference to 7H.0209(D)(10).

Staff has attached the proposed rule language for your review. Staff is requesting a modification to the 7K.0208 Exemption to: 1) remove the requirement for signed statements of no objection, 2) increase the time frame to 3 years, and 3) allow materials other than wood to be used for the house-to-water access. Staff recommends that the CRC consider sending the draft rule revision, including any additional changes by the CRC, to the public hearing process. Staff looks forward to the discussion with the Commission.

Attachment
15A NCAC 07K .0208 SINGLE FAMILY RESIDENCES EXEMPTED

(a) All single family residences constructed within the Coastal Estuarine Shoreline Area of Environmental Concern which are more than 40 feet landward of normal high water or normal water level, and involve no land disturbing activity within the 40 feet buffer area are exempted from the CAMA permit requirement as long as this exemption is consistent with all other applicable CAMA permit standards and local land use plans and rules in effect at the time the exemption is granted. This exemption does allow for the construction of an access to the water, in accordance with Rule 07H .0209(d)(10), providing that the access shall be no wider than six feet and may be constructed out of materials such as wood, composite material, gravel, paver stones, concrete, brick, or similar materials. Any access constructed over wetlands shall be elevated at least three feet above any wetland substrate as measured from the bottom of the decking. 

(b) Within the AEC for estuarine shorelines contiguous to waters classified as Outstanding Resource Waters (ORW), no CAMA permit shall be required if the proposed development is a single-family residence which has a built upon area of 25 percent or less and:
   (1) has no stormwater collection system; and
   (2) is at least 40 feet from waters classified as ORW.

(c) Before beginning any work under this exemption, the Department of Environment and Natural Resources representative must be notified of the proposed activity to allow on-site review. Notification may be by telephone, in person or in writing. Notification must include:
   (1) the name, address, and telephone number of the landowner and the location of the work, including the county, nearest community and water body;
   (2) the dimensions of the proposed project, including proposed landscaping and the location of normal high water or normal water level;
   (3) confirmation that a written statement has been obtained, signed by the adjacent riparian property owners indicating that they have no objections to the proposed work.

(d) In eroding areas, this exemption shall apply only when the local permit officer has determined that the house has been located the maximum feasible distance back on the lot but not less than forty feet.

(e) Construction of the structure authorized by this exemption shall be completed by December 31 of the third year within one year of the issuance date of this exemption or the general authorization expires.

History Note: Authority G.S. 113A-103(5) c; Eff. November 1, 1984; Amended Eff. December 1, 2006; December 1, 1991; May 1, 1990; October 1, 1989. Amended Eff. TBD, 2014.
MEMORANDUM

TO: Coastal Resources Commission
FROM: David Moye, District Manager – Washington Regional Office
SUBJECT: Amendments to 7H.1500 General Permit for Boat Basin Excavation
DATE: April 28, 2014

At the February CRC meeting, the Commission heard a presentation on DCM’s annual rules review and proposals for changes to rules and procedures in accordance with NCGS 150B-19.1(b) (the NC Administrative Procedures Act). One of the focus areas in that presentation was to provide greater flexibility in the use of the General Permit (GP) associated with upland boat basins.

As staff explained during the meeting, currently under your rules, construction of a boat basin up to 50’ by 50’ off a manmade system is allowable under this permit. Generally this means the property owner is digging up their own highground to put in a boatslip and in most cases the newly excavated area is bulkheaded to prevent sloughing of the bank into the basin. Currently under your rules, a bulkhead GP is also required in addition to the excavation GP resulting in a total permit fee of $800 for the work. In addition, currently this GP does not allow for any new basin excavation within or with connections to Primary Nursery Areas. After consulting with staff from the NC Wildlife Resources Commission as well as DCM’s Fishery Resource Specialists, it was the consensus of the aforementioned agency staff that new excavation in a PNA could be allowable, with coordination to determine whether any type of moratorium should be required for the project. A third component that was discussed at the last CRC meeting was modifying the expiration date of this GP from the current 90 days to 120 days to make it consistent with other GPs.

Staff has attached the proposed rule language for your review. Staff is requesting a modification to the 7H.1500 GP to: 1) allow for the construction of a bulkhead around the newly excavated boat basin, 2) allow for excavation of boat basins adjacent to primary nursery areas with coordination with the appropriate fishery resource personnel, and 3) extend the time frame of the permit from 90 days to 120 days. Staff recommends that the CRC consider sending the draft rule revision, including any additional changes by the CRC, to the public hearing process. Staff looks forward to the discussion with the Commission.

Attachment
SECTION .1500 - GENERAL PERMIT FOR EXCAVATION WITHIN OR CONNECTING TO EXISTING CANALS: CHANNELS: BASINS: OR DITCHES IN ESTUARINE WATERS: PUBLIC TRUST WATERS: AND COASTAL ESTUARINE SHORELINE AEC'S

15A NCAC 07H .1501 PURPOSE
This permit will allow excavation within existing canals, channels, basins and ditches in estuarine and public trust waters for the purpose of maintaining previous water depths and creating new boat basins from non-wetland areas that will be used for private, non-commercial activities. This general permit is being developed according to the procedures outlined in Subchapter 7J .1100, and will apply to the estuarine waters and public trust waters areas of environmental concern.

History Note: Authority G.S. 113A-107(a),(b); 113A-113(b); 113A-118.1; 113-229(cl); Eff. July 1, 1984; Amended Eff. December 1, 1987; Amended Eff. TBD, 2014.

15A NCAC 07H .1502 APPROVAL PROCEDURES
(a) The applicant must contact the Division of Coastal Management and complete an application form requesting approval for development. Applicants shall provide their name and address, the site location and the dimensions of the project area.
(b) The applicant must provide:
   (1) Confirmation that a written statement has been obtained signed by the adjacent riparian property owners indicating that they have no objections to the proposed work; or
   (2) Confirmation that the adjacent riparian property owners have been notified by certified mail of the proposed work. Such notice should instruct adjacent property owners to provide any comments on the proposed development in writing for consideration by permitting officials to the Division of Coastal Management within ten days of receipt of the notice, and, indicate that no response will be interpreted as no objection. DCM staff will review all comments and determine, based on their relevance to the potential impacts of the proposed project, if the proposed project can be approved by a General Permit. If DCM staff finds that the comments are worthy of more in-depth review, the applicant will be notified that he must submit an application for a major development permit.
(c) No work shall begin until an onsite meeting is held with the applicant and a Division of Coastal Management representative to inspect and mark the proposed area of excavation and spoil disposal. Written authorization to proceed with the proposed development can be issued during this site visit. All excavation must be completed within 120 days of the date of permit issuance, or the general authorization expires.

History Note: Authority G.S. 113A-107(a),(b); 113A-113(b); 113A-118.1; 113-229(cl); Eff. July 1, 1984; Amended Eff. January 1, 1990; December 1, 1987; Amended Eff. TBD, 2014.

07H .1503 APPLICATION FEE
The applicant shall pay a permit fee of two hundred dollars ($200.00) for maintenance excavation of 100 cubic yards or less or four hundred dollars ($400.00) for maintenance excavation of 100 to 1,000 cubic yards. Permit fees shall be paid by check or money order payable to the Department.

History Note: Authority G.S. 113A-107; 113A-113(b); 113A-118.1; 113A-119; 113A-119.1; 113A-124; Eff. July 1, 1984; Amended Eff. September 1, 2006; August 1, 2000; March 1, 1991.
15A NCAC 07H .1504  GENERAL CONDITIONS
(a) Individuals shall allow authorized representatives of the Department of Environment and Natural Resources to make periodic inspections at any time necessary to ensure that the activity being performed under authority of this general permit is in accordance with the terms and conditions prescribed herein.
(b) This general permit will not be applicable to proposed maintenance excavation when the Department determines that the proposed activity will adversely affect adjacent property.
(c) 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.
(d) New basins within or with connections to primary nursery areas are not allowed.
(e) No new basins will be allowed that result in closure of shellfish waters according to the closure policy of the Division of Marine Fisheries.
(f) This permit does not eliminate the need to obtain any other required state, local, or federal authorization, nor, to abide by regulations adopted by any federal or other state agency.
(g) Development carried out under this permit must be consistent with all local requirements, AEC rules, and local Land Use Plans current at the time of authorization.

History Note:  Authority G.S. 113A-107(a),(b); 113A-113(b); 113A-118.1; 113-229(cl); Eff. July 1, 1984; Amended Eff. May 1, 1990; December 1, 1987; RRC Objection due to ambiguity Eff. May 19, 1994; Amended Eff. August 1, 1998; July 1, 1994. Amended Eff. TBD, 2014.

15A NCAC 07H .1505  SPECIFIC CONDITIONS
Proposed maintenance excavation must meet each of the following specific conditions to be eligible for authorization by this general permit.

(1) New basins will be allowed only when they are located entirely in highground and join existing man-made canals or basins.
(2) New basins will be no larger than 50' in either length or width and no deeper than the waters they join.
(3) New basins must be for the private non-commercial use of the land owner.
(4) Maintenance excavation must involve the removal of no more than 1,000 cubic yards of material as part of a single and complete project.
(5) All excavated material must be placed entirely on high ground above the mean high tide or ordinary high water line, and above any marsh or other wetland.
(6) All spoil material must be stabilized or retained so as to prevent any excavated material from re-entering the surrounding waters, marsh or other wetlands.
(7) The proposed project must not involve the excavation of any marsh, submerged aquatic vegetation (as defined by the Marine Fisheries Commission), or other wetlands.
(8) Maintenance excavation must not exceed the original dimensions of the canal, channel, basin or ditch and in no case be deeper than 6 feet below mean low water or ordinary low water, nor deeper than connecting channels.
(9) No excavation may occur during times designated by the N.C. Division of Coastal Management for protection of fish, shellfish or wildlife resources.
(9)(10) No maintenance excavation may take place within prime shellfish areas as designated by the N.C. Division of Marine Fisheries.
(10)(11) Proposed excavation must not promote or provide the opportunity for a change in existing land use at the time of project review.
New basins and canals must maintain required setbacks between septic tank systems and surface waters.

Maintenance excavation as well as excavation of new basins shall not be allowed within or with connections to primary nursery areas without prior approval from the Division of Marine Fisheries or Wildlife Resources Commission (whichever is applicable).

Bulkheads shall be allowed as a structural component on one or more sides of the permitted basin to stabilized the shoreline from erosion.

The bulkhead shall not exceed a distance of two feet waterward of the normal high water or normal water level at any point along its alignment.

Bulkheads shall be constructed of vinyl or steel sheet pile, concrete, stone, timber, or other suitable materials approved by the Division of Coastal Management.

All backfill material shall be obtained from an upland source pursuant to 15A NCAC 07H .0208. The bulkhead shall be constructed prior to any backfilling activities and shall be structurally tight so as to prevent seepage of backfill materials through the structure.

Construction of bulkhead authorized by this general permit in conjunction with bulkhead authorized under 15A NCAC 07H .1100 shall be limited to a combined maximum shoreline length of 500 feet.

History Note: Authority G.S. 113A-107(a),(b); 113A-113(b); 113A-118.1; 113-229(cl); Eff. July 1, 1984; Amended Eff. September 1, 1988; December 1, 1987. Amended Eff. TBD, 2014.
NC COASTAL RESOURCES ADVISORY COUNCIL
May 14, 2014
Hilton Double Tree
Atlantic Beach, NC

AGENDA

Wednesday, May 14th

9:30  Welcome and Introductions            Frank Gorham, CRC Chair

9:35  CRC & CRAC Interactions
     • CRAC Meetings & Assignments
     • Inlet Management Study
     Frank Gorham, CRC Chair

9:45  Draft CRAC By-laws
     • CRAC Discussion
     • Election of Officers
     Mary Lucasse

10:15 Adjourn; Coastal Resources Commission meeting convenes at 10:30 am.

NEXT MEETING: July 30-31, 2014
Beaufort, NC

N.C. Division of Coastal Management
http://www.nccoastalmanagement.net
BYLAWS OF THE N.C. COASTAL RESOURCES ADVISORY COUNCIL

Article I - Purpose

The purpose of the Coastal Resources Advisory Council (Council) shall be to fulfill the duties prescribed for it in N.C. Gen. Stat. § 113A-105(e).

Article II - Membership


Article III - Officers

Section 1. The officers of the Council shall be the chairperson and vice-chairperson.

Section 2. Pursuant to N.C.G.S. § 113A-105(e), the chairperson and vice-chairperson shall be elected annually by the Council.

Section 3. The chairperson shall help establish meeting agendas, preside over Council meetings, and shall appoint subcommittees and subcommittee chairs as necessary to carry out business of the Council.

Section 4. The vice-chairperson shall preside over Council meetings in the absence of the chairperson and shall assume the duties of the chairperson if the chairperson is unable to complete his or her term.

Article IV - Staff

Section 1. Staff to the Council shall be provided by the Division of Coastal Management (DCM) in the Department of Environment and Natural Resources.

Article V - Meetings

Section 1. The Council shall meet a minimum of four (4) times each fiscal year to conduct its regular business. These meetings will generally be scheduled in conjunction with regularly scheduled meetings of the Coastal Resources Commission (Commission). The Council may meet at other times with the approval of the chairperson of the Council and the Director of DCM. The date and location of each regular meeting shall be set by the DCM.

Section 2. A duly constituted meeting is one in which a quorum is present. A simple majority of duly appointed members of the Council shall constitute a quorum. A roll call will be conducted at each meeting to determine whether there is a quorum.

Section 3. Meetings of the Council shall be open to the public; provided, the Commission may hold executive sessions where allowed by N.C.G.S. § 143-318.11.
Article VI - Records

Section 1. Minutes and other records of all Council meetings shall be collected and maintained by the DCM.

Article VII - Standard Order of Business

The Council adopts the following as its standard order of business. At his or her discretion, the chairperson may alter the order of business in order to carry out the Council’s business more efficiently.

1. Call to order/ Roll Call of Members
2. Approval of minutes of previous meeting
3. Approval of Agenda
4. Committee Meetings
5. Committee Reports
6. Old Business
7. New Business
8. Announcements
9. Adjournment

Article VIII – Council Agendas

Section 1. Persons, both members and non-members, desiring to have topics on the agenda for discussion at a regular meeting shall notify the chairperson, vice-chairperson, or the DCM at least three (3) weeks prior to the Council meeting date.

Section 2. The agenda items shall be approved by the council chairperson and forwarded by US Mail or email to the membership at least seven (7) days before a regularly scheduled meeting. Upon a vote of a majority of the members present at a duly constituted Council meeting, additional items may be placed on the agenda for that meeting for discussion and/or action.

Section 3. It is appropriate for resolutions or motions to be discussed and adopted by majority vote when such resolutions or motions are related to an agenda item on the approved agenda.

Article IX – Committees and Task Forces

Section 1. The Chairperson of the Council shall appoint such committees, standing or special, as he or she deems necessary. The Chairperson shall designate the chairperson of each committee from among the Council members and shall serve as an ex officio member of all committees.

Section 2. Committee meetings may be scheduled in conjunction with regularly scheduled Council meetings or at other times as necessary upon the call of the committee chairperson with the approval of the Council Chairperson and the approval of the Director of the DCM.

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Draft for review:
Revised March 3, 2014
Section 3. Duly appointed committees may adopt at their discretion any internal procedures necessary to the discharge of their business, provided that the procedures are not inconsistent with these procedures or with any other rules adopted by the Council, or with any statutes applicable to the Council.

Article IX - Parliamentary Authority

The rules contained in the current edition of Robert's Rules of Order Newly Revised shall govern the Council in all cases to which they are applicable and in which they are not inconsistent with these procedures and any special rules of order the Council may adopt, or with any statutes or rules applicable to the Council.

Article X - Attendance

Section 1. Regular attendance at Council meetings is a duty of each member. It shall be the duty of each member to notify the Chairperson of the Council or the DCM whenever a member plans to miss a regularly scheduled meeting.

Section 2. Any time a member has missed three (3) consecutive regularly scheduled Council meetings, the Chairperson of the Council, in consultation with the Director of DCM, shall be empowered to notify the Commission Chair of the member’s absence and request that a new appointment be made, unless the attendance requirement is waived by the Chairperson of the Council due to extraordinary circumstances. The Commission may declare vacant any seat for which a member misses three consecutive meetings.

Section 3. The Chairperson or division staff shall provide notice of this policy to any member who misses two (2) consecutive regularly scheduled Council meetings.

Article XI - Voting

Section 1. All duly appointed council members shall be entitled to make motions, second and vote on all matters coming before the Council, unless specifically provided otherwise by these articles.

Section 2. Votes shall be recorded on any matter when requested by any member.

Section 3. Motion to call the previous question or otherwise limit debate shall be considered extraordinary measures and shall require the affirmative vote of two-thirds of those members present and voting.

Section 4. Council members should not vote on matters where they have a significant and unique familial or financial interest. Since the Council is an advisory body, members have a great deal of latitude to discuss general issues or particular matters before the Council even if they have disclosed a potential conflict and have decided to withdraw from voting on a particular issue.
Article XII – Amendments

Section 1. These procedures may be amended at any duly constituted regular meeting of the Council by a two-thirds vote of these members present, provided that a written copy of the amendments has been made available to each Council member at least seven (7) days prior to adoption of the amendment.

Section 2. An amendment adopted by the Council becomes effective immediately unless otherwise specified.

Amendments adopted effective _____________, 2014

_____________, Chairperson
North Carolina Coastal Resources Council
Coastal Resources Commission Charge to the Coastal Resources Advisory Council

The Coastal Resources Advisory Council (CRAC) serves as a resource to the Coastal Resources Commission (CRC) for those issues determined by the CRC to need CRAC input, including special projects or investigations. The CRAC is an active conduit for relaying issues affecting the coastal area to the attention of the CRC, takes responsibility for communicating CRC policies, positions and actions to citizens and local governments, and solicits stakeholder input on matters before the Commission. CRAC members attend and actively participate in up to five CRAC meetings per year, scheduled in conjunction with CRC meetings. CRAC members serve two-year terms beginning on July 1st and ending on June 30th of every odd-numbered year.

CRAC Member Qualifications:

CRAC members are appointed by the CRC, and must have one or more of the following qualifications:

1. Represent a County or local government, or a coastal stakeholder group important to the business of the CRC;

2. Possess expertise deemed relevant by the CRC; and

3. Provide a geographical balance and/or perspective.