

NC COASTAL RESOURCES COMMISSION

April 29 – 30, 2015

Dare County Government Complex

Manteo, NC

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, April 29th

9:00 COASTAL RESOURCES ADVISORY COUNCIL MEETING

10:30 COMMISSION CALL TO ORDER*

Frank Gorham, Chair

- Roll Call
- Chair's Comments
- Approval of February 18-19, 2015 Meeting Minutes
- Executive Secretary's Report
- CRAC Report

Frank Gorham, Chair

Braxton Davis

Debbie Smith, CRAC Chair

11:00 DCM Year in Review

Braxton Davis

12:00 LUNCH

1:15 VARIANCES

- WineDucks, LLC (*CRC-VR-15-01*) Duck, 30' buffer
- Parker/US Life Saving Service, LLC (*CRC-VR-15-02*) Wrightsville Beach, 30' buffer

Ron Renaldi, Christine Goebel

Robb Mairs, Christine Goebel

2:15 Overview of Public Trust Doctrine

- Overview of Public Trust Law
- Relevant Case Law in NC

Dr. Dave Owens

Christine Goebel

3:15 BREAK

3:30 Sea-Level Rise Report 2015 Update

- Draft Report, Process & Findings (*CRC-15-04*)

Dr. Margery Overton, Chair

CRC Science Panel

4:15 Public Comment on Sea-Level Rise Report 2015 Update

Frank Gorham, Chair

6:00 RECESS

(TBA) Tentative Field Trip – Temporary Erosion Control Structures and Beach Fill Projects

Thursday, April 30th

9:00 COMMISSION CALL TO ORDER*

Frank Gorham, Chair

- Roll Call
- Chairman's Comments

Frank Gorham, Chair

9:15 CRC Rule Development

- Development Line – Subcommittee Report (*CRC-15-05*)
- Draft Development Rule Language
- Commission Discussion

Rudi Rudolph

Ken Richardson

10:45 BREAK

11:00	ACTION ITEMS	
	<ul style="list-style-type: none"> • Periodic Review of 15A 7B CAMA Land Use Planning – Public Comments and Final Report(<i>CRC-15-06</i>) • Static Line Exception Reauthorization – Towns of Atlantic Beach, Pine Koll Shores, Indian Beach & Emerald Isle (<i>CRC-15-07</i>) 	<p>Mike Lopazanski</p> <p>Ken Richardson, Christine Goebel</p>
11:45	PUBLIC INPUT AND COMMENT	Frank Gorham, Chair
12:00	LUNCH	
1:15	PUBLIC HEARING	
	<ul style="list-style-type: none"> • 15A NCAC 7H .0304 AECs Within Ocean Hazard Areas 	Frank Gorham, Chair
1:30	CRC Rule Development	
	<ul style="list-style-type: none"> • State Ports Inlet Management AEC – Beneficial Use, Sandbag Use & Boundary (<i>CRC-15-08</i>) • Commission Discussion 	Heather Coats
2:30	ACTION ITEMS	
	<ul style="list-style-type: none"> • Adopt 15A NCAC 7H .1500 GP for Excavation of Upland Basins • Approval of Fiscal Analysis 15A NCAC 7B CAMA Land Use Planning Guidelines& 7 L Local Planning and Management Grants (<i>CRC-15-09</i>) 	<p>Tancred Miller</p> <p>Mike Lopazanski</p>
3:00	BREAK	
3:15	Sandbag Use for Beachfront Erosion Control	
	<ul style="list-style-type: none"> • Sandbags and Beach Fill Projects (<i>CRC-15-11</i>) • Use of Geo-Textile Sandbags for Temporary Erosion Control Structures (<i>CRC-15-10</i>) 	<p>Frank Jennings</p> <p>Tancred Miller</p>
4:00	OLD/NEW BUSINESS	Frank Gorham, Chair
4:15	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 15-16, 2015; Beaufort

NC COASTAL RESOURCES ADVISORY COUNCIL
April 29, 2015
Dare County Government Complex
Room 168
Manteo, NC

- 9:00 CALL TO ORDER* (Room 168)** Spencer Rogers
- Roll Call
 - Announcements
 - Approval of February 18, 2015 Meeting Minutes
- 9:15 Sandbag Use within Proposed State Port Inlet AECs** Spencer Rogers
- 9:45 Sandbag Structure Maintenance** Spencer Rogers
- 10:15 CRAC Member Distribution**
- 10:25 Old/New Business**
- 10:30 Adjourn**



N.C. Division of Coastal Management
www.nccoastalmanagement.net
Next Meeting: July 15-16, 2015; Beaufort

**NC Coastal Resources Advisory Council
February 18, 2015
Doubletree Hotel, Atlantic Beach, NC
Meeting Summary**

Attendance

Debbie Smith (Chair)
Jett Ferebee
Kris Noble
Robert Outten

Spencer Rogers (Vice Chair)
Greg Rudolph (Vice Chair)
Ray Sturza
Dave Weaver

Call to Order

Debbie Smith called the meeting to order.

Recommendations for additions to the CRAC

Debbie Smith said that Chairman Gorham continues to be interested in hearing what additional expertise Council members would like to see added to the CRAC. Four names were put forward as recommendations for new or returning members:

- David Moye, recently retired as DCM's Washington District Manager. Greenville resident.
- John Brodman, retired Department of Energy economist. Pine Knoll Shores resident.
- J. Michael Moore, former CRAC Surf City town manager and member. Surf City resident.
- Lee Wynns, commercial fisherman and former CRC member. Colerain resident.

The Council voted unanimously to recommend all four individuals to the CRC for appointment.

Development Line

Spencer Rogers led off a discussion about the CRC's proposed development line, stating that it was one possible way to fix problems with the static line and static line exception rules. Staff questioned whether it would be more efficient to fix the problems with the existing rules rather than creating a new regulatory framework and potentially a new set of problems. The "no farther oceanward than the landward-most adjacent structure" was one example given of the problems with the exception rule.

Council members mentioned that Wrightsville Beach and Carolina Beach both have development lines already, but did not see any incentive for more towns to adopt them. Neither town could have been developed if a static line was in place in the beginning. Ocean Isle has a mandatory street-side construction line that works well, and other towns are free to adopt local ordinances for street-side and oceanfront setbacks. The development line is about creating more local options because the same rules don't work well everywhere. It is also about giving incentives to replace older homes with better-built structures.

Council members also discussed the concept of ongoing commitment to beach maintenance. Some felt that local commitment to beach maintenance should be demonstrated similarly to what the static line exception rule currently requires. Bogue Banks has 15% of the state's developed shoreline. Communities on Bogue Banks want a development line option but do not like the individual

commitment requirement. Council members and staff agreed that a regional approach should be codified.

The Council raised a few questions about the proposed development line. Would the line belong to the local government/community or to the CRC? Should the state be involved in regulating development landward of the development line? Can communities that do not do beach nourishment get a development line? How will the development line be created? Would a development line be required for projects that are just below the trigger for a static line?

The Council appeared to be in consensus on retaining the graduated setbacks for oceanfront development and giving more authority to local governments for making development decisions on the oceanfront. The Council wanted the CRC to re-examine the volumetric trigger for static lines, but any adjustments to the trigger should not be retroactive.

Spencer Rogers made a motion to recommend to the CRC that they consider keeping the static line, replacing the static line exception process with the development line, retaining the requirement to demonstrate commitment to ongoing beach maintenance, and look carefully at the procedures for adopting a development line. The motion was seconded and passed unanimously.

Abandoned and Derelict Vessels

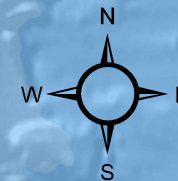
Judy Hills, Executive Director of the Eastern Carolina Council of Governments, gave a presentation about the problems with finding abandoned and derelict vessels, identifying their owners, and securing removal. Judy is seeking assistance from other state agencies and recommended that DCM play a lead role in coordinating an interagency program for mapping these vessels and their ultimate removal from state waters and public trust areas. The presentation is available on the ECCOG's website at <http://www.eccog.org/economic-development/abandoned-and-derelict-vessels/>.

Adjourn

With no further business the Council adjourned at 2:00 pm and joined the CRC meeting.

Coastal Resources Advisory Council (CRAC)

Location of CRAC Members



400 Commerce Avenue
Morehead City, NC 28557
1-888-4RCOAST

<http://www.nccoastalmangement.net>

NC COASTAL RESOURCES COMMISSION (CRC)

February 18-19, 2015

Hilton DoubleTree

Atlantic Beach, NC

Present CRC Members

Frank Gorham, Chair

Renee Cahoon, Vice-Chair

Neal Andrew

Larry Baldwin

Suzanne Dorsey

Marc Hairston

Greg Lewis

Janet Rose (present at 3:00 p.m. 2/18)

Jamin Simmons

Harry Simmons

John Snipes

Bill White

Present CRAC Members

Debbie Wilson, Chair

Spencer Rogers, Vice-Chair

Rudi Rudolph, Vice-Chair

Jett Ferebee

Kris Noble

Bobby Outten

Ray Sturza

Dave Weaver

Present Attorney General's Office Members

Mary Lucasse

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 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. Gwen Baker was absent. No conflicts were reported. Based upon this roll call Chairman Gorham declared a quorum.

ACTION ITEMS

Adopt 15A NCAC 7K .0208 Single Family Residences Exempted

Mike Lopazanski

Mike Lopazanski stated this rule has been amended to eliminate the requirement for property owners to seek signed statements of no objection to receive the exemption which results in the property owners having to apply for a Minor Permit. This will provide consistency with other exemptions and will increase the timeframe to three years to be consistent with other permits and allows additional flexibility to the property owner to construct a perpendicular (house to water)

access. The Division has not received any comments on this proposed amendment and recommends adoption.

Harry Simmons made a motion to adopt the amendments to 15A NCAC 7K .0208. Larry Baldwin seconded the motion. The motion passed unanimously (Snipes, Lewis, Hairston, Andrew, H. Simmons, Cahoon, Gorham, Baldwin, Dorsey, J. Simmons, White) (Rose absent for vote).

Periodic Review of 7B CAMA Land Use Planning (CRC 15-02)

Mike Lopazanski

Mike Lopazanski stated the Administrative Procedures Act (APA) guides rulemaking by Commissions and State Agencies. Prior to 2013, rules did not expire. In the 2013 legislative session, changes were made to the APA requiring review of all rules in the Administrative Code every ten years. During the ten-year review, any rule deemed unnecessary will expire. Necessary rules with substantive public interest must be re-adopted by the Commission or they will expire. Any rule that is necessary without substantive public interest does not need to be readopted. The CRC's 7B Land Use Planning rules are scheduled to go through the legislatively required periodic review by December 2015. All of the other CRC rules are scheduled to go through the review process in 2017. This review process requires all agencies to review the existing rules and classify them as necessary with substantive public interest, necessary without substantive public interest, or unnecessary. The classifications that we do in this initial report will be posted for public comment for 60 days. The public comments will be reviewed and addressed. Following the public comment period, classifications of the rules can be amended. A report including the designation for each of the CRC rules will be sent to the Rules Review Commission (RRC) for review and RRC can agree or disagree with the classifications of the rules. The rule designations are then sent to the Joint Legislative Administrative Procedures Oversight Committee for a final review and determination. If the Committee does not meet within 60 days of receiving the report then the report is approved. DCM has proposed significant revisions to the 7B rules and guidelines. DCM staff met with RRC attorneys to review the proposed revisions. After consultation with RRC staff, we asked that the periodic review of 7B be moved up to June 2015. This request will be considered at this week's RRC meeting. DCM staff is requesting the CRC approve the initial classification report for the 7B rules. At the April CRC meeting we will provide any comments received and determine if any changes to the classifications need to be made. A public hearing on the amendments to the planning guidelines could be scheduled for the Commission's September meeting. At the November meeting the CRC could adopt any amendments and this would satisfy the re-adoption requirement for the periodic review process.

Renee Cahoon made a motion to approve the Periodic Review Report for Subchapter 7B and send the report out for public comment. Harry Simmons seconded the motion. The motion passed unanimously (Snipes, Lewis, Hairston, Andrew, H. Simmons, Cahoon, Gorham, Baldwin, Dorsey, J. Simmons, White) (Rose absent for vote).

CRC RULE DEVELOPMENT

State Ports Inlet Management AEC – Stakeholder Feedback

Heather Coats

Heather Coats stated legislation in 2012 directed the CRC to study the feasibility of creating a new AEC for lands adjacent to the Cape Fear Inlet. The CRC studied the matter and recommended a comprehensive study of all NC inlets. The resulting inlet management study recommended establishing an AEC for the two deep draft port inlets, taking into account the priority proposed on

maintaining federal channels for access to the state ports, looking at erosion control measures, beneficial use of dredge materials, and beach management. Senate Bill 74 was passed last year which removed the two Port inlets from the Inlet Hazard Area of environmental concern. We met with the local governments to identify their priorities and their needs. Carteret County wanted stronger language for beneficial use of dredged materials. Caswell Beach wanted the ability to protect Fort Caswell from erosion. The Village of Bald Head Island wanted the ability to modify sandbag rules, beach bulldozing rules and to strengthen the language for beneficial use of dredged materials. DCM developed the draft language keeping comments from the Chair and local government in mind. The current language in 7M for beneficial use of dredged materials allows for both beach disposal and shallow active nearshore disposal unless no other practicable alternative exists. Since the directive was to strengthen this language we decided to propose use language from the State's Dredge and Fill Law. This language was previously proposed and rejected by NOAA for purposes of federal consistency. We sent the draft rule language out to the local governments, the Army Corps of Engineers, State Ports Authority, Ft. Macon, and the National Park Service. We heard back immediately from the local governments, the Army Corps and State Port Authority. The Corps commented that they were extremely concerned about the lack of flexibility in the rule with regard to utilizing the offshore dredge material disposal site (ODMDS) during times of bad weather or when emergency dredging small volumes of material. They also had concerns with regard to the use of the nearshore disposal site and the potential costs of this rule. There is a fear that if this rule were implemented that it could hinder dredging efforts of these inlets and could result in the state or local government having to assume additional costs for the dredging of the inlets which are currently entirely federally funded for navigation dredging. The State Ports also submitted comments asking that we fully study the effects of this rule language before moving forward with rule development. The local governments wanted to eliminate the nearshore disposal option and mandate that all sand be placed on the adjacent ocean beaches. We presented this to the Corps and the State Ports and they are still opposed to this rule language. We met with the Corps and State Ports and most of their concerns pertain to the Morehead City Harbor Project. The Cape Fear River Inlet could also be impacted, but to a much lesser degree. The Corps has said that the cost of a single beach disposal project where all sand is placed on the beach would cost \$12 million. They have tried to eliminate the use of the ODMDS for the Beaufort Inlet project and put out request bids for projects that did not use the ODMDS and received only one bid and it far exceeded the budget for the project. They have also said that requiring all projects to be pipeline dredge projects would double the cost of the projects that are now handled by hopper dredge. Currently at Beaufort Inlet every three years the sand goes to the beaches by pipeline dredge. The other two years a majority of the sand is placed in the nearshore disposal area with less than 15% going to the ODMDS. The Corps has been working on a dredged material management plan since 2007. Other concerns include eliminating the use of the ODMDS in times of bad weather while hopper dredging creates a safety hazard and could further limit dredging efforts. The environmental window for dredging at this inlet is January 1 to March 31. The last time they dredged in November or December they had six turtle takes. Federal money cannot be spent on a navigation project unless the project meets the federal standards. The Corps contends that they have spent years developing the best solution available to dredging at this inlet. Project funding is based on tonnage at the State Port. If they can't dredge due to a lack of funding and the tonnage decreases as a result due to draft restrictions then it could reduce the ranking of the Port and could lower it below the cut line of projects receiving federal funding. The Corps asserts that they have more than offset any impacts from the Morehead City Harbor project and that they have placed more sand on the beaches than has been lost even from natural erosion. They claim that sand placed in the nearshore disposal area remains in the system and that sand placed in the ODMDS also remains confined and is available for use to be placed on the beaches. More sand has been removed from the ODMDS for beach disposal on Bogue

Banks beaches than has been deposited there by the Corps. The Corps has requested that if we plan to move forward with this rule language then we should carefully study the impacts of navigation, commerce, environment, and the mission of effected federal and state agencies before moving forward. The State Port Authority has also expressed concerns regarding any rule language that would adversely impact the Corps' ability to maintain the channel. We need to talk about AEC boundaries before moving forward. Carteret County and Caswell Beach support the inclusion of the shoals and nearshore areas adjacent to the two channels. They want all of Caswell Beach's oceanfront shoreline and Fort Caswell's entire shoreline to be included within the AEC limits. The Village of Bald Head Island expressed a desire for all of South Beach to be included in the AEC, but strongly object to including Jaybird Shoals in the AEC boundary.

Justin McCorkle, USACE Counsel, stated we appreciated the DCM staff coming to us to discuss our concerns. The Corps of Engineers, in particular the Wilmington District, is passionate about providing safe navigation and conducting our operations in a responsible manner. We have to make sure that we are providing for safe navigation and safeguarding federal taxpayer dollars. We are already conducting our operations in a responsible manner. In the past decade in Wilmington, roughly 90% of beach quality material that we have dredged has gone on the beach at 100% federal expense. In Morehead City we have placed over 16 million cubic yards on the beaches of Fort Macon and Atlantic Beach since the 1980's. Our coastal engineers tell me that during that timeframe, at 100% federal expense, that is more than those stretches of beaches have lost. Our current plan puts sand directly on the beaches of Carteret County once out of every three years. If the current proposal is going to reduce our ability to dispose of sand in the nearshore area then it will be expensive and the wrong thing to do. It is not environmentally sound and it is not sound engineering and we don't support that. We agree that there is an inlet influence area to extend to the boundary of Pine Knoll Shores and Emerald Isle. If we were to take sand from the Beaufort Inlet system and put it on the beaches of Emerald Isle that would take it out of the system just as if you were taking it to the ODMDS. If the proposed rule language is intended to change what we are doing in the nearshore area then it would force us to put all of the sand on the beaches and then for two out of every three years it would take a \$4-6 million job and make it a \$12.5-14.5 million job. It is possible that the benefit-cost ratio for Morehead City (which is ranked number 86) could serve to cut federal funding off altogether. If this rule was in effect and we were required to put all the sand on the beach then there isn't enough money and we wouldn't be able to open the channel right now. With this rule in place today our answer to Morehead City would be sit tight and we will see what we can do next winter. It takes away our flexibility.

Rudi Rudolph, Carteret County Shore Protection office, stated there are some fundamentals on which we do not agree with the Corps. It is important to try to replicate the system. I don't think the Corps is doing that now and there are rules and regulations that mandate the Corps do that. Not having enough money to do the right thing only goes so far. If you take the economic benefits of the sand on the beach then the cost benefit ratio would sing. This rule language should move forward. The State Port should get into the game more with this.

Braxton Davis, DCM Director, stated there are still a lot of parts to this rule that need to be discussed and the staff is not asking the CRC to move the rule to public hearing so we can have discussions about beneficial use, the boundary issues, and use standards. The Division's position is that the rest of the rule has not been discussed sufficiently to move forward. The Division would need to discuss the beneficial use portion with the Department to talk about the implications for the State Port.

Greg Lewis made a motion for the Division to get a DENR position on beneficial use language for inclusion in the proposed State Port Inlet Management AEC. John Snipes seconded the motion. The motion passed unanimously (Snipes, Lewis, Hairston, Andrew, H. Simmons, Cahoon, Gorham, Baldwin, Dorsey, J. Simmons, White) (Rose absent for vote).

Chairman Gorham asked Justin McCorkle to have an official meeting with Carteret County to address the issue of the local communities having the ability to fill the gap of funding for 100% sand placement. The Chairman asked for a report to the Commission on this meeting in April. The Chairman asked the CRAC to look at the sandbag provisions within this proposed rule.

Braxton Davis stated the Division is a big proponent of beneficial use and that he is currently chairing a national committee of coastal states that has passed policy language that advances the concept of beneficial use. This is a funding issue. We already have the State Dredge and Fill Act which has incredibly strong standards saying no sand can leave the system. That policy was turned down at the federal level. Since it is a national issue it will likely be turned down again. Our initial recommendation was that the Commission should not resubmit the same policy that has already been rejected. Narrowing it down to the two Ports is a difference. Looking at the nearshore piece might also be a difference. I need to know what to take to Raleigh to figure out what the State's position is on this since it has significant implications for the State Ports and therefore the State of North Carolina.

Sea Level Rise Report – Update

Tancred Miller

Tancred Miller stated the Science Panel has been meeting monthly since July of last year to work on this report. The legislation required the draft be sent to the CRC by March 31, 2015. There will be a public hearing on the draft at the April CRC meeting and the final version of the report will be due on March 1, 2016. The CRC requested the Science Panel's draft be completed by December 31, 2014. The draft was then reviewed by Drs. Dean and Houston. The Science Panel's response to Dean and Houston's comments is now due. Drs. Dean and Houston will then give another response based on any Science Panel revisions. We are on track to meet the deadlines. The report is in pre-release draft form. The legislation requires the Commission to study the economic and environmental costs and benefits to the North Carolina coastal region of developing or not developing sea level rise regulations policy. This is in addition to looking at the science and the projections. Staff is looking to the CRC for guidance on how we should accomplish this. A lot of this work has probably already been done by the Division of Emergency Management within the Department of Public Safety. They have given us a copy of a draft sea level rise impact study for North Carolina.

Chairman Gorham stated there isn't a way to do an economic impact on regulations that haven't been proposed. There is no point to do an economic study. When we get the final Science Panel report and decide if we want to propose regulations then we could look at the economic impacts at that time. We are not forced to create rules based on the report.

***At this time Chairman Gorham presented the Eure Gardner Award to Robert E. Emory, former CRC Chair, on behalf of the Coastal Resources Commission. Braxton Davis presented a Certificate of Service to Mr. Emory on behalf of the Division of Coastal Management.*

Renee Cahoon made a motion that the Commission go into closed session pursuant to NCGS section 143-318.11(a)(3) to consult with its attorneys regarding North Carolina Supreme

Court Docket #401A13. The parties in that case are petitioner Riggings Homeowners, Inc. and respondent North Carolina Coastal Resources Commission. The Court of Appeals case is 12-1299 and the New Hanover Superior Court Case number is 09 CVS 2761. Marc Hairston seconded the motion. The motion passed unanimously (Snipes, Lewis, Hairston, Andrew, H. Simmons, Cahoon, Gorham, Baldwin, Dorsey, J. Simmons, White, Rose).

Greg Lewis made a motion for the Commission to return to open session. Neal Andrew seconded the motion. The motion passed unanimously (Snipes, Lewis, Hairston, Andrew, H. Simmons, Cahoon, Gorham, Baldwin, Dorsey, J. Simmons, White, Rose).

MINUTES

Renee Cahoon made a motion to approve the minutes of the December 17, 2014 Coastal Resources Commission meeting. Harry Simmons seconded the motion. The motion passed unanimously (Snipes, Lewis, Hairston, Andrew, H. Simmons, Cahoon, Dorsey, Gorham, Baldwin, J. Simmons, White, Rose).

EXECUTIVE SECRETARY'S REPORT

Braxton Davis, DCM Director, gave the following report:

We had some changes in the agenda due to our later start time because of weather conditions, and one of the items we postponed was a refresher on CAMA and a review of 2014. We will still plan to have that series of short presentations from staff at your April meeting. As for 2015, permit activity is slightly up so far, but this cold weather may slow things down a bit. Several notable Major Permits were issued since your last meeting, including two issued to the NC Wildlife Resources Commission for construction and improvements to public boat ramp facilities in Hertford and Bertie Counties. Major Permits were also issued to the Towns of Emerald Isle and North Topsail Beach for the construction of public parking and beach access areas. A Major Permit was issued to the Town of Oak Island for the proposed dredging of Eastern Channel, with an accompanying beach nourishment project for the west end of Oak Island. That Major Permit was issued in less than 65 days, including the resolution of several unanticipated issues with the Army Corps of Engineers including changing the location of a spoil disposal site for non-beach compatible material, and analyzing potential impacts of the project to the AIWW. We have received a draft EIS for a terminal groin project at Ocean Isle Beach, and staff will be providing comments to the Corps by mid-March. Also of note, federal consistency determinations have been submitted by two companies, Spectrum Geo, Inc. and GX Technology, who are proposing to conduct separate Marine Geophysical Surveys via 2D seismic surveying off the North Carolina coast, for geological and geophysical data that could provide information on offshore oil and gas resources offshore. The Spectrum Geo survey would be conducted during the second quarter of this year, and would involve two survey vessels towing seismic airgun arrays. The GXT survey would be conducted between July and December 2015, with one vessel towing seismic airgun arrays.

On the policy and planning side of DCM, staff are proceeding with the rulemaking process and preparing fiscal analyses for several new rules, including significant changes to the 7B Land Use Planning Guidelines and 7L Planning and Management Grant rules, repeal of the High Hazard Flood AEC, and a few improvements to general and minor permits. Staff have also completed two of the major studies required by HB819 back in 2012 (Cape Fear AEC, elimination of IHAs) and rulemaking (setbacks for residential structures greater than 5,000 sq. ft.). The only remaining study required by that bill is the Sea Level Rise study update.

The Coastal Habitat Protection Plan Steering Committee met in early January for an orientation and to discuss a 5-year update to the Plan. Commissioners Baldwin and Snipes were appointed to the CHPP Steering Committee by the Chairman late last year. The CHPP plan and steering committee were established under the Fisheries Reform Act of 1997, to enhance fisheries habitat through improved communication across the key state rules commissions (MFC, CRC, EMC) and to periodically assess the status of coastal habitats and management priorities. We will keep you informed of the Committee's work.

I was able to attend the most recent meeting of the subcommittee chaired by Commissioner Baldwin that has been focused on the Division's rules and procedures for the delineation of coastal wetlands. I wanted to thank Commissioners Baldwin and Dorsey again for their work on this. I thought it was a great meeting, and we came to consensus on a number of important issues.

The Coastal Reserve program is continuing to work on the draft strategic plan for the N.C. National Estuarine Research Reserve management plan update, and incorporating input from the stakeholder engagement activities conducted in the fall of 2014. Input on the draft strategic plan will also be gathered from Local Advisory Committees for Zeke's Island, Masonboro Island, Currituck Banks, and Rachel Carson Reserve in late March and early April. After the Local Advisory Committee meetings, the next steps are to write the draft management plan, solicit input from DENR, Local Advisory Committees, and NOAA during summer 2015, and hold a 30-day public comment period and public meetings on the final draft in October 2015. The final plan will be published in January 2016.

Steve Sollod, one of our Transportation Project Coordinators located in Raleigh, has announced his retirement from the Division effective March 31st. Steve has been with the Division since 2004. He worked for CP&L for many years before moving to DCM. We all wish Steve and his wife Cynthia well as he begins his second career as a builder of custom guitars.

The 2014 Walter B. Jones Memorial Award winners were announced last month by NOAA, and include several winners from North Carolina, including Spencer Rogers, a member of the CRC Science Panel and long-time member of the Coastal Resources Advisory Council. Spencer was honored with one of two Coastal Steward of the Year awards, which recognizes an individual who has shown strong leadership in finding a balance between human use of the coast and the needs of the environment. Other NC awards included Currituck County, which was recognized with the Excellence in Local Government award for its efforts to protect natural resources while supporting development, and the Award for Excellence in Coastal and Marine Graduate Study was awarded to four North Carolina graduate students: Barbara Doll, NCSU; Justin Ridge, UNC-Chapel Hill; Paul Rudershausen, NCSU; and Sharon Settlege, NCSU. These national awards, presented every other year, honor Walter B. Jones Sr., who represented North Carolina in the U.S. House of Representative from 1966 to 1992. The Jones Awards program recognizes people and organizations for their dedication to maintain healthy coastal and ocean resources. We want to extend special congratulations to Spencer and the other North Carolina awardees on a job well done. This award is well deserved.

We are planning for the next Commission meeting to be held in Nags Head on April 29-30.

CHAIRMAN'S COMMENTS

Chairman Gorham advised Commissioners if they have agenda topics they would like to see on future agendas, please send them to him to review and discuss with Director Davis.

CRAC Report

Debbie Smith, Chair, stated the Advisory Council would like to recommend for appointment David Moye, retired DCM employee; Michael Moore, past town manager of Surf City and former CRAC member; John Brodman, local government official in Pine Knoll Shores; and Lee Wynns, former CRC member.

Harry Simmons made a motion to appoint John Brodman, David Moye, Michael Moore, and Lee Wynns to the Coastal Resources Advisory Council. Neal Andrew seconded the motion. The motion passed unanimously (Snipes, Lewis, Hairston, Andrew, H. Simmons, Cahoon, Gorham, Baldwin, Dorsey, J. Simmons, Rose, White).

Chairman Gorham stated we have been selective in filling CRAC slots. I would like to recommend Bob Emory for consideration for appointment and if any Commissioners have recommendations for consideration please send those names to the CRAC Chair.

Chair Smith stated there was a lot of discussion in the CRAC meeting concerning the static vegetation line and the proposed development line. There was consensus that we maintain the static line but replace the static line exception with the option of a development line. There needs to be a commitment to beach nourishment or beach management with any development line. The CRC needs to be assured that the community is dedicated to maintaining a project and the management of their beach. The CRAC recommends looking at the language used to define the criteria to create the development line. This is an on-going process, but is a step in the right direction. The CRAC supports moving forward with this change.

CRC RULE DEVELOPMENT

Static Vegetation Line Alternatives – Draft Rule Language (CRC 15-01)

Frank Gorham and Ken Richardson

Frank Gorham stated I recommend that we accept the changes provided in the draft rule language with the addition of the option of a development line. What should our policy be when we have a major renourishment? In 1981, there was a major renourishment at Wrightsville Beach and this is when the CRC started looking at policies of setbacks with a manmade beach. In 1996 the static line rules were codified. The general principal is we measure setbacks from stable vegetation. When sand is placed on the beach you get a static line and setbacks are measured from the pre-project line. One of the problems with the static vegetation line concept is we don't recognize the extra beach. All of the setbacks are measured from the more landward of the two. One of the problems with this policy is that it doesn't give an incentive for communities to stabilize their beaches and do planting. The current definition of a major nourishment project and what triggers the static line is 300,000 cubic yards of sand. There are 15 communities subject to the static line. Eight of these 15 communities have a static line exception. There were four regional hearings on inlet management and one of the common thoughts is that many communities want a change to the static line. Dredging dollars are scarce, the Corps' budget is down, dredging costs are going up, dredging windows limit competition, and communities are asking for the option to have more input on their local community. If you have a project that is over 300,000 cubic yards in order to get an exception you have to show a 30-year design going forward, you have to have proof of compatible sediment, you have to have demonstration of proof of financial resources, and petition the CRC for approval and then re-approval every five years after. If a community does a major project they have to wait five years before they can apply for an exception. The provision that limits the total square footage to 2,500 square feet is hurting a lot of people. There have been four or five variances related to this. There should be a concept of a sight line or in line with adjacent structures. No one wants to have a

policy that allows new development to go in front of their neighbor. We seem to have some arbitrary setback numbers in the current rules. What was the rationale for the static line? There was a lot of undeveloped beach. It was created to address future development, and the communities did not have much expertise in dredging programs or erosion rates. There weren't many dredge projects. Today, there is significantly less dollars for dredging. The undeveloped portion of the beach is much less. The local community expertise is way up and the experience with dredging projects is way up. The option I would like to propose is the development line. The development line would allow a city or community to look at their beaches and draw a line. This line would be approved by the Division and then they wouldn't have to use the static line as their setback. They could use the more landward of the development line or the regular setback from vegetation. We are not supporting a new row of houses. We are supporting the concept of a sight line. It is optional for the community to have a development line. We would maintain the existing setbacks. New or replaced structures would be based on the vegetation line or the development line whichever is further landward. The rule amendments will prevent seaward encroachment. The 2,500 square foot maximum would be removed. There would be no square foot provision. The five year waiting period would be removed. The 300,000 cubic yard trigger would be changed. I would prefer to allow the engineers to design the project and the limit would be an average of 100 cubic yards per linear foot for the entire project.

Ken Richardson stated DCM's concern that the development line proposal which eliminates the static vegetation line has the potential for some seaward encroachment following renourishment, depending on the development line criteria. The good thing about the static vegetation line is that it is a natural feature that represents where the ocean hazard was at one time. Without that you lose the hazard reference. Without a beachfill maintenance project the hazard is likely to return. There are only a couple of communities that are lucky enough not to need to do beachfill. There are concerns with not having a community commitment to maintain the beach project. Is there enough beach quality sand to maintain the project and can it be funded? The Division can see some seaward encroachment may occur if a development line is used in place of the existing static vegetation line. Currently we have staggered development. There are different setback scenarios based on the time of development and changes in erosion rates and vegetation lines. What standards will the CRC apply when reviewing a development line? Does the CRC adopt or approve the static line? Can the development line be changed or updated? How would variances be handled? Would the variance be a local variance and then come to the CRC? We currently have rule language that addresses the landward most adjacent structure, and in peculiar situations you can take an average line of construction.

Representatives from the towns of Oak Island, Pine Knoll Shores, Holden Beach, Carolina Beach, Bald Head Island and Ocean Isle Beach spoke in support of a development line option.

Braxton Davis stated there is already a development line incorporated in the static line exception process. The development line, whether it is adopted by ordinance and surveyed in by a local government or whether it is the current standard which is to look at the adjacent neighbors and not build any further seaward, or whether the average line of construction is used, is already in existence. Staff believes there should be a static line in every case when a beach community has a significant beach nourishment project and a new vegetation line is established seaward. Setbacks should not be pulled from the new vegetation line unless the community has demonstrated a commitment to a long-range plan.

Renee Cahoon made a motion to move forward with the development line concept, establish a working group to develop criteria and present the development criteria to the Commission prior to the April CRC meeting. Greg Lewis seconded the motion. The motion passed unanimously (Snipes, Lewis, Hairston, Andrew, H. Simmons, Cahoon, Gorham, Baldwin, Dorsey, J. Simmons, Rose, White).

Use of Sandbags for Temporary Erosion Control – Overview (CRC 15-03)

Mike Lopazanski

Mike Lopazanski stated this issue will be particularly important as we begin to discuss the state port inlet management AEC because there are significant changes to how we manage sandbags. As a Commission and an agency we have devoted an enormous amount of time to the managing the use of sandbags. When the CRC began to develop the ban on oceanfront hardening we followed the recommendations of the Outer Banks Task Force, which made allowances for temporarily protecting structures that were imminently threatened by erosion. These measures included beach nourishment, sandbags, and beach bulldozing. The intent of sandbags was to allow these temporary measures to protect the structure for a short period of time to allow the structure to be relocated or for the effects of a short-term erosion event to be reversed. When the rule was first developed in 1985 it contained the provisions that we have now. The rule stated that if the bags were not covered with sand for more than six months then they were to be removed. This became an enforcement issue for the Division and it required continuous monitoring. By 1987, the use of these erosion control structures became prolific enough that the CRC began to investigate the effects of sandbags. During the 1990s, the CRC began to receive numerous complaints about sandbags - they were not being used as a temporary measure, but as a permanent solution to erosion problems. In addition to the complaints about appearance, citizens were complaining that sandbags interfered with the public use of the beach and that they were being fortified to become massive immovable structures. In 1994, an inventory showed that there were about 15,000 linear feet of ocean shoreline protected by sandbags with some being in place for more than eight years. While most complied with the standards, there were others that did not. The analysis supplied to the CRC outlined the problems with the sandbag rules. In 1995, there were a number of amendments made to the rules to address the size and physical location of the bags and to address the time limits. Sandbags are permitted to remain in place for two years if they are protecting a structure less than 5,000 square feet or five years for structures greater than 5,000 square feet. The rules also allowed the bags to remain in place for five years if the community was actively pursuing beach nourishment. The Commission restricted the use of sandbags to one time per property. Most of the beachfront communities qualified for the beach nourishment extension, but some of the sandbag structures in the unincorporated areas were subject to removal in 1997. The hurricanes of 1996 and 1998 caused the CRC to extend the deadline to September 1998 for the counties that were declared federal disaster areas. The CRC granted variances to several property owners in Onslow County extending their deadline to August 2001. Since most of the sandbags were to be removed in 2000, the Division began to prepare to notify these property owners. Records indicated that 141 sandbag structures were to be removed, but that number was believed to be low, since prior to 1995, sandbag permits were processed by local governments. In January 2000, Dare County submitted a petition for rulemaking that requested that properties that were protected by sandbags in communities that were pursuing beach nourishment be given additional time for removal. After discussion with the Science Panel, it was recommended to grant the extension but only to sandbag structures that conform with the size limits. The CRC also refined what was meant by a community “actively pursuing beach nourishment”. The CRC granted a coast-wide extension until May 2008 on sandbag permits in areas pursuing beach nourishment. By 2005, the extent of beach nourishment along the coast presented compliance and enforcement challenges since many of the sandbag structures were not removed

prior to beach nourishment. Many of the structures were buried, but were technically out of compliance because there were not vegetated. It also became common to find sandbag structures that were interlaced along properties with varying expiration dates. In 2006, the six foot height limitation became an issue. At the time, property owners were allowed to maintain the six foot height of the bags as they sank into the sand. In response the CRC directed staff to measure the structure from the base as opposed to the sand. As May 2008 approached, DCM began preparing to notify property owners that sandbag structures needed to be removed. In addition to time limits and removal deadlines, the Commission also discussed the use of degradable materials as a way of ensuring the eventual removal of sandbags from the oceanfront. This revealed a number of issues associated with biodegradable textiles for sandbags primarily over the length of time these bags could remain in the coastal environment. The CRC ultimately decided to enforce the current rule. We sent letters to 371 property owners notifying them of the deadline for removal. In 2008, DCM developed an inventory of sandbag structures and prioritized these structures for removal based on their compliance with the rules and their impediment to beach access. Also during this time the CRC denied a petition for rulemaking that would have allowed special provisions for commercial structures and denied an additional petition for rulemaking that sought to remove time limits for sandbags. In considering these petitions, the CRC found some merit in making allowances for sandbags located in inlet areas where beach nourishment was not as successful. We started to receive variance requests for sandbags. We notified 21 property owners that they had exceeded their time limit and we sent notices of violation to owners that had been notified but did not comply. The Commission implemented the provision that sandbags could remain in place in the inlet hazard area for eight years if the community was pursuing an inlet relocation project. The CRC also allowed for sandbags to be used multiple times in the inlet hazard area recognizing that the inlet may again move closer to the houses after being relocated. In 2009, House Bill 709 established a moratorium on enforcing the removal of sandbags in communities that were pursuing beach nourishment or inlet relocation; however the moratorium did not prevent the CRC from pursuing enforcement of other rule provisions. We developed a protocol for non-compliance. The CRC formed a sandbag stakeholder committee, but could not come to consensus about what to do. Further amendments were made to the sandbag rules, the time limit of eight years was extended to the oceanfront, and the one time per property limitation was removed. Most of our issues with sandbags had been in Dare County. The result of the Nags Head nourishment project was dramatic. The beach was very wide post-project and a lot of the Commission's issues with sandbags in Nags Head were resolved. There are still some problem areas and there are still a substantial number of sandbag structures in inlet areas.

Ken Richardson stated in 2008 the Division completed an inventory to see how many sandbag structures are out there and what had been removed. There are 349 structures, including those that have been permitted since the inventory was taken, in our mapping database. Of those we have 49 structures out there that are buried and vegetated. There have been 56 sandbag structures removed. There are about 283 structures on the beach, stretching approximately seven miles total, and that includes those that are buried.

Temporary Erosion Control Structures Design Considerations

Spencer Rogers

Spencer Rogers stated one of the earliest installations of sandbags was at the Cape Hatteras lighthouse in the 1960s. North Carolina is one of the largest markets for sandbags in the country, primarily because of CRC regulations. It is important to understand why we got involved in sandbags. It goes back to long-term erosion problems and shoreline hardening. In the early days of

CAMA there was a contrived debate between geologists and engineers on whether seawalls caused erosion or not. The two groups can debate this question forever, but the important question is if you harden the shoreline what are the consequences? There was consensus by all that this was a potential problem. If you have an area that is losing a couple of feet per year over time then the beach will exist as long as it keeps eroding back into existing dunes. If you draw a line with a hard structure then the beach will disappear. In order to avoid shoreline hardening there was a feeling that the State wanted to offer a limited protection to existing short-term threatened buildings. The fabric technology has changed a lot since sandbags have been in use. The original bags were very puncture prone and had a lightweight tensile strength. Today's fabrics are much stronger. The main problem area with them is ultraviolet sunlight resistance and decay. In some cases these bags can decay in as little as a month. The bags have always been filled from beach sand. The bags are filled hydraulically. The size limits were to reduce potential impacts on the beach and the neighbors. Litter and debris have also been an issue. It is crazy to put a time limit on the removal of sandbags. The lifetime of a sandbag is between one and ten years. You should put a time line on maintenance as opposed to removal. If you look at the older structures that have been exposed for a number of years, almost all of the structures that were once considered to be a problem are deteriorating and scattering on the beach. Other states have used other approaches over time. At one time, South Carolina had a five gallon bag requirement for sandbags. These bags would be carried miles away from where they were installed. South Carolina now uses a cubic yard container filled with off-site sand filled mechanically. I would not recommend going in this direction. About five years ago the Science Panel was asked to address geotextile tubes. Mason's inlet was moving at about a foot per day towards the Shell Island Resort. They built a temporary structure to buy time while the inlet relocation was built. Most of this structure is still in place. Under the right design and application the geotextile tube can be a functional alternative. In this case it was a temporary structure and did what it was supposed to do. The groin field on Bald Head Island is another example. There is a series of groins on the south facing beach that were installed using geotextile tubes. They have had their share of damages due to fabric decay and have been replaced a couple of times. The difference between the sandbags and tubes are the tubes are in 300 foot lengths and the dimensions can be custom built. The advantage over sandbags is the impact on the beach since it is a smaller structure. The use of the tubes also reduces the debris that can end up on the beach. The dimensions can be specified so width and height can be defined. The problem with the tubes, particularly on steeper sloping beaches, is they tend to roll. You can stabilize them with a scour apron that uses a smaller tube that is attached to the larger tube and as it settles over time it reduces the chances of it rolling. The effective protection provided by this is much greater. The Commission's rules would have to be modified to allow for geotextile tubes.

Chairman Gorham asked staff to come back to the Commission with more information on geotextile tubes.

Public Input and Comment

Renee Lewis commented in opposition to the Town of Carolina Beach boardwalk extension (written comments provided).

Mark Richard commented in opposition to the Town of Carolina Beach boardwalk extension (written comments provided).

Donald Motsinger commented in opposition to the Town of Carolina Beach boardwalk extension (written comments provided).

Cathy Lane commented in opposition to the Town of Carolina Beach boardwalk extension (written comments provided).

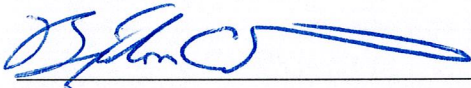
Public Hearing – 15A NCAC 7H .1500 GP for Excavation of Upland Basins

Tancred Miller stated 7H .1500 is the CRC's General Permit for the excavation within or connecting to existing canals, channels, basins or ditches in estuarine waters, public trust waters and estuarine shoreline AECs. This GP authorizes excavation within these areas 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 permit is limited to development off of existing manmade systems. The proposed amendments will provide financial and administrative relief for applicants who wish to perform upland excavation in conjunction with stabilization of the adjacent shoreline by allowing both activities to occur under a single GP instead of two. The amendments also make the combined GP valid for 120 days instead of 90.

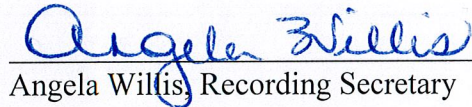
No comments were received.

With no further business, the CRC adjourned.

Respectfully submitted,



Braxton Davis, Executive Secretary



Angela Willis, Recording Secretary




State of North Carolina
Department of Justice

ROY COOPER
Attorney General

PO Box 629
Raleigh, North Carolina
27602

Reply to: Elizabeth Jill Weese
Environmental Division
Phone: (919) 716-6600
Fax: (919) 716-6767
jweese@ncdoj.gov

TO: Coastal Resources Commission

FROM: Elizabeth Jill Weese 
Assistant Attorney General

DATE: February 2, 2015 (for the February 18-19 CRC Meeting)

RE: **Variance Request by WineDucks, LLC (CRC-VR-15-01)**

Petitioner proposes to construct additions to an existing elevated wooden deck and to reposition an existing stairway leading to the deck on its property located in Duck, North Carolina. The Town of Duck Local Permit Officer denied the Petitioner's minor permit application because the proposed development was inconsistent with 15A NCAC 7H .0209(d)(10). The rule requires that new development within the Coastal Shoreline AEC must be located a distance of 30-feet landward of the normal high water level or normal water level ("Coastal Shoreline AEC buffer rule"), unless the proposed development meets an exception listed in 15A NCAC 07H.0209(d)(10)(A) through (J). For the reasons stated in Attachment C, Staff supports Petitioner's variance request.

The following additional information is attached to this memorandum:

Attachment A: Relevant Rules
Attachment B: Stipulated Facts
Attachment C: Petitioner's Positions and Staff's Response to Criteria
Attachment D: Stipulated Exhibits, including staff's Power Point presentation
Attachment E: Petitioner's Variance Request Materials

cc: Wyatt Booth, Esq., Attorney for Petitioner, electronically
Braxton Davis, DCM Director, electronically
Frank Jennings, DCM District Manager, electronically
Sandy Cross, Dare County LPO, electronically
Mary L. Lucasse, Special Deputy Attorney General, Counsel to CRC, electronically

RELEVANT RULES**ATTACHMENT A****15A NCAC 7H .0209****.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 7H .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:

(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:

(A) Water-dependent uses as described in Rule 7H .0208(a)(1) of this Section;

(B) Pile-supported signs (in accordance with local regulations);

(C) Post-or pile-supported fences;

(D) Elevated, slatted, wooden boardwalks exclusively for pedestrian use and six feet in width or less. The boardwalk may be greater than six feet in width if it is to serve a public use or need;

(E) Crab Shedders, if uncovered with elevated trays and no associated impervious surfaces except those necessary to protect the pump;

(F) Decks/Observation Decks limited to slatted, wooden, elevated and unroofed decks that shall not singularly or collectively exceed 200 square feet;

...

Authority G.S. 113A-107(b); 113A-108; 113A-113(b); 113A-124;

STIPULATED FACTS

ATTACHMENT B

1. Petitioner, Wine Ducks, LLC, is a North Carolina limited liability company having a principal office address of 1174 Duck Road, Duck, North Carolina 27949. See Stipulated Exhibit #1.
2. Petitioner has owned a 0.815 acre parcel located at 1174 Duck Road in Duck, Dare County, North Carolina (“the Property”), since 2007. There is a single commercial structure on the Property, the first floor of which is a restaurant known as Aqua Restaurant (the “Restaurant”) owned and operated by Aqua S, LLC and the second floor of which is a spa facility known as Aqua Spa (the “Spa”) owned and operated by Aqua S Spa, LLC.
3. The Restaurant and Spa have operated on the Property since 2007 and are situated along the shoreline adjacent to the estuarine waters of the Currituck Sound.
4. The Property lies within the Coastal Shoreline Area of Environmental Concern (“AEC”) which extends 75 feet landward from the normal high water level.
5. Since August 1, 2000, new development within the Coastal Shoreline AEC is required to be located a distance of 30-feet landward of the normal high water level or normal water level (“Coastal Shoreline AEC buffer rule”), unless the proposed development meets an exception listed in 15A NCAC 07H.0209(d)(10)(A) through (J).
6. During the summer of 2014, the Town of Duck completed a sound front boardwalk project (“the Boardwalk”). The southern terminus of the Boardwalk and its appurtenant parking area are adjacent to and contiguous with the Property.
7. The existing structure on the property that houses the Restaurant and Spa, and the slatted wooden decking appurtenant thereto, were all constructed prior to implementation of the 30-foot Coastal Shoreline AEC buffer rule, and also predate the Town of Duck Boardwalk and its appurtenant parking. As currently built, there is an approximately six (6) foot wide gap between the northern appurtenant deck and the building itself. The current stairs leading down from the existing decking to the shoreline are oriented east to west. At the bottom of the existing stairs, there is an existing decorative wooden wall/bulkhead that does not serve as a functional retaining wall or bulkhead.

8. On November 24, 2014, Petitioner, through its agent Quible & Associates, P.C., applied for a CAMA Minor Permit to add an additional 251 square feet of elevated slatted wooden decking and to replace the existing stairs. Of the 251 square feet of proposed decking, 137 square feet are within the 30-foot vegetative buffer. The application also requested the addition of a 158 square foot sound front deck but the Petitioner is not seeking a Variance for construction of this deck and has removed it from the proposal. Furthermore, in this Variance Petition, Petitioner has reoriented the proposed replacement stairs to run in a north to south configuration. See Stipulated Exhibits 2, 3 and 4.
9. The proposed development does not meet the exception criteria set forth in 15A NCAC 7H.0209(d)(10) because the proposed decking and the existing decking exceeds 200 total square feet.
10. Notice was given to the adjacent owners and to the general public of the proposed development. No objections to the proposed development were received. See Attachment E, Petitioner's Variance Request Materials.
11. On December 2, 2014, the Town of Duck Local Permit Officer (LPO) denied Petitioner's application based on the proposed development being inconsistent with NCAC 7H.0209(d)(10). See Attachment E, Petitioner's Variance Request Materials.
12. On January 6, 2015, Petitioner submitted its Variance Petition to construct the proposed development to the Division of Coastal Management (DCM).

ATTACHMENT C

PETITIONER'S AND STAFF'S RESPONSE TO VARIANCE CRITERIA

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

Petitioner's RESPONSE: Yes.

Rule 15A NCAC 07H.0209 is designed to protect the public trust rights and the biological and physical functions of the estuarine systems in the Coastal Shoreline AEC. While there are exceptions to the rule, the proposed development does not fall within the 200 square foot exemption for decking as the existing decking on the Property is already in excess of the 200 square foot limit. However, the proposed decking is pervious and should allow all rainwater to pass through to the bare ground underneath, with negligible resultant impact on runoff on the Property.

Furthermore, the Petitioner has serious safety and ingress/egress concerns as they relate to the existing decking. There is an approximate 6-foot gap between a current portion of the existing deck and the building. Patrons and members of the general public often use the railing on this portion of the existing deck to enjoy watching the sunset or to listen to music from performers on the deck from time to time. Petitioner is concerned that the gap creates a serious fall hazard and would like to close this opening to eliminate the hazard. Additionally, the current configuration of the stairs and upper decking creates a choke point both at the top and the bottom. The additional proposed decking at the top of the stairs, as well as the reorientation of the stairs themselves, will ease congestion at both the top and the bottom, and direct foot traffic down and away from the building in the case of an emergency.

As a result of the foregoing, strict application of the rule creates an unnecessary hardship in that it prevents safety optimization of the existing decking and creates no additional concentrations of stormwater runoff that would adversely impact the adjacent estuarine systems.

Staff's Position: Yes.

Staff agrees that strict application of the 30-foot buffer rule would cause Petitioner an unnecessary hardship. Rule 15A NCAC 7H .0209 applies to both estuarine shorelines AECs and public trust shorelines AECs. The overriding management objective of this Coastal Shorelines category 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 management 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.

Pursuant to subsection (d) of this Rule, acceptable uses shall be those consistent with these management objectives and 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. One of ways these goals are accomplished is by limiting the construction of impervious surfaces and areas not allowing natural drainage. 15A NCAC 7H .0209(d)(2). Petitioner seeks to add decking in two areas of the existing deck and to reorient an existing stairway leading to the deck. While the additional decking will collectively exceed 200 square feet and thus “violate” the 30 foot buffer rule, its surface is pervious, allowing rainfall to pass through to the ground. The increase in overall amount of pervious decking would likely result in only a minimal increase in runoff from the property. Also, as Petitioner points out, there is a legitimate safety concern in the area where railings surrounding an existing gap in the decking are used by the public as seating. The congestion at the top and bottom of the stairs is not only an inconvenience, but a potential safety issue as well. Orienting the stairway away from the building and adding decking at the top landing are reasonable ways of addressing these concerns with a minimum of new development.

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

Petitioner's RESPONSE: Yes.

The proposed development, and the resultant hardship created by the Permit denial, is dictated entirely by the current configuration of the decking, as well as the logical ingress and egress to and from the adjacent parking lot and Town of Duck Boardwalk. Furthermore, the existing structures were built prior to the implementation of the current 30-foot vegetative buffer rules, and the location and size of the existing structure is both the cause of the hardship and entirely peculiar to this Property.

Staff's Position: No.

Staff does not agree that the hardship results from conditions peculiar to this property because the condition of being within the 30-foot buffer is typical of many properties located within the Estuarine Shoreline AEC along North Carolina's coast.

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

Petitioner's RESPONSE: No.

The hardship does not result from actions taken by the Petitioner. The structures on the Property were built by the Petitioner's predecessor in title, and predate both the CAMA 30-foot vegetative buffer rule and the Town of Duck's construction of its soundfront Boardwalk. The Petitioner did not create the hardship and seeks to mitigate safety concerns on the Property. Petitioner contends that the proposed development is the most reasonable and practical solution to the identified concerns.

Staff's Position: No.

Staff agrees that the hardship does not result from actions taken by the Petitioner. The building and existing decking were built before the 30-foot buffer rule was enacted. It appears to staff that Petitioner has limited the proposed new development to address valid safety and convenience concerns.

- 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 RESPONSE: Yes.

The variance requested will be consistent with the spirit, purpose, and intent of the rules and orders of the Commission. The proposed development will be essentially pervious, and will not create any additional measurable impact on the adjacent estuarine systems. Furthermore, public safety and welfare will be enhanced in that identified safety concerns will be mitigated and/or eliminated by the proposed development. Finally, substantial justice will be preserved in that there have been no objections to the proposed development from neighboring owners, the public's interests in the Coastal Shoreline AEC will not be impacted, and the proposed development will enhance public safety and welfare.

Staff's Position: Yes.

Staff agrees that the variance requested by Petitioner will be consistent with the spirit, purpose, and intent of the rules or orders of the Commission; will secure public safety and welfare; and will preserve substantial justice. Since the denial of its CAMA permit application, Petitioner has scaled back its development plan by eliminating a 158 square-foot ground-level, soundfront deck. By removing the ground-level deck, Petitioner has reduced by approximately one-third the amount of additional decking that would be within the buffer. This variance request is limited to additional elevated wooden decking in two areas and to the replacement of (and reorienting away from the sound) an existing stairway used to access the deck. As discussed above, the additional decking and reorientation of the stairway are at least partially motivated by legitimate public safety concerns. For a relatively minor increase in total decking, both of these concerns could be resolved. For these reasons, granting this variance request would preserve substantial justice.

ATTACHMENT D

STIPULATED EXHIBITS

1. Copy of Secretary of State's Website Page regarding Wine Ducks, LLC; 1 page
2. CAMA Minor Permit survey dated 11/20/2014; 1 page
3. Revised survey dated 12/18/2014; 1 page
4. As-Built Survey of the Property dated 11/14/14; 1 page
5. Site photos (DCM Staff Powerpoint—9 slides).



Elaine F. Marshall
Secretary

North Carolina

**DEPARTMENT OF THE
SECRETARY OF STATE**

PO Box 29822 Raleigh, NC 27626-0622 (919)807-2000

[Account Login](#) [Register](#)

Date: 1/5/2015

Click here to:

[View Document Filings](#) | [File an Annual Report](#) |

[Print a Pre-populated Annual Report Fillable PDF Form](#) | [Amend A Previous Annual Report](#) |

Corporation Names

Name	Name Type
NC WINE DUCKS, LLC	LEGAL
NC WINEDUCK LLC	PREV LEGAL

Limited Liability Company Information

SOSID:	1001127
Status:	Current-Active
Effective Date:	9/14/2007
Citizenship:	DOMESTIC
State of Inc.:	NC
Duration:	PERPETUAL
Annual Report Status:	CURRENT

Registered Agent

Agent Name:	VB BUSINESS SERVICES, LLC
Office Address:	TWO HANOVER SQUARE, SUITE 2000 434 FAYETTEVILLE STREET MALL RALEIGH NC 27602-2599
Mailing Address:	PO BOX 2599 RALEIGH NC 27602-2599

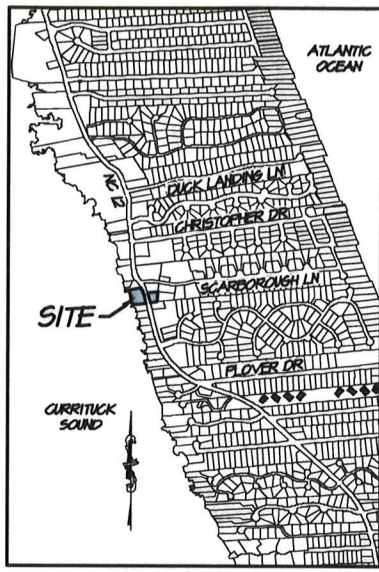
Principal Office

Office Address:	1174 DUCK RD. DUCK NC 27949
Mailing Address:	1174 DUCK RD. DUCK NC 27949

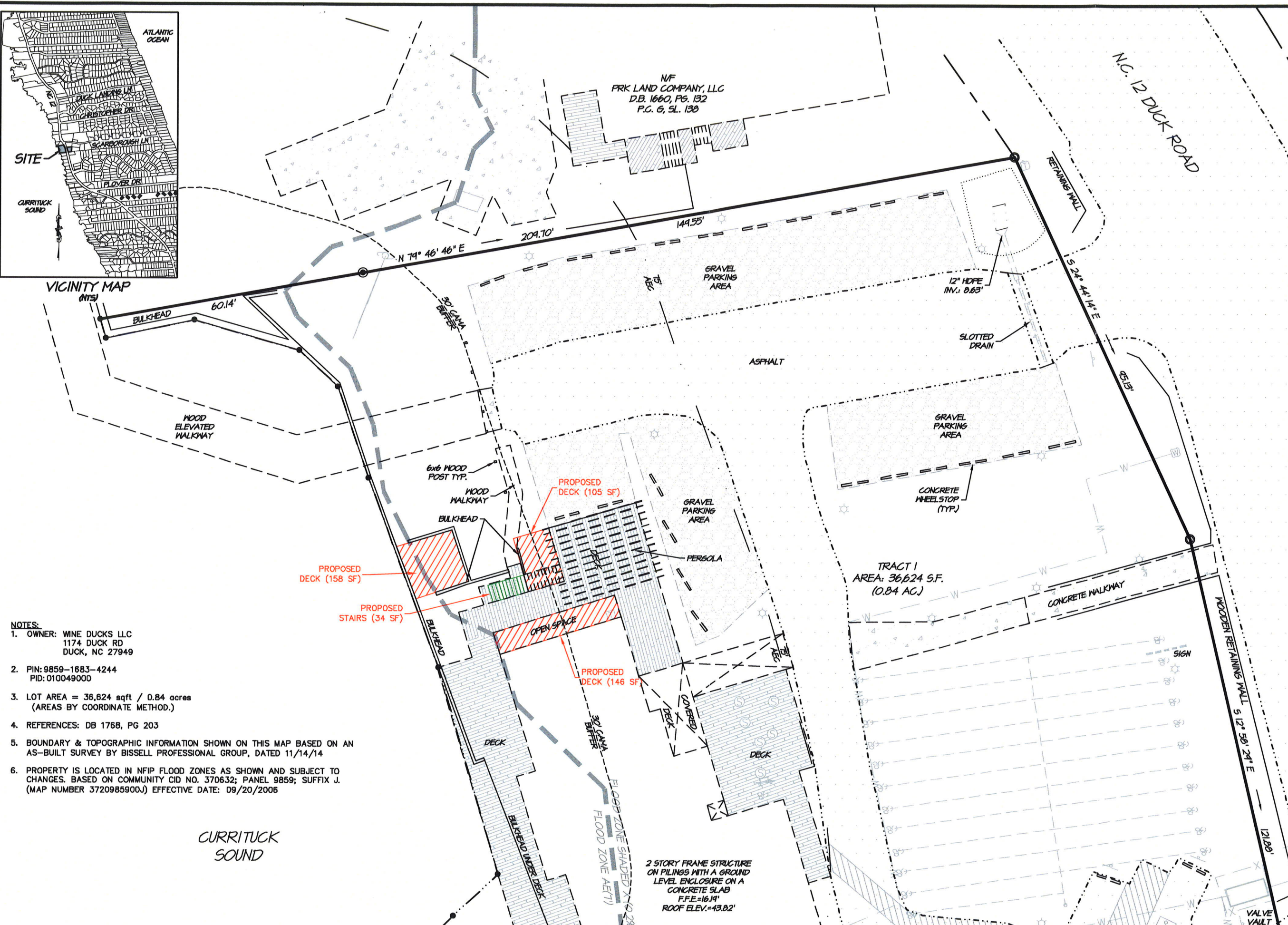
Officers/Company Officials

Title:	MANAGER
Name:	WESTERLUND ASSOCIATES LLC
Business Address:	3702 FAIRWAYS CRT. FREDERICKSBURG VA 22408
Title:	MANAGER
Name:	SUMNER LLC
Business Address:	105 CHICAHAWK TR. KITTY HAWK NC 27949

G:\2014\14116\Drawings\14116-Cama-Minor.dwg 11/20/2014 8:29 AM MHurdle



VICINITY MAP (NTS)



NF
PRK LAND COMPANY, LLC
D.B. 1660, PG. 132
P.C. 6, SL. 130

TRACT 1
AREA: 36,624 S.F.
(0.84 AC.)

2 STORY FRAME STRUCTURE
ON PILINGS WITH A GROUND
LEVEL ENCLOSURE ON A
CONCRETE SLAB
F.F.E.=16.14'
ROOF ELEV.=43.02'

- NOTES:**
- OWNER: WINE DUCKS LLC
1174 DUCK RD
DUCK, NC 27949
 - PIN: 9859-1683-4244
PID: 010049000
 - LOT AREA = 36,624 sqft / 0.84 acres
(AREAS BY COORDINATE METHOD.)
 - REFERENCES: DB 1768, PG 203
 - BOUNDARY & TOPOGRAPHIC INFORMATION SHOWN ON THIS MAP BASED ON AN AS-BUILT SURVEY BY BISSELL PROFESSIONAL GROUP, DATED 11/14/14
 - PROPERTY IS LOCATED IN NFIP FLOOD ZONES AS SHOWN AND SUBJECT TO CHANGES. BASED ON COMMUNITY CID NO. 370632; PANEL 9859; SUFFIX J. (MAP NUMBER 3720985900J) EFFECTIVE DATE: 09/20/2006

CURRITUCK
SOUND

Quible SINCE 1959
& Associates, P.C.
ENGINEERING * CONSULTING * PLANNING
ENVIRONMENTAL SCIENCES * SURVEYING
NC License#: C-0208
PO Drawer 870, Kitty Hawk, NC 27949
Phone: (252) 491-8147
Fax: (252) 491-8146
E-Mail: administrator@quible.com

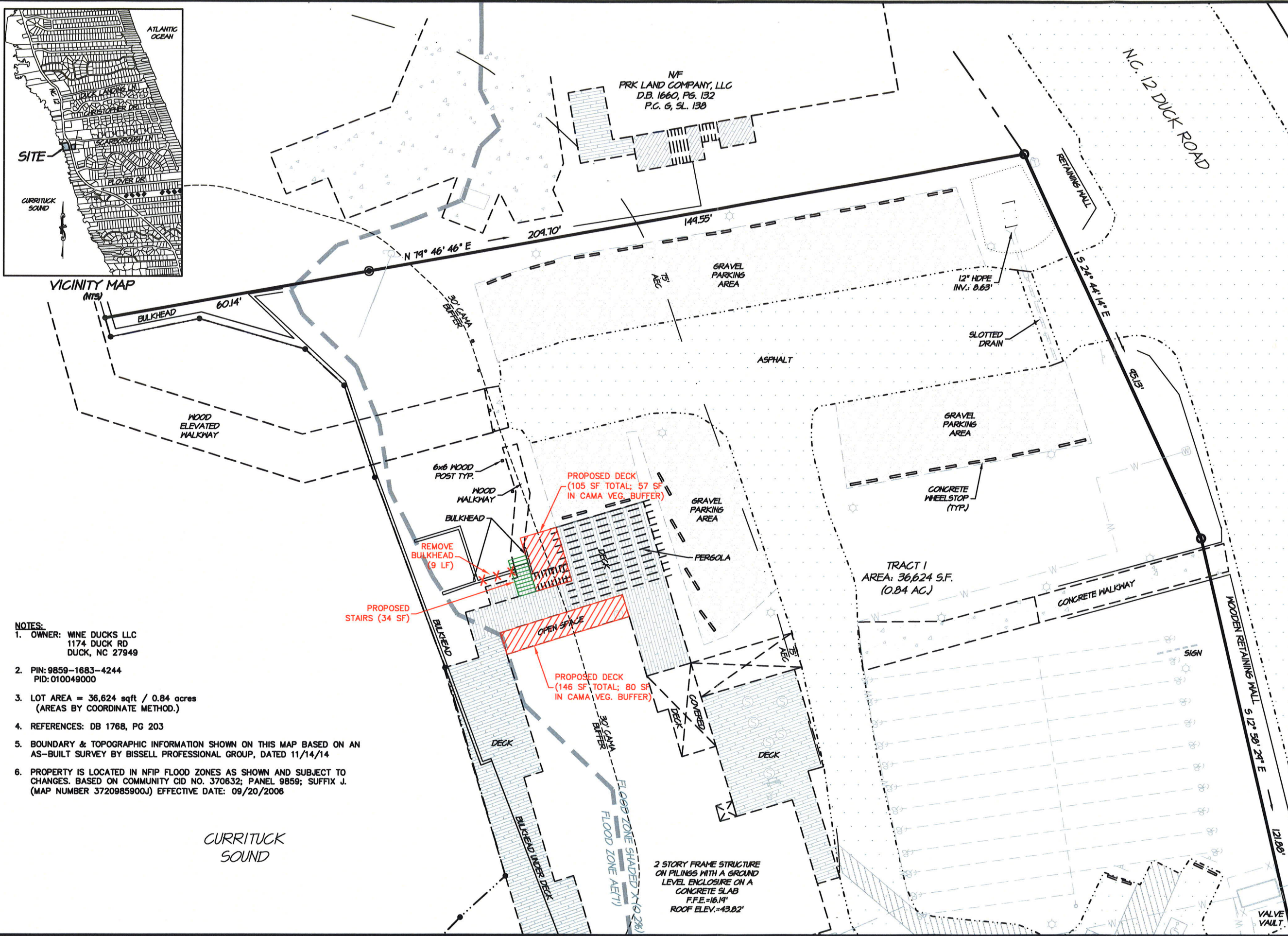
**PRELIMINARY
FOR CAMA
PERMITTING
ONLY**

CAMA MINOR PLAN
AQUA RESTAURANT & SPA
WINE DUCKS, LLC
TOWN OF DUCK
DARE COUNTY
ATLANTIC TOWNSHIP
NORTH CAROLINA
SCALE 1X
SCALE 2X
GRAPHIC SCALE IN FEET 1"=SCALE 1X

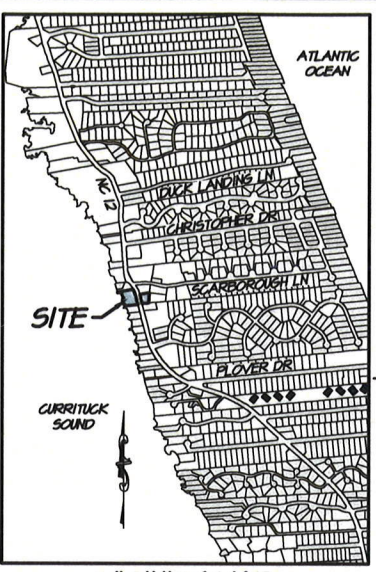
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RECORDATION, SALES OR LAND
CONVEYANCES, UNLESS OTHERWISE
NOTED.

PROJECT	P14116
DRAWN BY	JMH
CHECKED BY	BDR
DATE	11/20/14

Q:\2014\PI14116\Drawings\PI14116-Cama-Minor2.dwg 1/5/2015 2:13 PM Brubino



- NOTES:**
- OWNER: WINE DUCKS LLC
1174 DUCK RD
DUCK, NC 27949
 - PIN: 9859-1683-4244
PID: 010049000
 - LOT AREA = 36,624 sqft / 0.84 acres
(AREAS BY COORDINATE METHOD.)
 - REFERENCES: DB 1768, PG 203
 - BOUNDARY & TOPOGRAPHIC INFORMATION SHOWN ON THIS MAP BASED ON AN AS-BUILT SURVEY BY BISSELL PROFESSIONAL GROUP, DATED 11/14/14
 - PROPERTY IS LOCATED IN NFIP FLOOD ZONES AS SHOWN AND SUBJECT TO CHANGES. BASED ON COMMUNITY CID NO. 370632; PANEL 9859; SUFFIX J. (MAP NUMBER 3720985900J) EFFECTIVE DATE: 09/20/2006



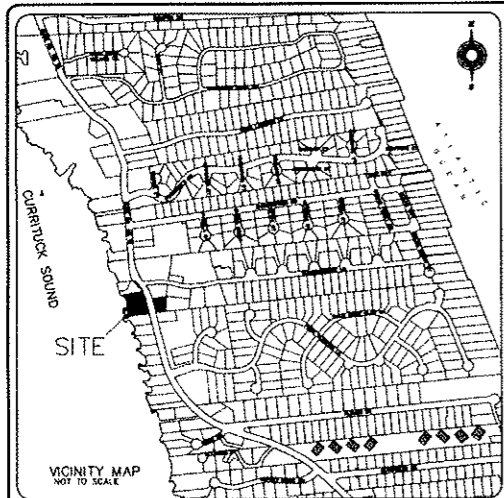
Quible SINCE 1959
& Associates, P.C.
 ENGINEERING * CONSULTING * PLANNING
 ENVIRONMENTAL SCIENCES * SURVEYING
 NC License#: C-0208
 PO Drawer 870, Kitty Hawk, NC 27949
 Phone: (252) 491-8147
 Fax: (252) 491-8146
 E-Mail: administrator@quible.com

**PRELIMINARY
 FOR CAMA
 PERMITTING
 ONLY**

CAMA MINOR PLAN #2
AQUA RESTAURANT & SPA
WINE DUCKS, LLC
 ATLANTIC TOWNSHIP
 DARE COUNTY NORTH CAROLINA
 TOWN OF DUCK
 SCALE 1X
 SCALE 2X
 GRAPHIC SCALE IN FEET 1"=SCALE 1X

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 RECORDATION, SALES OR LAND
 CONVEYANCES, UNLESS OTHERWISE
 NOTED.

PROJECT
P14116
 DRAWN BY
JMH
 CHECKED BY
BDR
 DATE
12/18/14



- LEGEND**
- ECM □ = EXISTING CONCRETE MONUMENT
 - SIR ● = SET IRON ROD
 - EIR ○ = EXISTING IRON ROD
 - EIP ○ = EXISTING IRON PIPE
 - EP/IP ○ = EXISTING PINCHED IRON PIPE
 - CP ○ = CALCULATED POINT/POINT ON BULKHEAD
 - ☆ = GROUND LIGHT/LIGHT POLE
 - ▽ = TELEPHONE PEDESTAL
 - ▲ = WATER VALVE
 - ⊕ = SIAMSE FIRE HYDRANT
 - = OVERHEAD ELECTRICAL LINE
 - = CONCRETE BOLLARD
 - = CABLE TV
 - = WATER METER
 - = CLEAN OUT VALVE
 - = UTILITY POLE
 - = SIGN
 - M.S.L. = MAXIMUM BUILDING LIMIT
 - N.T.S. = NOT TO SCALE
 - R/W = RIGHT OF WAY
 - EOP = EDGE OF PAVEMENT
 - = CENTERLINE
 - P.C. = PLAT CABINET
 - D.S. = DEED BOOK
 - SL = SLIDE
 - SQ.FT. = SQUARE FEET
 - XX.XX = SPOT ELEVATION (NAVD'88 DATUM)



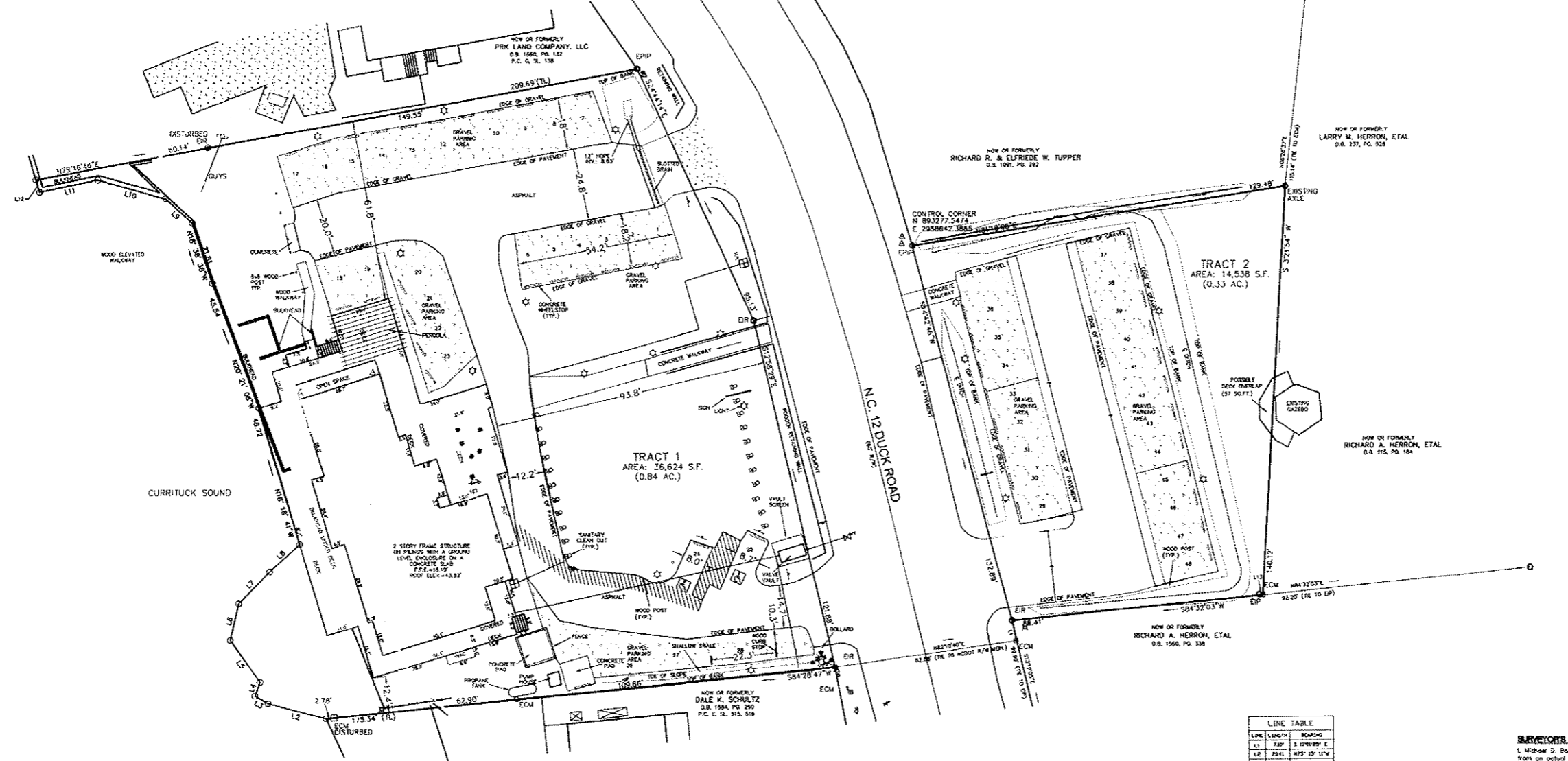
REFERENCES:

D.B. 1752, PG. 415
 D.B. 1752, PG. 416
 D.B. 1768, PG. 203
 D.B. 914, PG. 135
 D.B. 1714, PG. 412
 P.C. G. SL. 138
 P.C. E. SL. 515-516
 D.B. 1684, PG. 250
 D.B. 1680, PG. 132
 D.B. 1091, PG. 292
 D.B. 215, PG. 184
 D.B. 1560, PG. 338

UNRECORDED PLAT, "SURVEY FOR RICHARD A. & MAJORIE N. HERRON & LARRY M. & DEBRA A. HERRON, A PARCEL OF LAND IN DUCK, ATLANTIC TOWNSHIP, DARE COUNTY, NORTH CAROLINA" BY KIRK R. FOREMAN LAND SURVEYING CO., DATED 01/11/1994

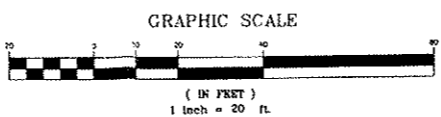
NOTES:

- IRON PINS AT ALL LOT CORNERS UNLESS OTHERWISE NOTED HEREON.
- UNDERGROUND UTILITIES, IF ANY, WERE NOT LOCATED BY THIS SURVEY. FURTHER EVALUATION MAY BE REQUIRED.
- NO RECOVERABLE INCG MONUMENTS APPEAR TO BE WITHIN 2000' OF THE SUBJECT PROPERTY SHOWN HEREON.
- SUBJECT TO TITLE SEARCH AND TO ANY AND/OR ALL RIGHT OF WAYS, ENFORCEABLE RESTRICTIONS, AND/OR EASEMENTS OF RECORD WHETHER SHOWN HEREON OR NOT.
- THIS SURVEY IS BASED ON FIELD LOCATION OF EXISTING MONUMENTATION AND EXISTING RECORD DOCUMENTS.
- FLOOD HAZARD ZONES: ZONE AE (7) AND ZONE X AS SHOWN ON F.E.M.A. F.I.R.M. # 370933 9859 J, EFFECTIVE DATE: SEPTEMBER 20, 2009 (SUBJECT TO CHANGE BY F.E.M.A.)
- PROPERTY OWNER: WHE DUCK, LLC
1174 DUCK ROAD
DUCK, NC 27949
- PROPERTY ADDRESS: TRACT 1 P.N.: 985918834244
1174 DUCK RD P.N.: 085916837211
DUCK, NC 27949 DUCK, NC 27949
- EXISTING PARKING SPACES
AS TOTAL PARKING SPACES PROVIDED INCLUDING
(1) UNASSIGNED PARKING SPACES
- TRACT 2 P.N.: 985918834244
1174 DUCK RD P.N.: 085916837211
DUCK, NC 27949 DUCK, NC 27949



LINE TABLE

LINE NO.	LENGTH	BEARING
11	730'	S 100°20'00" E
12	2541'	N 75° 31' 11" W
13	324'	N 0° 27' 44" W
14	330'	N 0° 31' 11" W
15	1772'	N 0° 31' 11" W
16	1220'	N 0° 31' 11" W
17	1519'	N 44° 24' 20" E
18	1330'	N 44° 24' 20" E
19	1193'	N 44° 24' 20" E
20	2468'	N 0° 31' 11" W
21	7948'	N 0° 31' 11" W
22	443'	N 44° 24' 20" E
23	150'	S 79°27'11" E




SURVEYOR'S CERTIFICATION

I, Mahan D. Box, certify that this plan was drawn under my supervision from an actual survey made under my supervision (date and description recorded in books referenced); that the boundaries not surveyed are clearly indicated as drawn from information found in books referenced; that the ratio of precision or accuracy is 1:10,000 and that this map meets the requirements of the Standards of Practice for Land Surveying in North Carolina [21 NCAC 06.1500].

Witness my original signature, registration number and seal this 14 day of November, A.D. 2014.

(Signature) E-1756
 Professional Land Surveyor

Blair's Professional Group
 P.O. Box 1008
 Raleigh, NC 27602
 Tel: (919) 286-1111
 Fax: (919) 286-1100




Blair's
 Engineers, Planners, Surveyors
 and Environmental Specialists

D.B. 1752, PG. 415 & 416

AQUA RESTAURANT & SPA
 TOWN OF DUCK
 DARE COUNTY
 NORTH CAROLINA

AS-BUILT SURVEY

NO.	DATE	DESCRIPTION	BY	CHK.
1	11-14-14	AS-BUILT SURVEY	MDB	
2				
3				
4				
5				
6				
7				
8				


MAHAN D. BOX
 PROFESSIONAL LAND SURVEYOR
 LICENSE L-1756

DATE: 11-14-14
 TIME: 11:20
 DRAWN BY: MNS
 CHECKED BY: HFC

CAD FILE
 335 AS BUILT 11-2014
 PROJECT NO:
4375

Z:\4375\blair\as-built\11-2014.dwg, 24 Nov 11:42:2014 13:58 AM HP 14604228 12891 P1 (16x12,26x1, 1:1)

Wine Ducks L.L.C. Variance

Duck, NC



Aqua Restaurant

(2013 Aerial Photo)



Aqua Restaurant

(Photo Date: 01/16/2015)



Located At South End of The Town of Duck Boardwalk

(Photo Date: 01/16/2015)



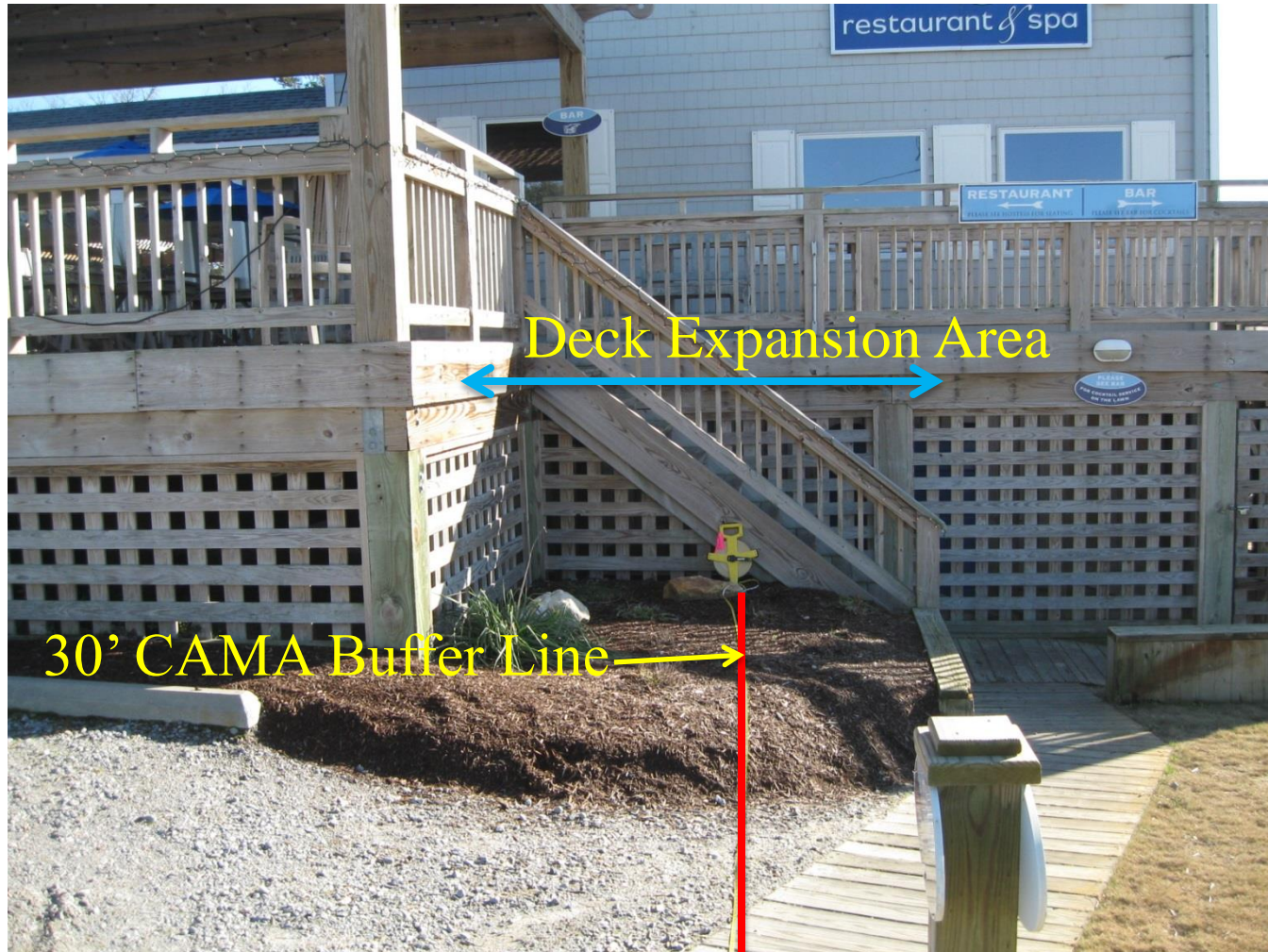
Proposed Development Area

(Photo Date: 01/16/2015)



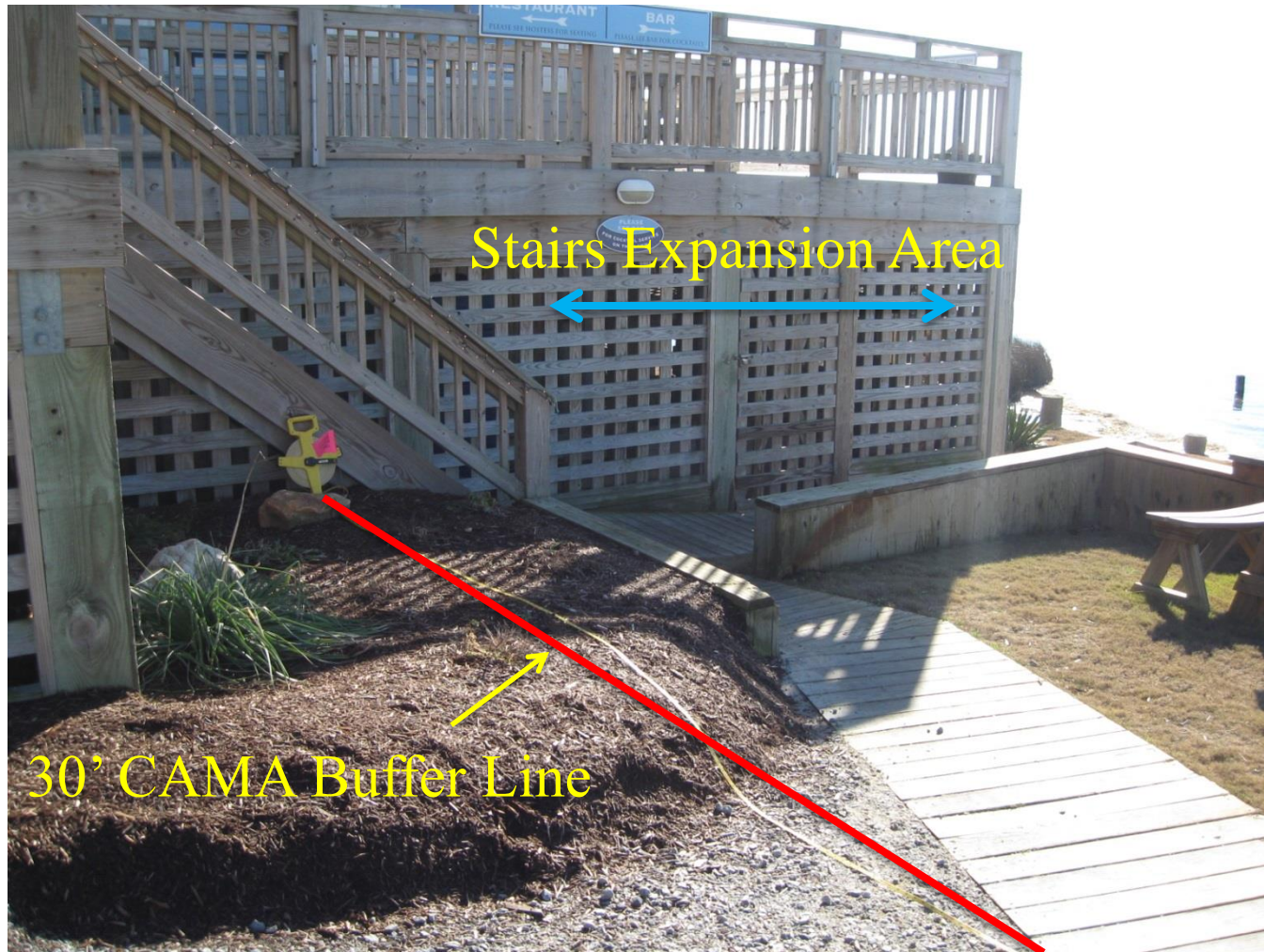
Proposed Development Area

(Photo Date: 01/16/2015)



Proposed Development Area

(Photo Date: 01/16/2015)



Proposed Development Area

(Photo Date: 01/16/2015)



Proposed Development Area

(Photo Date: 01/16/2015)



ATTACHMENT E

PETITIONER'S VARIANCE REQUEST

(PROPOSED FACTS AND PROPOSED EXHIBITS OMITTED)

STATE OF NORTH CAROLINA)	BEFORE THE NORTH CAROLINA
)	COASTAL RESOURCES COMMISSION
COUNTY OF DARE)	CRC-VR-_____
)	
)	
IN THE MATTER OF:)	
PETITION FOR VARIANCE)	VARIANCE PETITION
BY WINE DUCKS, LLC)	
)	

NOW COMES the Petitioner Wine Ducks, LLC, by and through counsel, and hereby petitions the Coastal Resources Commission (“the Commission”) for a variance from CAMA guidelines.

In support of this Petition, the Petitioner shows the Commission as follows:

1. The name and location of the development as identified on the permit application.

Wine Ducks, LLC
Application Number: D-2014-286
Project Address: 1174 Duck Road, Duck, Dare County, North Carolina

2. A copy of the permit decision for the development in question.

See attached Exhibit “A”. Blank CAMA appeal and variance forms omitted.

3. A copy of the deed to the property on which the proposed development would be located.

See attached Exhibit “B”.

4. A complete description of the proposed development including a site plan.

The subject property consists of two parcels (one soundfront and one on the west side of NC 12) in the Town of Duck, Dare County, North Carolina. The existing conditions are presented on the current As-Built Survey by Bissell Professional Group. This is a commercially developed and zoned property that contains Aqua Restaurant and Spa in downtown Duck. This property also includes the southern terminus of the Town of Duck elevated boardwalk that runs along the soundside along the downtown area. It should be noted that this downtown area essentially functions as an Urban Waterfront, but it is not designated as one at this time.

The proposed project includes expansion of an existing open elevated slotted deck and relocation of the existing access stairway as shown on the current plan dated

12/18/2014. A CAMA minor application package was submitted to the Town of Duck on 11/24/2014 (associated plan dated 11/20/2014) for the proposed expansion as well as an additional deck proposed at ground level (158 sq.ft.). This permit request was denied for reasons cited in the 12/02/2014 letter from Sandy Cross, Town of Duck LPO. Prior to submitting a permit and/or variance request, an on-site meeting was held on 10/15/2014 with Sandy Cross (Duck LPO), Joe Heard (Duck Planning Director), Judy Fisher (Aqua GM) and Brian Rubino (Quible & Associates, P.C.) to discuss the CAMA variance process. It was understood that the proposed project could not be permitted at this time due to buffer zone regulations and that a CAMA variance request was the most logical step to being able to permit. A similar variance that was granted at Blue Point Restaurant in Duck was also discussed with the Town by request of Mr. Rubino. Since permit denial, the owner has decided to pursue a variance request for elevated deck expansion and the relocation of the existing access stairway (34 sq.ft.) only and does not request the additional ground level deck that was similarly denied. In addition, the proposed stairway relocation has been rotated 90 degrees to further minimize buffer zone encroachment towards the sound. Of the 251 sq.ft. of decking proposed at this time, only 137 sq.ft. (57 sq.ft and 80 sq.ft.) is within the CAMA 30 ft buffer zone. On the enclosed plan, the proposed expansion areas are depicted in red and the stairway relocation is depicted in green.

It is important to note that the existing ground condition in the area of the deck expansion beside the building is bare sand and does not support vegetative growth due to its' location adjacent to the building, including excessive shade and kitchen employee foot traffic. All other portions of the building and associated decking located in the CAMA 30 ft buffer has been in place prior to implementation of the buffer rules.

5. A stipulation that the proposed development is inconsistent with the rule at issue.

The Petitioner stipulates that the proposed development is inconsistent with 15 NCAC 7H 0209 (d)(10)(F).

6. Proof that notice was sent to adjacent owners and objectors*, as required by 15A N.C.A.C. 07J .0701(c)(7).

See attached Exhibit "C". No objections to the proposed CAMA Minor Permit application by Petitioner were received.

7. Proof that a variance was sought from the local government per 15A N.C.A.C. 07J .0701(a), if applicable.

The proposed project is does not conflict with the current Town of Duck Zoning Ordinance, and therefore no variance from local government has been sought or is required.

8. Petitioner's written reasons and arguments about why the Petitioner meets the four variance 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.

RESPONSE: Rule 15A NCAC 07H.0209 is designed to protect the public trust rights and the biological and physical functions of the estuarine systems in the Coastal Shoreline AEC. While there are exceptions to the rule, the proposed development does not fall within the 200 square foot exemption for decking as the existing decking on the Property is already in excess of the 200 square foot limit. However, the proposed decking is pervious and should allow all rainwater to pass through to the bare ground underneath, with negligible resultant impact on runoff on the Property.

Furthermore, the Petitioner has serious safety and ingress/egress concerns as they relate to the existing decking. There is an approximate 6-foot gap between a current portion of the existing deck and the building. Patrons and members of the general public often use the railing on this portion of the existing deck to enjoy watching the sunset or to listen to music from performers on the deck from time to time. Petitioner is concerned that the gap creates a serious fall hazard and would like to close this opening to eliminate the hazard. Additionally, the current configuration of the stairs and upper decking creates a choke point both at the top and the bottom. The additional proposed decking at the top of the stairs, as well as the reorientation of the stairs themselves, will ease congestion at both the top and the bottom, and direct foot traffic down and away from the building in the case of an emergency.

As a result of the foregoing, strict application of the rule creates an unnecessary hardship in that it prevents safety optimization of the existing decking and creates no additional concentrations of stormwater runoff that would adversely impact the adjacent estuarine systems.

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

RESPONSE: The proposed development, and the resultant hardship created by the Permit denial, is dictated entirely by the current configuration of the decking, as well as the logical ingress and egress to and from the adjacent parking lot and Town of Duck Boardwalk. Furthermore, the existing structures were built prior to the implementation of the current 30-foot vegetative buffer rules, and the location and size of the existing structure is both the cause of the hardship and entirely peculiar to this Property.

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

RESPONSE: The hardship does not result from actions taken by the Petitioner. The structures on the Property were built by the Petitioner's predecessor in title, and predate both the CAMA 30-foot vegetative buffer rule and the Town of Duck's construction of its soundfront Boardwalk. The Petitioner did not create the hardship and seeks to mitigate safety concerns on the Property. Petitioner contends that the proposed development is the most reasonable and practical solution to the identified concerns.

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.


RESPONSE: The variance requested will be consistent with the spirit, purpose, and intent of the rules and orders of the Commission. The proposed development will be essentially pervious, and will not create any additional measurable impact on the adjacent estuarine systems. Furthermore, public safety and welfare will be enhanced in that identified safety concerns will be mitigated and/or eliminated by the proposed development. Finally, substantial justice will be preserved in that there have been no objections to the proposed development from neighboring owners, the public's interests in the Coastal Shoreline AEC will not be impacted, and the proposed development will enhance public safety and welfare.

9. 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.

See attached Exhibit "D".

10. This form completed, dated, and signed by the Petitioner or Petitioner's Attorney.

This the 6th day of January, 2015.


Wyatt M. Booth
N.C. State Bar No.: 28246
VANDEVENTER BLACK LLP
P.O. Box 2599
Raleigh, NC 27602-2599

Telephone: (919) 754-1171
Facsimile: (919) 754-1317
Email: nshearin@vanblk.com
Attorney for Petitioner Wine Ducks LLC

CERTIFICATE OF SERVICE

This is to certify that I have this day served the foregoing VARIANCE APPLICATION upon the parties by the methods indicated below:

Braxton Davis, Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557
Via Federal Express
Adult Signature Required and
Facsimile (252) 247-3330

Roy Cooper
Attorney General
114 W. Edenton Street
Raleigh, NC 27603
Via Federal Express
Adult Signature Required and
Facsimile (919) 716-6767

SOZO, LLC
c/o Louis G. Paulson
1432 North Great Neck Rd, Suite 101
Virginia Beach, VA 23454
Via Federal Express
Adult Signature Required

Albrecht and Josephine Heyder
706 Small Drive
Elizabeth City, NC 27909
Via Federal Express
Adult Signature Required

This the 6th day of January, 2015.

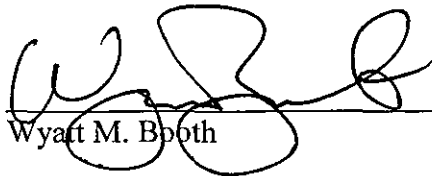

Wyatt M. Booth

Exhibit "A"



December 2, 2014

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Wine Ducks, LLC
c/o Judy Fisher, GM, Aqua Restaurant
1174 Duck Road
Duck, NC 27949

RE: DENIAL OF CAMA MINOR DEVELOPMENT PERMIT
APPLICATION NUMBER- D-2014-286
PROJECT ADDRESS- 1174 Duck Road

Dear Ms. Fisher:

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 construct a 409 square foot deck and stair addition partially within the 30' CAMA Buffer at 1174 Duck Road. Your property currently has 1,589 square feet of decking within the buffer. Your request to add additional decking would be inconsistent with 15 NCAC 7H 0209 (d)(10)(F), which states that *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 decks/observation decks limited to slatted, wooden, elevated and unroofed decks that shall not singularly or collectively exceed 200 square feet.*

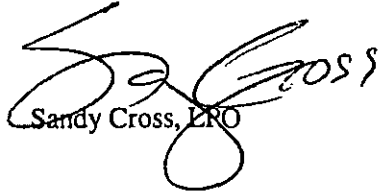
As per our conversations regarding your application, you have the right to appeal my decision to the Coastal Resource Commission (CRC) or request a variance from that group. I am therefore, attaching the proper forms and other information you may require to pursue either option. You may also find information regarding these two options and the associated forms on the Division of Coastal Management website at <http://www.nccoastalmanagement.net/web/cm/90>.

Please note that a petition for variance must be received six (6) weeks before the next scheduled CRC meeting for it to be eligible to be heard at that meeting. The next scheduled meeting that would allow you enough time to submit your request would be February 18-19, 2015, location to be announced. You can also follow the meeting schedule online at <http://www.nccoastalmanagement.net/web/cm/90>. If your plan is to appeal my decision, 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.

P. O. Box 8369 • Duck, North Carolina 27949
252-255-1234 • 252-255-1236 (fax) • www.townofduck.com

APPLICATION NUMBER- D-2014-286
PROJECT ADDRESS- 1174 Duck Road
December 2, 2014
Page 2

Respectfully yours,



Sandy Cross, ERO

Encl.

cc: Joe Heard, Town of Duck Director of Community Development
Ron Renaldi, Field Representative DCM
1367 US 17 South, Elizabeth City, NC 27909
Brian Rubino, Quible & Associates, P.C.

Exhibit “B”

UNOFFICIAL

Filed Book: 1752 Page: 415 Doc Id: 6232848
12/20/2007 04:41PM Receipt #: 197719
Doc Code: DEED NC Excise Tax pd: \$4400.00
BARBARA H GRAY, REGISTER OF DEEDS DARE CO, NC

DARE COUNTY REAL ESTATE TRANSFER TAX



LT 5033-07 \$22,000.00

6232848 Page: 1 of 2 12/20/2007 04:41P

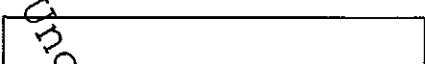
Land Transfer No: 5033-07 Recording Time, Book and Page
Excise Tax: \$4400.00
Land Transfer Tax: \$22,000.00

NORTH CAROLINA GENERAL WARRANTY DEED

Tax Lot No. _____ Parcel Identifier No. 010049000
Verified by _____ County on the _____ day of _____
by _____

Mail after recording to: Vandevanter Black LLP, P.O. Box 2, Kitty Hawk, NC 27949
This instrument was prepared by: Daniel D. Khoury, Esquire, Vandevanter Black LLP File Number: 326180001

Brief Description for the index



THIS DEED made this 8th day of November, 2007

GRANTOR	GRANTEE
LARRY M. HERRON and wife, DEBRA A. HERRON and RICHARD A. HERRON and wife, MARJORIE NANCY HERRON	WINE DUCKS LLC a North Carolina limited liability company 855 Herbert Perry Road Kitty Hawk, NC 27949

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 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, all that certain lot or parcel of land situated in the Town of Duck, Atlantic Township, Dare County, North Carolina and more particularly described as follows:

Beginning at an existing right of way concrete monument, said existing right of way concrete monument being located in and on the Western edge of the 60 foot right of way of N.C.S.R. 1200 known as "Duck Road", said right of way concrete monument being located where the Northernmost property line of that lot or parcel of land now or formerly owned by Eva R. Gard intersects the Western edge of the aforesaid right of way, said beginning point further being located North 89 deg. 45 min. 00 sec. West 62.89 feet from a concrete monument; thence from said beginning point along the Northern property line of that lot or parcel of land now or formerly owned by Eva R. Gard North 87 deg. 30 min. 00 sec. West 109.57 feet to a concrete monument; thence continuing North 87 deg. 30 min. 00 sec. West 62.90 feet to a concrete monument; thence continuing North 87 deg. 30 min. 00 sec. West 20 feet, more or less, to the mean highwater mark of the Currituck Sound; thence following the various meanderings of the mean highwater mark of the Currituck Sound in a generally Northernly direction to a point, said shoreline following the approximation of the following calls: North 35 deg. 54 min. 52 sec. West 47.03 feet to a point; North 00 deg. 56 min. 51 sec. East 159.68 feet to a point, said point being located on a certain wooden bulkhead which is the Southern property line of the lot or parcel of land now or formerly owned by L.D. Scarborough; thence running along the Southern property line of that lot or parcel of land now or formerly owned by L.D. Scarborough North 87 deg. 57 min. 04 sec. East 30.1 feet more or less to an iron pin; thence continuing along the Southern property line of that lot or parcel of land now or formerly owned by L.D. Scarborough North 87 deg. 57 min. 04 sec. East 149.55 feet to an existing iron pin, said existing iron pin being located in and on the Western edge of the aforesaid right of way; thence turning and running along the Western edge of the aforesaid right of way South 16 deg. 33 min. 56 sec. East 95.13 feet to an iron rod; thence continuing along the Western edge of the aforesaid right of way South 04 deg. 58 min. 48 sec. East 121.85 feet to the point and place of beginning.

Reference is hereby made to that map or plat entitled in part "Survey for Richard A. & Marjorie N. Herron & Larry M. & Debra A. Herron, a parcel of land in Duck, Atlantic Township, Dare County, North Carolina" by Kirk R. Foreman Land Surveying Company dated January 11, 1994 for a more complete and concise description of the land being herein conveyed.

This conveyance is a part of a tax deferred exchange undertaken in accordance with Section 1031 of the Internal Revenue Code of 1996 as amended and the regulations issued thereunder.

The property hereinabove described was acquired by Grantor by instrument recorded in Book _____, Page _____, Dare County Registry.

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 whatsoever except for the exceptions hereinafter stated.

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

Residual covenants, reservations, relocations, easements, right of way agreements and any other reservations applicable thereto of record in Dare County Registry.

All zoning ordinances and other land regulations applicable thereto.

Ad valorem taxes subsequent to 2007.

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

Richard A. Herron (SEAL)
Richard A. Herron

Marjorie Nancy Herron (SEAL)
Marjorie Nancy Herron

Larry M. Herron (SEAL)
Larry M. Herron

Debra A. Herron (SEAL)
Debra A. Herron

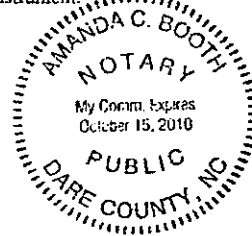
STATE OF NC
CITY/COUNTY OF Dare

I, the undersigned, a Notary Public of the County and State aforesaid, certify that Richard A. Herron and wife, Marjorie Nancy Herron, personally appeared before me this day and acknowledged the execution of the foregoing instrument.

Witness my hand and official stamp or seal, this the 3 day of December, 2007.

[Signature]
Notary Public

My commission expires: _____



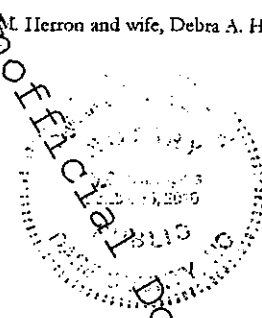
STATE OF NC
CITY/COUNTY OF Dare

I, the undersigned, a Notary Public of the County and State aforesaid, certify that Larry M. Herron and wife, Debra A. Herron, personally appeared before me this day and acknowledged the execution of the foregoing instrument.

Witness my hand and official stamp or seal, this the 3 day of December, 2007.

[Signature]
Notary Public

My commission expires: _____



6232848
Page: 2 of 2
12/20/2007 04:41P

Exhibit "C"

Quible

Quible & Associates, P.C.

ENGINEERING • ENVIRONMENTAL SCIENCES • PLANNING • SURVEYING
SINCE 1959

P.O. Drawer 870
Kitty Hawk, NC 27949
Phone: 252-261-3300
Fax: 252-261-1260
web: quible.com

November 24, 2014

Sandy Cross
Local Permit Officer for the Town of Duck
P.O. Box 8369
Duck, NC 27949

RE: CAMA Minor Permit Application
Aqua Restaurant and Spa

Ms. Cross:

Enclosed is the CAMA Minor submission for open deck improvements at Aqua Restaurant and Spa.

Enclosed is the following:

- \$100 Processing Fee Check and Photocopy
- CAMA Minor Application
- 2 copies of the Permit Plans (CAMA Plan and current as-built survey)
- Copies of letters sent to adjacent riparian land owners
- Photocopies of certified mail receipts

If you have any questions or if you need any additional information, please contact me at 252.261.3300 or at brubino@quible.com.

Sincerely,
Quible & Associates, P.C.




Brian Rubino

CC: Judy Fisher, GM, Aqua

RE: Agent Authorization for CAMA and Town Permitting
Aqua Restaurant and Spa

As property owner, I authorize Quible & Associates, P.C. to act as agent for the purpose
of Environmental and Town of Duck Permitting, including CAMA Permitting.



Authorized Signature

Name: Richard J. Westerland Date: 11/19/14

Locality _____ Permit Number _____

Ocean Hazard _____ Estuarine Shoreline _____ ORW Shoreline _____ Public Trust Shoreline _____ Other _____
(For official use only)

GENERAL INFORMATION

LAND OWNER

Name Wine Ducks, LLC

Address 1174 Duck Road

City Duck State NC Zip 27449 Phone 252.202.6774

Email judy@quadsbx.com

AUTHORIZED AGENT

Name Erion Rubino, Quible & Associates, P.C.

Address P.O. Drawer 870

City Kitty Hawk State NC Zip 27449 Phone 252.261.3100

Email brubino@quible.com

LOCATION OF PROJECT: (Address, street name and/or directions to site. If not oceanfront, what is the name of the adjacent waterbody?) Carroll's Sound
(1) Open area expansion: 409 sq. ft.

DESCRIPTION OF PROJECT: (List all proposed construction and land disturbance.) *(2) relocate deck stairs*

SIZE OF LOT/PARCEL: 36,624 square feet 0.84 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: _____ 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) N/A

(2) COASTAL SHORELINE AEC: 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.)
No new impervious surfaces proposed; open deck stairs only
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 areas/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, Installation 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)

I am owner or record title. Title is vested in Wine Ducks, LLC, see Deed Book 1768 page 203 in the _____ County Registry of Deeds.

I am owner by virtue of inheritance. Applicant is an heir to the estate of _____; probate was in _____ County.

I have 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) S&D LLC 1077 Boblink Dr. Virginia Beach VA 23451 (Name) (Address)
- (2) Abrecht and Josephine Hylander 766 Small Dr. Elizabeth City NC 27909
- (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 24TH day of NOV, 2014

Erion Rubino Erion O Rubino, Quible & Associates, P.C. - AGENT
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 AEC without permit is subject to civil, criminal and administrative action.

7013 1710 0000 2879 3915

U.S. Postal Service
CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

ELIZABETH CITY NC 27709

OFFICIAL USE

14116 Postage	\$ 6.9	\$0.70
Certified Fee	3.30	\$3.30
Return Receipt Fee (Endorsement Required)	2.70	\$2.70
Restricted Delivery Fee (Endorsement Required)		\$0.00
Total Postage & Fees	\$ 6.69	\$6.70

0449
01
Kitty Hawk NC
Postmark Here
11/26/2014

Sent to: R. Brent + Josephine Snyder
 Street, Apt. No., or PO Box No.: 706 Small Office
 City, State, ZIP+4: Elizabeth City NC 27709

PS Form 3800, August 2006 See Reverse for Instructions

7013 1710 0000 2879 3908

U.S. Postal Service
CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

VIRGINIA BEACH VA 23451

OFFICIAL USE

14116 Postage	\$ 6.9	\$0.70
Certified Fee	3.30	\$3.30
Return Receipt Fee (Endorsement Required)	2.70	\$2.70
Restricted Delivery Fee (Endorsement Required)		\$0.00
Total Postage & Fees	\$ 6.69	\$6.70

0449
01
Kitty Hawk NC
Postmark Here
11/26/2014

Sent to: SOZO, LLC
 Street, Apt. No., or PO Box No.: 1237 Bobolink Drive
 City, State, ZIP+4: Virginia Beach VA 23451

PS Form 3800, August 2006 See Reverse for Instructions

Quible

Quible & Associates, P.C.

ENGINEERING • ENVIRONMENTAL SCIENCES • PLANNING • SURVEYING
SINCE 1959

P.O. Drawer 870
Kitty Hawk, NC 27949
Phone: 252-261-3300
Fax: 252-261-1260
web: quible.com

CERTIFIED MAIL

November 24, 2014

SOZO, LLC
1037 Bobolink Dr.
Virginia Beach, VA 23451

Sir/Madam:

This letter is to notify you, as an adjacent riparian landowner, that Quible & Associates, P.C., on behalf of the landowner, Wine Ducks, LLC (Aqua Restaurant and Spa), has applied for a CAMA Minor Permit for soundfront improvements associated with open decking expansion. Enclosed is a copy of the overall site plan with the proposed expansion work shown in color.

Should you have no objections to this proposal, please check the appropriate statement below, sign and date where indicated and return this letter, in the self-addressed envelope, as soon as possible.

If you have any questions or comments on the project as proposed, please contact Brian Rubino at 252.261.3300 or by mail at P.O. Drawer 870, Kitty Hawk, NC 27949. If you wish to file written comments or objections with the Town of Duck, you may submit them to:

Sandy Cross
Local Permit Officer for the Town of Duck
P.O. Box 8369
Duck, NC 27949

Written comments must be received within 14 days of receipt of this notice. Failure to respond within 14 days will be interpreted as no objection.

Sincerely,
Quible & Associates, P.C.


Brian Rubino

- [] I have no objection to the project as shown and hereby waive that right of objection.
- [] I have objection to the project and have enclosed comments.

Signature

Date

Quible

Quible & Associates, P.C.

ENGINEERING • ENVIRONMENTAL SCIENCES • PLANNING • SURVEYING
SINCE 1959

P.O. Drawer 870
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Sandy Cross
Local Permit Officer for the Town of Duck
P.O. Box 8369
Duck, NC 27949

Written comments must be received within 14 days of receipt of this notice. Failure to respond within 14 days will be interpreted as no objection.

Sincerely,
Quible & Associates, P.C.


Brian Rubino

I have no objection to the project as shown and hereby waive that right of objection.

I have objection to the project and have enclosed comments.


Signature

11-28-14
Date

Quible

Quible & Associates, P.C.

ENGINEERING • ENVIRONMENTAL SCIENCES • PLANNING • SURVEYING
SINCE 1959

P.O. Drawer 870
Kitty Hawk, NC 27949
Phone: 252-261-3300
Fax: 252-261-1260
web: quible.com

CERTIFIED MAIL

November 24, 2014

Albrecht and Josephine Heyder
706 Small Drive
Elizabeth City, NC 27909

Dear Dr. and Mrs. Heyder:

This letter is to notify you, as an adjacent riparian landowner, that Quible & Associates, P.C., on behalf of the landowner, Wine Ducks, LLC (Aqua Restaurant and Spa), has applied for a CAMA Minor Permit for soundfront improvements associated with open decking expansion. Enclosed is a copy of the overall site plan with the proposed expansion work shown in color.

Should you have no objections to this proposal, please check the appropriate statement below, sign and date where indicated and return this letter, in the self-addressed envelope, as soon as possible.

If you have any questions or comments on the project as proposed, please contact Brian Rubino at 252.261.3300 or by mail at P.O. Drawer 870, Kitty Hawk, NC 27949. If you wish to file written comments or objections with the Town of Duck, you may submit them to:

Sandy Cross
Local Permit Officer for the Town of Duck
P.O. Box 8369
Duck, NC 27949

Written comments must be received within 14 days of receipt of this notice. Failure to respond within 14 days will be interpreted as no objection.

Sincerely,
Quible & Associates, P.C.


Brian Rubino

I have no objection to the project as shown and hereby waive that right of objection.

I have objection to the project and have enclosed comments.

Signature

Date



January 8,2015

Dear Customer:

Proof-of-delivery letters are being provided for the following shipments:

772476711559

ELIZABETH CITY,NC

772476687491

VIRGINIA BEACH,VA

You may save or print this Batch Signature Proof of Delivery file for your records.

Thank you for choosing FedEx.

FedEx

1.800.GoFedEx 1.800.463.3339



January 8, 2015

Dear Customer:

The following is the proof-of-delivery for tracking number **772476711559**.

Delivery Information:

Status:	Delivered	Delivered to:	Residence
Signed for by:	J.HEYDEN	Delivery location:	706 SMALL DR ELIZABETH CITY, NC 27909
Service type:	FedEx 2Day	Delivery date:	Jan 8, 2015 12:35
Special Handling:	Deliver Weekday Residential Delivery Adult Signature Required		



Shipping Information:

Tracking number:	772476711559	Ship date:	Jan 6, 2015
		Weight:	0.5 lbs/0.2 kg

Recipient:
Albrecht and Josephine Heyder
706 Small Drive
ELIZABETH CITY, NC 27909 US

Shipper:
Cassie Anderson
Vandeventer Black LLP
434 Fayetteville St, Suite 2000
P.O. Box 2599
Raleigh, NC 27602 US
33581-0006.638

Reference

Thank you for choosing FedEx.



January 8, 2015

Dear Customer:

The following is the proof-of-delivery for tracking number **772476687491**.

Delivery Information:

Status:	Delivered	Delivered to:	Receptionist/Front Desk
Signed for by:	S.MCFARLAND	Delivery location:	1432 N GREAT NECK RD 101 VIRGINIA BEACH, VA 23454
Service type:	FedEx 2Day	Delivery date:	Jan 8, 2015 14:46
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	772476687491	Ship date:	Jan 6, 2015
		Weight:	0.5 lbs/0.2 kg

Recipient:
Louis G. Paulson, Registered Agent
SOZO, LLC
1432 North Great Neck Rd
Suite 101
VIRGINIA BEACH, VA 23454 US

Reference

Shipper:
Cassie Anderson
Vandeventer Black LLP
434 Fayetteville St, Suite 2000
P.O. Box 2599
Raleigh, NC 27602 US
33581-0006.638

Thank you for choosing FedEx.



STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE

ROY COOPER
ATTORNEY GENERAL

P.O. BOX 629
RALEIGH, NC 27602

REPLY TO: CHRISTINE A. GOEBEL
ENVIRONMENTAL DIVISION
TEL: (919) 716-6600
FAX: (919) 716-6767
cgoebel@ncdoj.gov

TO: The Coastal Resources Commission
FROM: Christine A. Goebel, Assistant Attorney General **CAG**
DATE: April 16, 2015 (for the April 29-30, 2015 CRC Meeting)
RE: **Variance Request by Parker/US Life Saving Service, LLC (15-01)**

Petitioners (first as US Life Saving Service, LLC, now the Parkers) own property adjacent to Banks Channel in Wrightsville Beach in New Hanover County, North Carolina. In February 2014, Petitioners applied for a CAMA minor permit with the Town of Wrightsville Beach CAMA LPO to construct a single family residence on this recently razed lot. On February 7, 2014, the LPO denied Petitioners' CAMA permit application as part of the proposed development was located within the Commission's 30-foot buffer. Petitioners have received a variance from the Town's 30' setback, but not from the Town's street-side setback. Petitioners now seek 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: Petitioners' Positions and Staff's Responses to Criteria
- Attachment D: Petitioners' Variance Request Materials
- Attachment E: Stipulated Exhibits

cc(w/attachments): William A. Raney, Jr., Counsel for Petitioners, electronically
Mary L. Lucasse, CRC Counsel, electronically
Zachery Steffey, Town of WB LPO, electronically

RELEVANT STATUTES OR RULES**ATTACHMENT A****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

ATTACHMENT B

1. The Petitioner at the time this Petition was first filed was US Life Saving Service, LLC, a non-governmental limited liability company with the entire membership interest being owned by Christopher C. Parker and wife, Alison Parker (“the Parkers” or “Petitioners”). Since that time, US Life Saving Service, LLC conveyed the lot to the Parkers by a deed recorded on March 12, 2015, a copy of which is attached. Due to this change in ownership, the Parkers are now the Petitioners in this variance request.

2. US Life Saving Service, LLC purchased lot 15 of the Auditorium Tract, Shore Acres, Wrightsville Beach, North Carolina, by deed recorded September 12, 2013 (the “Lot”), a copy of which is attached. The Lot is shown on a subdivision map recorded on July 26, 1940. A copy of the subdivision map is included in the stipulated exhibits. This Lot, along with lots 14 and 13, is part of the former site of the Laque Center for Corrosion Technology.

3. The Lot is bounded on the east by the waters of Banks Channel. The waters of Banks Channel in this location are classified SB by the Environmental Management Commission and are closed to the harvest of shellfish.

4. The Lot is bounded on the north by Causeway Drive and by a portion of the Causeway Drive (part of U.S. 76) bridge (“Bridge”) over Banks Channel. Causeway Drive is a state-maintained public road. Between the Lot and the Bridge is a pier on which is located a pump and pipe for pumping water from Banks Channel to a marine research facility at the Wrightsville Beach municipal complex.

5. The Lot is bounded on the south by lots 14 and 13 of the Auditorium Tract, which were sold to Taylor Investment Properties, LLC in October of 2013, and then Lot 14 was deeded to John Taylor Jr. in February of 2014. A house was constructed on lot 14, pursuant to CAMA Minor Permit No. WB13-24 issued on October 29, 2013. The house on lot 14 has a covered porch that extends to the 30' Coastal Shoreline Buffer (“30' Buffer”) adjacent to Banks Channel, and the site plan shows an area of uncovered deck within the buffer as allowed by the Commission’s rules. A copy of WB13-24 and the site plan for lot 14 are attached.

6. The Lot and the four adjacent lots to the south have a bulkhead along the Banks Channel shoreline. CAMA Major Permit 99-14 was issued to US Life Saving Service, LLC on November 7, 2014, authorizing the construction of a replacement bulkhead up to 3' waterward of the existing bulkhead on its Lot. As of the date of the completion of stipulated facts in late March 2015, the bulkhead construction was underway. This permit also authorized improvements to existing docking facilities. A copy of CAMA Major Permit 99-14 and the site plan are attached.

7. The bulkhead on the Lot includes a return (“Return”) on the north boundary of the Lot where the bulkhead takes a 90 degree turn and extends westwardly along the side of the Bridge. The normal high water level of Banks Channel extends along the face of the Return to a point about 30' from the corner of the bulkhead at Banks Channel. The attached powerpoint shows photographs of this area.

8. The existence of the normal high water level along the Return about 30' westwardly from the east facing bulkhead along Banks Channel causes the northeast corner of the Lot to be subject to a 30' setback that is significantly farther from the east facing bulkhead along Banks Channel than the lots to the south of the Site.

9. The North Carolina Department of Transportation (“DOT”) and the Town of Wrightsville Beach have a stormwater collection system with a stormwater discharge pipe that discharges under the Bridge about 20' from the western end of the Return on the Lot. The stormwater collection system connected to the discharge pipe collects stormwater from a large area of developed property located north of Causeway Drive, including the area of Causeway Drive near the Bridge.

10. The dimensions of the Lot, the location of the proposed house, the location of the stormwater discharge pipe, and the location of the adjacent house to the south are depicted on the site plans submitted with the CAMA permit applications for the Lot and lot 14, and are attached as stipulated exhibits.

11. The Lot is 205 feet by 50.5 feet and is 10,295 square feet (0.24 acres) in size, as shown on the attached site plan. The 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 square feet or less for lots with sewer. The proposed house has a footprint of 5,995 square feet, and so the proposed house is not a “small house” as the Commission’s rules have defined that term as a 1,200 square foot footprint in 15A NCAC 7H .0209(d)(10)(I).

12. Part of the Site where the residence is proposed is located in the Estuarine Shoreline and Public Trust Shoreline Areas of Environmental Concern (“AECs”), and so the Site is subject to the Commission’s Setback Rules applicable to Coastal Shorelines found in Rule 15A NCAC 7H.0209(d)(10) (30’ Buffer). The setback for development in the Coastal Shorelines AEC is measured 30' landward from the normal high water level.

13. The Bridge is a four lane concrete bridge with pedestrian walkways. The Town’s 2006 CAMA Land Use Plan notes that “roads are in highest demand during the summer months” and further states that this Bridge, “U.S. 76 is often over capacity on peak summer days.” Table 7.10 shows that in the three years surveyed, the Bridge’s peak day volume was above the design capacity. A copy of the relevant portion of the LUP is attached.

14. On January 7, 2015, US Life Saving Service, LLC applied for a CAMA minor permit for the construction of a home on the Lot with the Town of Wrightsville Beach CAMA Local Permitting Officer (“LPO”). A copy of the permit application and a confirmation email from its Engineer disclosing the percent of impervious surfaces within the AEC are attached as stipulated exhibits. The application was determined to be complete that day.

15. Since the enactment of Session Law 2013-413, publishing notice of a CAMA minor permit application in a local newspaper and waiting 7 days until a permit decision is no longer required by law. Notice to the adjacent riparian owners is still required pursuant to the Commission’s rule at 15A NCAC 7J .0204(b)(5) either by certified mail or “any other method which satisfies the [LPO]”. In this case, notice was posted on site by the LPO on January 7, 2015, and as part of their complete application, US Life Saving Service, LLC submitted certified mail receipts which sent notice to the adjacent riparian owners of the Lot. Also in this case, the LPO has indicated that if this variance is approved, he will require both certified mail notice and posting notice on site before issuing a CAMA permit pursuant to this variance.

16. Later on January 7, 2015, the CAMA LPO for the Town of Wrightsville Beach denied US Life Saving Service, LLC’s CAMA minor permit application due to its inconsistency with the Commission’s 30’ Buffer Rule. A copy of this denial letter is attached as a stipulated exhibit.

17. Also on January 7, 2015, the US Life Saving Service, LLC through counsel, filed this variance petition. Notice of the variance petition was sent to Taylor Investment Properties LLC, the owner of lot 14, and was signed for on January 14, 2015 based on usps.gov tracking. Mr. Anderson Taylor contacted DCM staff with questions about the project after receiving notice of the permit application and of the variance request. Mr. Taylor indicates that he is in support of this variance petition. Notice to the DOT District Engineer had not been delivered as of January 21, 2015, though notice was left on January 10, 2015. A new notice to the DOT Division Engineer and to Mr. Taylor has been sent as of March 26, 2015 notifying them of a rescheduled variance hearing before the CRC. Copies of this new notice and tracking information are attached.

18. In 2007, the Town of Wrightsville Beach adopted Ordinance 1538 entitled “Stormwater Management Ordinance.” The development proposed by Petitioner for the Lot is subject to this ordinance, which includes its own 30-foot setback from the water and a collection requirement for the first 1.5” of water. A copy of the Town of Wrightsville Beach Stormwater Management Ordinance is attached.

19. On January 27, 2015, US Life Saving Service, LLC, who owned the Lot at that time, filed a petition with the Town of Wrightsville Beach for a variance from the 30’ setback provision in the Town’s Stormwater Management Ordinance to allow construction of the house as

proposed in the site plan. The Petition was heard by the Town Board of Adjustment on March 12, 2015 and was granted. Mr. Taylor of lot 14 spoke in favor of the variance at this hearing. A copy of the Petition and of the Order granting the variance is attached as a stipulated exhibit.

20. 15A NCAC 7J .0701(a) states that “[b]efore filing a petition for a variance from a rule of the Commission the person must seek relief from local government requirements restricting use of the property. . .” Petitioners argue that seeking such relief from the local government in this case regarding the town’s street-side setback (as opposed to the 30’ stormwater buffer which was varied by the Town) is moot, largely because the Town has no restriction that would prevent the Petitioner from building where the Petitioner wished to build so nothing is to be gained by requiring the Petitioner to seek a variance from the Town. Petitioner also maintains that if the local government variance requirement in 7J.0701(a) is to encourage an applicant to move development farther from the water or from a vegetation line in order to reduce or eliminate the need for a CAMA variance, this too is inapplicable to the Petitioner’s situation. The Petitioner has adequate room to build a significant structure in compliance with both the Town’s setbacks and the CAMA Shoreline Buffer Rule. The variance is not needed to enable the Petitioner to build a residence; it is needed in order to avoid the hardship of loss of value and utility arising from not being in line with adjacent conforming waterfront residences.

Petitioners’ full response is included in its variance materials. Based on this reasoning and these specific facts, Staff agreed that seeking local relief regarding a variance of the street-side setback was not needed in this case in order for Petitioner to have a complete variance petition.

21. Without a variance from the Commission, the current applicable setbacks of the Commission’s 30’ Buffer Rule would result in a building envelope of approximately 130’ long and approximately 35.5’ wide which results in a possible 4,615 square foot footprint, plus additional area on the south side where the NHWL follows the bulkhead.

22. The Petitioners contend that the proposed residence is designed to provide an enclosed space on the northeast corner of the residence to provide a buffer for the residence from the noise and traffic using the Bridge. The northeast corner of the structure is 30’ or more from the eastern-facing bulkhead but is within the 30’ Buffer when measured from the normal high water level (“NHWL”) that exists on the Return.

23. The area of the proposed residence under roof and within the 30’ Buffer that was provided by the Petitioner’s architect is 454 square feet.

Stipulated Exhibits

- A powerpoint of photographs showing the general area and site, including the stormwater system under the Bridge and the bulkhead return
- Deed to US Life Saving Service, LLC and deed from US Life Saving Service, LLC to the Parkers
- Traffic count data for Bridge from current Town of WB CAMA LUP
- Subdivision map
- CAMA permit application with revised site plan and notice information
- Permit denial letter
- CAMA Major Permit No. 99-14 for bulkhead with site plan for that permit
- Local stormwater ordinance
- USPS green cards or certified mail confirmation of delivery for variance notice, for the February hearing and the April hearing
- CAMA minor permit for lot 14 with site plan
- Variance Petition and signed Order of Wrightsville Beach Board of Adjustment granting a variance from the Town Stormater Ordinance's 30' setback.

Petitioners' and Staff's Positions

ATTACHMENT C

- 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.**

Petitioners' Position: Yes.

Petitioner's argument: The requirement for the residence to be located 30' from the normal high water level imposes an unnecessary hardship on the Petitioner because it will prevent the Petitioner from constructing the waterfront portion of the residence in line with the adjacent residence to the south. Compliance with the 30' setback on the northeast portion of the Petitioner's lot would cause the Petitioner to lose an extremely desirable and valuable view to the south from this portion of the Petitioner's lot. It will also prevent the Petitioner from creating a buffer to mitigate the noise from traffic from the Causeway Drive Bridge. This hardship is unnecessary because the goals and purposes of the coastal shoreline's buffer can be achieved by an engineered stormwater system that will have the same or better control over stormwater entering the adjacent waters. Any stormwater runoff from the Petitioner's lot is totally insignificant in view of the huge amount of stormwater being discharged through the DOT stormwater system immediately adjacent to the Petitioner's lot. The Petitioner could build a house that meets the coastal shoreline setback but the Petitioner would lose a significant and valuable view that is enjoyed by the lot owners to the south whose lots are in the same subdivision.

Staff's Position: Yes.

Staff disagrees with Petitioners that a loss of "an extremely desirable and valuable view" (due to the strict application of the 30-foot buffer) should be considered an unnecessary hardship. However, the proposed design of this structure is also intended to improve privacy and reduce noise impacts from traffic on the adjacent Causeway Drive Bridge. For this reason alone, staff finds that a strict application of the shoreline buffer rules in this case would create an unnecessary hardship for the petitioners.

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.

Petitioner's argument: The Petitioner's property lies adjacent to the North Carolina Department of Transportation (DOT) Causeway Drive bridge over Banks Channel at Wrightsville Beach. The DOT stormwater collection system for the Causeway Drive area near the bridge is discharged through a pipe under the bridge near the Petitioner's north property line. The discharge has caused erosion along the return bulkhead on the north boundary of the Petitioner's property thereby creating a peculiar situation regarding the location of the normal high water level. Generally all of the bulkheaded waterfront lots on Banks Channel form a continuous bulkhead that is more or less parallel to the body of water. The Petitioner's east facing bulkhead takes a right angle turn where it reaches the bridge thereby providing the opportunity for erosion under the bridge due in part to DOT's stormwater discharge pipe. The lack of a continuous bulkhead due to the Causeway Drive Bridge makes this property peculiar.

Staff's Position: Yes.

Staff agrees that Petitioners' hardship of the irregularly shaped northeast corner of their lot is a condition peculiar to Petitioners' property. As noted by Petitioners above, the DOT stormwater discharge at the causeway seems to have caused erosion to Petitioners' property, resulting in the irregular shape and the resulting normal high water level which cuts the northeast corner of the lot.

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

Petitioners' Position: No.

Petitioner's argument: The hardship results from application of the Coastal Shoreline Buffer Rule to the peculiar shoreline of the Petitioner's lot. The Petitioner has taken no action that caused the peculiar shoreline.

Staff's Position: No.

While staff notes that Petitioners could have designed a house for the lot while avoiding the buffer, Staff agrees that the erosion and resulting irregularly-shaped normal high water level on the northeast corner of Petitioners' lot was not caused by any actions taken by Petitioners, and occurred before their purchase of the lot, and so Petitioners came to the lot with the existing location of the normal high water level and resulting 30-foot buffer.

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.

Petitioner's argument:

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

The management objective for the Coastal Shoreline AEC is to "ensure that shoreline development is compatible with the dynamic nature of coastal shorelines as well as the management objectives of the estuarine and ocean systems." 7H.0209(c). The Petitioner's shoreline is already bulkheaded so protection of the development from a dynamic shoreline is not a concern. Although not specifically stated in the CRC Rule, another objective of the Rule is to provide a natural buffer to allow stormwater to be absorbed and filtered before reaching public trust waters. The Petitioner will install an engineered stormwater collection and disposal system to meet State and Town stormwater rules. The inclusion of this engineered system as part of the development will assure that the project will meet the purposes of the rule regarding stormwater control.

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

The development will have no affect on public safety and welfare.

- **Preserve substantial justice.**

Justice will be preserved by allowing the Petitioner to enjoy the same valuable waterfront views as the other waterfront lots along the Banks Channel shoreline.

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, and will secure public safety and welfare as long as Petitioners are made to install an engineered stormwater collection and disposal system which meets State and Town stormwater rules. Doing so will 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)

WESSELL & RANEY, L.L.P.
ATTORNEYS AT LAW
POST OFFICE BOX 1049
WILMINGTON, NORTH CAROLINA 28402-1049

JOHN C. WESSELL, III
WESSELL@BELLSOUTH.NET

WILLIAM A. RANEY, JR.
WARANEY@BELLSOUTH.NET

STREET ADDRESS:
107-B NORTH 2ND STREET
WILMINGTON, NC 28401

TELEPHONE: 910-762-7475
FACSIMILE: 910-762-7557

January 7, 2014

Via email and fax (252-247-3330)

Mr. Braxton Davis


Re: Variance Petition – U.S. Life Saving Service, LLC

Dear Mr. Davis:

The following Variance Petition on behalf of U.S. Life Saving Service, LLC is submitted for consideration by the Coastal Resources Commission. I request that this Variance be scheduled for the February meeting of the CRC. A copy has been provided to the Environmental Division of the Attorney General's office.

Very truly yours,

WESSELL & RANEY, L.L.P.



W. A. Raney, Jr.

WAR:dc
Enclosures
WAR\enviro\14-084-C03

CAMA VARIANCE REQUEST FORM

DCM FORM 11

DCM FILE No.: _____

PETITIONER'S NAME: U.S. Life Saving Services, LLC

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(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:

- 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;
- A complete description of the proposed development including a site plan;
- A stipulation that the proposed development is inconsistent with the rule at issue;
- Proof that notice was sent to adjacent owners and objectors*, as required by 15A N.C.A.C. 07J .0701(c)(7);
- NA* Proof that a variance was sought from the local government per 15A N.C.A.C. 07J .0701(a), if applicable; (See Petition)
- Petitioner's written reasons and arguments about why the Petitioner meets the four variance criteria, listed above;
- 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.

**Please contact DCM or the local permit officer for a full list of comments received on your permit application. Please note, for CAMA Major Permits, the complete permit file is kept in the DCM Morehead City Office.*

Due to the above information and pursuant to statute, the undersigned hereby requests a variance.

W. A. Raney, Jr.
Signature of Petitioner or Attorney

1-7-15
Date

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

wraney@wessellraney.com
Email address of Petitioner or Attorney

PO Box 1049
Mailing Address

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

Wilmington, NC 28402
City State Zip

(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:

Contact Information for Attorney General's Office:

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

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

By Fax:
(252) 247-3330

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

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

By Fax:
(919) 716-6767

Revised: July 2014

U.S. LIFE SAVING SERVICE, LLC VARIANCE

VARIANCE PETITION

NARRATIVE

The project consists of a single family residence on a bulkheaded waterfront lot at 1 Auditorium Circle, Wrightsville Beach, North Carolina. The lot is bounded on the north by Causeway Drive and a portion of the Causeway Drive bridge over Banks Channel. The lot dimensions are 205' x 50.5'. The applicant has been issued CAMA Major Development Permit and Dredge and Fill Permit 99-14 for replacement of a bulkhead and improvements to existing docking facilities. The variance request relates to the construction of a proposed residence on the lot. The residence has an interior floor area of 7,350 square feet and is situated on the lot in line with the adjacent house to the south in order to maximize the water view which is one of the most valuable aspects of the lot. The bulkhead has a return along the north boundary of the lot which borders Causeway Drive and the Causeway Drive bridge. Stormwater drainage from Causeway Drive is directed through a storm sewer pipe that discharges under the bridge near the bulkhead return. The stormwater discharge has scoured the area at the base of the bulkhead and has affected the location of the high water line at the bulkhead. The residence will be 30' from the normal high water line at the bulkhead along Banks Channel. The northeast corner of the proposed house is proposed to be located within 30' of the bulkhead return adjacent to the bridge where the base of the bulkhead has been eroded by the stormwater discharge.

WAR\enviro\NR14-084-002

**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 requirement for the residence to be located 30' from the normal high water level imposes an unnecessary hardship on the Petitioner because it will prevent the Petitioner from constructing the waterfront portion of the residence in line with the adjacent residence to the south. Compliance with the 30' setback on the northeast portion of the Petitioner's lot would cause the Petitioner to lose an extremely desirable and valuable view to the south from this portion of the Petitioner's lot. It will also prevent the Petitioner from creating a buffer to mitigate the noise or traffic from the Causeway Drive Bridge. This hardship is unnecessary because the goals and purposes of the coastal shoreline's buffer can be achieved by an engineered stormwater system that will have the same or better control over stormwater entering the adjacent waters. Any stormwater runoff from the Petitioner's lot is totally insignificant in view of the huge amount of stormwater being discharged through the DOT stormwater system immediately adjacent to the Petitioner's lot. The Petitioner could build a house that meets the coastal shoreline setback but the Petitioner would lose a significant and valuable view that is enjoyed by the lot owners to the south whose lots are in the same subdivision.

- (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 adjacent to the North Carolina Department of Transportation (DOT) Causeway Drive bridge over Banks Channel at Wrightsville Beach. The DOT stormwater collection system for the Causeway Drive area near the bridge is discharged through a pipe under the bridge near the Petitioner's north property line. The discharge has caused erosion along the return bulkhead on the north boundary of the Petitioner's property thereby creating a peculiar situation regarding the location of the normal high water level. Generally all of the bulkheaded waterfront lots on Banks Channel form a continuous bulkhead that is more or less parallel to the body of water. The Petitioner's east facing bulkhead takes a right angle turn where it reaches the bridge thereby providing the opportunity for erosion under the bridge due in part to DOT's stormwater discharge pipe. The lack of a continuous bulkhead due to the Causeway Drive Bridge makes this property peculiar.

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

Petitioner's position: No.

Petitioner's argument: The hardship results from application of the Coastal Shoreline Buffer Rule to the peculiar shoreline of the Petitioner's lot. The Petitioner has taken no action that caused the peculiar shoreline.

(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 management objective for the Coastal Shoreline AEC is to "ensure that shoreline development is compatible with the dynamic nature of coastal shorelines as well as the management objectives of the estuarine and ocean systems." 7H.0209(c). The Petitioner's shoreline is already bulkheaded so protection of the development from a dynamic shoreline is not a concern. Although not specifically stated in the CRC Rule, another objective of the Rule is to provide a natural buffer to allow stormwater to be absorbed and filtered before reaching public trust waters. The Petitioner will install an engineered stormwater collection and disposal system to meet State and Town stormwater rules. The inclusion of this engineered system as part of the development will assure that the project will meet the purposes of the rule regarding stormwater control.

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

The development will have no affect on public safety and welfare.

- **Preserve substantial justice.**

Justice will be preserved by allowing the Petitioner to enjoy the same valuable waterfront views as the other waterfront lots along the Banks Channel shoreline.

ATTACHMENT E

STIPULATED EXHIBITS:

- A powerpoint of photographs showing the general area and site, including the stormwater system under the Bridge and the bulkhead return
- Deed to US Life Saving Service, LLC and deed from US Life Saving Service, LLC to the Parkers
- Traffic count data for Bridge from current Town of WB CAMA LUP
- Subdivision map
- CAMA permit application with revised site plan and notice information
- Permit denial letter
- CAMA Major Permit No. 99-14 for bulkhead with site plan for that permit
- Local stormwater ordinance
- USPS green cards or certified mail confirmation of delivery for variance notice, for the February hearing and the April hearing
- CAMA minor permit for lot 14 with site plan
- Variance Petition and signed Order of Wrightsville Beach Board of Adjustment granting a variance from the Town Stormater Ordinance's 30' setback.

2
26
1340-RS



FOR REGISTRATION REGISTER OF DEED
TAMMY THEUSCH BEASLEY
NEW HANOVER COUNTY, NC
2013 SEP 12 01 57 29 PM
BK 5769 PG 150-152 FEE \$26 00
NC REV STAMP \$1,340 00
INSTRUMENT # 2013033208

NORTH CAROLINA SPECIAL WARRANTY DEED

Excise Tax \$1,340 00

Parcel ID# R06308-027-006-000

This deed was prepared by Kirsten E Foyles, Esq , 340 Commerce Ave , 17B, Southern Pines, NC 28387

Mail after recording to _____ **NO OPINION ON TITLE REQUESTED OR GIVEN**

THIS DEED made this 5th day of September, 2013, by and between

GRANTOR: FIRST TROY SPE, LLC
A North Carolina Limited Liability Company
340 Commerce Ave , Ste 17B, Southern Pines, NC 28387

And

GRANTEE: U.S. LIFE SAVING SERVICE, LLC
A North Carolina Limited Liability Company
PO Box 1612, Wrightsville Beach, NC 28480

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, all that certain lot or parcel of land situated in New Hanover County, North Carolina and more particularly described as follows

ALL OF LOT 15, OF THE AUDITORIUM TRACT, SHORE ACRES, Wrightsville Beach, New Hanover County, North Carolina, as the same are shown on a plat by Lewis L Merritt, dated July 19, 1940, and recorded in Book 290, Page 597, of the New Hanover County Registry, to which plat reference is made for a more particular description

TOGETHER WITH all of Grantor's right, title and interest in and to the dock, pier and boat slip, appurtenant to the above described property

Returned To:
*** MARSHALL WILLIAMS & GORHAM, LLP**

The property hereinabove described was acquired by Grantor in instruments recorded in **Book 5727, Page 622**, New Hanover County Registry

All or a portion of the property herein conveyed does not include the primary residence of a Grantor

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 has done nothing to impair such title as Grantor received, and Grantor will warrant and defend the title against the lawful claims of all persons claiming by, under or through Grantor, except for the exceptions hereinafter stated

1. Easements, Rights of Way, Restrictions and Encumbrances of record.

Pursuant to *Article VI Sec. 6.1 (a) of the Operating Agreement of First Troy SPE, LLC dated November 16, 2009*, the management and control of the business and affairs of said LLC is vested in its' Board of Directors, each member of whom constitutes a manager of the LLC. Pursuant to *Article VI Sec. 6.12 (a)*, the Board of Directors may, from time to time, designate and/or employ one or more individuals to be officers of the Company. ...the officers of the Company shall have the authority to pursue the business and purpose of the Company, including without limitation the authority to (i) acquire and retain for any period of time, any real or personal property, or interest in such property; (ii) sell, exchange, quitclaim, convert, partition, grant an option on, abandon or otherwise dispose of all or any part of any real or personal property or any interest in such property;... By *Resolution dated June 26, 2013*, the signing officer herein was authorized and empowered to execute instruments on behalf of the LLC and such power remains in full force and effect as of the date hereof.

IN WITNESS WHEREOF, the Grantor has caused this instrument to be executed in its company name by its duly authorized Vice President the day and year first above written

FIRST TROY SPE, LLC

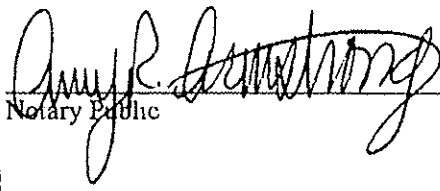
BY  (SEAL)
KIRSTEN E. FOYLES, *Vice President*

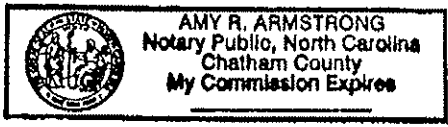
NORTH CAROLINA, CHATHAM COUNTY

I, Amy R. Armstrong, a Notary Public of the County and State aforesaid do hereby certify that KIRSTEN E. FOYLES, Vice President, for **FIRST TROY SPE, LLC**, a North Carolina Limited Liability Company, personally appeared before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein expressed being authorized to do so on behalf of the company

Witness my hand and official stamp or seal, this 5th day of September, 2013

My commission expires July 4, 2015
SEAL


Notary Public



2015



FOR REGISTRATION REGISTER OF DEEDS
TAMMY THEUSCH BEASLEY
NEW HANOVER COUNTY, NC
2015 MAR 12 04 22.32 PM
BK 5873 PG 2065-2068 FEE.\$26 00

INSTRUMENT # 2015006641

WARRANTY DEED

REVENUE STAMPS \$ -0-
TAX PARCEL NUMBER R06308-027-006-000
GRANTEE'S ADDRESS Christopher B Parker
PO Box 1612
Wrightsville Beach, NC 28480
Lettered To:
PREPARED BY MARSHALL, WILLIAMS & GORHAM, LLP
P O. Drawer 2088, Wilmington, NC 28402
BRIEF DESCRIPTION Lot 15, Auditorium Tract, Shore Acres

All or a portion of the property herein conveyed ___ includes or X does not include the primary residence of a Grantor

STATE OF NORTH CAROLINA
COUNTY OF NEW HANOVER

WARRANTY DEED

THIS DEED, made and entered into this ___ day of March, 2015, by and between U.S. LIFE SAVING SERVICE, LLC (a North Carolina limited liability company), with an address of PO Box 1612, Wrightsville Beach, NC 28480, hereinafter called GRANTOR, and

CHRISTOPHER B. PARKER and wife, ALISON B. PARKER, hereinafter called GRANTEE (the designations Grantor and Grantee as used herein shall include said parties and their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine, or neuter, as required by context)

WITNESSETH

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 real property located in New Hanover County, North Carolina, and more particularly described as follows:

All of Lot 15 of the Auditorium Tract, Shore Acres, Wrightsville Beach, New Hanover County, North Carolina, as the same is shown on a plat by Lewis L. Merritt, dated July 19, 1940, and recorded in Book 290, Page 597, of the New Hanover County Registry, to which plat reference is made for a more particular description

TO HAVE AND TO HOLD the above granted and described property, together with all privileges, easements, tenements and appurtenances thereto belonging, to the GRANTEE in fee simple

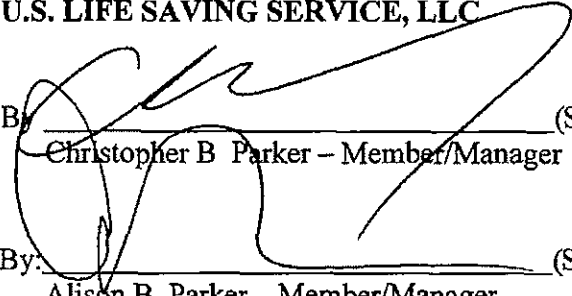
And the GRANTOR covenants with the GRANTEE, that the GRANTOR is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that GRANTOR will warrant and defend the title against the lawful claims of all persons whomsoever, except for the exceptions hereinafter stated. Title to the property hereinabove described is subject to the following exceptions.

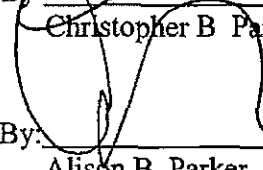
- 1 Ad valorem taxes for the year 2015 and subsequent years,
- 2 Utility easements and street rights-of-way of record;
3. Applicable restrictive covenants of record, and
- 4 Local, county, state, and federal government laws and regulations relative to zoning, subdivision, occupancy, use, construction, and development of the subject property

IN TESTIMONY 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

U.S. LIFE SAVING SERVICE, LLC

By:  (SEAL)
Christopher B Parker – Member/Manager

By:  (SEAL)
Alison B Parker – Member/Manager

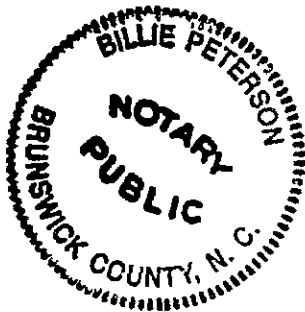
STATE OF NORTH CAROLINA


COUNTY OF New Hanover

I, Billie Peterson, a Notary Public of Brunswick County, North Carolina, do hereby certify that **Christopher B. Parker**, Member/Manager, and **Alison B. Parker**, Member/Manager, each personally appeared before me and acknowledged that he/she is Member/Manager of **U.S. Life Saving Service, LLC (a North Carolina limited liability company)**, and that by authority duly given and as the act of the company, he/she voluntarily signed the foregoing instrument for the purposes stated therein and in the capacity indicated.

WITNESS my hand and official seal or stamp, this 27th day of March, 2015

[NOTARY SEAL]




Signature of Notary Public

Billie Peterson
Printed or Typed Name of Notary Public

My Commission Expires. 8-29-19



TAMMY THEUSCH BEASLEY
REGISTER OF DEEDS, NEW HANOVER
216 NORTH SECOND STREET

WILMINGTON, NC 28401

Filed For Registration: 03/12/2015 04:22:32 PM
Book: RE 5873 Page: 2065-2068
Document No.: 2015006641
4 PGS \$26.00
Recorder: CRESWELL, ANDREA

State of North Carolina, County of New Hanover

PLEASE RETAIN YELLOW TRAILER PAGE WITH ORIGINAL DOCUMENT.

2015006641

2015006641

Table 7.10: Estimated Peak Traffic Volumes (1990 – 2003)

Road	Estimated Peak Day Volume			Design Capacity	Peak Percent Use		
	1990	1996	2003		1990	1996	2003
ICW Bridge	45,030	52,000	44,785	50,000	90.1	104.0	89.6
U.S. 74	14,315	20,800	17,914	35,000	40.9	59.4	51.2
U.S. 76	24,462	31,200	26,871	20,000	122.3	156.0	134.3
Waynick Blvd.	12,684	19,600	14,780	28,000	45.3	70.0	52.8

notifies the operator when an ambulance is approaching the bridge. Police also notify the bridge operator when there is fire, police or a medical emergency that requires highway access across the bridge. Under these emergency circumstances, the bridge operator will not open the bridge until the emergency has been cleared.

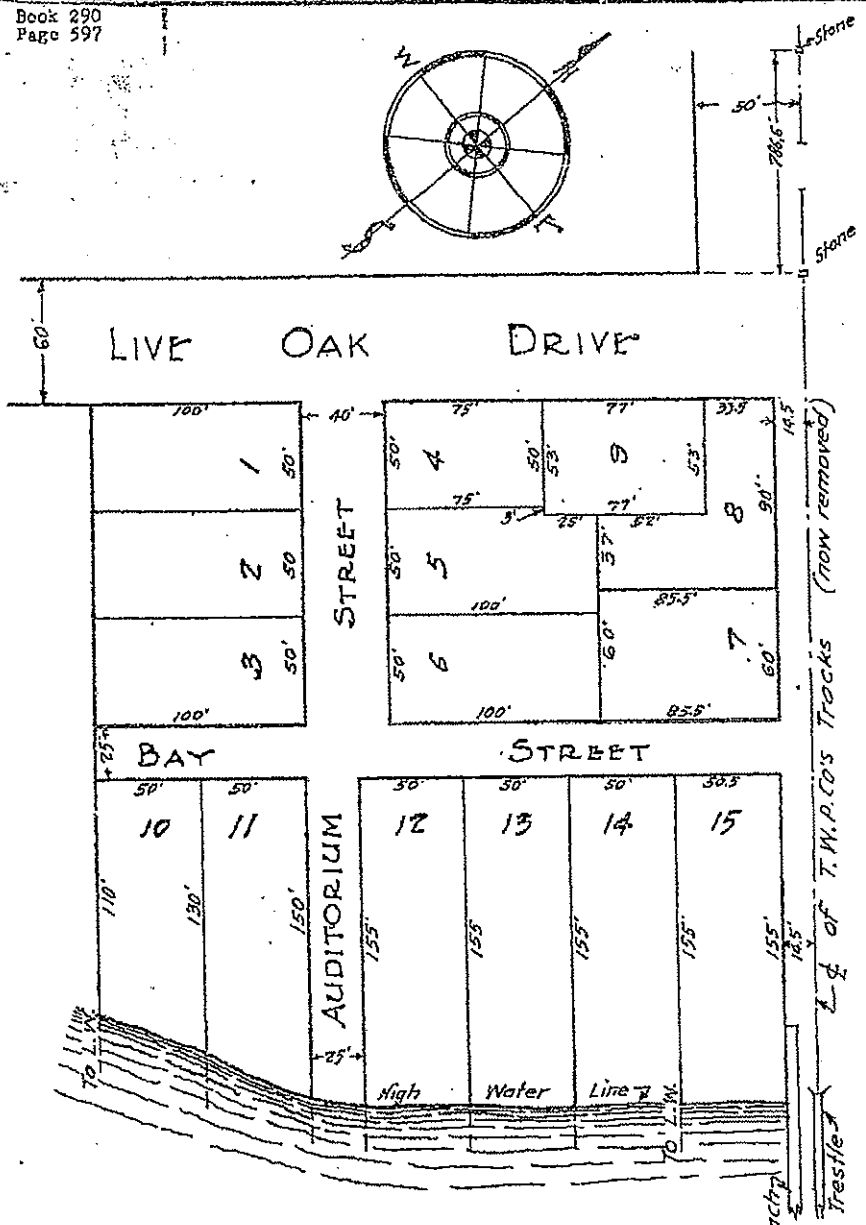
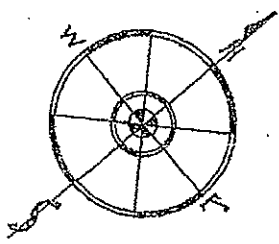
Should the bridge become inoperable because of mechanical problems or other reasons, many beach-goers or resident travelers could find themselves stranded on the beach. The Town's police and fire departments maintain radio contact with the bridge and can assist with minor repairs. In 2004, major maintenance was completed on the bridge. It is not expected that major repairs will become necessary in the near future.

7.6.B Traffic Counts and Roadway Design Capacity

Like other facilities, roads are in highest demand during the summer months. Table 7.10 shows the estimated peak day traffic volumes for 1990, 1996 and 2003. Compared to the maximum design capacities, Waynick Blvd and U.S. 74 appear to have excess capacities. However, the ICW bridge approaches capacity on peak summer days. U.S. 76 is often over capacity on peak summer days.

It appears that the main thoroughfares have sufficient capacity to handle traffic during most periods through the year 2013. However, traffic congestion during certain peak periods will continue to occur, particularly during the summer months. The periodic congestion is likely to remain a fact of life for residents and visitors because there are no easy or inexpensive solutions to the problem given inherent limitations associated with the drawbridge. Nevertheless, further study of roadway, traffic, and parking issues is warranted.





BANKS CHANNEL

NORTH CAROLINA, NEW HANOVER COUNTY.

Personally appeared before me Lewis L. Merritt, C.E. who being duly sworn, says that this map is true and correct to the best of his knowledge and belief, Magnetic variation 3°35' West. Let this instrument and certificate be recorded.
July 26, 1940.

A. L. Mansford
Asst. Clerk Superior Court

AUDITORIUM TRACT — SHORE ACRES —

New Hanover Co., N.C.

Surveyed July 12, 1940.

Scale 1"=50'

Lewis L. Merritt, C.E.

LUMINA INC. OWNERS.

SITE DRAWING/APPLICATION CHECKLIST

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

PHYSICAL DIMENSIONS

- Label roads
- Label highways right-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 dune ridges (include spot elevations)
- Draw and label toe of dunes
- Identify and locate first line of stable vegetation (contact 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 the 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 30-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)

FOR STAFF USE

Site Notice Posted 1/7 Final Inspection Fee Received

Site Inspections

Date of Action: Issued Exempted Denied Appeal Deadline (20 days from permit action) _____



**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 that 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

APPLICATION | Auditorium Circle | LOCALITY | Town of Watauga Beach | PERMIT ISSUED USING
 W 815-01 | STATUTE EXCEPTION? YES NO

Locality Town of Wrightsville Beach Permit Number WB15-01

Ocean Hazard _____ Estuarine Shoreline ORW Shoreline _____ Public Trust Shoreline _____ Other _____

(For official use only)

GENERAL INFORMATION

LAND OWNER

Name Christopher Parker - U.S. Life Saving Service, LLC

Address P.O. Box 1612

City Wrightsville Beach State NC Zip 28480 Phone 910-256-4229

Email chris@parkerconstructiongroup.com

AUTHORIZED AGENT

Name Frank Braxton - Coastal Land Design, PLLC

Address P.O. Box 1172

City Wilmington State NC Zip 28402 Phone 910-254-9333 x 1003

Email fbraxton@cldeng.com

LOCATION OF PROJECT: (Address, street name and/or directions to site. If not oceanfront, what is the name of the adjacent waterbody.) 1 Auditorium Circle, Wrightsville Beach, NC : Banks Channel

DESCRIPTION OF PROJECT: (List all proposed construction and land disturbance.) Proposed Single Family F

SIZE OF LOT/PARCEL: 10,295 square feet 0.2363 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 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: 6,358 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 NC

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 U.S. Life Saving Service LLC, see Deed Book 5769 page 0150 in the New Hanover County Registry of Deeds.

an owner by virtue of inheritance. Applicant is an heir to the estate of _____; probate 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:

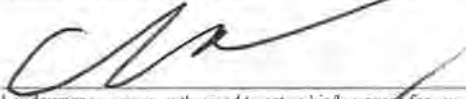
I furthermore certify that the following persons are owners of properties adjoining this property. I affirm that I have given ACTUAL NOTICE to each of them concerning my intent to develop this property and to apply for a CAMA permit.

- | (Name) | (Address) |
|--|--|
| (1) <u>Taylor Investment Properties, LLC</u> | <u>3 Auditorium Circle, Wrightsville Beach, NC 28480</u> |
| (2) <u>NCDOT - Benjamin Hughes</u> | <u>300 Division Dr., Wilmington, NC 28401</u> |
| (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 7th day of July, 2015

 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 AEC without permit is subject to civil, criminal and administrative action.



January 7, 2015

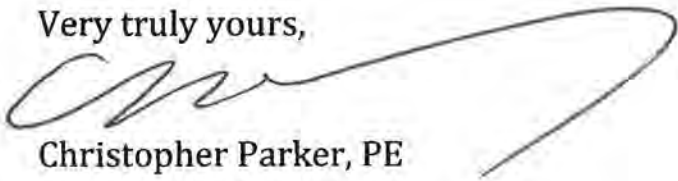
NC Department of Transportation
Benjamin T. Hughes, PE
300 Division Drive
Wilmington, NC 28401

Benjamin,

This letter is to inform you that U.S. Life Saving Service, LLC has applied for a CAMA Minor Permit to construct a new single family dwelling on their property located at 1 Auditorium Circle in Wrightsville Beach, NC. As required by CAMA regulations, I have enclosed a copy of the permit application and site plan as notification of the proposed project. No action is required from you. If you have any questions or comments about the proposed project, please contact me at 910-367-8739, or by mail at the address listed below. If you wish to file written comments or objections with the Town of Wrightsville Beach CAMA Minor Permit Program, you may submit them to:

Zach Steffey
Local Permit Officer for
Town of Wrightsville Beach
321 Causeway Drive
Wrightsville Beach, NC 28480

Very truly yours,



Christopher Parker, PE

Parker Construction Group
2030 Eastwood Road Ste 10b
Wilmington, NC 28403

www.parkerconstructiongroup.com



January 7, 2015

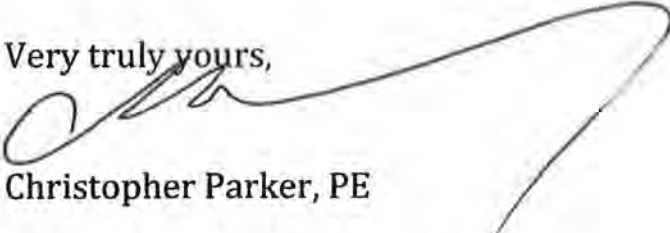
Taylor Investment Properties, LLC
Anderson Taylor
3 Auditorium Circle
Wrightsville Beach, NC 28480

Anderson,

This letter is to inform you that U.S. Life Saving Service, LLC has applied for a CAMA Minor Permit to construct a new single family dwelling on their property located at 1 Auditorium Circle in Wrightsville Beach, NC. As required by CAMA regulations, I have enclosed a copy of the permit application and site plan as notification of the proposed project. No action is required from you. If you have any questions or comments about the proposed project, please contact me at 910-367-8739, or by mail at the address listed below. If you wish to file written comments or objections with the Town of Wrightsville Beach CAMA Minor Permit Program, you may submit them to:

Zach Steffey
Local Permit Officer for
Town of Wrightsville Beach
321 Causeway Drive
Wrightsville Beach, NC 28480

Very truly yours,


Christopher Parker, PE

Parker Construction Group
2030 Eastwood Road Ste 10b
Wilmington, NC 28403

www.parkerconstructiongroup.com

AEC HAZARD NOTICE

Project Is In An: Ocean Erodible Area High Hazard Flood Area Inlet Hazard Area

Property Owner: US Life Savings Service, LLC

Property Address: 1 Audubon Circle Wrightsville Beach, NC

Date Lot Was Platted: 1/6/72

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 N/A 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 N/A feet landward in a major storm.

The flood waters in a major storm are predicted to be about 15 feet deep in this area.

Preferred oceanfront protection measures are beach nourishment and relocation of threatened structures. Hard erosion control 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. Permits 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.

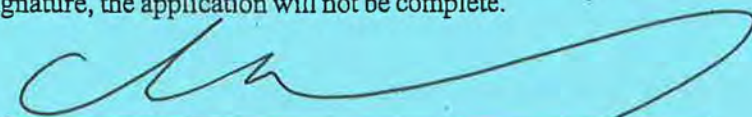
For more information, contact:

Zachary Steffey
Local Permit Officer

321 Causeway Drive
Address

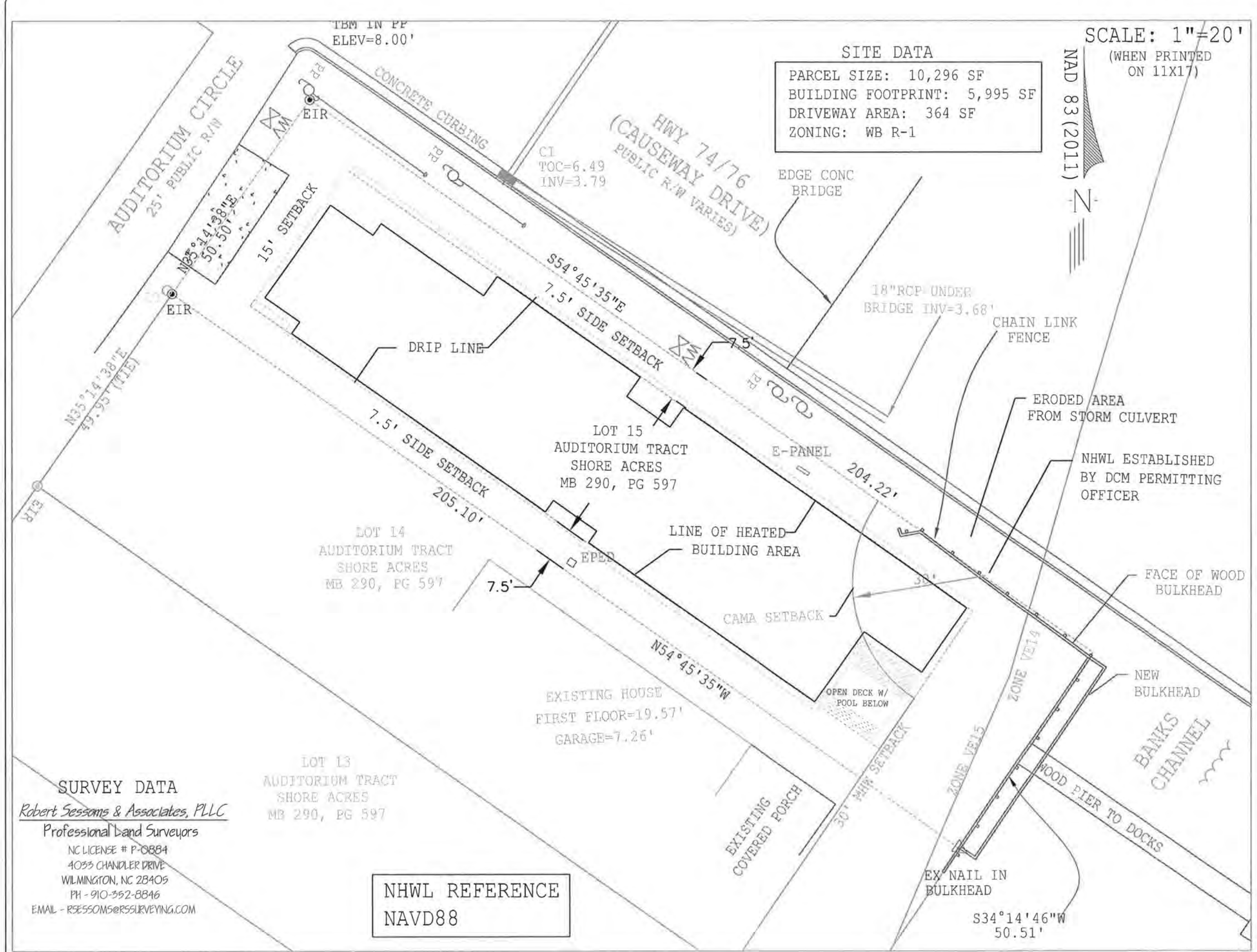
Town of Wrightsville Beach
Locality

910-239-1748
Phone Number



Property Owner's Signature

Date



SITE DATA
 PARCEL SIZE: 10,296 SF
 BUILDING FOOTPRINT: 5,995 SF
 DRIVEWAY AREA: 364 SF
 ZONING: WB R-1

SCALE: 1"=20'
 (WHEN PRINTED ON 11X17)



LEGEND:

REV. #	DESCRIPTION	REV. BY	DATE
REVISIONS			

CHRISTOPHER PARKER
 US LIFE SAVING SERVICE, LLC
 P.O. BOX 1612
 WRIGHTSVILLE BEACH, NC 28480
 910.256.4229

Coastal Land Design, PLLC
 Civil Engineering / Landscape Architecture
 Land Planning / Construction Management
 NCEM's Fire License No. P-0884
 P.O. Box 1122, Wilmington, NC 28405
 Phone: 910-254-0231, Fax: 910-254-0232

DRAWN: P. BRAYTON	PROJECT: 000-01
DESIGN: J. BRAYTON	NUMBER: 000-01
CHECK: J. BRAYTON	SCALE: 1"=20'
APPROVED: P. BRAYTON	DATE: 06 JAN 15
FILE NAME:	

PARKER STATION
 1 AUDITORIUM CIRCLE

CAMA SUBMITTAL
SITE PLAN

000-01	SD-1
--------	------

SURVEY DATA
 Robert Sessoms & Associates, PLLC
 Professional Land Surveyors
 NC LICENSE # P-0884
 4033 CHANDLER DRIVE
 WILMINGTON, NC 28405
 PH - 910-352-8846
 EMAIL - RSSESSOMS@RSSSURVEYING.COM

NHWL REFERENCE
 NAVD88

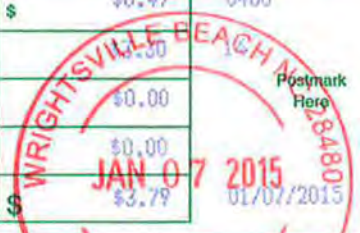
7014 1200 0000 3192 5782

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Total Postage & Fees	\$	\$3.79	



Sent To: *Taylor Investment Properties, LLC*
 Street, Apt. No., or PO Box No.: *3 Anderson Circle*
 City, State, ZIP+4: *Wrightsville Beach, NC 28480*

PS Form 3800, August 2006 See Reverse for Instructions

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Total Postage & Fees	\$	\$3.79	



Sent To: *NKDOT*
 Street, Apt. No., or PO Box No.: *300 Duxin Pl.*
 City, State, ZIP+4: *Wilmington, NC 28401*

PS Form 3800, August 2006 See Reverse for Instructions



TOWN OF WRIGHTSVILLE BEACH

PLANNING AND PARKS • 321 CAUSEWAY DRIVE • P.O. BOX 626
WRIGHTSVILLE BEACH, N.C. 28480 • 910-256-7937

January 7, 2015

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Christopher Parker

P.O. Box 1612

Wrightsville Beach, NC 28480

RE: Denial of CAMA Minor Development Permit Application #WB15-01

1 Auditorium Circle, Wrightsville Beach, NC 28480


Dear Mr. Christopher Parker:

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 and Local Land Use Plans. You have applied to construct a new single family dwelling that encroaches in the 30 foot buffer, which is inconsistent with 15A NCAC 07H.0209, which states that: 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 (see attached 15A NCAC 07H.0209 d.10 A-J).

Should you wish to appeal my decision to the Coastal Resources 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 Morehead City Headquarters Office must receive appeal notices within twenty (20) days of the date of this letter in order to be considered.

Respectfully yours,


Zachary Steffey, LPO

Town of Wrightsville Beach

Wrightsville Beach, NC 28480

cc: Robb Mair's, DCM Field Rep. Wilmington Office

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DCM WILMINGTON, NC

JAN 08 2015

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- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
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1. Article Addressed to:

N.C. Department of Transportation
 Attn: District Engineer
 300 Division Drive
 Wilmington, NC 28401

2. Article Number
(Transfer from service label)

7012 2210 0001 2434 5714

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

 Agent Addressee

B. Received by (Printed Name)

C. Date of Delivery

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4. Restricted Delivery? (Extra Fee)

 Yes**SENDER: COMPLETE THIS SECTION**

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1. Article Addressed to:

Taylor Investment Properties LLC
 110 Oakwood Drive, Suite 530
 Winston-Salem, NC 27103-1958

2. Article Number
(Transfer from service label)

7012 2210 0001 2434 5721

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

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 Agent Addressee

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C. Date of Delivery

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type

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4. Restricted Delivery? (Extra Fee)

 Yes

WESSELL & RANEY, L.L.P.
ATTORNEYS AT LAW
POST OFFICE BOX 1049
WILMINGTON, NORTH CAROLINA 28402-1049

JOHN O. WESSELL, III
WESSELL@BELLSOUTH.NET

WILLIAM A. RANEY, JR.
WARANKY@BELLSOUTH.NET

STREET ADDRESS:
107-B NORTH 2ND STREET
WILMINGTON, NC 28401

TELEPHONE: 910-762-7475
FACSIMILE: 910-762-7557

January 7, 2015

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

7012 2210 0001 2434 5721

Taylor Investment Properties LLC
110 Oakwood Drive, Suite 530
Winston-Salem, NC 27103-1958

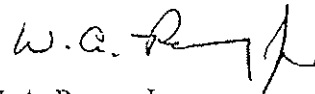
Re: CAMA Variance Request by U.S. Life Saving Service, LLC

Dear Property Owner:

This is to notify you that U.S. Life Saving Service, LLC is applying for a variance from the North Carolina Coastal Resources Commission to allow construction of a single family residence on its lot at 1 Auditorium Circle, Wrightsville Beach, North Carolina. A copy of the site plan is enclosed for your information. The variance is projected to be heard at the February 18-19, 2015, 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 U.S. Life Saving Service, LLC

WAR:ktw
Enclosure
WAR\ENVIRON\NR14-084-C01

English

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Customer Service ›
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Updated Delivery Day: Friday, January 9, 2015

Product & Tracking Information

Postal Product:

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Email Updates

Return Receipt After Mailing

DATE & TIME	STATUS OF ITEM	LOCATION
January 14, 2015 , 9:34 am	Delivered	WINSTON SALEM, NC 27103

Your item was delivered at 9:34 am on January 14, 2015 in WINSTON SALEM, NC 27103.

January 9, 2015 , 9:40 am	Notice Left (No Authorized Recipient Available)	WINSTON SALEM, NC 27103
January 9, 2015 , 8:11 am	Arrived at Unit	WINSTON SALEM, NC 27103
January 9, 2015 , 2:04 am	Departed USPS Facility	GREENSBORO, NC 27498
January 8, 2015 , 2:45 pm	Arrived at USPS Facility	GREENSBORO, NC 27498
January 8, 2015 , 4:04 am	Departed USPS Facility	FAYETTEVILLE, NC 28302
January 7, 2015 , 9:53 pm	Arrived at USPS Facility	FAYETTEVILLE, NC 28302

*Notice to
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Properties LLC
Lot 14*

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WESSELL & RANEY, L.L.P.
ATTORNEYS AT LAW
POST OFFICE BOX 1049
WILMINGTON, NORTH CAROLINA 28402-1049

JOHN C. WESSELL, III
WESSELL@BELLSOUTH.NET

WILLIAM A. RANEY, JR.
WARANEY@BELLSOUTH.NET

STREET ADDRESS:
107-B NORTH 2ND STREET
WILMINGTON, NC 28401

TELEPHONE: 910-762-7475
FACSIMILE: 910-762-7557

January 7, 2015

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

7012 2210 0001 2434 5714

N.C. Department of Transportation
Attn: District Engineer
300 Division Drive
Wilmington, NC 28401

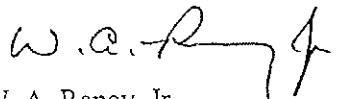
Re: CAMA Variance Request by U.S. Life Saving Service, LLC

Dear Property Owner:

This is to notify you that U.S. Life Saving Service, LLC is applying for a variance from the North Carolina Coastal Resources Commission to allow construction of a single family residence on its lot at 1 Auditorium Circle, Wrightsville Beach, North Carolina. A copy of the site plan is enclosed for your information. The variance is projected to be heard at the February 18-19, 2015, 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 U.S. Life Saving Service, LLC

WAR:ktw
Enclosure
WAR\ENVIRON\R14-084-C02

English

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Tracking Number: 70122210000124345714

Updated Delivery Day: Saturday, January 10, 2015

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Available Actions

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Features:
Certified Mail™

Text Updates

Email Updates

DATE & TIME	STATUS OF ITEM	LOCATION
January 10, 2015 , 10:36 am	Notice Left (No Authorized Recipient Available)	WILMINGTON, NC 28401
<p>We attempted to deliver your item at 10:36 am on January 10, 2015 in WILMINGTON, NC 28401 and a notice was left because an authorized recipient was not available. You may arrange redelivery by visiting http://www.usps.com/redelivery or calling 800-ASK-USPS, or may pick up the item at the Post Office indicated on the notice. If this item is unclaimed after 15 days then it will be returned to the sender. Information, if available, is updated periodically throughout the day. Please check again later.</p>		
January 10, 2015 , 8:33 am	Out for Delivery	WILMINGTON, NC 28401
January 10, 2015 , 8:23 am	Sorting Complete	WILMINGTON, NC 28401
January 10, 2015 , 5:02 am	Arrived at Unit	WILMINGTON, NC 28401
January 8, 2015 , 9:12 pm	Departed USPS Facility	FAYETTEVILLE, NC 28302
January 7, 2015 , 10:50 pm	Arrived at USPS Facility	FAYETTEVILLE, NC 28302

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Permit Class
NEW

Permit Number
99-14

STATE OF NORTH CAROLINA
Department of Environment and Natural Resources
and
Coastal Resources Commission

Permit

for

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

Excavation and/or filling pursuant to NCGS 113-229

Issued to US Life Saving Service LLC c/o Christopher C. Parker, PO Box 1612, Wrightsville Beach, NC 28411

Authorizing development in New Hanover County at Banks Channel, 1 Auditorium Circle,

Wrightsville Beach, as requested in the permittee's application dated 9/12/14 (MP-1 & MP-4) & 8/28/14 (MP-2), including the attached workplan drawings (9), as referenced in Condition No. 1 of this permit.

This permit, issued on November 7, 2014, 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.

- 1) Unless specifically altered herein, all development shall be carried out in accordance with the attached workplan drawings (9), 1 dated 8/15/14, S1-S4 dated revised 9/15/14 and 4 dated received in the Wilmington Regional Office 9/18/14.

Docking Facility

- 2) Unless specifically altered herein, this permit authorizes the docks, piers, platforms 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, shall become a permanent part of this docking facility without permit modification. No non-water dependent uses of structures shall be conducted on, in or over public trust waters without permit modification.

(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, 2017

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

Signed by the authority of the Secretary of DENR and the Chairman of the Coastal Resources Commission,



Braxton C. Davis, Director
Division of Coastal Management

This permit and its conditions are hereby accepted.

Signature of Permittee

ADDITIONAL CONDITIONS

- 3) No sewage, whether treated or untreated, shall be discharged at any time from any boats using the docking facility. Any sewage discharge at the docking 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 structure.
- 4) No portion of the authorized docking facility shall extend beyond the established pier head line.
- 5) The pier and associated structures shall have a minimum setback distance of 15 feet between any parts of the structure and the adjacent property owner's riparian access corridor.
- 6) No attempt shall 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.
- 7) The permittee shall 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.
- 8) This permit does not authorize the interference with any existing or proposed Federal project, and the permittee shall 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.
- 9) The permittee shall 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 shall be attached to the structure in order to make it more visible during hours of darkness or inclement weather.
- 10) The authorized gazebo shall not be enclosed. Any material used on the sides shall not obstruct view and shall be permeable to air and water. Screen or wire on the sides along with benches and knee walls are permitted. Lattice is specifically excluded from being used under this authorization.
- 11) The roof of the gazebo shall not be designed for second story use.
- 12) No more than 4 boats shall be docked at the authorized docking facility.

Bulkhead

- 13) The permitted bulkhead shall be constructed in the location as depicted on the attached workplan drawings.
- 14) The bulkhead shall be constructed prior to any backfilling activities.
- 15) The temporary placement or double handling of fill materials within waters or vegetated wetlands is not authorized.
- 16) The bulkhead shall be structurally tight so as to prevent seepage of backfill materials through the structure.

ADDITIONAL CONDITIONS

- 17) The bulkhead shall be solid and constructed of treated wood, concrete slabs, metal or vinyl sheet piles, or other suitable materials approved by Division personnel.
- 18) All backfill material shall be clean and free of any pollutants except in trace quantities.

Sedimentation and Erosion Control

- 19) In order to protect water quality, runoff from construction shall not visibly increase the amount of suspended sediments in adjacent waters.
- 20) A ground cover sufficient to restrain erosion shall be provided within 30 calendar days of completion of any phase of grading on cut or filled slopes. At a minimum, a silt fence shall be properly installed immediately landward of the bulkhead cap immediately following completion of backfilling activities.

General

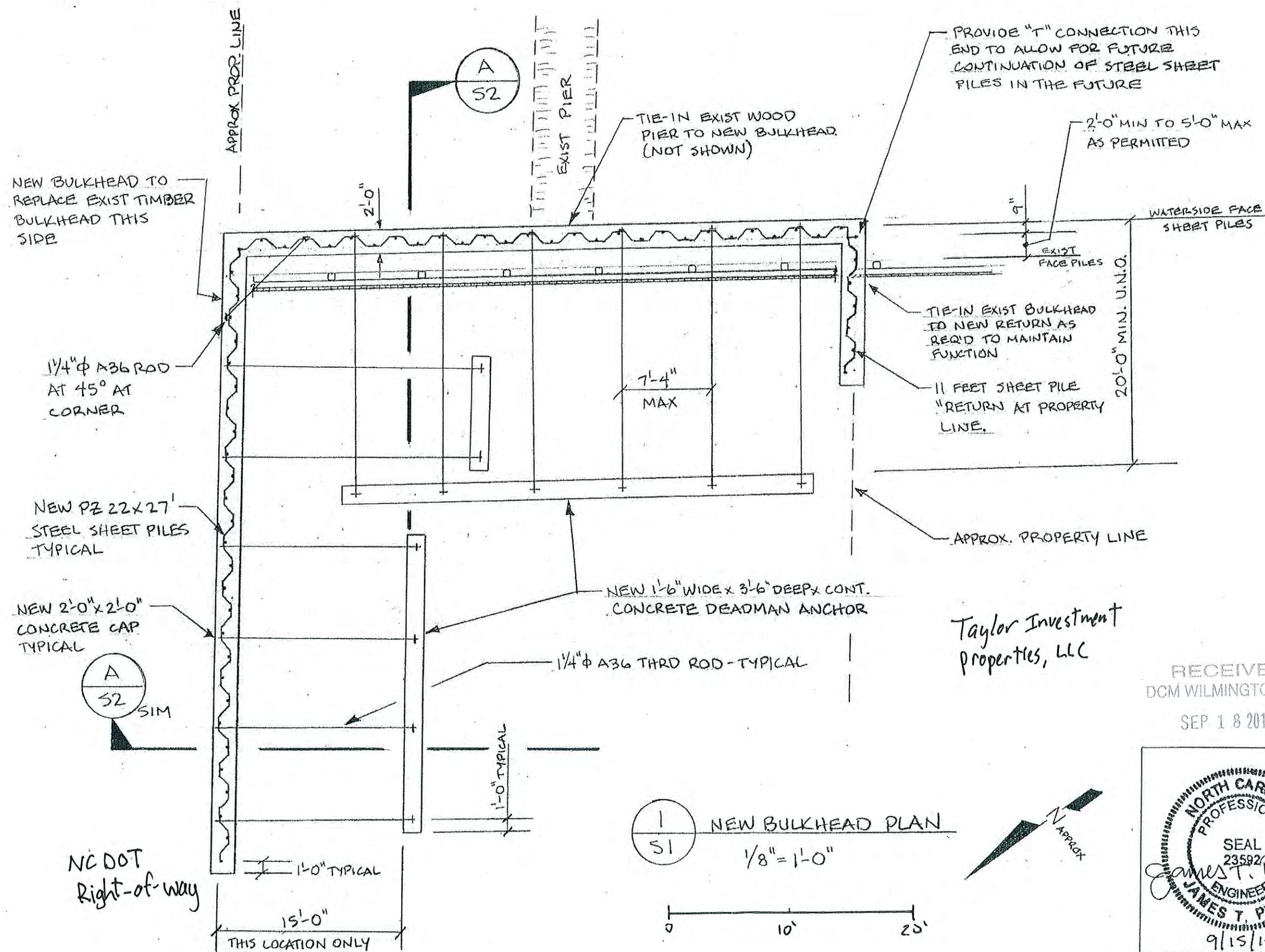
- 21) The permittee understands and agrees that, if future operations by the United States requires the removal, relocation, or other alteration of the structure or work authorized by this permit, or if in the opinion of the Secretary of the Army or his authorized representative, said structure or work 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.
- 22) No vegetated wetlands or open water areas shall be excavated or filled, even temporarily, without permit modification.
- 23) This permit shall not be assigned, transferred, sold, or otherwise disposed of to a third party without the written approval of the Division of Coastal Management.
- 24) The permittee and/or his or her contractor shall meet with a representative of the Division prior to project initiation.

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

NOTE: Future development of the permittee's property may require a modification of this permit. Contact a representative of the Division at (910) 796-7215 prior to the commencement of any such activity for this determination. The permittee is further advised that many non-water dependent activities are not authorized within 30 feet of the normal high water level.

NOTE: The N.C. Division of Water Resources has authorized the proposed project under DWR Project No. 14-1026.

NOTE: The U.S. Army Corps of Engineers authorized the proposed project under COE Action Id. No. SAW-2006-00538.



REVISION	DATE	DESCRIPTION
1	9/15/14	MOVE WESTERMOST DEADMAN
0	9/12/14	ISSUED FOR PERMIT/CONSTRUCTION

PYRTLE ENGINEERING & DESIGN PLLC
 NC LICENSE P-0877
 103 S. SEA LILY COURT
 HAMPSTEAD, NC 28443
 910-270-6288

PROJECT: NEW BULKHEAD
 1 AUDITORIUM CIRCLE
 WRIGHTSVILLE BEACH, NC 28480

NEW BULKHEAD PLAN

SHEET:
S1

§ 50.130 TITLE.

This subchapter shall be officially known as the "Stormwater Management Ordinance." It is referred to herein as "this subchapter."

(Ord. 1538, passed 5-24-07)

§ 50.131 AUTHORITY.

The town is authorized to adopt this subchapter pursuant to North Carolina law, including but not limited to Article 14, Section 5 of the Constitution of North Carolina; G.S. § 143-214.7 and rules promulgated by the Environmental Management Commission thereunder; Session Law 2006-246; Chapter 160A, §§ 174, 185 and Chapter 153A, Article 18.

(Ord. 1538, passed 5-24-07)

§ 50.132 FINDINGS.

(A) It is hereby determined that:

(1) Development and redevelopment alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, soil erosion, stream channel erosion, nonpoint and point source pollution, and sediment transport and deposition, as well as reducing groundwater recharge;

(2) These changes in stormwater runoff contribute to increased quantities of water-borne pollutants and alterations in hydrology that are harmful to public health and safety as well as to the natural environment; and

(3) These effects can be managed and minimized by applying proper design and well-planned controls to manage stormwater runoff from development sites.

(B) Further, the Federal Water Pollution Control Act of 1972 ("Clean Water Act") and Federal Phase II Stormwater Rules promulgated under it, as well as rules of the North Carolina Environmental Management Commission promulgated in response to Federal Phase II requirements, compel certain urbanized areas, including this jurisdiction, to adopt minimum stormwater controls such as those included in this subchapter.

(C) Therefore, the town establishes this set of water quality and quantity regulations to meet the requirements of state and federal law regarding control of stormwater runoff and discharge.

(Ord. 1538, passed 5-24-07)

§ 50.133 PURPOSE.

(A) General. The purpose of this subchapter is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased post-development stormwater runoff and nonpoint and point source pollution associated with new development and redevelopment and illicit discharges into municipal stormwater systems. It has been determined that proper management of construction-related and post-development stormwater runoff will minimize damage to public and private property and infrastructure; safeguard the public health, safety, and general welfare; and protect water and aquatic resources.

(B) Specific. This subchapter seeks to meet its general purpose through the following specific objectives and means:

(1) Establishing decision-making processes for development that protect the integrity of watersheds and preserve the health of water resources;

(2) Requiring that new development and redevelopment maintain the pre-development hydrologic response in their post-development state as nearly as practicable for the applicable design storm to reduce flooding, stream bank erosion, non-point and point source pollution and

increases in stream temperature, and to maintain the integrity of stream channels and aquatic habitats;

(3) Establishing minimum post-development stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;

(4) Establishing design and review criteria for the construction, function, and use of structural stormwater BMPs that may be used to meet the minimum post-development stormwater management standards;

(5) Encouraging the use of better management and site design practices, such as the use of vegetated conveyances for stormwater and the preservation of greenspace, riparian buffers and other conservation areas to the maximum extent practicable;

(6) Establishing provisions for the longterm responsibility for and maintenance of structural and nonstructural stormwater BMPs to ensure that they continue to function as designed, are maintained appropriately, and pose no threat to public safety;

(7) Establishing administrative procedures for the submission, review, approval and disapproval of stormwater management plans, for the inspection of approved projects, and to assure appropriate long-term maintenance;

(8) Controlling illicit discharges into the municipal separate stormwater system;

(9) Controlling erosion and sedimentation from construction activities; and

(10) Assigning responsibility and processes for approving the creation and maintenance of adequate drainage and flood damage prevention measures.

(Ord. 1538, passed 5-24-07)

§ 50.134 APPLICABILITY AND JURISDICTION.

(A) General. Beginning with and subsequent to its effective date, this subchapter shall be applicable to all development and redevelopment, including, but not limited to, site plan applications, subdivision applications, and grading applications.

(B) No development or redevelopment until compliance and permit. No development or redevelopment shall occur except in compliance with the provisions of this subchapter or unless exempted. Development for which a permit is required pursuant to this subchapter shall not occur except in compliance with the provisions, conditions, and limitations of the permit.

(1) The provisions of this subchapter shall apply within the areas designated on the map titled "USMP Stormwater Map of the Town of Wrightsville Beach, North Carolina" (the "stormwater map"), which is adopted simultaneously herewith. The stormwater map and all explanatory matter contained thereon accompanies and is hereby made a part of this subchapter.

(2) The stormwater map shall be kept on file by the Stormwater Manager and shall be updated to take into account changes in the land area covered by this subchapter and the geographic location of all structural BMPs permitted under this subchapter. In the event of a dispute, the applicability of this subchapter to a particular area of land or BMP shall be determined by reference to the North Carolina Statutes, the North Carolina Administrative Code, and local zoning and jurisdictional boundary ordinances.

(Ord. 1538, passed 5-24-07)

§ 50.135 INTERPRETATION.

(A) Meaning and intent. All provisions, terms, phrases, and expressions contained in this subchapter shall be construed according to the general and specific purposes set forth in §50.133. If a different or more specific meaning is given for a term defined elsewhere in the Town of Wrightsville Beach or New Hanover County's code of ordinances, the meaning and application of the term in this subchapter shall control for purposes of application of this subchapter.

(B) Text controls in event of conflict. In the event of a conflict or inconsistency between the text of this subchapter and any heading, caption, figure, illustration, table, or map, the text shall control.

(C) Authority for interpretation. The Stormwater Manager or his designee has authority to determine the interpretation of this subchapter. Any person may request an interpretation by submitting a written request to the Stormwater Manager, who shall use his best efforts to respond in writing within 30 days. The Stormwater Manager shall keep on file a record of all written interpretations of this subchapter.

(D) References to statutes, regulations, and documents. Whenever reference is made to a resolution, ordinance, statute, regulation, manual, including the design manual, or document, it shall be construed as a reference to the most recent edition of such that has been finalized and published with due provision for notice and comment, unless otherwise specifically stated.

(E) Computation of time. The time in which an act is to be done shall be computed by excluding the first day and including the last day. If a deadline or required date of action falls on a Saturday, Sunday, or holiday observed by the Town of Wrightsville Beach, the deadline or required date of action shall be the next day that is not a Saturday, Sunday or holiday observed by the town. References to days are calendar days unless otherwise stated.

(F) Delegation of authority. Any act authorized by this subchapter to be carried out by the Stormwater Manager of the town may be carried out by his or her designee.

(G) Usage.

(1) Mandatory and discretionary terms. The words "shall", "must", and "will" are mandatory in nature, establishing an obligation or duty to comply with the particular provision. The words "may" and "should" are permissive in nature.

(2) Conjunctions. Unless the context clearly indicates the contrary, conjunctions shall be interpreted as follows: The word "and" indicates that all connected items, conditions, provisions and events apply. The word "or" indicates that one or more of the connected items, conditions, provisions or events apply.

(3) Tense, plurals, and gender. Words used in the present tense include the future tense. Words used in the singular number include the plural number and the plural number includes the singular number, unless the context of the particular usage clearly indicates otherwise. Words used in the masculine gender include the feminine gender, and vice versa.

(H) Measurement and Computation. Lot area refers to the amount of horizontal land area contained inside the lot lines of a lot or site.

(Ord. 1538, passed 5-24-07)

📖 § 50.136 DEFINITIONS.

For the purposes of this subchapter the following definitions shall apply unless the context clearly indicates or requires a different meaning.

"BUILT-UPON AREA (BUA)." That portion of a development project that is covered by impervious or partially impervious surface including, but not limited to, buildings; pavement and gravel areas such as roads, parking lots, and paths; and recreation facilities such as tennis courts. "Built-upon area" does not include a wooden slatted deck, the water area of a swimming pool, or pervious or partially pervious paving material to the extent that the paving material absorbs water or allows water to infiltrate through the paving material.

"COASTAL AREA MANAGEMENT ACT (CAMA)." An act that requires the establishment of a cooperative program of coastal land management between local government and the State of North Carolina for preparing, adopting and enforcing local land use plans. CAMA requires that

local governments within the 20 coastal counties prepare land use plans that provide for the protection, preservation, orderly development, and management of the coastal area of North Carolina.

"DESIGN MANUAL." The stormwater design manual approved for use by the town for the proper implementation of the requirements of the Federal Phase II Stormwater Program. All references herein to the design manual are to the latest published edition or revision.

"DEVELOPMENT." Any land-disturbing activity that increases the amount of built-upon area or that otherwise decreases the infiltration of precipitation into the soil.

"FLOODPLAIN." The 1% Annual Chance Floodplain as delineated by the North Carolina Floodplain Mapping Program in the Division of Emergency Management.

"HIGH QUALITY WATERS (HQW)." Supplemental classification intended to protect waters with quality higher than state water quality standards. In general, there are two means by which a water body may be classified as HQW:

(1) By definition; or

(2) They may be supplementally classified as HQW through the rule-making process.

"LARGER COMMON PLAN OF DEVELOPMENT OR SALE." Any area where multiple separate and distinct construction or land-disturbing activities will occur under one plan. A plan is any announcement or piece of documentation (including but not limited to a sign, public notice or hearing, sales pitch, advertisement, loan application, drawing, permit application, zoning request, or computer design) or physical demarcation (including but not limited to boundary signs, lot stakes, or surveyor markings) indicating that construction activities may occur on a specific plot.

"OWNER." The legal or beneficial owner of land, including but not limited to a mortgagee or vendee in possession, receiver, executor, trustee, or long-term or commercial lessee, or any other person or entity holding proprietary rights in the property or having legal power of management and control of the property. "Owner" shall include long-term commercial tenants; management entities, such as those charged with or engaged in the management of properties for profit; and every person or entity having joint ownership of the property. A secured lender not in possession of the property does not constitute an owner, unless the secured lender is included within the meaning of "owner" under another description in this definition, such as a management entity.

"REDEVELOPMENT." Any development on previously-developed land, other than a rebuilding activity that results in no net increase in built-upon area and provides equal or greater stormwater control than the previous development.

"SA WATERS." Surface waters that are used for shellfishing or marketing purposes and all SC and SB uses. All SA waters are also HQW by definition. Stormwater controls are required under CAMA. No domestic discharges are permitted in these waters.

"SB WATERS." Surface waters that are used for primary recreation, including frequent or organized swimming and all SC uses. Stormwater controls are required under CAMA and there are no categorical restrictions on discharges.

"SC WATERS." All tidal salt waters protected for secondary recreation such as fishing, boating and other activities involving minimal skin contact; aquatic life propagation and survival; and wildlife. Stormwater controls are required under CAMA and there are no categorical restrictions on discharges.

"STRUCTURAL BMP." A physical device designed to trap, settle out, or filter pollutants from stormwater runoff; to alter or reduce stormwater runoff velocity, amount, timing, or other characteristics; to approximate the pre-development hydrology on a developed site; or to achieve

any combination of these goals. Structural BMP includes physical practices such as constructed wetlands, vegetative practices, filter strips, grassed swales, and other methods installed or created on real property. "Structural BMP" is synonymous with "structural practice," "stormwater control facility," "stormwater control practice," "stormwater treatment practice," "stormwater management practice," "stormwater control measures," "structural stormwater treatment systems," and similar terms used in this subchapter.

"SUBSTANTIAL PROGRESS." For the purposes of determining whether sufficient progress has been made on an approved plan, one or more of the following construction activities toward the completion of a site or subdivision plan shall occur: obtaining a grading permit and conducting grading activity on a continuous basis and not discontinued for more than 30 days; or installation and approval of on-site infrastructure; or obtaining a building permit for the construction and approval of a building foundation. "Substantial progress" for purposes of determining whether an approved plan is null and void is not necessarily the same as "substantial expenditures" used for determining vested rights pursuant to applicable law.

(Ord. 1538, passed 5-24-07)

§ 50.137 DESIGN MANUAL.

(A) Reference to design manual.

(1) The Stormwater Manager shall use the policy, criteria, and information, including technical specifications and standards, in the design manual as the basis for decisions about stormwater permits and about the design, implementation and performance of structural and non-structural stormwater BMPs.

(2) The design manual includes a list of acceptable stormwater treatment practices, including specific design criteria for each stormwater practice. Stormwater treatment practices that are designed, constructed, and maintained in accordance with these design and sizing criteria will be presumed to meet the minimum water quality performance standards of the Phase II and other applicable stormwater laws.

(B) Relationship of design manual to other laws and regulations. If the specifications or guidelines of the design manual are more restrictive or apply a higher standard than other laws or regulations, that fact shall not prevent application of the specifications or guidelines in the design manual.

(C) Changes to standards and specifications. If the standards, specifications, guidelines, policies, criteria, or other information in the design manual are amended subsequent to the submittal of an application for approval pursuant to this subchapter but prior to approval, the new information shall control and shall be utilized in reviewing the application and in implementing this subchapter with regard to the application.

(D) Amendments to design manual. The Design manual may be updated and expanded from time to time, based on advancements in technology and engineering, improved knowledge of local conditions, or local monitoring or maintenance experience. Prior to amending or updating the design manual, proposed changes shall be generally publicized and made available for review, and an opportunity for comment by interested persons shall be provided.

(Ord. 1538, passed 5-24-07)

§ 50.138 RELATIONSHIP TO OTHER LAWS, REGULATIONS AND PRIVATE AGREEMENTS.

(A) Conflict of laws. This subchapter is not intended to modify or repeal any other ordinance, rule, regulation or other provision of law. The requirements of this subchapter are in addition to the requirements of any other ordinance, rule, regulation or other provision of law. Where any

provision of this subchapter imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human or environmental health, safety, and welfare shall control.

(B) Private agreements. This subchapter is not intended to revoke or repeal any easement, covenant, or other private agreement. However, where the regulations of this subchapter are more restrictive or impose higher standards or requirements than such an easement, covenant, or other private agreement, the requirements of this subchapter shall govern. Nothing in this subchapter shall modify or repeal any private covenant or deed restriction, but such covenant or restriction shall not legitimize any failure to comply with this subchapter. In no case shall the town be obligated to enforce the provisions of any easements, covenants, or agreements between private parties.

(Ord. 1538, passed 5-24-07)

§ 50.139 SEVERABILITY.

If the provisions of any section, subsection, paragraph, subdivision or clause of this subchapter shall be adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision or clause of this subchapter.

(Ord. 1538, passed 5-24-07)

§ 50.140 EFFECTIVE DATE AND TRANSITIONAL PROVISIONS.

(A) Effective date. This subchapter shall take effect on June 28, 2007.

(B) Final approvals, complete applications.

(1) All development and redevelopment projects for which complete and full applications were submitted and approved by the town prior to the effective date of this subchapter and which remain valid, unexpired, unrevoked and not otherwise terminated at the time of development or redevelopment shall be exempt from complying with all provisions of this subchapter dealing with the control and/or management of discharge provisions.

(2) A phased development plan shall be deemed approved prior to the effective date of this subchapter if it has been approved by all necessary government units, it remains valid, unexpired, unrevoked and not otherwise terminated, and it shows:

(a) For the initial or first phase of development, the type and intensity of use for a specific parcel or parcels, including at a minimum, the boundaries of the project and a subdivision plan that has been approved.

(b) For any subsequent phase of development, sufficient detail so that implementation of the requirements of this subchapter to that phase of development would require a material change in that phase of the plan.

(C) Violations continue. Any violation of provisions existing on the effective date of this subchapter shall continue to be a violation under this subchapter and be subject to penalties and enforcement under this subchapter unless the use, development, construction, or other activity complies with the provisions of this subchapter.

(Ord. 1538, passed 5-24-07)

§ 50.141 REVIEW AND DECISION-MAKING ENTITIES.

(A) Stormwater Manager.

(1) Designation. A Stormwater Manager shall be designated by the Board of Aldermen to administer and enforce this subchapter.

(2) Powers and duties. In addition to the powers and duties that may be conferred by other provisions of the town ordinances and other laws, the Stormwater Manager shall have the following powers and duties under this subchapter:

(a) To review and approve, approve with conditions, or disapprove applications for approval of plans pursuant to this subchapter.

(b) To make determinations and render interpretations of this subchapter.

(c) To establish application requirements and schedules for submittal and review of applications and appeals, to review and make recommendations to the Board of Aldermen on applications for development or redevelopment approvals.

(d) To enforce the provisions of this subchapter in accordance with its enforcement provisions.

(e) To maintain records, maps, forms and other official materials as relate to the adoption, amendment, enforcement, and administration of this subchapter.

(f) To provide expertise and technical assistance to the Board of Aldermen, upon request.

(g) To designate appropriate other person(s) who shall carry out the powers and duties of the Stormwater Manager.

(h) To take any other action necessary to administer the provisions of this subchapter.

(Ord. 1538, passed 5-24-07)

§ 50.142 REVIEW PROCEDURES.

(A) Permit required; must apply for permit. A stormwater permit is required for all development and redevelopment unless exempt pursuant to this subchapter. A permit may only be issued subsequent to a properly submitted and reviewed permit application, pursuant to this section.

(B) Effect of permit. A stormwater permit shall govern the design, installation, and construction of stormwater management and control practices on the site, including structural BMPs and elements of site design for stormwater management other than structural BMPs. The permit is intended to provide a mechanism for the review, approval, and inspection of the approach to be used for the management and control of stormwater for the development or redevelopment site consistent with the requirements of this subchapter, whether the approach consists of structural BMPs or other techniques such as low-impact or low-density design. The permit does not continue in existence indefinitely after the completion of the project; rather, compliance after project construction is assured by the maintenance provisions of this subchapter.

(C) Authority to file applications. All applications required pursuant to this subchapter shall be submitted to the Stormwater Manager by the land owner or the land owner's duly authorized agent.

(D) Establishment of application requirements, schedule, and fees.

(1) Application contents and form. The Stormwater Manager shall establish requirements for the content and form of all applications and shall amend and update those requirements from time to time. At a minimum, the stormwater permit application shall describe in detail how post-development stormwater runoff will be controlled and managed, the design of all stormwater facilities and practices, and how the proposed project will meet the requirements of this subchapter.

(2) Submission schedule. The Stormwater Manager shall establish a submission schedule for applications. The schedule shall establish deadlines by which complete applications must be

submitted for the purpose of ensuring that there is adequate time to review applications, and that the various stages in the review process are accommodated.

(3) Permit review fees. The Board of Aldermen shall establish permit review fees as well as policies regarding refund of any fees upon withdrawal of an application, and may amend and update the fees and policies from time to time.

(4) Administrative manual. For applications required under this subchapter, the Stormwater Manager shall compile the application requirements, submission schedule, fee schedule, a copy of this subchapter, and information on how and where to obtain the design manual in an administrative manual, which shall be made available to the public.

(E) Submittal of Complete Application.

(1) Applications shall be submitted to the Stormwater Manager pursuant to the application submittal schedule in the form established by the Stormwater Manager, along with the appropriate fee established pursuant to this section.

(2) An application shall be considered as timely submitted only when it contains all elements of a complete application pursuant to this subchapter, along with the appropriate fee. If the Stormwater Manager finds that an application is incomplete, the applicant shall be notified of the deficient elements and shall be provided with an opportunity to submit a complete application. However, the submittal of an incomplete application shall not suffice to meet a deadline contained in the submission schedule established above.

(F) Review. Within 45 calendar days after a complete application is submitted, the Stormwater Manager shall review the application and determine whether the application complies with the standards of this subchapter.

(1) Approval. If the Stormwater Manager finds that the application complies with the standards of this subchapter, the Stormwater Manager shall approve the application. The Stormwater Manager may impose conditions of approval as needed to ensure compliance with this subchapter. The conditions shall be included as part of the approval.

(2) Fails to comply. If the Stormwater Manager finds that the application fails to comply with the standards of this subchapter, the Stormwater Manager shall notify the applicant and shall indicate how the application fails to comply. The applicant shall have an opportunity to submit a revised application.

(3) Revision and subsequent review.

(a) A complete revised application shall be reviewed by the Stormwater Manager within 45 calendar days after its re-submittal and shall be approved, approved with conditions or disapproved.

(b) If a revised application is not resubmitted within 30 calendar days from the date the applicant was notified, the application shall be considered withdrawn and a new submittal for the same or substantially the same project shall be required along with the appropriate fee for a new submittal.

(c) One re-submittal of a revised application may be submitted without payment of an additional permit review fee. Any re-submittal after the first re-submittal shall be accompanied by an additional permit review fee, as established pursuant to this subchapter.

(Ord. 1538, passed 5-24-07)

§ 50.143 APPLICATIONS FOR APPROVAL.

(A) Concept plan and consultation meeting.

(1) Before a stormwater management permit application is deemed complete, the Stormwater Manager or developer may request a consultation on a concept plan for the post-

construction stormwater management system to be utilized in the proposed development project. This consultation meeting should take place at the time of the preliminary plan of subdivision or other early step in the development process. The purpose of this meeting is to discuss the post-construction stormwater management measures necessary for the proposed project, as well as to discuss and assess constraints, opportunities and potential approaches to stormwater management designs before formal site design engineering is commenced. Local watershed plans, the CAMA Land Use Plan, and other relevant resource protection plans should be consulted in the discussion of the concept plan.

(2) To accomplish this goal, the following information should be included in the concept plan, which should be submitted in advance of the meeting:

(a) Existing conditions/proposed site plans. Existing conditions and proposed site layout sketch plans, which illustrate at a minimum: existing and proposed topography; perennial and intermittent streams; mapping of predominant soils from soil surveys (if available); boundaries of existing predominant vegetation; proposed limits of clearing and grading; and location of existing and proposed roads, buildings, parking areas and other impervious surfaces.

(b) Natural resources inventory. A written or graphic inventory of natural resources at the site and surrounding area as it exists prior to the commencement of the project. This description should include a discussion of soil conditions, geologic features, topography, wetlands, and native vegetative areas on the site, as well as the location and boundaries of other natural feature protection and conservation areas such as ponds, floodplains, stream buffers and other setbacks. Particular attention should be paid to environmentally sensitive features that provide particular opportunities or constraints for development and stormwater management.

(c) Stormwater management system concept plan. A written or graphic concept plan of the proposed post-development stormwater management system including: preliminary selection and location of proposed structural stormwater controls; low-impact design elements; location of existing and proposed conveyance systems such as grass channels, swales, and storm drains; flow paths; location of floodplain/floodway limits; relationship of site to upstream and downstream properties and drainages; and preliminary location of any proposed stream channel modifications, such as bridge or culvert crossings.

(B) Stormwater management permit application.

(1) The stormwater management permit application shall detail how post-development stormwater runoff will be controlled and managed and how the proposed project will meet the requirements of this subchapter, including the section entitled Standards. All such plans shall be prepared by a qualified registered North Carolina professional engineer, surveyor, soil scientist or landscape architect, and the engineer, surveyor, soil scientist or landscape architect shall perform services only in their area of competence, and shall verify that the design of all stormwater management facilities and practices meets the submittal requirements for complete applications, that the designs and plans are sufficient to comply with applicable standards and policies found in the Design Manual, and that the designs and plans ensure compliance with this subchapter.

(2) The submittal shall include all of the information required in the submittal checklist established by the Stormwater Manager. Incomplete submittals shall be treated pursuant to § [50.142\(E\)](#).

(C) As-built plans and final approval.

(1) Upon completion of a project, and before a certificate of occupancy shall be granted, the applicant shall certify that the completed project is in accordance with the approved stormwater

management plans and designs, and shall submit actual "as built" plans (both hardcopy and electronic format) for all stormwater management facilities or practices after final construction is completed.

(2) The plans shall show the final design specifications for all stormwater management facilities and practices and the field location, size, depth, and planted vegetation of all measures, controls, and devices, as installed. The designer of the stormwater management measures and plans shall certify, under seal, that the as-built stormwater measures, controls, and devices are in compliance with the approved stormwater management plans and designs and with the requirements of this subchapter. A final inspection and approval by the Stormwater Manager shall occur before the release of any performance securities.

(D) Other permits. No certificate of compliance or occupancy shall be issued by the Town of Wrightsville Beach Planning and Inspections Department without final as-built plans and a final inspection and approval by the Stormwater Manager, except where multiple units are served by the stormwater practice or facilities, in which case the Town of Wrightsville Beach Planning and Inspections Department may elect to withhold a percentage of permits or certificates of occupancy until as-built plans are submitted and final inspection and approval has occurred.

(Ord. 1538, passed 5-24-07)

📖 § 50.144 APPROVALS.

(A) Effect of approval. Approval authorizes the applicant to go forward with only the specific plans and activities authorized in the permit. The approval shall not be construed to exempt the applicant from obtaining other applicable approvals from local, state, and federal authorities.

(B) Time limit/expiration.

(1) An approved plan shall become null and void if the applicant fails to make substantial progress on the site within one year after the date of approval. The Stormwater Manager may grant a single, one-year extension of this time limit, for good cause shown, upon receiving a written request from the applicant before the expiration of the approved plan.

(2) In granting an extension, the Stormwater Manager may require compliance with standards adopted since the original application was submitted unless there has been substantial reliance on the original permit and the change in standards would infringe the applicant's vested rights.

(Ord. 1538, passed 5-24-07)

📖 § 50.145 APPEALS.

(A) Right of appeal. Any aggrieved person affected by any decision, order, requirement, or determination relating to the interpretation or application of this subchapter made by the Stormwater Manager, may file an appeal to the Board of Adjustment within 30 days.

(B) Filing of appeal and procedures. Appeals shall be taken within the specified time period by filing a notice of appeal and specifying the grounds for appeal on forms provided by the Town of Wrightsville Beach. The Stormwater Manager shall transmit to the Town Manager all documents constituting the record on which the decision appealed from was taken. The hearing conducted by the Board of Adjustment shall be conducted in the nature of a quasi-judicial proceeding with all findings of fact supported by competent, material evidence.

(C) Review by superior court. Every decision of the Board of Adjustment shall be subject to superior court review by proceedings in the nature of certiorari. Petition for review by the superior court shall be filed with the clerk of superior court within 30 days after the latter of the following:

- (1) The written decision of the Board of Adjustment is filed; or
- (2) A written copy of the decision is delivered to every aggrieved party who has filed a written request for such copy with the Board of Adjustment at the time of its hearing of the case. (Ord. 1538, passed 5-24-07)

§ 50.146 GENERAL STANDARDS.

All development and redevelopment to which this subchapter applies shall comply with the standards of this section.

(Ord. 1538, passed 5-24-07)

§ 50.147 IMPERVIOUS SURFACE REQUIREMENTS.

(A) Setback requirement.

(1) All impervious surfaces, except for roads, paths, and water dependent structures, shall be located at least 30 feet landward of all perennial and intermittent surface waters.

(2) A perennial or intermittent surface water shall be deemed present if the feature is shown on either the most recent version of the soil survey map prepared by the Natural Resources Conservation Service of the United States Department of Agriculture (USDA) or the most recent complete version of the 1:24,000 scale (7.5 minute) quadrangle topographic maps prepared by the United States Geologic Survey (USGS). An exception to this requirement may be allowed when surface waters are not present in accordance with the provisions of 15A NCAC 2B .0233

(3)(a) or similar site-specific determination made by the Division of Water Quality, using Division-approved methodology.

(B) Land draining to shellfish waters. All development activities that are located within 75 feet of waters designated by the Environmental Management Commission as estuarine shellfishing waters or 575 feet from designated Outstanding Resource Waters shall be limited to a maximum impervious surface density of 36%.

(Ord. 1538, passed 5-24-07)

§ 50.148 STRUCTURAL STORMWATER CONTROL REQUIREMENTS.

Owners of property subject to this subchapter and required to install structural stormwater control measures shall implement those measures in compliance with each of the following standards:

(A) The measures shall control and treat runoff from the first one and one-half inches of rain. Runoff volume drawdown time for wet detention ponds shall be a minimum of 48 hours, but not more than 120 hours.

(B) All structural stormwater treatment systems used shall be designed to have a minimum of 90% average annual removal for Total Suspended Solids (TSS).

(C) General engineering design criteria for all projects shall be in accordance with 15A NCAC 2H .1008(c), as explained in the design manual.

(D) The measure shall discharge the storage volume at a rate equal or less than the pre-development discharge rate for the one-year, 24-hour storm, or as specified in the design manual.

(E) The approval of the stormwater permit shall require enforceable restrictions on property usage that runs with the land, including recorded deed restrictions and protective covenants, to ensure that future development and redevelopment maintains the site consistent with the approved project plans.

(Ord. 1538, passed 5-24-07)

§ 50.149 STANDARDS FOR STORMWATER CONTROL MEASURES.

(A) Evaluation according to contents of design manual. All stormwater control measures and stormwater treatment practices (also referred to as Best Management Practices, or BMPs)

required under this subchapter shall be evaluated by the Stormwater Manager according to the policies, criteria, and information, including technical specifications and standards and the specific design criteria for each stormwater practice, in the design manual. The Stormwater Manager shall determine whether proposed BMPs will be adequate to meet the requirements of this subchapter.

(B) Determination of adequacy; presumptions and alternatives. Stormwater treatment practices that are designed, constructed, and maintained in accordance with the criteria and specifications in the design manual will be presumed to meet the minimum water quality and quantity performance standards of this subchapter. Whenever an applicant proposes to utilize a practice or practices not designed and constructed in accordance with the criteria and specifications in the design manual, the applicant shall have the burden of demonstrating that the practice(s) will satisfy the minimum water quality and quantity performance standards of this subchapter. The Stormwater Manager may require the applicant to provide the documentation, calculations, and examples necessary for the Stormwater Manager to determine whether such an affirmative showing is made.

(C) Separation from seasonal high water table. For BMPs that require a separation from the seasonal high-water table, the separation shall be provided by at least 12 inches of naturally occurring soil above the seasonal high-water table.

(Ord. 1538, passed 5-24-07)

§ 50.150 VARIANCES.

(A) Any person may petition the town for a variance granting permission to use the person's land in a manner otherwise prohibited by this subchapter. To qualify for a variance, the petitioner must show all of the following:

- (1) Unnecessary hardships would result from strict application of this subchapter.
- (2) The hardships result from conditions that are peculiar to the property, such as the location, size, or topography of the property.
- (3) The hardships did not result from actions taken by the petitioner.
- (4) The requested variance is consistent with the spirit, purpose, and intent of this subchapter; will secure public safety and welfare; and will preserve substantial justice.

(B) The town may impose reasonable and appropriate conditions and safeguards upon any variance it grants.

(C) Statutory exceptions. Notwithstanding division (A) of this section, exceptions from the 30-foot landward location of built-upon area requirement as well as the deed restrictions and protective covenants requirements shall be granted in any of the following instances:

(1) When there is a lack of practical alternatives for a road crossing, bridge, or utility crossing as long as it is located, designed, constructed, and maintained to minimize disturbance, provide maximum nutrient removal, protect against erosion and sedimentation, have the least adverse effects on aquatic life and habitat, and protect water quality to the maximum extent practicable through the use of BMPs.

(2) When there is a lack of practical alternatives for a stormwater management facility; a stormwater management pond; or a utility, including, but not limited to, water, sewer, or gas construction and maintenance corridor, as long as it is located 15 feet landward of all perennial and intermittent surface waters and as long as it is located, designed, constructed, and maintained to minimize disturbance, provide maximum nutrient removal, protect against erosion and sedimentation, have the least adverse effects on aquatic life and habitat, and protect water quality to the maximum extent practicable through the use of BMPs.

(3) A lack of practical alternatives may be shown by demonstrating that, considering the potential for a reduction in size, configuration, or density of the proposed activity and all alternative designs, the basic project purpose cannot be practically accomplished in a manner which would avoid or result in less adverse impact to surface waters.

(Ord. 1538, passed 5-24-07)

§ 50.151 ADDITIONAL STANDARDS FOR SA WATERS.

(A) In addition to the standards for stormwater handling set out in the Design Manual, development and redevelopment that is located within one-half mile of and that drains in whole or part to class SA waters shall design and implement the best stormwater practices that ensure reduction of fecal coliform loading. The best practices are ones that result in the highest degree of fecal die-off and control sources of fecal coliform to the maximum extent practicable while still meeting the other requirements of this subchapter.

(B) No direct discharge or expansion of discharges to SA waters. No new direct points of stormwater discharge to SA waters or increases in the volume of stormwater flow through conveyances or increases in capacity of conveyances in existing stormwater conveyance systems that drain to Class SA waters are permitted. Any modification or redesign of a stormwater conveyance system within the contributing drainage basin must not increase the net amount or rate of stormwater discharge through existing outfalls to Class SA waters. Diffuse flow of stormwater at a nonerosive velocity to a vegetated buffer or other natural area capable of providing effective infiltration of the runoff from the one-year, 24-hour storm shall not be considered a direct point of stormwater discharge. Consideration shall be given to soil type, slope, vegetation, and existing hydrology when evaluating infiltration effectiveness.

(Ord. 1538, passed 5-24-07)

§ 50.152 GENERAL STANDARDS FOR MAINTENANCE.

(A) Function of BMPs as intended. The owner of each structural BMP installed pursuant to this subchapter shall maintain and operate it so as to preserve and continue its function in controlling stormwater quality and quantity at the degree or amount of function for which the structural BMP was designed.

(B) Annual maintenance inspection and report.

(1) The Stormwater Manager will conduct annual inspections of all structural BMPs installed pursuant to this subchapter. At the Stormwater Manager's discretion, the town may require the person responsible for maintenance of any structural BMP installed to submit to the Stormwater Manager an inspection report from one of the following persons performing services only in their area of competence: a qualified registered North Carolina professional engineer, surveyor, landscape architect, soil scientist, aquatic biologist, or person certified by the North Carolina Cooperative Extension Service for stormwater treatment practice inspection and maintenance.

(2) The inspection report shall contain all of the following:

- (a) The name and address of the land owner;
- (b) The recorded book and page number of the lot of each structural BMP;
- (c) A statement that an inspection was made of all structural BMPs;
- (d) The date the inspection was made;
- (e) A statement that all inspected structural BMPs are performing properly and are in compliance with the terms and conditions of the approved maintenance agreement required by this subchapter; and
- (f) The original signature and seal of the engineer, surveyor, or landscape architect.

(3) All inspection reports shall be on forms supplied by the Stormwater Manager. An original inspection report shall be provided to the Stormwater Manager, if requested, beginning one year from the date of as-built certification and each year thereafter on or before the date of the as-built certification.

(Ord. 1538, passed 5-24-07)

§ 50.153 OPERATION AND MAINTENANCE AGREEMENT.

(A) In general.

(1) Prior to the conveyance or transfer of any lot or building site to be served by a structural BMP pursuant to this subchapter, and prior to issuance of any permit for development or redevelopment requiring a structural BMP pursuant to this subchapter, the applicant or owner of the site must execute an operation and maintenance agreement that shall be binding on all subsequent owners of the site, portions of the site, and lots or parcels served by the structural BMP. Until the transference of all property, sites, or lots served by the structural BMP, the original owner or applicant shall have primary responsibility for carrying out the provisions of the maintenance agreement.

(2) The operation and maintenance agreement shall require the owner or owners to maintain, repair and, if necessary, reconstruct the structural BMP, and shall state the terms, conditions, and schedule of maintenance for the structural BMP. In addition, it shall grant to the Town of Wrightsville Beach a right of entry in the event that the Stormwater Manager has reason to believe it has become necessary to inspect, monitor, maintain, repair, or reconstruct the structural BMP; however, in no case shall the right of entry, of itself, confer an obligation on the town to assume responsibility for the structural BMP.

(3) The operation and maintenance agreement must be approved by the Stormwater Manager prior to plan approval, and it shall be referenced on the final plat and shall be recorded with the county Register of Deeds upon final plat approval. A copy of the recorded maintenance agreement shall be given to the Stormwater Manager within 14 days following its recordation.

(B) Special requirement for homeowners' and other associations. For all structural BMPs required pursuant to this subchapter and that are to be or are owned and maintained by a homeowners' association, property owners' association, or similar entity, the required operation and maintenance agreement shall include all of the following provisions:

(1) That the association shall continuously operate and maintain the stormwater control and management facilities.

(2) That the town shall have a right of entry to inspect, monitor, maintain, repair, and reconstruct structural BMPs.

(3) That the town shall be allowed to recover from the association and its members any and all costs the town expends to maintain or repair the structural BMPs or to correct any operational deficiencies. Failure to pay the town all of its expended costs, after 45 days written notice, shall constitute a breach of the agreement. In case of a deficiency, the town shall thereafter be entitled to bring an action against the association and its members to pay, or foreclose upon the lien hereby authorized by the agreement against the property, or both. Interest, collection costs, and attorney fees shall be added to the recovery.

(4) That this agreement shall not obligate the town to maintain or repair any structural BMPs, and the town shall not be liable to any person for the condition or operation of structural BMPs.

(5) That this agreement shall not in any way diminish, limit, or restrict the right of the town to enforce any of its ordinances as authorized by law.

(6) That the association, or similar entity, shall indemnify and hold harmless the Town of Wrightsville Beach for any costs and injuries arising from or related to the structural BMP, unless the town has agreed in writing to assume the maintenance responsibility for the BMP and has accepted dedication of any and all rights necessary to carry out that maintenance.

(Ord. 1538, passed 5-24-07)

§ 50.154 INSPECTION PROGRAM.

(A) Inspections and inspection programs by the Town of Wrightsville Beach may be conducted or established on any reasonable basis, including but not limited to routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to, reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in BMPs; and evaluating the condition of BMPs.

(B) If the owner or occupant of any property refuses to permit such inspection, the Stormwater Manager shall proceed to obtain an administrative search warrant pursuant to G.S. § 15-27.2 or its successor. No person shall obstruct, hamper or interfere with the Stormwater Manager while carrying out his or her official duties.

(Ord. 1538, passed 5-24-07)

§ 50.155 NOTICE TO OWNERS.

(A) Deed recordation and indications on plat. The applicable operations and maintenance agreement pertaining to every structural BMP shall be referenced on the final plat and shall be recorded with the county Register of Deeds upon final plat approval. If no subdivision plat is recorded for the site, then the operations and maintenance agreement shall be recorded with the county Register of Deeds so as to appear in the chain of title of all subsequent purchasers under generally accepted searching principles.

(B) Signage. Where appropriate in the determination of the Stormwater Manager to assure compliance with this subchapter, structural BMPs shall be posted with a conspicuous sign stating who is responsible for required maintenance. The sign shall be maintained so as to remain visible and legible.

(Ord. 1538, passed 5-24-07)

§ 50.156 RECORDS OF INSTALLATION AND MAINTENANCE ACTIVITIES.

The owner of each structural BMP shall keep records of inspections, maintenance, and repairs for at least five years from the date of creation of the record and shall submit the same upon reasonable request to the Stormwater Manager.

(Ord. 1538, passed 5-24-07)

§ 50.157 NUISANCE.

The owner of each stormwater BMP, whether structural or non-structural BMP, shall maintain it so as not to create or result in a nuisance condition.

(Ord. 1538, passed 5-24-07)

§ 50.158 ENFORCEMENT.

(A) Authority to enforce. The provisions of this subchapter shall be enforced by the Stormwater Manager, his or her designee, or any authorized agent of the Town of Wrightsville Beach. Whenever this section refers to the Stormwater Manager, it includes his or her designee as well as any authorized agent of the Town of Wrightsville Beach.

(B) Violation unlawful. Any failure to comply with an applicable requirement, prohibition, standard, or limitation imposed by this subchapter, or the terms or conditions of any permit or

other development or redevelopment approval or authorization granted pursuant to this subchapter, is unlawful and shall constitute a violation of this subchapter.

(C) Each day a separate offense. Each day that a violation continues shall constitute a separate and distinct violation or offense.

(D) Responsible persons/entities.

(1) Any person who erects, constructs, reconstructs, alters (whether actively or passively), or fails to erect, construct, reconstruct, alter, repair or maintain any structure, BMP, practice, or condition in violation of this subchapter shall be subject to the remedies, penalties, and/or enforcement actions in accordance with this section. Persons subject to the remedies and penalties set forth herein may include any architect, engineer, builder, contractor, developer, agency, or any other person who participates in, assists, directs, creates, causes, or maintains a condition that results in or constitutes a violation of this subchapter, or fails to take appropriate action, so that a violation of this subchapter results or persists; or an owner, any tenant or occupant, or any other person, who has control over, or responsibility for, the use or development of the property on which the violation occurs.

(2) For the purposes of this section, responsible person(s) shall include but not be limited to:

(a) Person maintaining condition resulting in or constituting violation. An architect, engineer, builder, contractor, developer, agency, or any other person who participates in, assists, directs, creates, causes, or maintains a condition that constitutes a violation of this subchapter, or fails to take appropriate action, so that a violation of this subchapter results or persists.

(b) Responsibility for land or use of land. The owner of the land on which the violation occurs, any tenant or occupant of the property, any person who is responsible for stormwater controls or practices pursuant to a private agreement or public document, or any person, who has control over, or responsibility for, the use, development or redevelopment of the property.

(Ord. 1538, passed 5-24-07)

§ 50.159 REMEDIES.

The remedies and penalties provided herein are not exclusive; may be exercised singly, simultaneously, or cumulatively; may be combined with any other remedies authorized under the law; and may be exercised in any order.

(A) Withholding of certificate of occupancy. The Stormwater Manager or other authorized agent may refuse to issue a certificate of occupancy for the building or other improvements constructed or being constructed on the site and served by the stormwater practices in question until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.

(B) Disapproval of subsequent permits and development approvals. As long as a violation of this subchapter continues and remains uncorrected, the Stormwater Manager or other authorized agent may withhold, and the Board of Aldermen may disapprove, any request for permit or development approval or authorization provided for by this subchapter or the (zoning, subdivision, and/or building regulations, as appropriate) for the land on which the violation occurs.

(C) Injunction, abatements, etc. The Stormwater Manager, with the written authorization of the Town Manager, may initiate an action in a court of competent jurisdiction for a mandatory or prohibitory injunction and order of abatement to correct a violation of this subchapter. Any person violating this subchapter shall be subject to the full range of equitable remedies provided in the General Statutes or at common law.

(D) Correction as public health nuisance, costs as lien, etc. If the violation is deemed dangerous or prejudicial to the public health or public safety and is within the geographic limits prescribed by North Carolina G.S. § 160A-193, the Stormwater Manager, with the written authorization of the Town Manager, may cause the violation to be corrected and the costs to be assessed as a lien against the property.

(E) Stop work order. The Stormwater Manager may issue a stop work order to the person(s) violating this subchapter. The stop work order shall remain in effect until the person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violation or violations described therein. The stop work order may be withdrawn or modified to enable the person to take the necessary remedial measures to cure such violation or violations.

(Ord. 1538, passed 5-24-07; Am. Ord. 1590, passed 1-29-09)

📖 § 50.160 PROCEDURES.

(A) Initiation/complaint. Whenever a violation of this subchapter occurs, or is alleged to have occurred, any person may file a written complaint. Such complaint shall state fully the alleged violation and the basis thereof, and shall be filed with the Stormwater Manager, who shall record the complaint. The complaint shall be investigated promptly by the Stormwater Manager.

(B) Inspection. The Stormwater Manager shall have the authority, upon presentation of proper credentials, to enter and inspect any land, building, structure, or premises to ensure compliance with this subchapter.

(C) Notice of violation and order to correct.

(1) When the Stormwater Manager finds that any building, structure, or land is in violation of this subchapter, the Stormwater Manager shall notify, in writing, the property owner or other person violating this subchapter. The notification shall indicate the nature of the violation, contain the address or other description of the site upon which the violation is occurring, order the necessary action to abate the violation, and give a deadline for correcting the violation. If civil penalties are to be assessed, the notice of violation shall also contain a statement of the civil penalties to be assessed, the time of their accrual, and the time within which they must be paid or be subject to collection as a debt.

(2) The Stormwater Manager may deliver the notice of violation and correction order personally, by the Code Enforcement Administrator, by certified or registered mail, return receipt requested, or by any means authorized for the service of documents by Rule 4 of the North Carolina Rules of Civil Procedure.

(3) If a violation is not corrected within a reasonable period of time, as provided in the notification, the Stormwater Manager may take appropriate action under this subchapter to correct and abate the violation and to ensure compliance with this subchapter.

(D) Extension of time.

(1) A person who receives a notice of violation and correction order, or the owner of the land on which the violation occurs, may submit to the Stormwater Manager a written request for an extension of time for correction of the violation. On determining that the request includes enough information to show that the violation cannot be corrected within the specified time limit for reasons beyond the control of the person requesting the extension, the Stormwater Manager may extend the time limit as is reasonably necessary to allow timely correction of the violation, up to, but not exceeding 90 days. The Stormwater Manager may grant 30-day extensions in addition to the foregoing extension if the violation cannot be corrected within the permitted time due to circumstances beyond the control of the person violating this subchapter.

(2) The Stormwater Manager may grant an extension only by written notice of extension. The notice of extension shall state the date prior to which correction must be made, after which the violator will be subject to the penalties described in the notice of violation and correction order.

(E) Enforcement after time to correct. After the time has expired to correct a violation, including any extension(s) if authorized by the Stormwater Manager, the Stormwater Manager shall determine if the violation is corrected. If the violation is not corrected, the Stormwater Manager may act to impose one or more of the remedies and penalties authorized by this subchapter.

(F) Emergency enforcement. If delay in correcting a violation would seriously threaten the effective enforcement of this subchapter or pose an immediate danger to the public health, safety, or welfare, then the Stormwater Manager may order the immediate cessation of a violation. Any person so ordered shall cease any violation immediately. The Stormwater Manager may seek immediate enforcement, without prior written notice, through any remedy or penalty authorized by this section.

(Ord. 1538, passed 5-24-07)

§ 50.161 ILLICIT DISCHARGES AND CONNECTIONS.

(A) Illicit discharges. No person shall cause or allow the discharge, emission, disposal, pouring, or pumping directly or indirectly to any stormwater conveyance, the waters of the state, or upon the land in manner and amount that the substance is likely to reach a stormwater conveyance or the waters of the State, any liquid, solid, gas, or other substance, other than stormwater. Prohibited substances include but are not limited to: oil, anti-freeze, chemicals, fertilizer, animal waste, paints, garbage, litter and rubbish. It is also prohibited to deposit in any manner (sweeping, blowing, etc) yard waste, to include but not limited to: grass and plant trimmings, leaves and thatch. Non-stormwater discharges associated with the following activities are allowed provided that they do not significantly impact water quality:

- (1) Water line flushing;
- (2) Landscape irrigation;
- (3) Rising ground waters;
- (4) Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20));
- (5) Uncontaminated pumped ground water;
- (6) Discharges from potable water sources;
- (7) Foundation and footing drains;
- (8) Air conditioning condensation;
- (9) Irrigation water;
- (10) Lawn watering;
- (11) Individual residential car washing;
- (12) Flows from riparian habitats and wetlands;
- (13) Street wash water; and
- (14) Other non-stormwater discharges for which a valid NPDES discharge permit has been approved and issued by the State of North Carolina, and provided that any such discharges to the municipal separate storm sewer system shall be authorized by the Town of Wrightsville Beach.

(B) Illicit connections.

(1) Connections to a stormwater conveyance or stormwater conveyance system that allow the discharge of non-stormwater, other than the exclusions described in division (A) above, are unlawful. Prohibited connections include, but are not limited to: floor drains, waste water from

washing machines or sanitary sewers and wash water from commercial vehicle washing or steam cleaning.

(2) Where such connections exist in violation of this section and said connections were made prior to the adoption of this provision or any other ordinance prohibiting such connections, the property owner or the person using said connection shall remove the connection within one year following the effective date of this subchapter. However, the one-year grace period shall not apply to connections which may result in the discharge of hazardous materials or other discharges which pose an immediate threat to health and safety, or are likely to result in immediate injury and harm to real or personal property, natural resources, wildlife, or habitat.

(3) Where it is determined that said connection:

(a) May result in the discharge of hazardous materials or may pose an immediate threat to health and safety, or is likely to result in immediate injury and harm to real or personal property, natural resources, wildlife, or habitat, or

(b) Was made in violation of any applicable regulation or ordinance, other than this section; the Stormwater Manager shall designate the time within which the connection shall be removed. In setting the time limit for compliance, the Stormwater Manager shall take into consideration:

1. The quantity and complexity of the work,
2. The consequences of delay,
3. The potential harm to the environment, to the public health, and to public and private property, and
4. The cost of remedying the damage.

(C) Spills.

(1) Spills or leaks of polluting substances released, discharged to, or having the potential to released or discharged to the stormwater conveyance system, shall be contained, controlled, collected, and properly disposed. All affected areas shall be restored to their preexisting condition.

(2) Persons in control of the polluting substances immediately prior to their release or discharge, and persons owning the property on which the substances were released or discharged, shall immediately notify the Town of Wrightsville Beach Public Works Department of the release or discharge, as well as making any required notifications under state and federal law. Notification shall not relieve any person of any expenses related to the restoration, loss, damage, or any other liability which may be incurred as a result of said spill or leak, nor shall such notification relieve any person from other liability which may be imposed by state or other law.

(D) Nuisance. Illicit discharges and illicit connections which exist within the Town of Wrightsville Beach are hereby found, deemed, and declared to be dangerous or prejudicial to the public health or public safety and are found, deemed, and declared to be public nuisances. Such public nuisances shall be abated in accordance with the procedures set forth in Chapter 130: Offenses Against Public Peace And Safety.

(Ord. 1538, passed 5-24-07)

📖 § 50.162 STORMWATER FEES.

(A) Stormwater fees as set forth in the Schedule of Fees listed below shall be determined from time to time by the Board of Aldermen and kept on file in the office of the Town Clerk. Adjustments to the stormwater fees shall be applicable to the first building following the effective date of the modified rate.

(B) The following fees are hereby established by the Board of Aldermen:

Parcel size in square feet	Monthly fee
<2,000	\$2
>2,000 and <8,000	\$5
>8,000 and <20,000	\$6

Parcel size in square feet	Monthly fee
>20,000 and <100,000	\$10
>100,000	\$20

For the purposes of this section, “parcel” shall mean a tax parcel as identified on the records of the New Hanover County Tax Office.

(Ord. 1516, passed 8-24-06)

📖 § 50.999 PENALTY.

(A) Any person violating any provision of this chapter shall be subject to the penalties set forth in this section. If the violation is continued, each day's violation shall be a separate offense.

(B) Any violation of this chapter shall subject the offender to a civil penalty to be recovered by the town in a civil action in the nature of a debt if the offender does not pay any penalty called for hereunder within the prescribed period of time after notice of violation of the chapter. Penalties shall be as prescribed herein but in no case less than \$10 per day.

(C) This chapter may be enforced by an appropriate equitable remedy such as an injunction or order of abatement issuing from any court of competent jurisdiction.

(D) This chapter may be enforced by any, all, or a combination of the remedies as authorized and prescribed above.

(E) It shall be unlawful for any person to violate any provision of §§ [50.120](#) through [50.126](#), including any mandatory water conservation measure.

(F) A violation of §§ [50.130](#) through [50.162](#) may subject the violator to a civil penalty to be recovered in a civil action in the nature of a debt if the violator does not pay the penalty within 30 days after notice of the violation is issued by the Stormwater Manager.

(1) Civil penalties.

(a) Any person who allows, acts in concert, participates, directs, or assists directly or indirectly in the creation of a violation of §§ [50.130](#) through [50.162](#) is subject to a civil penalty. A civil penalty may be assessed from the date the violation first occurs.

(b) Civil penalties may be assessed up to the full amount of penalty to which the town is subject for violations of its NPDES stormwater permit, or up to \$5,000 for each violation of §§ [50.130](#) through [50.162](#), whichever is greater. Each day of violation shall constitute a separate violation.

(c) No penalty shall be assessed until the person alleged to be in violation has been served notice of the violation as described in § [50.160](#)(C). Refusal to accept the notice shall not relieve the violator of the obligation to pay such penalty.

(d) Penalties may be assessed concurrently with a notice of violation for any of the following:

1. Obstructing, hampering or interfering with an authorized town representative who is in the process of carrying out official duties under §§ [50.130](#) through [50.162](#);
2. A repeated violation for which a notice of violation was previously given to the person responsible for the violation; or
3. Willful violation of §§ [50.130](#) through [50.162](#).

(e) In determining the amount of a civil penalty, the Stormwater Manager shall consider any relevant mitigating and aggravating factors including, but not limited to the following:

1. Degree and extent of harm caused by the violation;
2. Cost of rectifying the damage;
3. Amount of money saved through noncompliance;
4. Whether the violator took reasonable measures to comply with this chapter;
5. Knowledge of the requirements by the violator and/or reasonable opportunity or obligation to obtain such knowledge;
6. Whether the violator voluntarily took reasonable measures to restore any areas damaged by the violation;
7. Whether the violation was committed willfully;
8. Whether the violator reported the violation to an appropriate authority;
9. Technical and economic reasonableness of reducing or eliminating the discharge; and
10. Prior record of the violator in complying or failing to comply with §§ [50.130](#) through [50.162](#) or any other water pollution control ordinance or regulation.

(f) The Stormwater Manager shall determine the amount of the civil penalty to be assessed under this section and shall make written demand for payment upon the person in violation and shall set forth in detail a description of the violation for which the penalty was imposed. Notice of said assessment shall be by registered or certified mail or other means reasonably calculated to give adequate notice. If a violator does not pay a civil penalty assessed by the town within 30 days after it is due, the Stormwater Manager shall request the Town Attorney to institute a civil action to recover the amount of the assessment. The civil action shall be brought in New Hanover County Superior Court or in any other court of competent jurisdiction. Such civil action must be filed within three years of the date the notice of assessment was served on the violator.

(g) An assessment that is not contested is due when the violator is served with a notice of assessment. An assessment that is contested is due at the conclusion of the administrative and judicial review of the assessment.

(h) Civil penalties collected pursuant to this chapter shall be credited to the town's water and sewer fund as a non-tax revenue.

(i) A violation of §§ [50.130](#) through [50.162](#) shall not constitute a misdemeanor or infraction punishable under G.S. § 14-4, but instead shall be subject to the civil penalties fixed by this section.

- (2) Cost recovery. The town may also recover from the violator:

(a) Costs to restore damaged property based on restoration costs, which include, but are not limited to, cleanup costs, value of animal and plant life damaged, and town administrative costs;

(b) Compensation for damage to or destruction of the stormwater system.

(G) In no case shall the maximum penalty per day exceed the amount as specified in § [50.999](#)(F)(1)(b).

(Ord., passed 7-28-83; Am. Ord. 1422, passed 8-8-02; Am. Ord. 1538, passed 5-24-07; Am. Ord. 1590, passed 1-29-09)

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WESSELL & RANEY, L.L.P.
 ATTORNEYS AT LAW
 POST OFFICE BOX 1049
 WILMINGTON, NORTH CAROLINA 28402-1049

JOHN C. WESSELL, III
 WESSELL@BELLSOUTH.NET

WILLIAM A. RANEY, JR.
 WARANEY@BELLSOUTH.NET

STREET ADDRESS:
 107-B NORTH 2ND STREET
 WILMINGTON, NC 28401

TELEPHONE: 910-762-7475
 FACSIMILE: 910-762-7557

March 31, 2015

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

7012 2210 0001 2434 5738

Taylor Investment Properties LLC
 110 Oakwood Drive, Suite 530
 Winston-Salem, NC 27103-1958

Re: CAMA Variance Request by Christopher and Alison Parker

Dear Property Owner:

This is to notify you that Christopher and Alison Parker are applying for a variance from the North Carolina Coastal Resources Commission to allow construction of a single family residence on their lot at 1 Auditorium Circle, Wrightsville Beach, North Carolina. A copy of the site plan is enclosed for your information. The variance is projected to be heard at the April 29-30, 2015, 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 Christopher and Alison Parker

7012 2210 0001 2434 5738

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City, State, ZIP+4 Winston-Salem, nc 27103-1958	

WESSELL & RANEY, L.L.P.
 ATTORNEYS AT LAW
 POST OFFICE BOX 1049
 WILMINGTON, NORTH CAROLINA 28402-1049

JOHN C. WESSELL, III
 WESSELL@BELLSOUTH.NET

WILLIAM A. RANEY, JR.
 WARANEY@BELLSOUTH.NET

STREET ADDRESS:
 107-B NORTH 2ND STREET
 WILMINGTON, NC 28401

TELEPHONE: 910-762-7475
 FACSIMILE: 910-762-7557

March 31, 2015

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

7012 2210 0001 2434 5745

N.C. Department of Transportation
 Attn: District Engineer
 300 Division Drive
 Wilmington, NC 28401

Re: **CAMA Variance Request by Christopher and Alison Parker**

Dear Property Owner:

This is to notify you that U.S. Life Saving Service, LLC is applying for a variance from the North Carolina Coastal Resources Commission to allow construction of a single family residence on their lot at 1 Auditorium Circle, Wrightsville Beach, North Carolina. A copy of the site plan is enclosed for your information. The variance is projected to be heard at the April 29-30, 2015, 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 Christopher and Alison Parker

7012 2210 0001 2434 5745

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PS Form 3800, August 2006 See Reverse for Instructions	

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Customer Service ›
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Tracking Number: 70122210000124345738

Updated Delivery Day: **Thursday, April 2, 2015**

Product & Tracking Information

Available Actions

Postal Product:

Extra Svc:
Certified Mail™

Text Updates

Email Updates

Return Receipt After Mailing

DATE & TIME	STATUS OF ITEM	LOCATION
April 7, 2015 , 8:41 am	Delivered	WINSTON SALEM, NC 27103
Your item was delivered at 8:41 am on April 7, 2015 in WINSTON SALEM, NC 27103.		
April 6, 2015	Redelivery Scheduled	WINSTON SALEM, NC 27103
April 2, 2015 , 10:01 am	Notice Left (No Authorized Recipient Available)	WINSTON SALEM, NC 27103
April 2, 2015 , 9:24 am	Out for Delivery	WINSTON SALEM, NC 27103
April 2, 2015 , 9:14 am	Sorting Complete	WINSTON SALEM, NC 27103
April 2, 2015 , 8:48 am	Arrived at Unit	WINSTON SALEM, NC 27103
April 1, 2015 , 8:16 pm	Departed USPS Facility	GREENSBORO, NC 27498
April 1, 2015 , 7:29 am	Arrived at USPS Facility	GREENSBORO, NC 27498
April 1, 2015 , 4:52 am	Departed USPS Facility	FAYETTEVILLE, NC 28302
April 1, 2015 , 12:00 am	Arrived at USPS Facility	FAYETTEVILLE, NC 28302

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Tracking (or receipt) number

Track It

English

Customer Service

USPS Mobile

Register / Sign In



USPS Tracking™



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Have questions? We're here to help.

Tracking Number: 70122210000124345745

Product & Tracking Information

Postal Product:

Extra Svc:
Certified Mail™

DATE & TIME

STATUS OF ITEM

LOCATION

April 2, 2015 , 10:28 am

Delivered

WILMINGTON, NC 28401

Your item was delivered at 10:28 am on April 2, 2015 in WILMINGTON, NC 28401.

April 1, 2015 , 4:03 pm

Departed USPS Facility

FAYETTEVILLE, NC 28302

March 31, 2015 , 11:10 pm

Arrived at USPS Facility

FAYETTEVILLE, NC 28302

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Email Updates

Return Receipt After Mailing

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Tracking (or receipt) number

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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 Anderson Taylor, authorizing development in the Estuarine Shoreline (AEC) at 3 Auditorium Circle, in Wrightsville Beach, NC, as requested in the permittee's application, dated September 18, 2013 and received complete October 23, 2013. This permit, issued on October 29, 2013, 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: Erect a single family residence and any associate lot preparation.

- (1) All proposed development and associated construction must be done in accordance with the permitted work plat drawings(s) dated received on September 19, 2013.
- (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) 256-7937 for a final inspection at completion of work.

(Additional Permit Conditions on Page 2)

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:

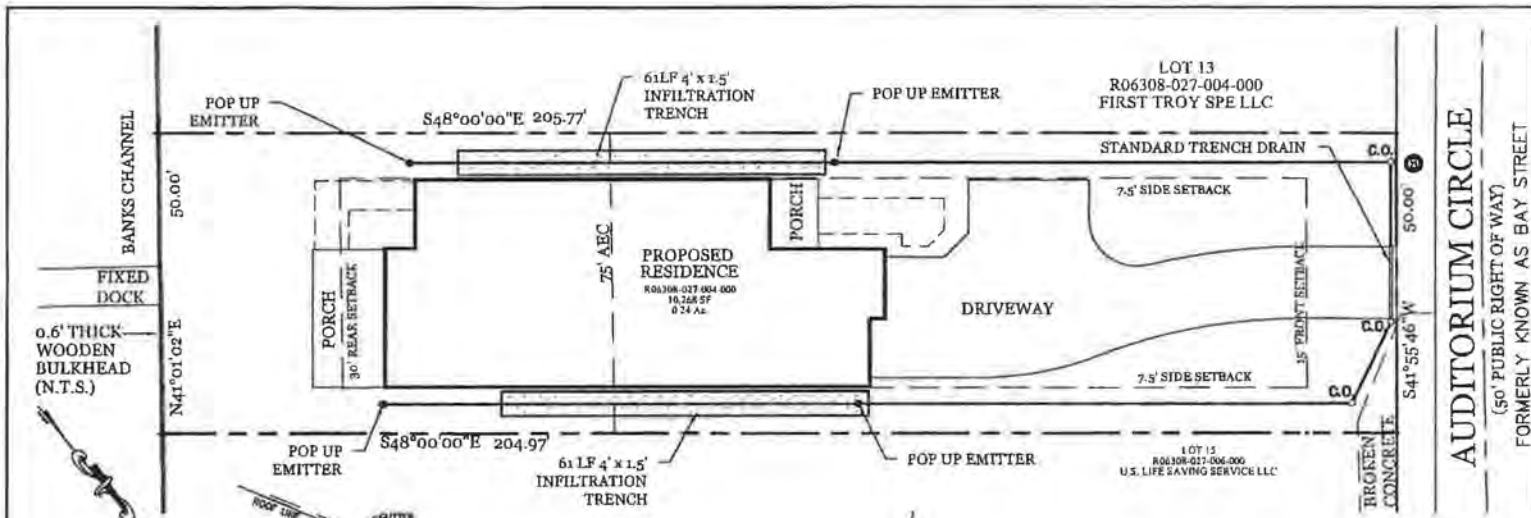
DECEMBER 31, 2016

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.

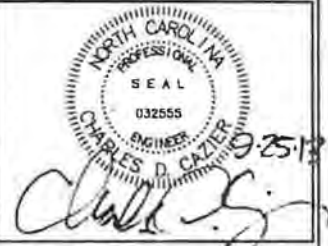
ERYN K. MOLLER
CAMA LOCAL PERMIT OFFICIAL
321 CAUSEWAY DRIVE
WRIGHTSVILLE BCH, NC 28480

PERMITTEE

(Signature required if conditions above apply to permit)



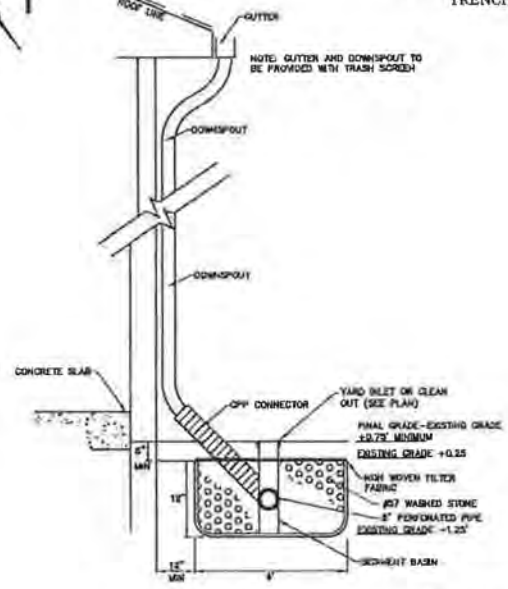
INTRACOASTAL ENGINEERING, PLLC
 91 Pelican Point Road
 Wilmington, North Carolina 28409
 Phone: 910.409.3567
 License Number P-0662



SITE AND STORMWATER MANAGEMENT PLAN
3
AUDITORIUM CIRCLE
WILMINGTON, NC

NOTE: SITE PLAN LAYOUT INCLUDING BOUNDARY PROVIDED BY OWNERS REPRESENTATIVE "SULLIVAN DESIGN COMPANY"

RECEIVED
OCT 23 2013



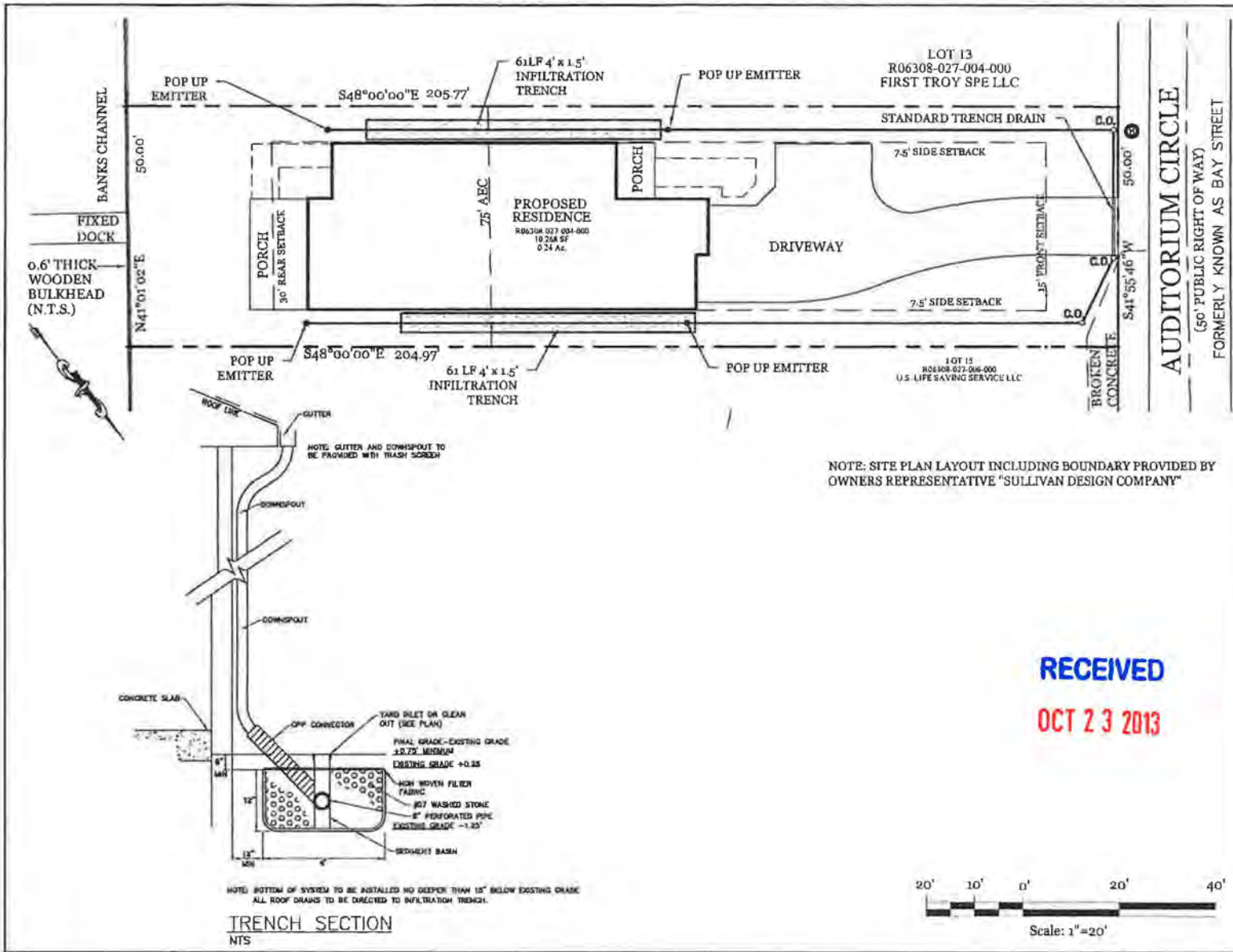
NOTE: BOTTOM OF SYSTEM TO BE INSTALLED NO DEEPER THAN 10" BELOW EXISTING GRADE
 ALL ROOF DRAINS TO BE DIRECTED TO INFILTRATION TRENCH

TRENCH SECTION
 NTS



DRAWN: NME	SHEET SIZE: 11 X 17
CHECKED: CDC	DATE: 09/25/2013
APPROVED: CDC	SCALE: 1" = 20.0'
PROJECT NUMBER: 2013-022	

SHEET NUMBER: **C1**
 SHEET 1 OF 1



INTRACOASTAL ENGINEERING, PLLC
91 Pelican Point Road
Wilmington, North Carolina 28409
Phone: 910.409.3567
License Number P-0662



SITE AND STORMWATER MANAGEMENT PLAN

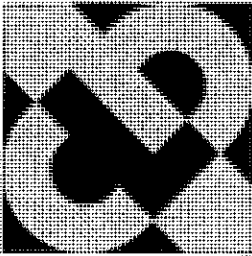
3

AUDITORIUM CIRCLE

WILMINGTON, NC

RECEIVED
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SHEET NUMBER: C1	SHEET 1 OF 1



Coastal Land Design, PLLC
Civil Engineering/Landscape Architecture
Land Planning/Construction Management

January 27, 2015

Mr. Tim Owens, Town Manager
Town of Wrightsville Beach
321 Causeway Drive, PO Box 626
Wrightsville Beach, NC 28480

RE: STORMWATER VARIANCE REQUEST – 1 AUDITORIUM CIRCLE

Dear Mr. Owens:

On behalf of the property owner of 1 Auditorium Circle, Wrightsville Beach, NC, I am requesting a Variance from the requirements of Chapter 50-147 of the Town's Stormwater Ordinance. The specific request is to allow impervious area within the 30 foot setback from perennial or intermittent surface water shown on USGS or USDA maps.

This request is factored on a unique circumstance related to a NCDOT drainage pipe eroding and altering the receiving water body. Specifically, the NCDOT stormwater outlet discharge pipe has eroded a channel along the side bulkhead and thus, extended the shore line inward along said bulkhead. The situation has created a 30 foot setback from the front and side of the existing bulkhead instead of the typical front setback of the adjacent properties. The resulting setback boundary has created a hardship for the property owner to fully utilize the property. I have included a copy of the Site Plan for your review.

This issue was first addressed as a Variance of the CAMA Setback from the North Carolina Coastal Resource Commission (CRC). Their review established that the 'Local' Stormwater Variance must be obtained prior to the CRC Hearing.

In accordance with Chapter 50-150, a Variance can be requested from the Town. Please accept this letter as Variance Request and provide me with any additional procedural requirements. It is the property owner's desire to move this matter forward as quickly as possible.

Your assistance with this matter is greatly appreciated and please call (910-520-3347) or email (fbraxton@cldeng.com) me should you have questions or desire additional information.

Sincerely,

J. Frank Braxton, RLA

P.O. Box 1172 Wilmington, NC 28402 Phone:910-254-9333 Fax:910-254-0502

TOWN OF WRIGHTSVILLE BEACH
ORDER GRANTING A VARIANCE IN ACCORDANCE WITH §50.150 OF
THE CODE OF ORDINANCES, TOWN OF WRIGHTSVILLE BEACH
PROPERTY LOCATED AT 1 AUDITORIUM CIRCLE, WRIGHTSVILLE BEACH, NC
AND OWNED BY U.S. LIFE SAVING SERVICE, LLC

The Board of Adjustment of the Town of Wrightsville Beach, held a public hearing on March 12, 2015 to consider a request for a variance from the provisions of §50.147 of the Code of Ordinances, Town of Wrightsville Beach (the "Code") in connection with the property located at 1 Auditorium Circle, Wrightsville Beach, North Carolina. The Board of Adjustment, having heard all the evidence and arguments presented at the hearing, makes the following Findings of Fact and draws the following Conclusions:

1. It is the Board's Conclusion that unnecessary hardships would result from strict application of §50.147 of the Code. This Conclusion is based on the following Findings of Fact:

- A. The property for which the variance is sought is a lot located at 1 Auditorium Circle in the R-1 Residential Zoning District. The lot has a total site area of 10,296 square feet and is considered a non-conforming lot because the lot width is less than 70 feet. The applicant proposes construction of a single family residence on the lot.
- B. §50.147 of the Code requires impervious surfaces to be at least 30 feet landward of all perennial and intermittent surface waters. The plan as presented by the applicant shows a portion of the proposed single family residence located within 30 feet of perennial and intermittent surface waters at the southeast corner of the proposed single family house. The area for which the variance is requested is labeled "Variance Request Affected Area" on Exhibit "A" attached hereto and incorporated herein by reference.
- C. Complying with the 30 foot setback required by §50.147 of the Code will prevent the applicant from constructing the waterfront portion of the residence in line with the adjacent residence to the south. Additionally, compliance with the 30 foot setback will cause the applicant to lose views to the south from this portion of the applicant's property. Additionally, compliance with the 30 foot setback will prevent the applicant from creating a buffer to mitigate traffic noise from the adjacent Causeway Drive Bridge.
- D. The hardship is unnecessary because the goals and purposes of the impervious surface requirements can be achieved by an engineered storm water system that will capture all storm water runoff from the applicant's property.
- E. The existence of perennial and intermittent surface waters along the eastern boundary of the applicant's property is caused in part by storm water discharge from the Causeway Drive Bridge immediately to the north of the applicant's property.

2. It is the Board's Conclusion that the hardships result from conditions that are peculiar to the property, such as location, size, or topography of the property. This Conclusion is based on the following Findings of Fact:

- A. The Findings of Fact set forth in the preceding paragraph are incorporated herein by reference.
- B. The applicant's property is adjacent to the Causeway Drive Bridge over Banks Channel. There is a storm water collection system for Causeway Drive and for the bridge and the storm water passing through this system is discharged through a pipe under the bridge adjacent to the applicant's north property line. This discharge has caused erosion around the return bulkhead on the north boundary of the applicant's property. This erosion has caused perennial and intermittent surface waters to be located adjacent to the north boundary of the applicant's property thus giving rise to the 30 foot setback which led to this variance request.
- C. Generally the bullheaded waterfront lots on Banks Channel form a continuous bulkhead that is more or less parallel to Banks Channel. The applicant's east facing bulkhead takes a right angle turn when it reaches the bridge thereby providing the opportunity for erosion under the bridge resulting in part from the storm water discharge pipe described above. As noted above, the storm water discharge pipe at this location has in part contributed to the location of the perennial and intermittent surface waters along the northern boundary of the applicant's property.

3. It is the Board's Conclusion that the hardships did not result from actions taken by the applicant. This Conclusion is based on the following Findings of Fact:

- A. The Findings of Fact set forth in the preceding paragraphs are incorporated herein by reference.
- B. The hardship resulting from the location of perennial and intermittent surface waters along the northern boundary of the applicant's property as described above results from the discharge of water from the Causeway Drive Bridge and not from any actions taken by the applicant.

4. It is the Board's Conclusion that the requested variance is consistent with the spirit, purpose, and intent of this subchapter; will secure public safety and welfare; and will preserve substantial justice. This Conclusion is based on all of the Findings of Fact listed above, as well as the following:


- A. The Findings of Fact set forth in the preceding paragraphs are incorporated herein by reference.
- B. The applicant must install an engineered storm water collection and disposal system that meets all requirements of Town ordinances.

- C. The requirement for this engineered system in conjunction with the construction of the single family residence on the property will insure that storm water will be retained on site and the purposes of the Town ordinances will be met.

THEREFORE, on the basis of all the foregoing, IT IS ORDERED that the application for a variance be granted, subject to the requirement that the applicant comply with all other applicable federal, state and local statutes, ordinances and regulations.

Ordered this 31ST day of March, 2015 for the hearing held on March 12, 2015.





Darryl Mills, Chairman
Board of Adjustment

NOTE: If you are dissatisfied with the decision of this Board, an appeal may be taken to the Superior Court of New Hanover County in accordance with the provisions of Section 155.4.7 of the Wrightsville Beach Code and N.C.G.S. §160A-388.

**US Life Saving Service, LLC
c/o Christopher Parker
1 Auditorium Circle
Wrightsville Beach, New Hanover
County**

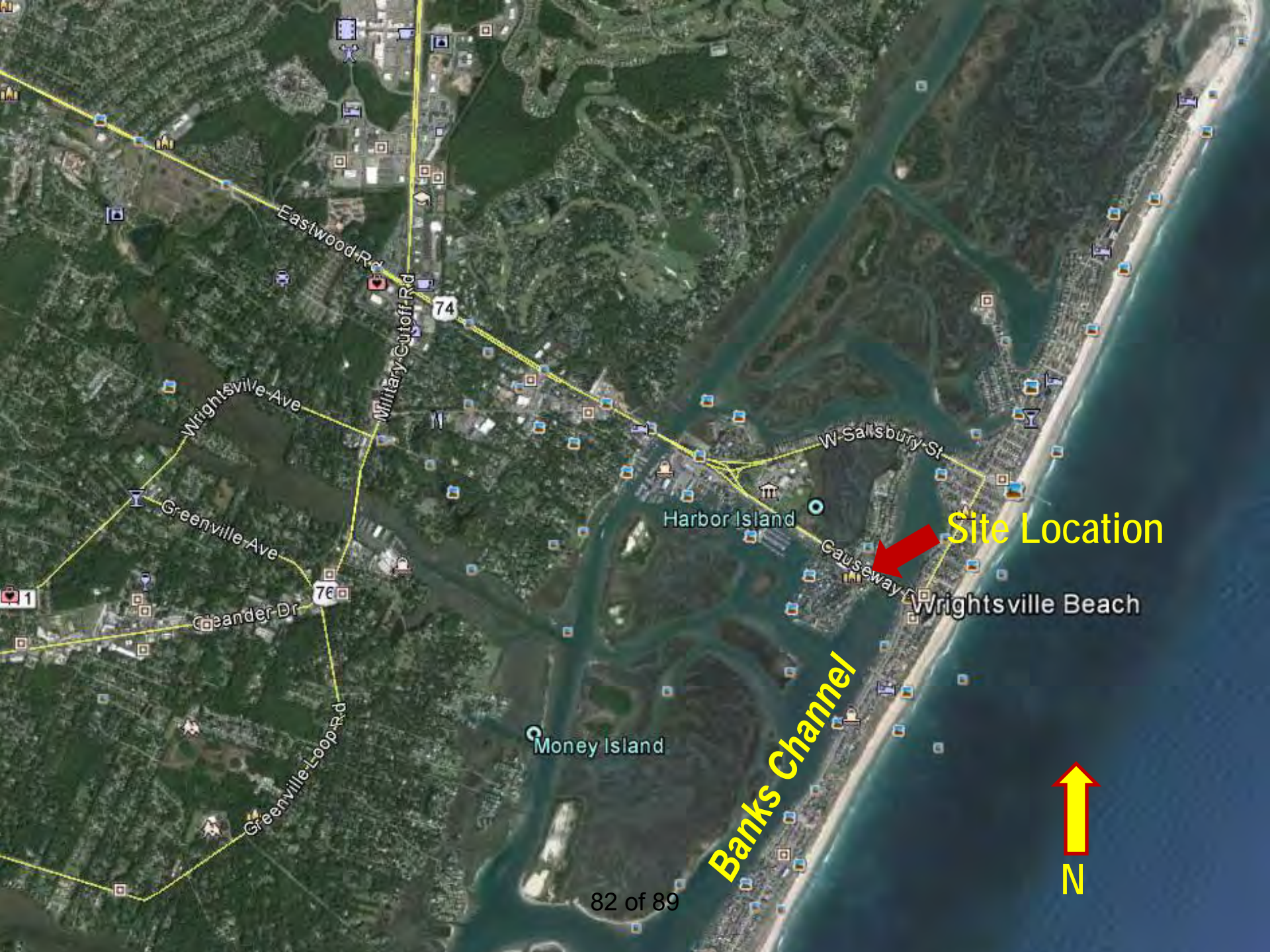
**Variance Request
April 29, 2015**



Site Location

Cape Fear River

N



Site Location

Banks Channel

N



Banks Channel

Site Location

N

Google earth

1 Auditorium Circle

Causeway Dr

© 2015 Google

84 of 89

Google earth

Imagery Date: 10/5/2014 34°12'34.50" N 77°47'55.45" W elev 5 ft eye alt 484 ft



View Of The Project Site And Adjacent Properties Facing East
Photo: NC DCM Photography dated 4.1.2015

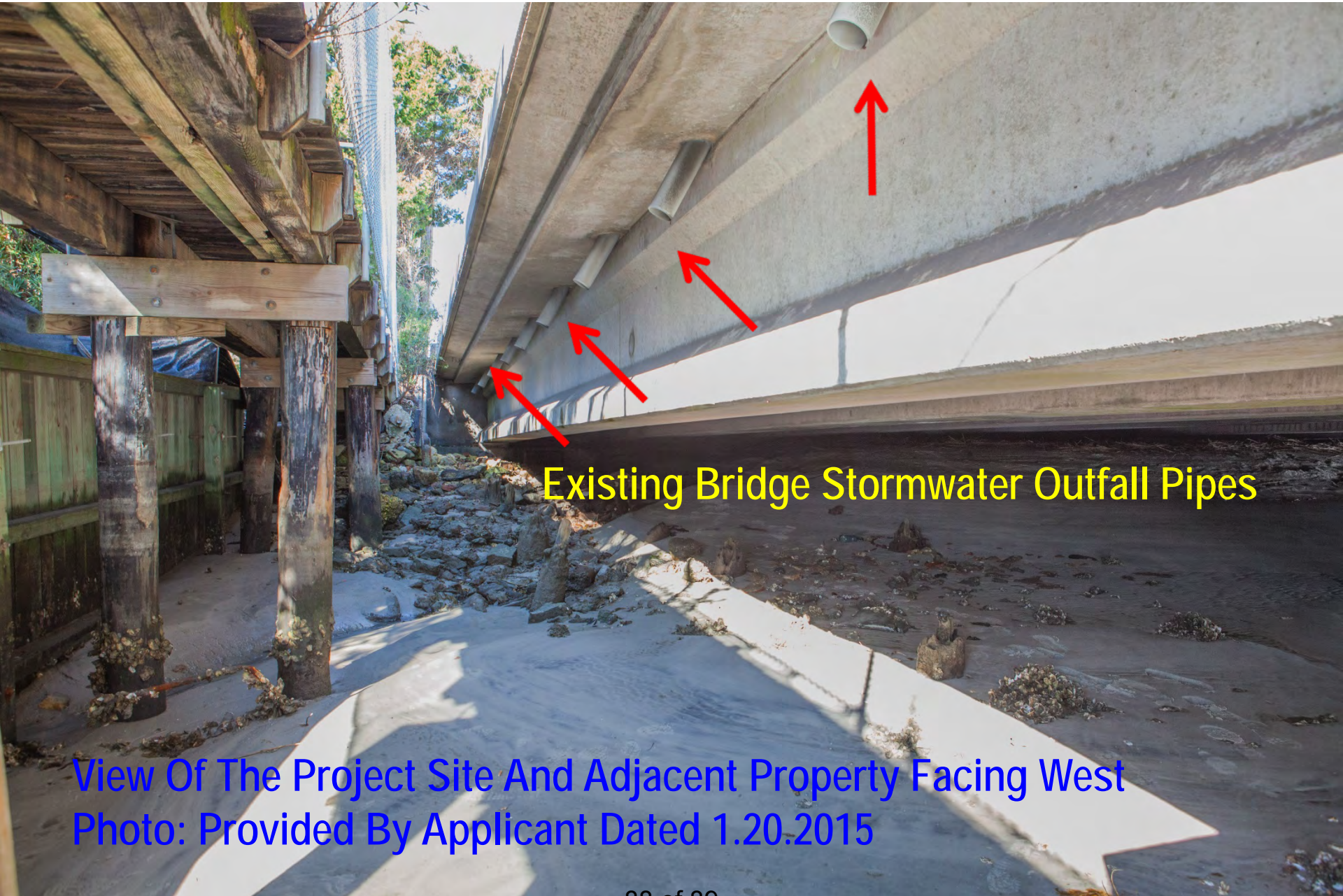
View Of The Project Site And Adjacent Properties Facing West

Photo: NC DCM Photography dated 4.1.2015



View From The Project Site Facing East Towards Banks Channel
Photo: NC DCM Photography dated 4.1.2015





Existing Bridge Stormwater Outfall Pipes

View Of The Project Site And Adjacent Property Facing West
Photo: Provided By Applicant Dated 1.20.2015



Existing Stormwater Outfall Pipe

Applicant

~NHW Boundary

View Of The Project Site And Adjacent Property Facing West
Photo: Provided By Applicant Dated 1.20.2015



North Carolina Department of Environment and Natural Resources

Pat McCrory
GovernorDonald R. van der Vaart
Secretary

April 15, 2015

MEMORANDUM

TO: Coastal Resources Commission

FROM: Tancred Miller
Division of Coastal Management

SUBJECT: 2015 Update to the North Carolina Sea-Level Rise Assessment Report

The Science Panel completed their draft of the 2015 Update to the N.C. Sea-Level Rise Assessment Report as you requested, and delivered it to the Commission on March 31st as required by S.L. 2012-202. A copy of the draft is attached.

In addition, the Technical Peer Review process that the Commission set up with Drs. James Houston and Robert Dean was completed essentially as designed, despite the unfortunate passing of Dr. Dean. The comments generated in the Technical Peer Review process are also attached.

DCM released the report for public comment on April 1st, and the public can submit comments through our website until December 31st. Only a few comments have been received so far.

Dr. Margery Overton will be at your April meeting to present a summary of the report, and to answer any questions you may have. Science Panel members Spencer Rogers and Greg Rudolph are also expected to be in attendance as members of the Coastal Resources Advisory Council.

The next staff update in connection with the Sea-Level Rise Study will be concerning fulfillment of the economic and environmental cost-benefit assessment required under S.L. 2012-202.

NORTH CAROLINA

Sea Level Rise

Assessment Report

2015 Update to the 2010 Report
and 2012 Addendum



This work supported by the N.C. Department of Environment and Natural Resources, Division of Coastal Management.

Disclaimer: This report was prepared by the N.C. Coastal Resources Commission's Science Panel, acting entirely in a voluntary capacity on behalf of the Coastal Resources Commission. The information contained herein is not intended to represent the views of the organizations with which the authors are otherwise affiliated.

Members of the CRC Science Panel

The Science Panel consists of the following individuals, who serve voluntarily and at the pleasure of the Coastal Resources Commission.

Dr. Margery Overton, Chair

Department of Civil, Construction, and Environmental Engineering, N.C. State University

Mr. William Birkemeier, Co-Chair

Field Research Facility, ERDC/CHL, US Army Corps of Engineers

Mr. Steven Benton

N.C. Division of Coastal Management (retired), Raleigh

Dr. William Cleary

Center for Marine Science, University of North Carolina at Wilmington

Mr. Tom Jarrett, P.E.

U.S. Army Corps of Engineers (Retired), Wilmington

Dr. Charles "Pete" Peterson

Institute of Marine Sciences, University of North Carolina at Chapel Hill

Dr. Stanley R. Riggs

Department of Geological Sciences, East Carolina University

Mr. Spencer Rogers

North Carolina Sea Grant, Wilmington

Mr. Greg "Rudi" Rudolph

Shore Protection Office, Carteret County

Dr. Elizabeth Judge Sciaudone, P.E.

N.C. State University, Raleigh

Executive Summary: 2015 Science Panel Update to 2010 Report and 2012 Addendum

Charge: This report has been written by the members of the Science Panel as a public service in response to a charge from the Coastal Resources Commission (CRC) and the N.C. General Assembly Session Law 2012-202. The CRC charge specified that sea level rise projections be developed for a 30-year timeframe.

Background: The Science Panel, along with six additional contributors, issued a report in March 2010 titled “North Carolina Sea Level Rise Assessment Report.” In response to a series of questions by the CRC, in April 2012 the panel issued a follow up Addendum to the report. As stated in these documents, the Science Panel recommendation was for re-assessments to be completed every five years. The present document serves as the 2015 update of the 2010 report.

Approach: It is critical to the Science Panel that our process be transparent. Therefore all numerical values used in this report, as well as the corresponding sources, are presented. In addition, mathematical calculations and formulas employed are described in detail.

What’s New: This document expands on the 2010 report and 2012 addendum in a number of important ways, including the following:

- Inclusion of scenario based global sea level rise predictions from the most recent Intergovernmental Panel on Climate Change (IPCC) Report (AR5).
- Emphasis on the spatial variation of relative sea level rise rates as evidenced by the analysis of data collected by NOAA tide gauges along the North Carolina coast.
- Additional discussion of the expected spatial variability in relative sea level rise rates along the North Carolina coast due to geologic factors.
- Review of recent research indicating that ocean dynamics effects may be a significant source of spatial variability in existing relative sea level rise rates along the North Carolina coast.
- Discussion of recent research into the impacts of sea level rise on the frequency of relatively minor coastal flooding not necessarily associated with storms (*nuisance flooding*).
- Examination of dredging effects on tide range and sea level signal.
- Consideration of a 30-year time frame for sea level rise projections as requested by the CRC.
- Development of a range of predictions at each of the long-term tide gauges along the North Carolina coast based on a combination of local vertical land motion information and the IPCC scenarios.

Summary: Sea level is rising across the coast of North Carolina. The rate of local sea level rise varies, depending on location (spatially) and the time frame for analysis (temporally). Two main factors affect the spatial variation of rates of sea level rise along the North Carolina coast: (1) vertical movement of the Earth’s surface, and (2) effects of water movement in the oceans (including the shifting position and changing speed of the Gulf Stream). There is evidence from both geological data and tide gauges that there is more land subsidence north of Cape Lookout than south of Cape Lookout. This contributes to higher measured rates of sea level rise along the northeastern N.C. coast. Oceanographic research reveals a strong link between speed and position of the Gulf Stream and sea level. This effect has been

observed to increase sea level primarily north of Cape Hatteras. The differences in the rates of relative sea level rise (meaning, the rate of sea level rise at a specific location including local effects, and distinct from the global average rate of sea level rise) at different locations along the North Carolina coast are evident in the sea level trends reported by the National Oceanic and Atmospheric Administration (NOAA) at tide gauge stations along the North Carolina coast. Five tide gauges along the state's coast have collected water level data for long enough to have reported sea level trends. Two are located in Dare County: one of those at the U.S. Army Corps of Engineers' Field Research Facility in Duck and another at the Oregon Inlet Marina. A third is located in Carteret County at the Duke University Marine Lab dock in Beaufort. The fourth station is located in Wilmington, at the U.S. Army Corps of Engineers' maintenance yard and docks at Eagle Island. This location is in New Hanover County, immediately adjacent to Brunswick County. These stations still continue to record water level data. The fifth station was located at the Southport Fishing Pier, but is no longer active.

NOAA makes available these data and an analysis of rate based on linear regression. Data span the time period from the initial installation of the gauge through December 2013 for the gauges at Duck, Oregon Inlet Marina, Beaufort and Wilmington and through 2008 for the gauge at Southport. NOAA reports a high, a low, and a mean value for the rate of relative sea level rise using a 95% confidence interval for each gauge. The Science Panel worked closely with Dr. Chris Zervas (*e.g.*, Zervas 2001, Zervas 2009, Zervas et al. 2013) at the NOAA National Ocean Service Center for Operational Oceanographic Products and Services, who provided additional analyses of tide gauge data for this report. The existing published rate of sea level rise is converted to a future elevation by multiplying the rate plus or minus the 95% confidence interval (for the high/low estimates respectively) by 30 years – the time frame specified by the CRC for the projections in this update.

Since tide gauges only measure past sea levels, the Science Panel used the most recent report of the Intergovernmental Panel on Climate Change (AR5) to provide scenario-based global sea level rise projections. The scenarios chosen to model sea level rise over the next 30 years are the IPCC's low greenhouse gas emissions scenario (RCP 2.6) and the high greenhouse gas emissions scenario (RCP 8.5), as all other scenario projections fall within the range of these two. These values were combined with rates of vertical land movement (subsidence) determined by the analysis of tide gauge records and provided by NOAA (Zervas et al. 2013; Zervas, pers. comm. 2014) to develop a range of values across the North Carolina coast.

Table ES1 summarizes the results. Using existing gauge rates, sea level rise across North Carolina by 2045 would vary from a low estimate of 2.4 inches (with a range between 1.9 and 2.8 inches) at Southport to a high estimate of 5.4 inches (with a range between 4.4 and 6.4 inches) at Duck. Considering the IPCC scenario RCP 2.6 combined with vertical land movement, sea level rise would vary from a low estimate of 5.8 inches (with a range between 3.5 and 8.0 inches) at Wilmington to a high estimate at Duck of 7.1 inches (with a range between 4.8 and 9.4 inches). Considering IPCC scenario RCP 8.5 with vertical land movement, sea level rise would vary from a low estimate of 6.8 inches (with a range between 4.3 and 9.3 inches) at Wilmington to a high estimate at Duck of 8.1 inches (with a range between 5.5 and 10.6 inches).

Table ES1. Three relative sea level rise (RSLR) scenarios by 2045 using published tide gauge rates (NOAA 2014a), and IPCC scenario projections RCP 2.6 and RCP 8.5 (Church et al. 2013) representing the lowest and highest greenhouse gas emission scenarios, combined with local vertical land movement (VLM) at each tide gauge.*

Station	Tide Gauge Projections		IPCC RCP 2.6 + VLM		IPCC RCP 8.5 + VLM	
	RSLR in 30 years (inches)		RSLR in 30 years (inches)		RSLR in 30 years (inches)	
	Mean	Range	Mean	Range	Mean	Range
Duck	5.4	4.4-6.4	7.1	4.8-9.4	8.1	5.5-10.6
Oregon Inlet	4.3	2.7-5.9	6.3	3.9-8.7	7.3	4.7-9.9
Beaufort	3.2	2.8-3.6	6.5	4.2-8.7	7.5	5.0-10.0
Wilmington	2.4	2.0-2.8	5.8	3.5-8.0	6.8	4.3-9.3
Southport	2.4	1.9-2.8	5.9	3.7-8.2	6.9	4.4-9.4

*Note: Projections were rounded to the nearest tenth of an inch.

Using the Projections: The range of sea level values (from 1.9 to 10.5 inches) reported in **Table ES1** reflects both the uncertainty in the predictions and the spatially varying nature of sea level in North Carolina. Economic, social and environmental sustainability in the coastal region of North Carolina will, in part, be dependent on how this information is used. Agency groups should work in an open and informed manner with the scientific community, local landowners and political bodies, and other affected stakeholders to consider acceptable levels of risk. Planning objectives that span longer time frames (greater than 30 years) will require looking at the IPCC results directly as the IPCC scenarios begin to differ significantly beyond 30 years.

Table ES1 reflects change in mean sea level. Recent research into the frequency of coastal flooding has shown that, regardless of the rate of rise, as the mean sea level increases, North Carolinians should expect more frequent flooding of low-lying areas.

Future Data Collection, Data Analysis and Reporting: Recommendations are made to:

- continue to monitor oceanographic research with regards to the effect of ocean-atmospheric oscillations and regional ocean currents (*e.g.*, the Gulf Stream) on sea level,
- sustain existing water level recording stations and land movement measurements and establish additional gauges to provide more complete spatial coverage,
- review updated satellite sea level data as the record is extended and consider use of these data in the future,
- consider additional analysis of the tide gauge data to standardize the time period covered using the NOAA analysis of rate procedures, and
- update the assessment every five years to include the rapidly changing science of projecting sea level rise.

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Terms and Acronyms

BIMP: Beach and Inlet Management Plan – a joint project by the North Carolina Division of Water Resources and the North Carolina Division of Coastal Management to manage the state's inlets and beaches

AR5: Fifth Assessment Report – the most recent report (2013) on climate change from the Intergovernmental Panel on Climate Change

CORS: Continuously Operating Reference Stations – ground based reference stations that continuously collect and record GPS data

Eustatic Sea Level – the global sea level; eustatic sea level changes affect all areas across the globe and include changes in the volume of water in the ocean or changes in ocean basins that affect the volume of water they can hold

GIA: Glacial Isostatic Adjustment – describes the Earth's rebound, both positively and negatively, from the melting of kilometers-thick ice sheets that covered much of North America and Europe during the last glacial maximum approximately 20,000 years ago

GPS: Global Positioning System – a satellite based navigation system that provides location and time information anywhere on or near Earth where there is an unobstructed line of sight to four or more GPS satellites

GSL: Global Sea Level – the global average sea level

IPCC: Intergovernmental Panel on Climate Change – the leading international body for the assessment of climate change. It operates under the auspices of the United Nations (UN)

Nuisance flooding – flooding events not necessarily associated with storms

OE: Oceanographic effects – changes in sea level due to movement of the ocean waters, including effects of ocean-atmospheric oscillations and changes in ocean currents

RCP: Representative Concentration Pathways – four greenhouse gas concentration trajectories adopted by the IPCC for AR5; these scenarios are used for climate modeling and research and represent possible climate futures depending on the amounts of greenhouse gases emitted in the years to come

RSL: Relative Sea Level – the sea level at any location and time

Thermal expansion of ocean water – increase in ocean water volume due to a corresponding increase in water temperature

VLM: Vertical land movement or vertical land motion – sinking or rising of the Earth's surface (*i.e.*, subsidence or uplift, respectively)

1. Introduction

In 1954, Hurricane Hazel made landfall at the border of North Carolina and South Carolina as a category 4 hurricane arriving at spring high tide and packing 140 mph winds (Smith 2014). Her winds, waves and 18-ft storm surge swept across the barrier islands causing wide-spread destruction along the coast. In North Carolina, 19 people died; on Long Beach only five of 357 homes survived. Hurricane Hazel was one of the most damaging storms in North Carolina history. Because of the sea level change that has occurred since, a storm of similar intensity today, 60 years later, would have a storm surge approximately 5 inches higher (~10 inches higher north of Cape Hatteras). In low lying areas of the coast, a few inches may be the difference between the ground floor of a house staying dry or being underwater. Sea Level change is not a new coastal hazard, but over time it “exacerbates existing coastal hazards such as flooding from rain or tide, erosion, and storm surge” (Ruppert 2014). Over time, rising water levels also increase the occurrence of *nuisance flooding* (flooding events not necessarily associated with storms) during more frequent events (like monthly spring tides) (Sweet et al. 2014, Sweet and Park 2014, Ezer and Atkinson 2014).

Because of the potential impact of future sea levels to coastal North Carolina, in 2009 the Coastal Resources Commission (CRC) asked the Science Panel on Coastal Hazards to develop an assessment of future sea levels for NC. The first assessment was published in March 2010 (NC Science Panel 2010). Because climate and sea level science is advancing rapidly, the 2010 report recommended an update every five years. In 2013 the CRC, responding to Session Law 2012-202 from the N.C. General Assembly, requested the first 5-year update using the latest science to estimate future sea levels. The CRC requested that the update consider only the next 30 years, from 2015 to 2045 (see Appendix A for the charge from the CRC and Appendix B for S.L. 2012-202) rather than the 90-year timeframe used in the original report.

Since our original report, there have been significant advances in climate science and the publication of several major reports, including the 2013 report of Working Group I (WG1) to the Fifth Assessment (AR5) of the Intergovernmental Panel on Climate Change (IPCC 2013b, 2013c). That report is a thorough and updated analysis of climate and sea level prediction. It represents a 5-year effort by 250 authors and their conclusions were based on 9,200 published papers and were finalized after fielding 50,000 comments.

Because the IPCC report is based on peer-reviewed research and is itself peer-reviewed science, it is the most widely used and vetted climate document. We make use of their projections in the present report. The AR5 scenarios are currently also being used in recent efforts by New York State (New York State Energy Research and Development Authority 2014) and the Canadian coast (Zhai et al. 2014).

Also published since our 2010 report are the 2014 update to the United States National Climate Assessment, which includes sea level predictions (Melillo et al. 2014) and a series of studies of sea level along the Atlantic coast which are relevant to North Carolina and are discussed in this report.

In this update, we:

- 1) Introduce the concept of sea level and the variables that control sea level change;
- 2) Provide and explain how sea level change varies across coastal North Carolina and the factors that control that variation;
- 3) Present a range of sea level values appropriate for different areas of North Carolina, which may occur by 2045 based on the IPCC scenarios as well as local geologic and oceanographic variations;
- 4) Provide guidance as to how to interpret and make use of these values.

2. Sea Level Change: What influences ocean water levels?

The sea level at any location and time is known as the Relative Sea Level or RSL, which is the combination of three primary factors including the *Global Sea Level (GSL)*, *Vertical Land Movement (VLM)* and *Oceanographic Effects (OE)*. GSL and RSL are discussed in this section; VLM and OE are discussed in **Section 3**. These parameters are usually discussed in terms of their rates of temporal change, commonly expressed in mm/year.

2.1 Historical Sea Level Change

Over the scale of 10,000s to 100,000s of years, climate has oscillated between extensive periods of cold and warm phases, triggering the uptake of seawater in glacial ice during cold stages of global climate and the release of this water during warm episodes (Wright 1989). Periods of glaciation and interglaciation, and the corresponding fall and rise of sea level respectively have been well documented in the geologic record using an array of indicators [e.g., oxygen isotopes in calcium carbonate fossils, coral reef terraces, marsh peat elevation and geochemistry, paleo-shorelines, etc. (Cohen and Gibbard 2011; Blanchon and Shaw 2005; NOAA 2014b)]. The cyclicity of the “Ice Ages” has been used to signify the Quaternary geologic period, which includes both the Pleistocene and Holocene Epochs.

As depicted in **Figure 1** (Imbrie et al. 1984) the most recent previous interglacial (warm) period was approximately 125,000 years ago when sea level was ~16 to 20 feet above present, which was subsequently followed by a period of glaciation that reached a maximum at ~20,000 years ago when sea level was ~425 feet below present. Currently, we are in a warm phase that was first marked by rapid de-glaciation and rising sea level, which also represents the demarcation

of the Pleistocene/Holocene boundary (**Figure 2**, Donoghue 2011; Fairbanks 1989; Peltier and Fairbanks 2006; Bard et al. 2010). Climate and sea level have relatively plateaued over the past 5,000 years and sea level is estimated to have risen on the order of 3 feet during this timeframe (**Figures 2 and 3**; Kemp et al. 2011).

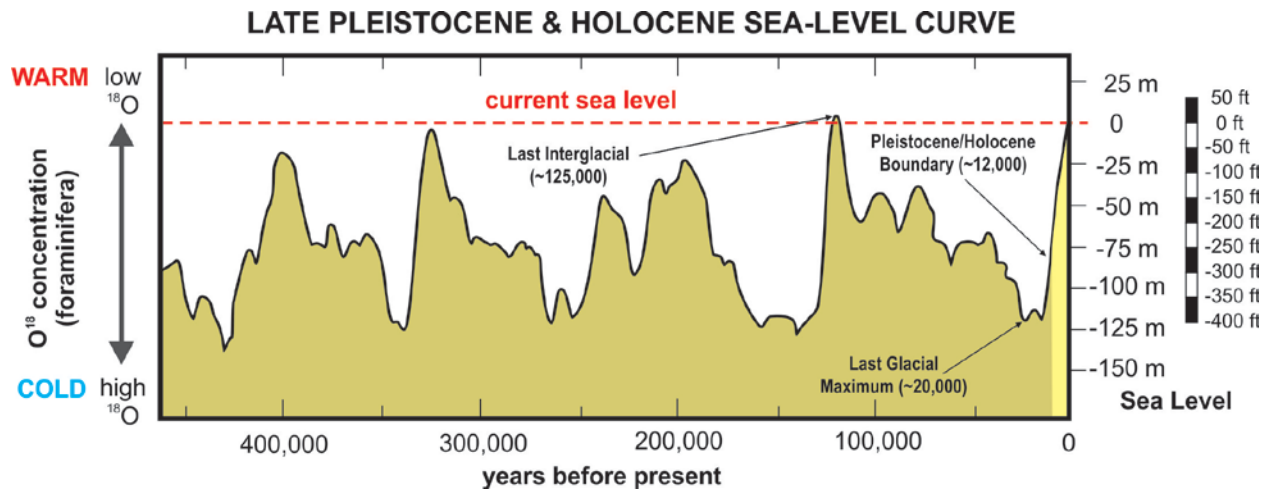


Figure 1. Global sea level curve over the scale of 100,000s of years developed from the marine delta ^{18}O record, which also depicts the last interglacial highstand and glacial maximum. (Modified from Imbrie et al. 1984)

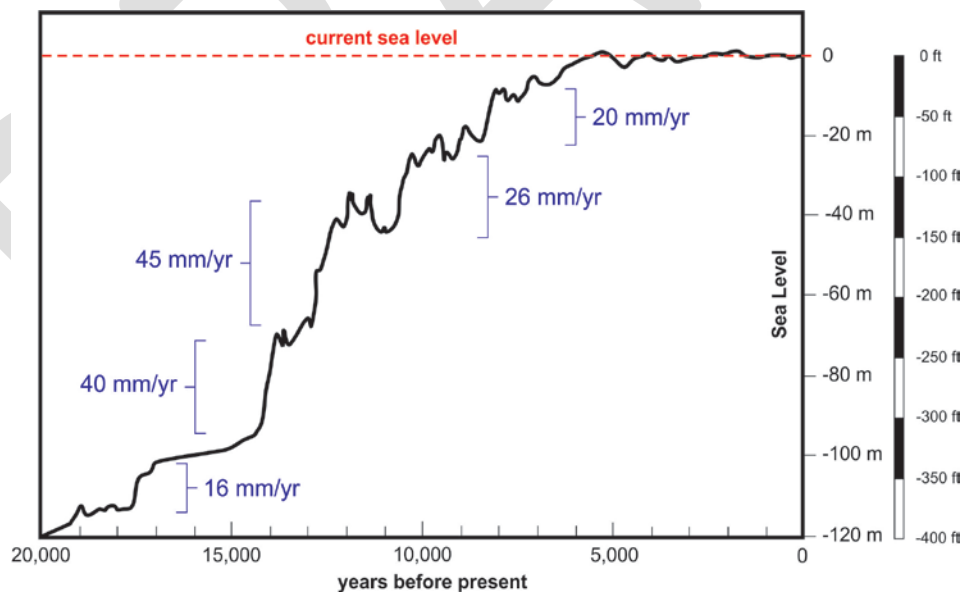


Figure 2. Global sea level curve over the scale of the past 10,000s of years based on radiocarbon-dated reef corals and paleoshoreline indicators constraining sea level movement since the last glacial maximum. (Adapted from Donoghue 2011).

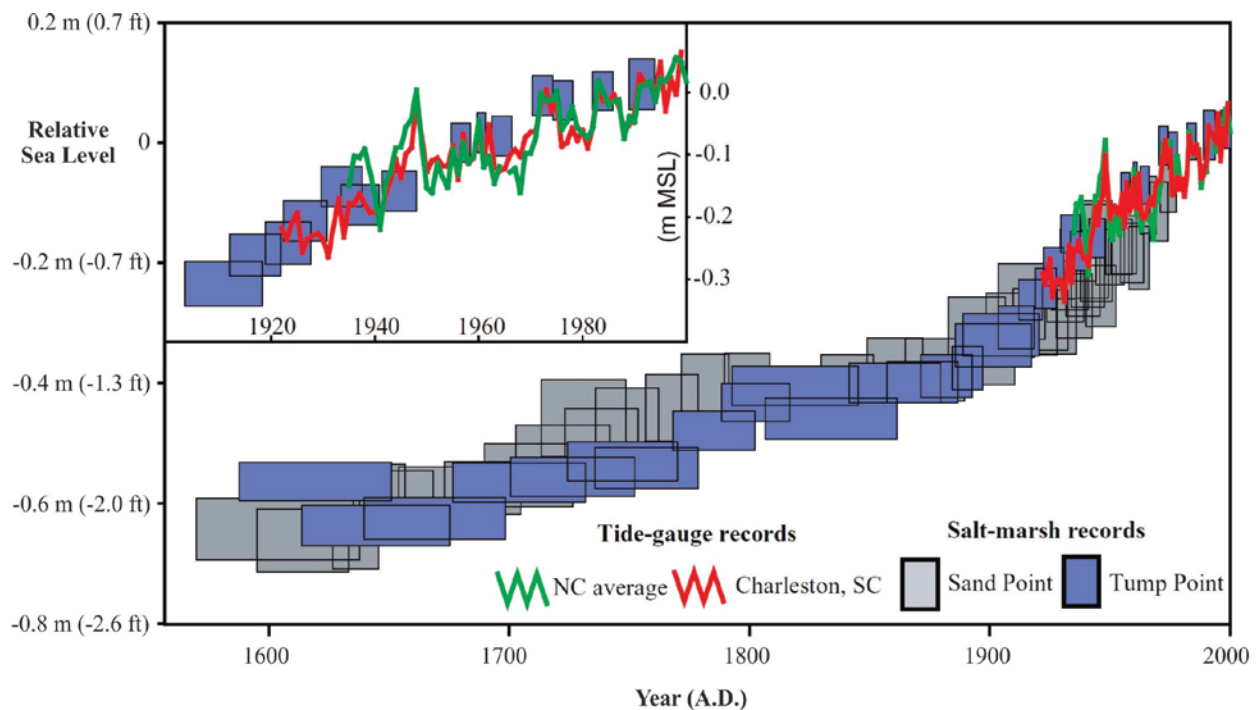


Figure 3. Sea level curve over the scale of the past decades or centuries of years based on N.C. salt marsh records, presented along with the N.C. and S.C. tide gauge records superimposed upon the latter portion of the salt marsh data. The rate of sea level rise has ranged from approximately 0–2 mm/year during the timeframe shown. (Adapted from Kemp et al. 2009)

2.2 Global or Eustatic Sea Level (GSL)

Sea level movement attributable to changes in the volume of water in the world’s ocean basins, in general responding to cooling and warming, is referred to as eustatic or Global Sea Level (GSL) change. There are many forces driving changes in water volume (Table 1, Church et al. 2013) and future GSL is anticipated to be controlled predominantly by the thermal expansion of ocean water and mass loss from glaciers, ice caps, and ice sheets on the Earth’s surface.

Table 1. Major factors contributing to Global Sea Level (GSL), representing the volume change of water in the world’s ocean basins; and their respective inputs to the present rate of GSL change. (Adapted from Church et al. 2013.)

FACTORS CONTRIBUTING TO GLOBAL SEA LEVEL (GSL) FROM 1993-2010	
Thermal Expansion (+) or Contraction (-)	39%
Glaciers (non Greenland and Antarctica)	27%
Greenland and Antarctic ice sheets	21%
Land water storage	13%

2.3 Relative Sea Level (RSL)

Relative sea level is the measurement of the sea surface elevation relative to a local datum incorporating both the global rate of rise and other dynamics affecting land and/or sea movement such as tectonic uplift, land subsidence, glacial isostatic adjustment (GIA), ocean-atmospheric oscillations, and other non-climatic local oceanographic effects (**Table 2**, Church et al. 2013). Importantly, tide gauges and satellites record relative sea level changes at particular locations. For instance, in areas where mountain building is occurring, the land may be rising at a rate close to that of GSL. Therefore, the measured rate of sea level rise would be close to zero. Conversely, in areas where land is subsiding (sinking), sea level measurements will record sea level rise at a higher rate than global sea level rise because GSL is rising and the land is sinking, producing an additive effect.

Table 2. Major factors contributing to positive and negative changes to the surface of the Earth and sea. These changes affect Relative Sea Level (RSL). (Adapted from Church et al. 2013.)

FACTORS CONTRIBUTING TO CHANGES IN THE EARTH & SEA SURFACES	
LAND	SEA
Plate Tectonics	Ocean-Atmospheric Oscillations
Faults	<i>El Niño</i> Southern Oscillation
Volcanic-isostasy Earthquakes	Atlantic Multi-decadal Oscillation Pacific Decadal Oscillation
Glacial Isostatic Adjustment	Oceanographic effects on western boundary currents like the Gulf Stream
Subsidence	River run-off/floods
Structural deformation	Astronomical Tides
Compaction	Wind driven pile up
Loss of interstitial fluids	Sea Surface Topography
(hydrocarbon and/or water)	(changes in water density & currents)

3. Relative Sea Level Change: What causes variation across North Carolina?

Along the North Carolina coast, sea level is rising. The rate of rise varies depending on the location. There are two primary reasons for this variation: vertical land motion (VLM) and the effects of ocean dynamics. These are discussed in this section.

3.1 Vertical Land Motion (VLM)

Two primary regional elements impact vertical land motion that have long-term overprints on North Carolina's relative sea level record – structural deformation of the bedrock underlying the coastal plain (Grow and Sheridan 1988; Klitgord and Hutchinson 1988; N.C. Geological Survey 1991; Snyder et al. 1993) and glacial isostatic adjustment in response to the retreat of glacial ice sheets in North America (Horton et al. 2009; Peltier 2004). These factors segregate the North Carolina Coastal Plain into different zones of relative sea level change.

Tectonic Structural Deformation Resulting in Subsidence and Uplift

The rifting of the supercontinent Pangea and formation of the Atlantic Ocean that began 180 million years ago had (and continues to have) a pronounced impact on the spatial geometry and physical dynamics of the N.C. Coastal Plain and Continental Shelf (Dillon and Popenoe 1988; Gohn 1988; Klitgord and Hutchinson 1988; Riggs et al. 2011). The resulting deformation of the crystalline rock (bedrock) created structural lows providing basins for subsequent deposition of thick sequences of sediment/rock, and structural highs that limited the amount of sediment/rock accumulation. The rates of modern subsidence and uplift are related to the processes still at work that created the highs and lows of the bedrock surface and determined the thickness of sediment/rock accumulation, as well as the subsequent erosion and loss of sediments/rocks. In general, there is a greater amount of subsidence associated with the structural lows that correspond to areas of thick sediment/rock accumulation and conversely, less subsidence, or a greater likelihood of uplift associated with the structural highs and areas of low sediment/rock accumulation areas. This produces the fundamental differences between the southeastern and northeastern North Carolina coastal systems, which are characterized by stability to slight uplift and subsidence, respectively (Riggs 1984; Popenoe 1990; Riggs and Belknap 1988; Schlee et al. 1988; Riggs et al. 1990, 1995; Snyder et al. 1990).

Glacial Isostatic Adjustment (GIA)

GIA describes the Earth's rebound, both positively and negatively, from the melting of kilometers-thick ice sheets that covered much of North America and Europe during the last glacial maximum approximately 20,000 years ago (Peltier 2004). Accumulation and subsequent melting of vast ice masses caused the depression and release, respectively, of the Earth's surface beneath the ice sheet and developed fore-bulges of the surface out in front of the ice sheet. The ongoing rates of GIA rebound are measured directly in the northern portions of the U.S., but are primarily estimated based upon model studies within the southern portions of the country, including North Carolina. More specifically, models for the northeastern North Carolina coastal system demonstrate the region was part of a fore-bulge that lifted the Earth's surface upward during the last glacial maximum, but which has been collapsing (subsiding) since and continues today (Engelhart et al. 2009, 2011; Horton et al. 2009). This phenomenon

also causes some ocean basins to be subsiding as mantle material moves from under the oceans into previously glaciated regions on land.

Other Factors Influencing Vertical Land Motion

The extraction of fluids such as water and fossil fuels from subsurface sediments by extensive pumping is also known to increase regional land subsidence as evidenced in southern Chesapeake Bay, Va.; Houston, TX; etc. (Eggleston and Pope 2013; Coplin and Galloway 1999). However no studies have been conducted citing fluid extraction as a factor in eastern North Carolina, even in the coast's major water *Capacity Use Areas* where high levels of fresh-water aquifer pumping occurs; specifically the Central Coastal Plain Capacity Use Area or in the Capacity Use Area #1 region near the Aurora phosphate mine and Pamlico River Estuary (NC Department of Environment and Natural Resources 2014).

Geological Zonation of the North Carolina Coastal Plain

Studies demonstrate there is a regional effect of uplift and subsidence on RSL rise in North Carolina (Engelhart et al. 2009, 2011; Kemp et al. 2009, 2011; van de Plassche et al. 2014). However on the basis of existing data, it is extremely difficult to separate the effects of structural deformation from GIA processes. Consequently, the Science Panel assumes for the purpose of this analysis that both processes are ongoing and differentially impact the North Carolina coastal system. Because no data are available to constrain the precise inputs of the two processes, they are considered together as a net influence on vertical land motion. Regions with substantial variations in the rate of vertical land motion have been delineated for coastal North Carolina and are described below and graphically depicted in **Figure 4**. The figure was developed by members of the Science Panel and it is important to note the lines represent the general location of divisions in geologic characteristics and are not to be interpreted as delineation for policy implementation.

Zone 1: Carolina Platform: Old crystalline basement rocks form a high platform within this zone that is capped by a relatively thin layer of younger marine sediment units. This results in higher land topography; a broad, shallow, rock-floored continental shelf; and a coastal system of narrow barrier islands and estuaries (Riggs et al. 1995, 2011). This zone is characterized by a relative rate of uplift of 0.24 mm/yr \pm 0.15 mm (van de Plassche et al. 2014).

Zone 2: Albemarle Embayment: The old crystalline basement rocks slope downward to the north forming a deep basin which has been buried through time with a very thick layer of younger marine sediments (Mallinson et al. 2009). This results in very low land topography; a narrow and deep sediment-floored continental shelf; and a coastal system dominated by broad, embayed estuaries and high wave energy barrier islands

(Riggs et al. 1995, 2011). This zone is characterized by a high rate of relative subsidence of 1.00 ± 0.10 mm/yr (Engelhart et al. 2009, 2011; Kemp et al. 2009, 2011).

Zone 3: Cape Lookout Transition Zone: This intermediate zone occurs in the region where the crystalline basement rocks of the Carolina Platform (Zone 1) dip gradually into the deeper basin of the Albemarle Embayment (Zone 2) (Snyder et al. 1990, 1993). The resulting coastal system contains sediment rich barrier islands with extensive beach ridges, dune fields, and moderate sized shore-parallel estuaries (Riggs et al. 1995, 2011). Since there is a general northward slope of both the basement rocks and the younger sequence of marine deposits between the uplift of Zone 1 and the subsidence of Zone 2, the vertical land movement in this area likely falls in a range between those two zones.

Zone 4: Inner Estuarine Hinge Zone: This is an intermediate zone that generally constitutes the central Coastal Plain in northeastern NC. It represents the transition from the upper Coastal Plain to the west and the lower Coastal Plain to the east which is dominated by the Albemarle Embayment (Zone 2) (Brown et al. 1972; Riggs 1984). The crystalline bedrock occurs at intermediate depths and is covered by a moderately thick sequence of older marine sediments. The coastal system within this hinge zone consists of the inner or western portions of the drowned river estuaries that grade westward and upslope into the riverine systems of the stable upper Coastal Plain (Riggs et al. 1995, 2011). Since the Inner Estuarine Hinge Zone occurs between the stable region of the upper Coastal Plain to the west and the subsiding Albemarle Embayment (Zone 2) to the east, subsidence is estimated to have an approximate value between zero and 1 mm/yr (as measured in Zone 2).

The information presented for Zones 1 through 4 is intended to be utilized as estimates of the VLM contribution characterizing the difference between the GSL and the different RSL values observed along the North Carolina coast. This assumption is predicated by the following: (1) the geographic area of each zone is large and therefore the underlying geology is spatially heterogeneous, resulting in different rates of VLM within each zone; (2) similarly, the collapse of the deglaciation fore-bulge is also not uniform across the northern provenance of the state and subsidence rates across Zones 2 and 4 most notably will be different; (3) the VLM numbers were obtained from sediment studies at two discrete locations in two of the four zones—the VLM calculation therefore is applicable to only the specific sampling location(s) and again may not represent the entire zone; and (4) no exact VLM numbers are provided for Zones 3 and 4, rather, the values are expected to be in a range between known values in adjacent zones.

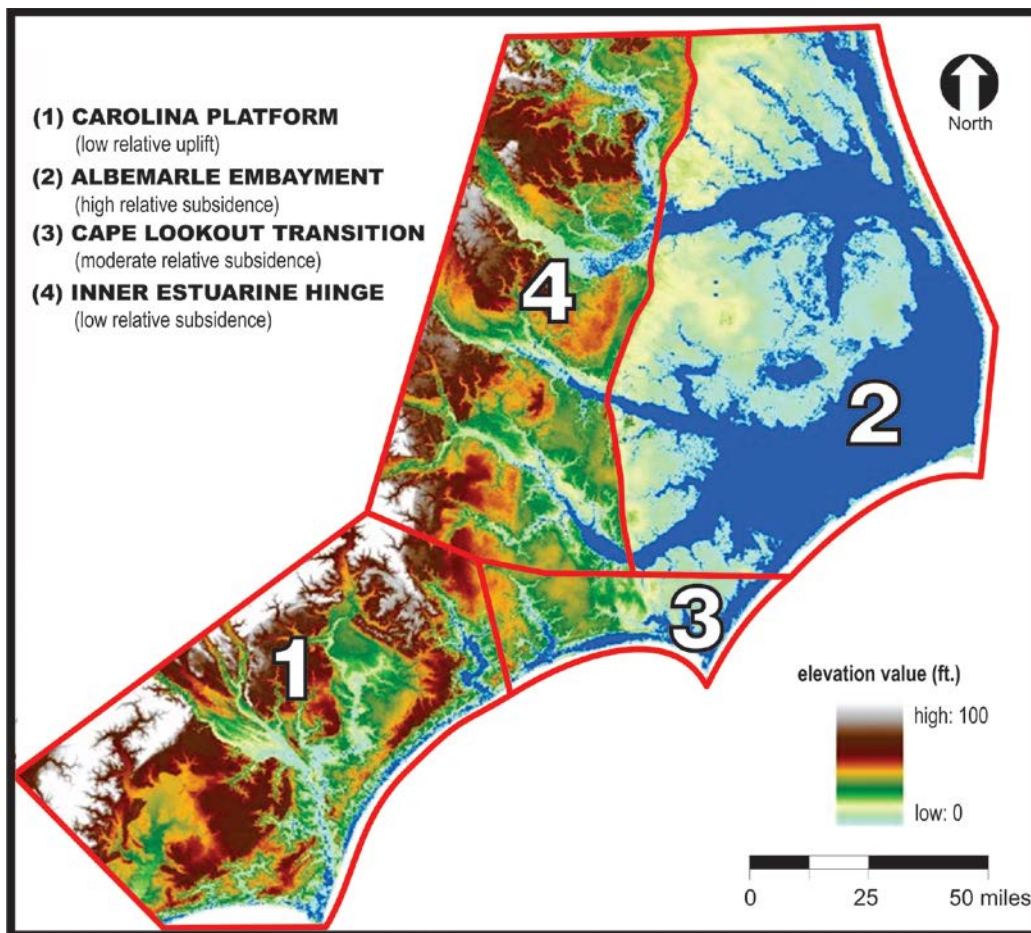


Figure 4. Zones of uplift and subsidence across coastal North Carolina based on major differences in structure, composition, and thickness of the underlying geologic framework.

3.2 Oceanographic Effects

Data observed from tide gauges (NOAA 2014a) show sea level rise rates along the mid-Atlantic coast of more than twice the global sea level rise average rate from 1900 to 2009 of 1.7 mm/yr determined by Church and White (2011). Some of that difference is attributed to vertical land movement, discussed in the previous section, and the remainder to short and longer term oceanographic effects (see **Table 2**). Examples relevant to the N.C. coast include sea level response to the Atlantic Multi-decadal Oscillation (AMO), North Atlantic Oscillation (NAO), and velocity changes and position shifting of the Gulf Stream (Ezer et al. 2013). The signature of these is imprinted in the sea level record (both satellite and tide gauge measurements) and considerable recent research has looked at separating out temporal, local, and global effects.

Sallenger et al. (2012) identified a “hotspot” approximately 600 miles north of Cape Hatteras where the sea level rise rate increase was 3 to 4 times the global rate, while south of Cape Hatteras there was no increase. Houston and Dean (2013) examined the tide gauge analysis of Sallenger et al. (2012) and pointed out that because of long-term quasi-periodic variations in

the record up to 60 years (see Chambers et al. 2012), the records used for computing acceleration were too short. Most studies use a linear (or quadratic) regression analysis to compute the sea level trend and acceleration which is sensitive to both record length and the variation included in the period of coverage. Ezer (2013), and Ezer and Corlett (2012) used an Empirical Mode Decomposition/Hilbert-Huang Transformation (EMD/HHT) to remove the quasi-periodic variations from the trend, thereby allowing the direct computation of the acceleration in the record. They found similar findings to those of Sallenger et al. (2012) and Boon (2012) with marked differences north and south of Cape Hatteras. There is evidence that the Atlantic Ocean circulation is slowing down (Smeed et al. 2014), resulting in a weakening of the Gulf Stream. Ezer et al. (2013) and Ezer (2013) hypothesize that variations in the Gulf Stream location and strength change the sea surface height gradient, raising sea level along the U.S. East Coast north of Cape Hatteras and lowering sea level in the open ocean southeast of the Gulf Stream. They correlate observational data to Gulf Stream changes in support of this hypothesis.

Kopp (2013) examined the findings in the mid-Atlantic of Boon (2012), Sallenger et al. (2012), and Ezer and Corlett (2012) using a different technique, a Gaussian Process model. He confirmed a recent shift toward higher than global sea level rise rates in the mid-Atlantic, but noted that the rates were not unprecedented within the available record and would need to continue for two more decades before they would exceed the range of past variability. Yin and Goddard (2013) and Calafat and Chambers (2013) also examine the relationship between variation in oceanographic observations and sea level change along the Atlantic coast and obtained similar patterns as in Ezer (2013).

Along with these studies of the change in RSL along the Atlantic coast are new studies into the increased frequency of minor flooding. Flooding occurs when sea level, typically during a storm or during high tide, exceeds land elevation. Sweet et al. (2014), Sweet and Park (2014) and Ezer and Atkinson (2014) show that water level exceedance above an elevation threshold for “minor” (meaning, not necessarily associated with a storm event) coastal flooding, established by the local NOAA National Weather Service forecast offices, has increased over time, and that minor, nuisance flooding event frequencies are accelerating at many East and Gulf Coast gauges. They found that some of the increased frequency of flooding resulted both from high rates of VLM at locations like Duck, N.C. and from natural oceanographic variation. These factors were less important at Wilmington, N.C. but the frequency of nuisance flooding has also increased there because of the low elevation threshold established by the local forecast office. Ezer and Atkinson (2014) and Boon (2012) have both examined nuisance flooding using available tide station data. All of these studies strongly indicate that, as mean sea level rises, the frequencies of flooding will increase at all locations.

The studies discussed above, all published in just the past two years, represent the interest and focus on the mid-Atlantic and the challenge of separating naturally varying ocean dynamics

from GSL changes. Relevant to North Carolina is the growing evidence that sea level change is currently greater north of Cape Hatteras (after the Gulf Stream separates from the coast) than it is to the south and that oceanographic effects at times can greatly influence RSL along the coast. At this stage, it is unknown whether oceanographic effects on RSL will persist into the future; however, this is an important area of current oceanographic research which should be followed closely in future sea level rise assessment reports.

The variability of relative sea level change along the North Carolina coast is examined further in the following section, using data measured at tide gauges.

4. Tide Gauge Data in North Carolina

In North Carolina there are five NOAA tide gauges with published rates of sea level change. The measured rates vary along the coastline, with the highest in Dare County in the northeast and the lowest along New Hanover and Brunswick counties to the south. The Science Panel worked closely with Dr. Chris Zervas (*e.g.*, Zervas 2001, Zervas 2009, Zervas et al. 2013) at the NOAA National Ocean Service Center for Operational Oceanographic Products and Services, who provided additional analyses of the tide gauge data for this report.

4.1 Measured Historical Local Sea Level Rise in North Carolina

In order to accurately determine historical sea level change trends nationwide, Zervas (2001, 2009) used National Water Level Observation Network stations with a minimum of a 30-year record, because trends computed with shorter data ranges have wide error bars and in some cases differ noticeably from longer-term stations nearby. The data analyzed are monthly mean sea levels, which are the arithmetic average of all of the hourly data for each complete calendar month. The monthly data are characterized as an autoregressive time series of order 1 and processed such that the monthly seasonal trend is identified and removed and a linear long-term trend is determined (Zervas 2001, 2009). This method accounts for the fact that consecutive monthly mean water levels are not independent variables, and it provides an estimate of the uncertainty associated with the long-term trend.

Published sea level trends are available (NOAA 2014a) through calendar year 2013 for five stations along the North Carolina coast (see **Figure 5**). These long term trends are presented in **Table 3**. In general, the sea level trends from the stations north of Cape Hatteras (Duck, Oregon Inlet) are substantially higher than those from the stations south of Cape Hatteras, with the highest sea level rise in North Carolina measured at Duck.

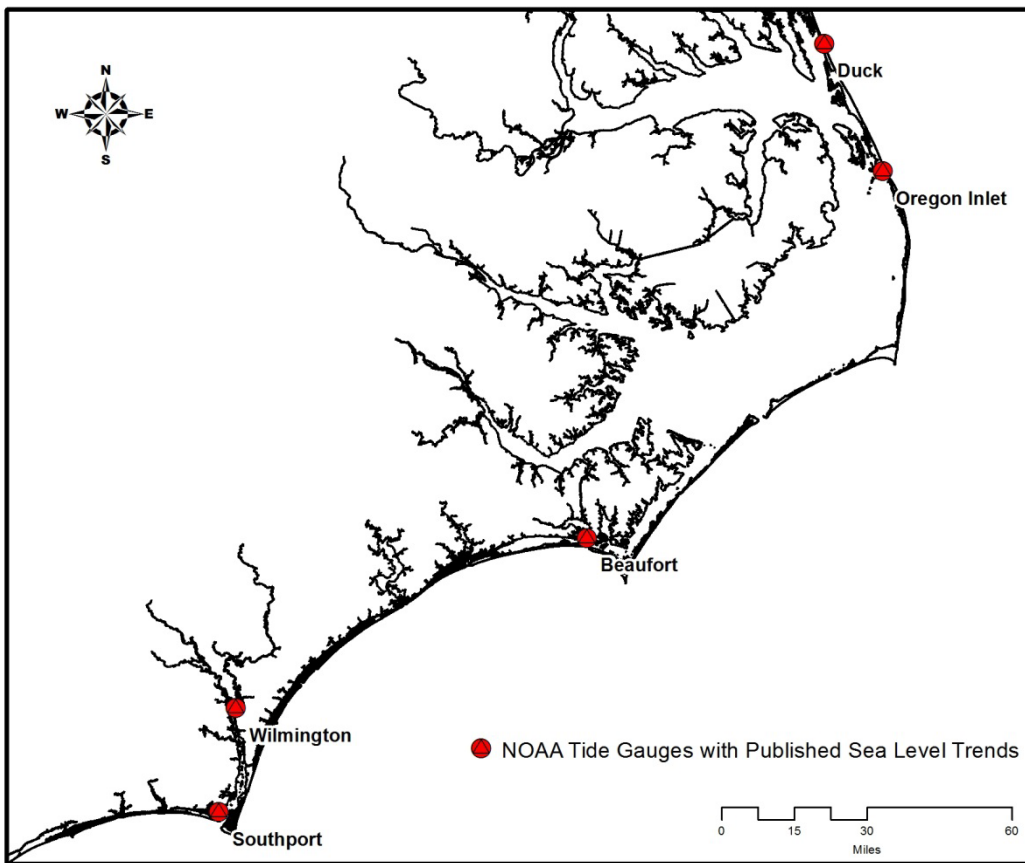


Figure 5. Location of NOAA tide gauges with published sea level trends in North Carolina.

Table 3. Long Term Sea Level Change Trends in North Carolina (NOAA 2014a).

Station (North to South)	Sea Level Change Trend, mm/yr (NOAA 2014a)	Coverage Dates	Time Span of the Data (years)
Duck	4.57 ± 0.84	1978-2013	36
Oregon Inlet	3.65 ± 1.36	1977-2013	37
Beaufort	2.71 ± 0.37	1953-2013	61
Wilmington	2.02 ± 0.35	1935-2013	79
Southport	2.00 ± 0.41	1933-2008	76

The monthly mean sea level trend plots from NOAA for each location are shown for reference in **Figure 6**. It is noted that the Oregon Inlet and Southport gauges have some discontinuity in their records. Zervas (2001, 2009) notes that at some locations where sea level trends were determined, there are long data gaps. However, it is stated that the existing discontinuous data can still provide good estimates of linear mean sea level trends because the vertical datums have been carefully maintained through periodic leveling to stable benchmarks with respect to the adjacent landmass (Zervas 2001, 2009).

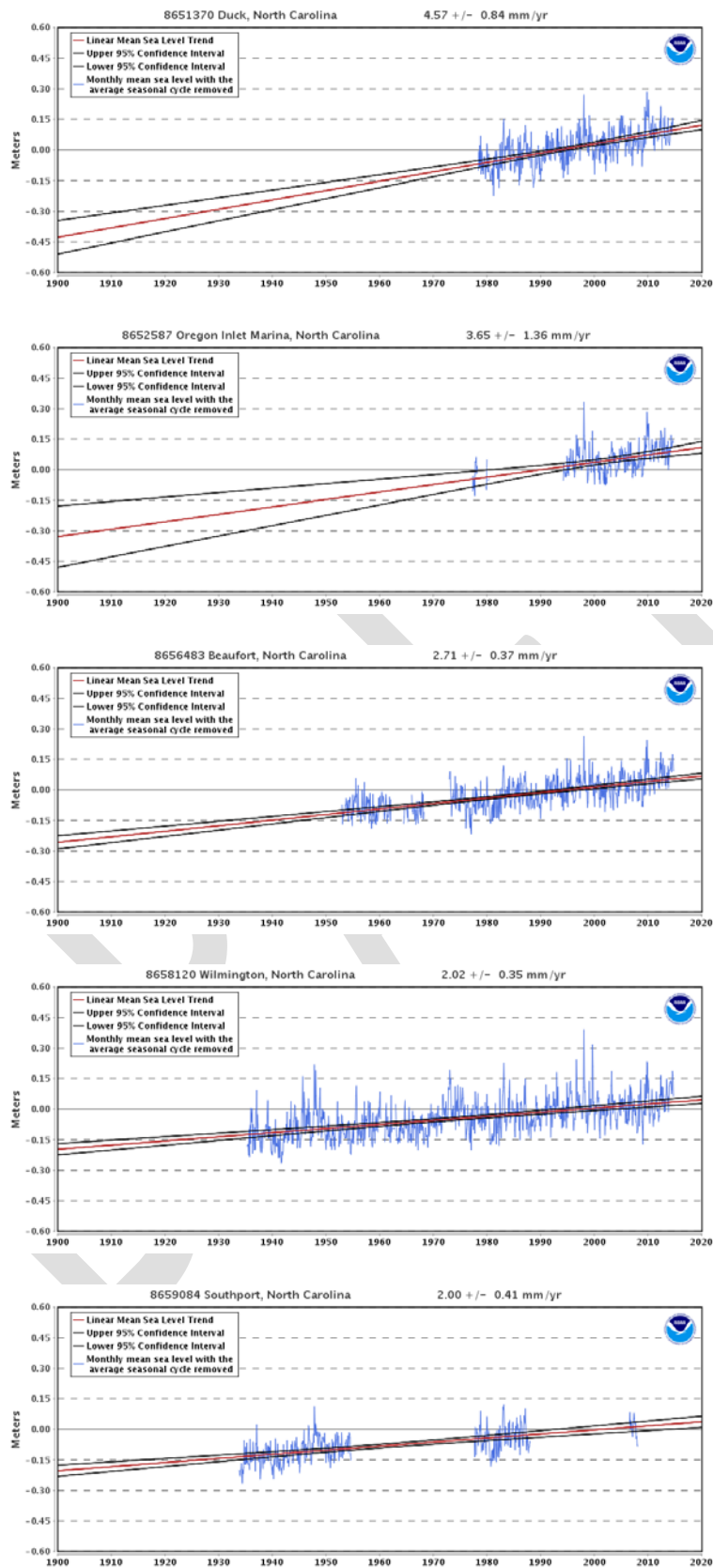


Figure 6. Monthly mean sea levels with seasonal trends removed, for each station with published sea level trends. The long-term linear trend is also shown, including its 95% confidence interval. (NOAA 2014a)

The 2010 Sea Level Rise Assessment Report based its projections on the Duck gauge, the only ocean gauge with a long-term record. The other gauges were not used due to concern that dredging could have altered the tide range and the sea level trend. On the Cape Fear River, mean high water, as recorded by the Wilmington tide gauge, had been found to have risen significantly after the deepened channel efficiently circulated more water (Hackney and Yelverton 1990). Dredging events and corresponding depths of the Cape Fear channel are shown in **Table 4**. The impact of increasing the tide range on sea level depends on how mean low water is altered relative to mean high water. If mean low water goes down the same amount that mean high water goes up, the change is symmetrical and the sea level record is not altered by the dredging.

Dredging impacts have since been analyzed using two methods — numerical modeling and more detailed analysis of the water level records. The North Carolina Flood Mapping Program is upgrading the coastal flood maps using a storm surge model that is initially verified by modeling the daily tides. The present Wilmington and Beaufort tides were compared to the results obtained using the shallower channel depths in place at the beginning of the tidal record (R. Luettich, pers. comm. 2013). The modeling found no significant dredging impacts for the Beaufort gauge. However, the modeling found an increase in the Wilmington tide range of 15 cm since the tide gauge was installed in 1935. Because the model resets mean sea level for each channel condition, assessment of the impact of the tide range changes on sea level measurements was inconclusive.

Table 4. Cape Fear River Channel Deepening Progression. The Wilmington tide gauge was installed in 1935.

Dredging Completion Date	River Channel Depth (feet)
1829-1889	16
1907	20
1913	26
1930	30
1949	32
1958	34
1970	38
2002	42

Zervas (pers. comm., Oct. 16, 2014) updated the tidal analysis for Wilmington including the relative changes in mean high water and mean low water for the 1935 to 2013 period. While changes in the tide range have been observed, there do not appear to be obvious shifts in the monthly mean water levels following the dredging events detailed in **Table 4** (refer to **Figure 6**). For these reasons, dredging impacts on mean sea level are not considered to substantially affect sea level changes measured at the Wilmington tide gauge.

4.2 Vertical Land Movement Estimated from Tide Gauge Data

Because local sea level change measurements include the vertical land movement (subsidence and/or uplift), tide gauge data can be used to assess the magnitude of this movement. Zervas et al. (2013) used tide gauge records to estimate vertical land movement at stations across the U.S. coasts. Long-term gauge records were analyzed with linear mean sea level trends through 2006 as presented in Zervas (2009). Seasonal and regional oceanographic signals were removed as well as an approximated global (eustatic) sea level trend. A linear trend was then fit to the resultant data to estimate vertical land movement at the gauge station. Results were reported in Zervas et al. (2013) for gauges at Oregon Inlet Marina, Beaufort, Wilmington, and Southport. These published results were computed through 2006 for consistency with previously published sea level trends in Zervas (2009). The Science Panel contacted Zervas, who at our request updated the vertical land movement trends through 2013 and included an analysis of the vertical land movement at the Duck gauge. These results (Zervas, pers. comm. Oct. 21, 2014) are presented in **Table 5**. From this analysis, the highest rates of subsidence were found at Duck and the lowest at Wilmington. While the numbers in **Table 5** are not exactly the same as those reported in **Section 3**, the trends are the same as those determined from geologic evidence. It is noted that geological data indicate a small amount of uplift in the Wilmington/Southport area, and tide gauge determined land motion shows a small amount of subsidence. Similar to the published values reported for vertical land motion in **Section 3**, these values are also obtained at discrete locations along the coast, which differ from those precise locations where the geologic data were obtained. This likely explains some of the differences in the exact numerical values. *Most important is the fact that both data sources indicate that subsidence has more influence on relative sea level rise in the northeastern portion of North Carolina than in the southeastern counties.*

Table 5. Vertical Land Movement Trends Determined from Tide Gauge Data in North Carolina.

Station (North to South)	Vertical Land Movement Trend*, (mm/yr)	Coverage Dates	Time Span of the Data (years)
Duck	-1.49 ± 0.39	1978-2013	36
Oregon Inlet	-0.84 ± 0.65	1977-2013	37
Beaufort	-0.99 ± 0.17	1953-2013	61
Wilmington	-0.39 ± 0.19	1935-2013	79
Southport	-0.51 ± 0.15	1933-2008	76

*Zervas pers. comm. Oct. 21, 2014

5. Future Sea Level in North Carolina

The Science Panel considered three scenarios for future sea level in North Carolina: (1) sea level rise will continue at existing rates as measured at tide gauges, (2) sea level rise will decelerate, and (3) sea level rise will increase in response to changes in the climate. These scenarios are discussed in this section for the 2015-2045 timeframe (30 years, specified by the N.C. Coastal Resources Commission's charge for this report).

5.1 Existing Rates of Sea Level Rise

Table 6 presents the amount of future sea level rise that would occur over 30 years at the tide gauges along the N.C. coast using the published sea level rise (SLR) rates given in **Table 3** (NOAA 2014a). As shown, if existing conditions continue for the next 30 years, sea level would be expected to rise between approximately 2 and 6 inches across the North Carolina coast, with the highest sea levels expected north of Cape Hatteras. This computation assumes that the trends at each gauge will remain the same as historical trends over the 30-year time frame.

Table 6. Relative sea level rise over 30 years at existing published rates (NOAA 2014a) of sea level rise. Magnitude of rise was determined by multiplying the rate \pm the confidence interval (for the high/low estimates respectively) by 30 years.*

Station	Tide Gauge Projections		
	RSLR in 30 years, inches		
	Mean	Low	High
Duck	5.4	4.4	6.4
Oregon Inlet	4.3	2.7	5.9
Beaufort	3.2	2.8	3.6
Wilmington	2.4	2.0	2.8
Southport	2.4	1.9	2.8

*Note: Sea level rise over 30 years was rounded to the nearest tenth of an inch.

5.2 Potential Decrease in Sea Level Rise

The Science Panel examined the scientific research regarding deceleration of sea level rise, meaning a rate lower than existing published global rates of sea level rise, over the next 30 years. There have been many efforts to detect acceleration or deceleration in the past sea level record. AR5 (Rhein et al. 2013) discusses these studies and concludes, as have others (Houston and Dean 2011, 2013; Houston 2013, Chambers et al. 2012), that strong multi-decadal

variations in the tide gauge record make it difficult to detect whether there is a long-term acceleration or deceleration using record lengths less than 60 years (see also **Section 3.2**). While researchers using both tide data and altimetry data have reported analyses that observe deceleration in sea level records (*e.g.*, Houston and Dean 2011, 2013; Ezer 2013), the signal is small and indicative of cyclic or multi-decadal variations. Houston (2013) summarizes the existing studies and concludes that the range of acceleration in the existing record is from -0.01 to 0.01 mm/yr², or just ± 0.18 inches over 30 years, so not a significant factor. There is therefore no justification to apply a global deceleration factor to existing gauge rate projections for the next 30 years.

5.3 Potential Increase in Sea Level Rise

Global Mean Sea Level through 2045

The IPCC is the leading international body for the assessment of climate change and for predicting future global sea level. It operates under the auspices of the United Nations (UN), and reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change. Thousands of scientists from all over the world contribute to the work of the IPCC on a voluntary basis (IPCC 2013c). Multiple stages of review are an essential part of the IPCC process to ensure a comprehensive, objective, and transparent assessment of the current state of knowledge of the science related to climate change. The review process includes wide participation, with hundreds of reviewers critiquing the accuracy and completeness of the scientific assessment contained in the drafts (IPCC 2013d). The IPCC's most recent publication is the Fifth Assessment Report (AR5, Church et al. 2013), which was released in draft form on Sept. 30, 2013, and published in final form in March 2014. For the 30-year time frame requested by the CRC, the panel considers the IPCC scenarios to be the most scientifically vetted predictions to use for global sea level rise.

Future climate predictions require assumptions about activities that may alter the climate. Accordingly the IPCC has developed a series of scenarios or *Representative Concentration Pathways* (RCPs), each defined by a specific mix of emissions, concentrations and land use. RCP 2.6 is the "best case" scenario in which greenhouse gases are lowest in concentration, and RCP 8.5 is the "worst case" with the highest concentration.

AR5 states that it is very likely that the rate of global mean sea level rise during the 21st century will exceed that observed in the 20th, in response to increased ocean warming and loss of mass from glaciers and ice sheets. **Table 7** presents the range of sea level rise predictions through the year 2050 from a variety of process-based model scenarios (Church et al. 2013). This table was developed by converting the original table in the IPCC report (Table AII.7.7) from meters to inches, rounded to the nearest tenth of an inch.

Table 7. Global mean sea level rise projections with respect to 1986-2005 at Jan. 1 on the years indicated, with uncertainty ranges for the four IPCC Representative Concentration Pathways (modified from Table AII.7.7, IPCC 2013a).*

Year	RCP 2.6 (inches)	RCP 4.5 (inches)	RCP 6.0 (inches)	RCP 8.5 (inches)
2010	1.6 [1.2 to 2.0]	1.6 [1.2 to 2.0]	1.6 [1.2 to 2.0]	1.6 [1.2 to 2.0]
2020	3.1 [2.4 to 3.9]	3.1 [2.4 to 3.9]	3.1 [2.4 to 3.9]	3.1 [2.4 to 4.3]
2030	5.1 [3.5 to 6.3]	5.1 [3.5 to 6.3]	4.7 [3.5 to 6.3]	5.1 [3.9 to 6.7]
2040	6.7 [5.1 to 8.7]	6.7 [5.1 to 8.7]	6.7 [4.7 to 8.3]	7.5 [5.5 to 9.4]
2050	8.7 [6.3 to 11.0]	9.1 [6.7 to 11.4]	8.7 [6.3 to 11.0]	9.8 [7.5 to 12.6]
*Note: Projections were rounded to the nearest tenth of an inch.				

In addition to the process-based models, the IPCC (Church et al. 2013) also reviewed other approaches to sea level projections including semi-empirical models, paleo-records of sea level change, and ice sheet dynamics. They state that of the approaches examined, they have greater confidence in the process-based projections, and that the global mean sea level rise during the 21st century is likely to lie within the 5-95% uncertainty ranges given by the process-based projections and shown in **Table 7** (Church et al. 2013). For completeness, all scenarios are presented in **Table 7**. However, to provide a range of potential effects across the North Carolina coast, the low greenhouse gases (RCP 2.6) and high greenhouse gases (RCP 8.5) model scenarios are presented as upper and lower bounds of the potential range of future sea level rise. The endpoints of the range of global sea level rise scenarios for this report were computed as follows:

- 1) Use linear interpolation of **Table 7** values to estimate sea level and its uncertainty range in 2015 and 2045.
- 2) Subtract each 2015 value from the corresponding 2045 value to obtain magnitude of the projected rise over the 30-year time frame.

When values with quantified uncertainties are added and subtracted, the uncertainties associated with those values are added in quadrature (*i.e.*, added as the square root of the sum of squares). The uncertainties in **Table 8** have been added in quadrature to obtain the uncertainty of the change in SLR from 2015 to 2045. This provides a better estimate of the confidence interval than simply adding or subtracting the uncertainty values. In the case of **Table 8** where there are uneven confidence intervals, the larger of the two was used to obtain the quadrature uncertainty.

Table 8. Global sea level rise from 2015 to 2045 as predicted by IPCC Scenarios.*

Predicted Amount of Sea Level Rise by Year	Scenario RCP 2.6 (inches)	Scenario RCP 8.5 (inches)
2015	2.4 [1.8 to 3.0]	2.4 [1.8 to 3.1]
2045	7.7 [5.7 to 9.8]	8.7 [6.5 to 11.0]
Change in SLR (2015 to 2045)	5.3 [3.1 to 7.6]	6.3 [3.8 to 8.8]
<i>*Note: Projections were rounded to the nearest tenth of an inch.</i>		

Note that the range of values for the two scenarios overlap and differ only by approximately 1 inch, reflecting the fact that these scenarios are similar initially and begin to differ significantly after 2045.

Linking Global Sea Level Rise Projections to Local RSL

In order to consider the relationship of global sea level rise projections to those in North Carolina, factors causing variability in sea level trends across the state must be quantified. As discussed in **Section 4.2**, vertical land movement has been quantified using tide gauge data; additional information on vertical land movement is presented in **Section 3.1** based on geologic studies. The VLM trends are dependent upon long-term geologic factors; therefore they are considered to be likely to persist into the future.

While considerable study has been devoted to identifying oceanographic effects on relative sea level rise (**Section 3.2**), it is unknown whether these effects will persist in the 30-year time period considered for sea level rise projections in this report. Therefore, for the present report, no quantification of oceanographic effects has been included in the sea level projections. Should continued research suggest that these effects may be persisting, future reports may incorporate these factors.

In order to make the global sea level rise values from **Table 8** relevant for North Carolina, VLM was used as a proxy for local effects. This was done by adding 30-year VLM projections (30 years times the values presented in **Table 4**) to the global sea level projections in **Table 8**. As discussed previously, the confidence intervals on the VLM and global projections were added in quadrature to assess uncertainty associated with the projections.

To provide a range of potential increase scenarios, the 30-year projection values were computed for the low and high values of the projected sea level rise from 2015 to 2045 using scenarios RCP 2.6 and RCP 8.5. For comparison with **Table 6**, values were rounded to the nearest tenth of an inch. Results, including the 95% confidence intervals, are presented in **Tables 9 and 10**. The low value in each table is the 95% confidence interval subtracted from the mean, and the high is the mean plus the confidence interval.

Table 9. Relative sea level rise by 2045 considering potential increased rates of sea level rise (RCP 2.6 which is the lowest greenhouse gas emission scenario, combined with vertical land movement at each tide gauge).*

Station	RCP 2.6 + VLM			
	RSLR in 30 years, inches			
	Mean	Low	High	95% CI
Duck	7.1	4.8	9.4	2.3
Oregon Inlet	6.3	3.9	8.7	2.4
Beaufort	6.5	4.2	8.7	2.3
Wilmington	5.8	3.5	8.0	2.3
Southport	5.9	3.7	8.2	2.3
*Note: Projections were rounded to the nearest tenth of an inch.				

Table 10. Relative sea level rise by 2045 considering potential increased rates of sea level rise (RCP 8.5 which is the highest greenhouse gas emission scenario, combined with vertical land movement at each tide gauge).

Station	RCP 8.5 + VLM			
	RSLR in 30 years, inches			
	Mean	Low	High	95% CI
Duck	8.1	5.5	10.6	2.5
Oregon Inlet	7.3	4.7	9.9	2.6
Beaufort	7.5	5.0	10.0	2.5
Wilmington	6.8	4.3	9.3	2.5
Southport	6.9	4.4	9.4	2.5
*Note: Projections were rounded to the nearest tenth of an inch.				

As shown, under alternative rates of increase in sea level rise as a function of varying emissions scenarios, sea level could rise from a low estimate of 3.5 inches to high of 10.6 inches by 2045, depending on location. Locations with higher rates of subsidence have correspondingly higher relative sea level rise projections.

5.4 Future Sea Level Rise across North Carolina

Preparing a map depicting varying sea level rise estimates across the state of North Carolina is difficult, because the local effects are quantified only at the tide gauge locations. The four geologic regions presented in **Figure 4** indicate areas within which effects driven by local vertical land movement are expected to be similar based on the geologic data. Further, Session Law 2012-202 (Appendix B), specifies that the Coastal Resources Commission consider the four regions presented in the N.C. Dept. of Environment and Natural Resources' April 2011 report entitled "North Carolina Beach and Inlet Management Plan" (BIMP) in making geographically variable sea level rise assessments. Therefore the following discussion to address similarities and differences of the regions provided in the geologic map in **Figure 4** compared with the BIMP map (shown in **Figure 7**) is provided.

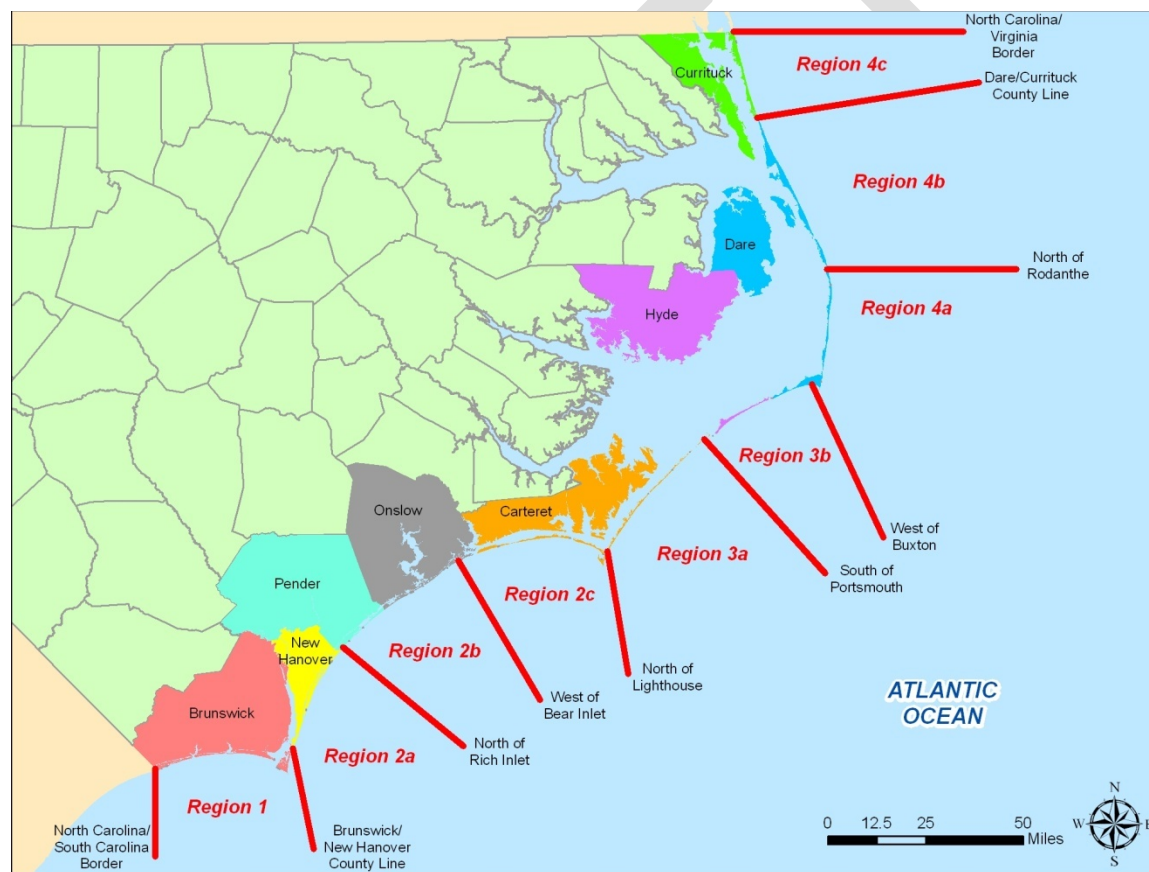


Figure 7. Beach and Inlet Management Plan (BIMP) Regions referenced in S.L. 2012-202.

Region 1 (Carolina Platform) in **Figure 4** corresponds roughly to Regions 1 and 2a, plus part of Region 2b, as drawn in the BIMP (**Figure 7**). The gauges in that part of North Carolina are the Wilmington and Southport gauges, which are very similar in characteristics, with similar future increased sea level rise predictions. Region 2 (Albemarle Embayment) in **Figure 4** encompasses

Regions 3b, 4a, 4b, and 4c, as well as a portion of Region 3a as drawn in the BIMP (**Figure 7**). Both the Oregon Inlet and Duck tide gauges are located in this area. The Duck gauge has the highest expected sea level rise by 2045 across the state, with the projections at Oregon Inlet slightly lower. Region 3 in **Figure 4** (Cape Lookout Transition) corresponds approximately to BIMP Region 2c, with parts of Region 2b and 3a included as well. This region contains the Beaufort tide gauge, which has an expected sea level rise by 2045 similar to the Oregon Inlet gauge. Region 4 (Inner Estuarine Hinge) in **Figure 4** does not correspond to any of the BIMP regions, and contains no tide gauges.

For any management decisions, the CRC will have to evaluate the potential division of the state by region. Additional monitoring and data will facilitate this type of decision.

6. Making Sense of the Predictions

The report presents a range of sea level values that may occur by 2045 across the North Carolina coast. Providing a range of values reflects both the uncertainty in the predictions with regards to future climate and the varying nature of sea level. From a planning perspective, the *risk* of flooding decreases by selecting a higher elevation within the expected range of sea levels. The goal in planning is to match the selected elevation with a level of *acceptable risk* for a particular project (road, bridge, hospital, etc.) based on the expected range of water levels. The U.S. Army Corps of Engineers (USACE 2014) has adopted a planning process similar to this, requiring that every coastal project be evaluated using three sea level scenarios. Doing so allows the project planner to estimate the risk of any impacts of sea level rise, and if the potential impact is found to not be acceptable, require a change to the project design. The adoption of this planning guidance by the USACE is relevant to North Carolina as it is required on every federal coastal project.

We also note that the difference between the highest (**Table 10**) and lowest (**Table 6**) potential increase in mean sea level varies from just 2.7 inches at Duck to 4.5 inches at Southport. This small change reflects the short 30-year time span of the projection. This small amount adds to, but is inconsequential relative to, the extreme water levels experienced in a storm surge and is small relative to the twice daily excursion of the tide. But since it is cumulative and rising, areas of N.C. will be impacted. Recent research into the frequency of coastal flooding has shown that, regardless of the rate of rise, as sea level increases North Carolinians should expect more frequent flooding of low-lying areas. These impacts are already being observed in North Carolina (Sweet et al. 2014; Sweet and Park 2014; Ezer and Atkinson 2014).

The short 30-year period also allows increased confidence in the forecast, relative to a 60- or 100-year forecast during which more rapid climate change is expected. One of the major sources of uncertainty in estimates of sea level rise is the behavior of ice sheets. However, the IPCC states that only the collapse of marine-based sectors of the Antarctic ice sheet, if initiated,

could cause global mean sea level to rise substantially above the likely predicted range during the 21st century (Church et al. 2013). As research evolves with more data and our understanding of these phenomena improves, forecasts will be updated. This is one of the many reasons that the panel recommends updating this report every five years.

Because our focus is on the next 30 years, people whose planning requirements extend beyond that should consult other reports on sea level such as the IPCC (2013b) or the USACE guidance (2014) and their online sea level calculator (<http://www.corpsclimate.us/ccaceslcurves.cfm>).

7. Recommendations for Improved Sea Level Rise Monitoring in North Carolina

Tide gauges provide a critical and permanent record of sea level in North Carolina. Consequently, as we recommended in our 2010 report, it is important to sustain the long-term tidal observations. At a minimum, continued monitoring at the recently established gauge (2010) at Cape Hatteras and establishment of long-term tidal monitoring in the Albemarle Sound and at a location in the Pamlico Sound near the entrance to the Neuse River as well as on the innermost portion of the drowned river estuaries (*e.g.*, New Bern, Washington, and Edenton) would start to fill gaps in knowledge of not only local sea level changes but also the magnitude of tidal surge and wind set-up during storms of differing intensity and track across the North Carolina coast. Ongoing efforts by the North Carolina Division of Emergency Management include maintenance of seven new gauges in the Albemarle and Pamlico Sounds. These gauges should also be maintained long-term to augment the sea level record in North Carolina.

The state should also consider augmenting existing Continuously Operating Reference Stations (CORS) to provide coverage in all the regional zones in order to quantify and refine land subsidence and uplift on the coastal plain. Since 2007 the N.C. Geodetic Survey has been installing CORS which are used to improve the accuracy and ease of surveying using Global Position Survey (GPS) techniques. These stations use the GPS satellites to determine the exact location and elevation of the station as frequently as once a second. Thirty-three stations are presently installed in or near the four zones in **Figure 4**. With time these stations will provide detailed measurement of land elevation changes that can be used to put water level records in perspective. The collection and analysis of additional sediment cores is also desirable to compliment the CORS stations. To be useful, all new CORS and tide gauge locations will need to be sustained for decades, so the sooner they are deployed, the better.

8. Recommendations for Updating the Report

Predicting future sea level rise in North Carolina will continue to be an important topic of interest. As we have seen over the past five years, knowledge in climate science and forecast models is rapidly advancing — improving predictions and reducing uncertainty. Continued monitoring of global and regional sea levels using satellite data will improve as the record length is extended, and these data should be reviewed for consideration in future reports. The panel again recommends a general reassessment of sea level rise in North Carolina every five years. Information from future analyses of CORS GPS stations and from additional geologic research (*e.g.*, expanded regional salt marsh studies) should be considered to provide additional information on vertical land movement across the state. Continuing research on oceanographic impacts on sea level rise should be followed closely. Detailed analyses of tide gauge data and potential dredging impacts are areas of research that the CRC may wish to pursue on a contract basis with researchers in those fields.

9. Summary

Sea level is rising across the entire coast of North Carolina. This report discusses the variation in sea level rise across the state's coastline and provides projections of future sea level. The following points summarize the results of this report:

- The rate of sea level rise varies within NC, depending on location. Two main factors affect the local rate of sea level rise: (1) vertical movement of the Earth's surface, and (2) effects of ocean dynamics (oceanographic influences).
- There is evidence from both geological data and tide gauges that there is more subsidence north of Cape Lookout than south of Cape Lookout. This contributes to higher measured rates of sea level rise along the northeastern N.C. coast.
- Oceanographic research points to a link between speed and position of the Gulf Stream and local sea level. This effect has been reported primarily north of Cape Hatteras.
- At existing rates of sea level rise, over a 30-year time frame, sea level rise across the North Carolina coast would vary from a low estimate of 2.4 inches (with a range between 1.9 and 2.8 inches) at Southport to a high estimate of 5.4 inches (with a range between 4.4 and 6.4 inches) at Duck.
- In a scenario with low greenhouse gas emissions, projected potential sea level rise over a 30-year time frame would vary from a low estimate of 5.8 inches (with a range between 3.5 and 8.0 inches) at Wilmington to a high estimate at Duck of 7.1 inches (with a range between 4.8 and 9.4 inches).
- In a scenario with high greenhouse gas emissions, projected potential sea level rise over a 30-year time frame would vary from a low estimate of 6.8 inches (with a range

between 4.3 and 9.3 inches) at Wilmington to a high estimate at Duck of 8.1 inches (with a range between 5.5 and 10.6 inches).

- Recent research into the frequency of coastal flooding has shown that, regardless of the rate of rise, as sea level increases North Carolinians should expect more frequent flooding of low-lying areas.

Because the science is changing rapidly, it is recommended that this assessment be updated every five years, and that water level monitoring and land movement measurements be sustained and additional gauges placed in as yet unmonitored locations where necessary.

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Appendix A. CRC Charge to the Science Panel, June 11, 2014

The CRC has determined that the issue of potential sea-level rise is of extreme importance to the State, its policy makers and the citizens of NC. It is further noted that the periodic updates of current data are vital to help formulate future policy. The CRC therefore charges the Science Panel to conduct a comprehensive review of scientific literature and available North Carolina data that addresses the full range of global, regional, and North Carolina specific sea-level change. The CRC further determines that the scope and time period of the study and report regarding sea-level rise shall be limited to a “Rolling 30-Year Time Table”. It is the intent of the CRC that this rolling 30-year time table will be updated every five years. The CRC further directs the Science Panel to report regional ranges of sea-level rise as described in S.L. 2012-202

Timeline

S.L. 2012-202 requires the Science Panel to deliver your report to the CRC no later than March 31, 2015.

This will be the version that will be made available for public comment, and we would like this version to include the review and responses as described in the technical peer review process. In order to complete the technical peer review process we are asking you to deliver your initial draft to us by **December 31, 2014**. The technical peer review timeline is as follows:

1. CRC sends the initial draft report for Drs. Dean and Houston's review on January 1, 2015.
2. Drs. Dean and Houston write a brief review with comments and suggestions as appropriate, and forwards to the Science Panel through CRC by January 21, 2015.
3. Science Panel submits a response to Drs. Dean and Houston's comments by February 15, 2015.
4. Drs. Dean and Houston respond in writing as to whether the Science Panel has adequately addressed their comments, by February 28, 2015.

All four written documents will be publicly disseminated together without change.

Following the March 31, 2015 public release of the draft report, there will be an extended public comment period through December 31, 2015, as well as the preparation of an economic and environmental cost-benefit study. The Science Panel will not be asked to prepare the cost-benefit study. The CRC will ask the Science Panel to finalize the report in early 2016, following the close of the public comment period.

Appendix B. General Assembly of North Carolina: Session 2011, Session Law 2012-202, House Bill 819

SECTION 2.(a) Article 7 of Chapter 113A of the General Statutes is amended by adding a new section to read:

"§ 113A-107.1. Sea-level policy.

The General Assembly does not intend to mandate the development of sea-level policy or the definition of rates of sea-level change for regulatory purposes.

No rule, policy, or planning guideline that defines a rate of sea-level change for regulatory purposes shall be adopted except as provided by this section.

Nothing in this section shall be construed to prohibit a county, municipality, or other local government entity from defining rates of sea-level change for regulatory purposes.

All policies, rules, regulations, or any other product of the Commission or the Division related to rates of sea-level change shall be subject to the requirements of Chapter 150B of the General Statutes.

The Commission shall be the only State agency authorized to define rates of sea-level change for regulatory purposes. If the Commission defines rates of sea-level change for regulatory purposes, it shall do so in conjunction with the Division of Coastal Management of the Department. The Commission and Division may collaborate with other State agencies, boards, and commissions; other public entities; and other institutions when defining rates of sea-level change."

SECTION 2.(b) The Coastal Resources Commission and the Division of Coastal Management of the Department of Environment and Natural Resources shall not define rates of sea-level change for regulatory purposes prior to July 1, 2016.

SECTION 2.(c) The Coastal Resources Commission shall direct its Science Panel to deliver its five-year updated assessment to its March 2010 report entitled "North Carolina Sea Level Rise Assessment Report" to the Commission no later than March 31, 2015. 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.

DRAFT

Comments on 2015 Science Panel Update to 2010 Report and 2012 Addendum

We highly commend the members of the Science Panel for volunteering their time and talents in public service to the people of North Carolina.

The 2015 Science Panel Update to 2010 Report and 2012 Addendum (referred to as SPU) presents two good approaches that use different assumptions to estimate sea level rises by 2045 at tide gauge locations in North Carolina (NC). One approach estimates rises by projecting empirical data measured by the NC tide gauges, which assumes the future reflects that past. The second approach uses sea level projections of the Intergovernmental Panel on Climate Change (IPCC 2013), which are based on IPCC global warming scenarios in which temperature rises more rapidly in the future than the past.

The SPU has two significant problems. Confidence intervals are incorrectly added and subtracted in the report, and it uses a value for global sea level rise that is appropriate for the period 1900 through 2009 but not for the periods of North Carolina tide gauge measurements, leading to projections not supported by the data.

Confidence intervals in SPU were incorrectly added and subtracted, producing errors in most tables. Averages are properly added and subtracted, but variances add for confidence intervals, meaning that confidence intervals are added in quadrature. For example $(a \pm c) - (b \pm c)$ is not $a - b \pm 0$ and $(a \pm c) + (b \pm c)$ is not $a + b \pm 2c$. In both cases the confidence interval is $\pm \sqrt{c^2 + c^2} = \pm \sqrt{2} c$. The following website explains this: http://ipl.physics.harvard.edu/wp-uploads/2013/03/PS3_Error_Propagation_sp13.pdf. Note that IPCC (Church, et al, 2013) adds confidence intervals in quadrature for components of global sea level rise.

As an example of the errors caused by adding confidence intervals incorrectly, for Southport the SPU has $(2.0 \pm 0.41) - (1.7 \pm 0.20)$ equal to 0.3 ± 0.21 . However, the result should be $0.3 \pm \sqrt{(0.41)^2 + (0.2)^2} = 0.3 \pm 0.46$, making the range (- 0.16 to 0.76) rather than (0.09 to 0.51). Another example is in Table 8. The 2015 values for RCP2.6 and RCP8.5 are correctly given as both being about 2.4 ± 0.6 inches and the 2045 values as about 7.7 ± 2.1 inches and 8.7 ± 2.3 inches for RCP2.6 and RCP8.5 respectively. But when the 2015 values are subtracted from the 2045 values, the errors do not subtract, but add in quadrature, so the correct values are 5.3 ± 2.2 inches for RCP2 and 6.3 ± 2.4 inches for RCP8.5. Therefore, results should be 5.3 (3.1 to 7.5) for RCP2.6 and 6.3 (3.9 to 8.7) for RCP8.5 rather than 5.3 (3.9 to 6.8) and 6.3 (4.7 to 7.9) in SPU. The SPU should include a simple discussion and reference that explain how confidence intervals are added and subtracted.

It is not valid to use a global sea level rate of 1.7 ± 0.2 mm/yr over the periods of NC gauge measurements because this rate was determined for 1900 to 2009, whereas global rates during actual times of NC gauge measurements were sometimes much greater. SPU subtracts this unrepresentative low global rate along with subsidence from measured rates and calls the difference “oceanographic effects”. SPU then assumes these “oceanographic effects” continue unchanged for the next 30 years and adds them to IPCC scenarios, and this produces rises by 2045 that are not supported by the data.

The problem of using a global rate not representative of actual rates during periods of gauge measurements is readily seen for Duck and Oregon Inlet. The Duck gauge recorded from 1978 through 2013 and the Oregon Inlet gauge from 1977 through 2013. Satellite altimeters measured a global rise rate of 3.2 ± 0.4 mm/yr from 1993 through 2013 (University of Colorado, 2014). Therefore, for about 60% of the Duck and Oregon Inlet tide gauge records the global rise rate was substantially greater than 1.7 ± 0.2 mm/yr. It is important to realize that in addition to the linear rise of 1.7 mm/yr given in Church and White (2011), they have an acceleration term so the rise rate increases with time, and this is not considered in the SPU. The linear and acceleration terms determined by Church and White could be used to estimate rise rates during periods of NC gauge measurements. However, Church and White's approach underestimates the rise rate measured by satellite altimeters. Church and White use "synthetic data" generated by combining tide gauge data with Empirical Orthogonal Functions, whereas the satellite altimeter data are measured data. Therefore, the satellite altimeter data should be used for 1993 through 2013.

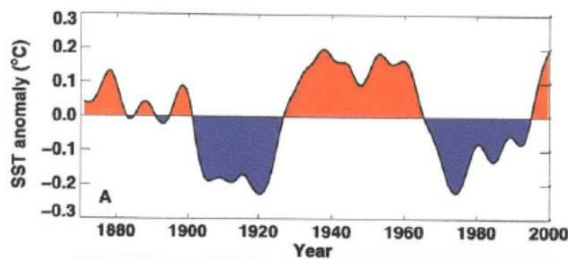
We can estimate the rate from 1978 to 2013 by taking a global rate of 1.9 ± 0.4 mm/yr for 1978 through 1992 (Church and White, 2011, have a global rate of 1.9 ± 0.4 mm/yr for 1961 through 2009, which is much more representative of the time period than the rate from 1900 through 2009) and a global rate of 3.2 ± 0.4 mm/yr from 1993 through 2013. Combining these rates gives a global rate from 1978 to 2013 of 2.66 ± 0.4 mm/yr (Ray and Douglas, 2011, show a global rise from 1978 to 2007 of about 2.5 mm/yr that when coupled with a rise from 2007 through 2013 of 3.2 mm/yr results in a similar global rate of 2.6 mm/yr from 1978 through 2013). With subsidence of -1.49 ± 0.39 at Duck, this gives a relative sea level rise (global rate minus subsidence) of 4.15 ± 0.56 mm/yr (confidence intervals added in quadrature). This compares with the gauge recording of 4.57 ± 0.84 mm/yr over the same period. Note the two rates are within confidence intervals of each other. The same analysis for Oregon Inlet, results in an average global rate from 1977 to 2013 of 2.64 ± 0.4 mm/yr. With a subsidence of -0.84 ± 0.65 mm/yr, this leads to a relative rise of 3.48 ± 0.76 mm/yr versus the recorded 3.65 ± 1.36 mm/yr. Again, calculated and measured rates are within confidence intervals.

If global sea level rise rates are estimated for Beauford, Wilmington, and Southport using rates of 0.71 ± 0.4 mm/yr prior to 1935 and 1.84 ± 0.19 mm/yr from 1935 to 1961 (Church and White, 2006), 1.9 ± 0.4 mm/yr from 1961 to 1993 (Church and White, 2011), and 3.2 ± 0.4 mm/yr from 1993 through 2013 (University of Colorado, 2014); subtracting the vertical motions of Table 2 from these global rates result in relative sea level rise rates within confidence intervals of the measured rates in Table 1. For all five NC gauges, realistic global rates combined with subsidence yield relative sea level rates within confidence intervals of measured rates. Therefore, "oceanographic effects" must have relatively small magnitudes that are less than confidence intervals of measured rates.

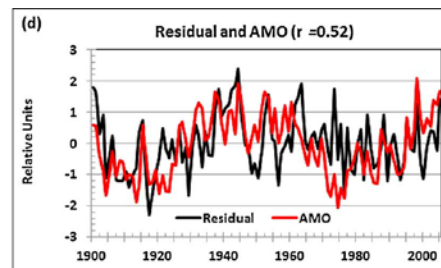
The above method of estimating global rise rates also applies to the gauges north and south of the NC gauges. Figure 5 of the SPU presents a figure from Ezer (2013) that is shown presumably to indicate there is a significant difference in sea level rise north of Cape Hatteras. The figure shows that the Norfolk (Sewell Point) gauge recorded the greatest sea level rise rate and acceleration of the gauges from Key West to Boston, and it is the nearest gauge north of the Duck and Oregon Inlet gauges. Using the same approach as for the NC gauges yields a global rate from 1927 through 2006 of 1.99 ± 0.33 mm/yr. Zervas (2013) shows a subsidence of -2.61

± 0.11 mm/yr. Combining the calculated rate with subsidence yields 4.60 ± 0.33 mm/yr. Zervas shows the rise measured by the Norfolk tide gauge from 1927 through 2006 was 4.44 ± 0.27 mm/yr. The same approach applied to the Charleston gauge, the nearest long-term gauge south of NC, yields a global and subsidence relative rise of 3.14 ± 0.34 mm/yr versus the rate of 3.15 ± 0.25 mm/yr recorded by the Charleston tide gauge. As was the case for the five NC tide gauges, calculated rates for the Charleston and Norfolk gauges that are based on subsidence and realistic global sea level rates during periods of recording agree within confidence intervals of measured relative sea level rise rates. The average rise rate based on calculated global rates and subsidence for the five NC, Charleston, and Norfolk gauges is 3.15 ± 0.43 mm/yr, and this is in good agreement with the measured average rate for the seven gauges of 3.22 ± 0.55 .

There certainly are oceanographic effects that affect sea level along the NC coast such as variations in the Atlantic Multidecadal Oscillation (AMO), North Atlantic Oscillation (NAO), and Gulf Stream as governed by the Atlantic Meridional Overturning Current (AMOC), and other factors. Indeed, Houston and Dean (2014) show that there are multi-decadal oscillations in the rate of sea level rise in every gauge recording in the world. Variations in the AMOC, AMO (see figures), and NAO can affect sea levels along the NC coast, but these variations will not remain constant over the next 30 years as is assumed in SPU (“oceanographic effects” are assumed in SPU to have a constant rate over 30 years when used with the IPCC scenarios). For example, it would not be valid to take falling sea levels on the Pacific Coast measured over the last 22 years by satellite altimeters (caused by an oscillation of the Pacific Decadal Oscillation – PDO), and project that sea level will fall on the Pacific Coast over the next 22 years. Indeed, Bromirski et al (2011) assert just the opposite will occur, the rise in sea level will be greater than the worldwide average along this coast for decades as the PDO reverses. AMO, NAO, and AMOC also have periodic reversals.



AMOC (Buckley, 2011)



AMO (Chylek et al, 2014)

SPU cites journal papers that indicate there has been acceleration in sea level rise in the mid-Atlantic area, but some of the papers also indicate the acceleration may well be a typical variation in decadal oscillations and not enduring. For example, Smeed et al (2014) say that evidence suggests that the decrease in the AMOC, “... represents decadal variability of the AMOC system rather than a response to climate change.” Knopp (2013) says, “Consistent with the hypothesis that the regional ‘hot spot’ represents variability rather than the start of a trend, none of these indexes currently exceeds its range of historical variability. As the changes in these indices reflect the driving factors underlying the ‘hot spot’, the phenomenon may not prove to be enduring.” Varying and non-enduring phenomenon cannot be assumed constant and projected into the future. In any case, magnitude of sea level change rates resulting from “oceanographic effects” are not apparent because relative sea level rates estimated from realistic

global and subsidence rates agree within confidence intervals with measurements at all five NC gauge locations and gauges at Charleston and Norfolk.

The SPU should discuss how calculated rises as shown above agree within confidence intervals at all seven gauges, so additional factors other than subsidence should not be added to IPCC projected rises.

The error caused by using a rate of 1.7 ± 0.2 mm/yr at Duck from 1978 to 2013 and then having to postulate “oceanographic effects” that would remain constant for the next 30 year is easily shown. As shown earlier, there is a global sea level rise of 6.3 ± 2.4 in/yr for IPCC scenario RCP 8.5 (confidence intervals added incorrectly in Table 8). If we subtract the vertical motion of -1.8 ± 0.5 in/yr at Duck, the relative sea level projection becomes 8.1 ± 2.5 in/yr (confidence intervals from adding in quadrature). The low, medium, and high values are therefore 5.6, 8.1, and 10.6 in/yr versus 7.3, 9.7, and 12.3 in/yr in Table 10.

Dropping the incorrect rate of 1.7 ± 0.2 mm/yr as representative of the global rate over the time of NC gauge measurements also simplifies results and makes them more understandable and transparent to non-technical readers. For example, one approach would just multiply measured rates by 30. The second approach would merely combine subsidence over 30 years with IPCC projections. These approaches are simple, understandable, and defensible; in contrast to the current approach in SPU 2015, which is easily criticized and, therefore, likely to be controversial.

Using three sentences to dismiss the possibility of deceleration may not satisfy critics. Satellite altimeters have made the best measurements of sea level rise in the past two decades because they measure over the globe rather than the limited locations of tide gauges and they do not have the problem of vertical land motions that tide gauges have. Satellite altimeter measurements show a decelerating sea level rise. Dean and Houston (2013) show that during the period of satellite altimeter measurements from 1993 to 2011, sea level had a deceleration of -0.083 mm/yr² (deceleration also seen in Figure 5b of the SPU and Ezer, 2013, p. 5441). They analyzed all 456 tide gauges in the world with records from 1993 to 2011 and found a deceleration of -0.041 mm/yr². The altimeter record (University of Colorado, 2014) analyzed from 1992.9595 through 2014.6508 still shows a deceleration of -0.035 mm/yr². However, the record is relatively short and, as noted in Dean and Houston (2013), the deceleration may just be evidence of cyclic behavior - that is, caused by decadal variations. As noted earlier, uncertain and varying phenomena cannot be assumed to remain at current values and then be projected into the future.

With the Duck gauge as an example, projecting the current rate of rise at Duck for 30 years yields an average relative sea level rise of 137.1 ± 25.2 mm. Analysis of the altimeter record from 1992.9595 through 2014.6508 shows that the rise has the form $3.245x - 0.0176x^2$ with x equal to years of record. Over the next 30 years, this rise would produce a global rise of 81.5 ± 12 mm including the deceleration term. Subsidence would add 44.7 ± 11.7 mm/yr for a total of 126.2 ± 23.7 mm. This value is well within the confidence interval of the rise determined by projecting Duck rates without deceleration. Moreover, the difference in the two projections is

only 10.9 mm, or 0.4 inches. Assuming the global deceleration for last 22 years will continue unchanged for the next 30 years is not justified, and its effect is small in any case.

Duck is shown in Table 4 to have a substantially greater vertical land motion than does Oregon Inlet, although the tide gauges are only about 30 miles apart. Since the Duck pier pilings are concrete, is it known whether the pier itself is sinking, so that it is not representative of land subsidence in the area? There are bench marks on the pier, in the parking lot, and along the pier access road, so the question can be settled if it has not been already. If settled, a sentence should note that there is not subsidence of the pier relative to land.

Additional comments on SPU 2015 are listed below by page section and page.

Executive Summary

We suggest a brief introductory paragraph in the Executive Summary. Something like:

“Two bases for quantifying global sea level change are reported in the scientific literature: (1) sea level as observed directly by tide gauges, and (2) volumetric changes including the best estimate of the average global subsidence of the sea floor (0.3 mm/yr) due to Glacial Isostatic Adjustment (GIA) as reported in the satellite altimeter measurements and calculations by Church and White (2006, 2011) and others. In this report, the first basis is used as the most relevant to those who will use the results.”

We also suggest an expanded discussion of the above be included as an early section of the main text of the report. The 0.3 mm/yr is relevant to the SPU because IPCC projections include the GIA average global sea floor subsidence of 0.3 mm/yr. When IPCC projections are used to determine local relative rise projections, they are too large by 0.3 mm/yr because they include the effect of global sea floor subsidence. However, Zervas (2013) subtracted 1.7 mm/yr (includes the GIA value of 0.3 mm/yr) instead of 1.4 mm/yr to determine local subsidence. Therefore, subsidence values are too low by 0.3 mm/yr. The 0.3 mm/yr portions of IPCC projections and subsidence values offset, so IPCC and subsidence numbers are properly added (as done in the SPU) to determine relative sea level change at NC tide gauges.

Also, early in the main body of the report or alternatively as a table preceding the report there should be a description of terms and acronyms including: Relative Sea Rise (RSL), etc.

Page 1. Ezer and Atkinson 2014 does not appear in the references.

Page 2. Fairbanks (1989) does not appear in the references.

Page 4. Table 1 has a percentage contribution to sea level rise from the Greenland and Antarctic ice sheets for the period from 1971 to 2010, but it is based on Table 13.1 of Church et al (2013), which does not have percentage contributions for these ice sheets for the period. SPU apparently assumes the numbers must add to 100%, but contributions are so uncertain that Church et al (2013) do not give percentages for either ice sheet. We suggest instead percentages be presented for the period shown in Table 13.1 from 1993 to 2010, because Greenland and Antarctic ice

sheet contributions are given (it appears the total should be 2.94 rather than 2.8 mm/yr). In addition, the 1993 to 2010 rates give a better appreciation of current contributions to sea level rise. For example, “Land water storage”, which includes water impoundment and groundwater extraction, is shown in Table 1 to be only 6% of the contribution to sea level rise, whereas Table 13.1 has it contributing 13%, illustrating how important groundwater extraction has become to sea level rise.

Page 7.

Eggleston et al. 2013 should be Eggleston and Pope 2013.

The reference should be Engelhart et al. 2009 and not Englehart et al. 2009.

The acronym NCDENR appears without being defined as North Carolina Department of Environment and Natural Resources

Page 9.

Text says, “The present rate of GSL rise is 1.7 mm/yr (Church and White, 2011) ...” Of course, this is not the present rate, but the average rate from 1900 to 2009. The present rate as measured by satellite altimeters from 1993 through the present is 3.2 mm/yr (University of Colorado, 2014).

Page 10.

Spanger-Siegfried et al. (2014) is a non-peer-reviewed internet article authored by an advocacy group. There are many non-peer-reviewed internet articles authored by skeptics of global warming and increased sea level rise that also could be cited, so we suggest dropping the reference. In addition, NOAA (June 2014) isn't referenced although it focuses on nuisance flooding (Sea Level Rise and Nuisance Flood Frequency Changes around the United States, NOAA Technical Report NOS CO-OPS 073, http://tidesandcurrents.noaa.gov/publications/NOAA_Technical_Report_NOS_COOPS_073.pdf)

We recommend the reference to the 2014 National Climate Assessment (actual citation should be Melillo et al 2014 rather than Melillo 2014) be dropped because it has about a page of its 841 pages devoted to sea level rise. It has no original information, but bases its maximum projected sea level rise on the intermediate high listed in NOAA 2012. The NOAA report says the intermediate high is, “... based on an average of the high end of semi-empirical, global SLR projections.” IPCC 2013 (page 1140) said of semi-empirical modeling, “...there is no consensus in the scientific community about their reliability, and consequently low confidence in projections based on them.” A couple of authors of IPCC 2013 have used semi-empirical models and published papers, but they agreed with the IPCC statement that there is low confidence in projections based on semi-empirical modeling.

Pages 9-11.

The discussion of “oceanographic effects” is interesting, but as discussed earlier, the section should be eliminated or shortened with an emphasis on the effects having a magnitude less than confidence intervals and being oscillatory and likely non-enduring as pointed out by Smeed et al (2014) and Knopp (2013). As discussed earlier, the usefulness of Figure 5 is not apparent because subsidence combined with global rates equals measured rates within confidence intervals for the tide gauges from Charleston to Norfolk.

Page 12.

The acronym NWLON is never used.

Text says Yelverton and Hackney 1990, but references say Hackney, C.T. and G.F. Yelverton. 1990.

Page 23.

Sweet and Parker 2014 should be Sweet et al 2014.

Page 24.

The text says that, “One of the major sources of uncertainty in estimates of sea level rise even over a period as short as 30 years is introduced by our limited understanding of the rates of loss of the Greenland and West Antarctic ice shelves. The rates of melting and ice sheet loss into the sea are highly uncertain and could occur rapidly.” These sentences have an element of hyperbole. The IPCC numbers in Table AII 7.7 include uncertainties in loss of ice in Greenland and West Antarctica. In 2045, even for Scenario RCP 8.5, the upper confidence level is only 2.4 inches higher than the average and only part of this uncertainty is due to uncertainty in the loss of ice in Greenland and West Antarctica. There have been a number of media releases in 2014 emphasizing studies that indicate the West Antarctic ice sheet has started to collapse and the collapse is unstoppable. Joughin et al (2014) is the only one of these studies with a projected sea level rise rate resulting from this beginning collapse. They note that losses in the 21st century due to the beginning collapse of the West Antarctic ice sheet at the Thwaites glacier (which would eventually release other glaciers – in hundreds of years) will be less than 0.25 mm/yr with a more rapid rise of greater than 1 mm/yr within the range of 200 to 900 years from now. A rise of less than 0.25 mm/yr results in a rise over the next 30 years of less than 0.3 inches, and is largely accounted for in current IPCC projections.

The reference Boon, J. D., J. M. Brubaker, and D. R. Forrest (2010) is not found in the text.

Page 27.

The reference Horton, B.P., W.R. Peltier, S.J. Culver, R. Drummond, S.E. Engelhart, A.C. Kemp, D. Mallinson, E.R. Thieler, S.R. Riggs, D.V. Ames, and K.H. Thomson, 2009 does not appear in the text.

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Bromirski, P.D.; Miller, A.J.; Flick, R.E., and Auad, G., 2011. Dynamical suppression of sea level rise along the Pacific Coast of North America: Indications for imminent acceleration. *Journal of Geophysical Research–Climate*, 116, C7, doi: 10.1029/2010JC006759.

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<http://dspace.mit.edu/handle/1721.1/68891#files-area>.

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<http://onlinelibrary.wiley.com/doi/10.1002/2014GL059274/pdf>

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Joughin, I., Smith, B.E., and Medley, B., 2014. Marine Ice Sheet Collapse Potentially Under Way for the Thwaites Glacier Basin, West Antarctica, *Science*, 344, 735-738.

Ray, R.D. and Douglas, B.C., 2011. Experiments in reconstructing twentieth-century sea levels, *Progress in Oceanography*, 91, 496-515.

University of Colorado, 2014. 2014_rel5: Global Mean Sea Level Time Series (seasonal signals removed). <http://sealevel.colorado.edu/>

Reply to comments by Houston and Dean

We first extend our appreciation to our reviewers for their time and careful consideration of this report and methodology. Two issues that impact the calculation of the range of future sea level rise projections are the primary focus of the review comments. They are 1) how the confidence interval or range of projections for each component is treated mathematically as elements are combined in the methodology and 2) the assessment of local effects and how these are used in combination with the IPCC projections. The Panel has considered these comments and a synthesis of our discussions are provided below. The additional comments were more editorial in nature and will be considered in our revised draft in March.

1) The Panel discussed possible inclusion of 'quadrature' in assessing limits or ranges of estimates in our November meeting and is revisiting our proposed methodology based on the reviewers' comments. Because of the expression of range of estimates in the Table II.7.7 of Annex II: Climate System Scenario Tables is not a confidence interval, we have asked for additional review from statistics at NC State on our methodology and will not have their input until later this month. At that time we plan to update our calculations and will communicate with the reviewers on the outcome.

2) The reviewers note that the length of record for the gauge at Duck is not consistent with the time period used to establish a global SLR of 1.7 mm/yr and conclude that therefore the computed local effect at Duck is in error. Further, they suggest an alternative computation which would result in a conclusion that the local effect can be explained by the local VLM (vertical land motion) only.

The Panel recognizes the issues with respect to length of record of the tide gauges and the time period of the record relative to assessment of global sea level rise and in the November meeting considered using different rates for different gages. The primary tide gauge that has spurred this discussion is the Duck gauge. The time frame of operation of this gauge and the Oregon Inlet gauge are the shortest in North Carolina, spanning the late 1970s to present time frame (data through the end of 2013 were employed for the report). The panel spent considerable time discussing the issue of the different time periods of measurement for each of the gauges including an analysis offered by Tom Jarrett that could simulate the extension of the time series at Duck in order to be more consistent with the time frame for the use of 1.7 mm/yr. As a result of this discussion the Panel recommended that the time series issue should be dealt with as a special project outside the work of the Panel.

In response to the reviewers' comments we offer the following discussion. The time frame of operation of the Duck gauge coincides with a measured increase in the rates of sea level rise along the mid-Atlantic region (consistent with the reviewers' analysis). The question at hand is whether this measured increase reflects a global increase or is local. In addition, if local, will the effect persist for the 30 year response period requested by the CRC or is it other (i.e., cyclic or not persisting). In our draft, the Panel made the assumption that the local effect was separate from the global and would persist into the future. This assumption is clearly stated and the numbers reflect that approach. The Panel felt that it was responsible to acknowledge the possibility that local effects including oceanographic factors could

persist and to bring this information to the attention those making management decisions. After discussion in the January meeting, the Panel decided to keep this analysis in the report.

Because it is an assumption and we recognize it as such, we can compute and present the alternative formulation (considering the IPCC projections in combination with the VLM numbers) in order to communicate the magnitude of the difference in the projections by making this assumption. Using VLM directly eliminates the step of assuming a global sea level rise rate in the proposed methodology. Using the updated 2013 VLM values as computed by Zervas essentially reduces the local effects at Duck and Oregon Inlet 1-2 inches in the 30 year projection since these gauges have the shorter temporal records and are located north of Cape Hatteras where the increase in the mid-Atlantic rates has been observed. Projections for the Beaufort gauge remain the same and Wilmington and Southport differ by less than 1 inch. (see table below). Note, the magnitude of the high and the low of the local effect and the difference may change when procedures for error analysis are finalized.

Station	Local Effects			VLM Effects			Difference		
	Relative Sea Level Rise by 2045, inches			Relative Sea Level Rise by 2045, inches			Relative Sea Level Rise by 2045, inches		
	Mean	High	Low	Mean	High	Low	Mean	High	Low
Duck	3.4	4.2	2.6	1.8	2.2	1.3	-1.6	-2.0	-1.3
Oregon Inlet Marina	2.3	3.7	0.9	1.0	1.8	0.2	-1.3	-1.9	-0.7
Beaufort	1.2	1.4	1.0	1.2	1.4	1.0	0.0	0.0	0.0
Wilmington	0.4	0.6	0.2	0.5	0.7	0.2	0.1	0.1	0.0
Southport	0.4	0.6	0.1	0.6	0.8	0.4	0.2	0.2	0.3

The issue of the impact of the length of record and time period of the record of the tide gauges on the computations (including VLM) is important as the state considers how to use the information and our recommendation for further analysis will likely remain in the report.

The Science Panel has not adequately addressed our comments on the Science Panel Update (SPU), and, therefore, in its present form the SPU is not publishable as we expected in a referred journal. The Panel did not rebut our criticisms of assumptions underlying one of its key approaches. Instead it merely said the assumptions were clearly stated. However, these assumptions were not justified in the SPU or in a rebuttal of our criticisms. Assumptions must be clearly justified, not merely clearly stated.

The Panel's one action that was responsive was to indicate it would include in one part of a table sea level rises based on the standard approach of adding IPCC projections and vertical ground. We recommended this approach because local and global data presented in the SPU provided no evidence of a persistent local effect other than ground motion that would cause an extra increase in sea level rise on the NC coast over the next 30 years.

The Panel did not address our comments relating to adding and subtracting errors. The approach used in the SPU is embarrassingly incorrect, and the Panel should have simply admitted so and made corrections. It is good the Panel will be seeking help from NC State. However, it is important to provide NC State with correct information. For example, the Panel's response says, "...the expression of range of estimates in the Table II.7.7 of Annex II: Climate System Scenario Tables is not a confidence interval." This is incorrect. Table II.7.7 of Annex II uses the term "likely range" and says to go to Section 13.5.1 of "Sea Level Change" of IPCC (2013) to see what this means. On page 1184 of Section 13.5.1 (entitled "Confidence in Likely Ranges and Bounds"), it says "The AR5 5 to 95% process-based model range is interpreted as a likely range". The IPCC numbers all have 95% confidence intervals.

Even if the Panel was not sure about the IPCC numbers, it should have been clear that the NOAA sea level rise rates, vertical land motion, and global rates from Church and White (2011) all had confidence intervals, so it is inexplicable that the Panel did not agree with our comments and correct the SPU. The NOAA (2014) sea level rise rates have confidence intervals as can be seen in Table ES1 of the SPU report itself, which has the caption, "Sea level rise over 30 years at existing published rates of sea level rise (NOAA 2014). Magnitude of rise was determined by multiplying the rate \pm the 95% confidence interval..." VLM numbers from Zervas (2013) have confidence intervals as noted in the following from Zervas, "Table 1 lists the published relative NOAA sea level trend for each station (along with the 95% Confidence Interval of the trend) and the estimated rate of VLM (along with the 95% Confidence Interval) using the methodology described above." The projections of Church and White (2011) have standard deviation confidence intervals.

Had the errors been simple average errors rather than confidence intervals, the absolute value of the errors would have had to have been added regardless of whether the means were added or subtracted. In any case, the approach used in the SPU is glaringly incorrect. The website below explains how to add and subtract both simple average errors and confidence intervals.
<http://www.rit.edu/cos/uphysics/uncertainties/Uncertaintiespart2.html>.

The Panel's response says, "The reviewers note that the length of record for the gauge at Duck is not consistent with the time period used to establish a global SLR of 1.7 mm/yr and conclude that therefore the computed local effect at Duck is in error." Actually, this comment holds for all

the NC gauges with the lack of consistency being greater the shorter the record. The SPU approach results in spurious “local effects” for all gauges with the spurious effects being about equally large at Oregon Inlet and Duck. We noted in our review that it was not valid to use a global sea level rate of 1.7 mm/yr over the periods of NC gauge measurements because this rate was determined for 1900 to 2009, whereas global rates during actual times of NC gauge measurements were all greater, and sometimes much greater. We showed for all the NC gauges and for the Norfolk and Charleston gauges that if a simple approach is used to estimate realistic global sea level rates, when these rates are added to vertical motion rates, the results match measured data within confidence intervals for every gauge - that is, there are no residuals for any of the gauges. The SPU only obtains residuals that it calls “local effects” because 1.7 mm/yr is lower than the actual global sea level rise rates during the periods of tide gauge measurements. No one would claim that the global rise in sea level was 1.7 mm/yr from 1977 (Oregon Inlet gauge) or 1978 (Duck gauge) to 2013, when satellite altimeters (and tide gauges within confidence intervals) say the rise from late 1992 to 2013 was 3.2 mm/yr. We do not know yet if the increase in global sea level rise from the early 1990s to today is an enduring increase or a multidecadal variation. However, there is no doubt from measurements that it occurred and the global sea level rate from 1977 or 1978 to 2013 was a good deal greater than 1.7 mm/yr. The SPU did not justify using the incorrect global rise of 1.7 mm/yr during gauge measurements, but just “assumed” it was true and as a result obtained spurious local effects. If realistic values for global rates during periods of gauge measurements are used, these residuals all disappear (within confidence intervals of measurements). The Panel’s response provided no rebuttal of our demonstration that the global sea level rate it used over the periods of NC gauge measurements was incorrect and led to its spurious “local effects”.

We also showed in our comments that even if there had been local effects, the SPU’s own references, which it uses to justify projecting the effects forward, do not support projecting varying and non-enduring phenomena forward. We noted that Smeed et al (2014) say that evidence suggests that the decrease in the AMOC, “... represents decadal variability of the AMOC system rather than a response to climate change.” We noted that Knopp (2013) says, “Consistent with the hypothesis that the regional ‘hot spot’ represents variability rather than the start of a trend, none of these indexes currently exceeds its range of historical variability. As the changes in these indices reflect the driving factors underlying the ‘hot spot’, the phenomenon may not prove to be enduring.” Eber (2013) says, “The results suggest that global SLR is accelerating in recent years but that this acceleration is a combination of long-term trends and multidecadal variations.” IPCC (2013) projections include acceleration and are the best source for determining the long-term global trend that Eber noted. “Multidecadal variations” that Eber noted north of Cape Hatteras are oscillatory, and even if they were significant today in NC, they would have different values in 30 years, and could even have phases that reduce sea level rise somewhat. We also provided a classic case of why a multidecadal variation on the Pacific Coast of the US, which has resulted in an actual fall in sea level over more than 20 years, cannot be projected forward at present values. As we noted in our review, “Varying and non-enduring phenomenon cannot be assumed constant and projected into the future.” The Panel provides no rebuttal of our criticism and no justification for carrying forward a varying and non-enduring effect, even if it were shown to exist.

In its response, the Panel justifies using a 1.7 mm/yr rate and assuming the resulting local effects persist unchanged for 30 years because it says they are “clearly stated” assumptions. However, the Panel cannot justify assumptions that are not supported by evidence by merely saying the assumptions are clearly stated. Incorrect assumptions lead to incorrect outcomes regardless of how clearly the incorrect assumptions are stated.

The Panel did not even comment on our question as to whether the Duck pier might be sinking relative to land.

We had numerous comments on the last four pages of our review of the SPU, and none of these comments were addressed by the Panel. It only said it would “consider” the comments. Considering comments and addressing them are not the same.

An adequate response would have sent the latest version of the draft report and provided real responses to our comments. The Panel would have addressed our comments by rebutting our criticisms and justifying its assumptions or agreeing with us and changing its approach. Instead it basically ignored the comments, providing no rebuttals and keeping assumptions that it does not justify.

We recommend that the Panel adequately address our comments even with the pressing time constraints. It can easily remove the approach in the SPU that it has not been able to justify, making the SPU simple, understandable, and defensible. We would be happy to review another version of the SPU to determine if it is publishable.

Reply to comments by Houston and Dean from January 17th

1) *Calculation of confidence intervals.*

The reviewers were correct in pointing out that the propagation of error in the estimates should be added in quadrature. Therefore, the 30 year change in sea level for RCP 2.6 and RCP 8.5 is 5.3 (3.1 to 7.6) inches and 6.3 (3.8 to 8.8) inches, respectively. This has also been incorporated into the projections including VLM (see No. 2).

2) *Estimation of local effects and use of 1.7 ± 0.2 mm/yr for global sea level rise.*

The panel appreciates the detailed review comments related to global and local sea level rates and their computation. The Panel met on March 13, 2015 and has agreed to adopt the approach of combining the IPCC projections with VLM estimates from Zervas. The revised projections presented in the table below have also been combined considering quadrature error propagation as discussed above.

RCP 2.6 + VLM				
	Mean	Low	High	95% CI
Duck	7.1	4.8	9.4	2.3
OI	6.3	3.9	8.7	2.4
Beaufort	6.5	4.2	8.7	2.3
Wilmington	5.8	3.5	8.0	2.3
Southport	5.9	3.7	8.2	2.3
RCP 8.5 + VLM				
	Mean	Low	High	95% CI
Duck	8.1	5.5	10.6	2.5
OI	7.3	4.7	9.9	2.6
Beaufort	7.5	5.0	10.0	2.5
Wilmington	6.8	4.3	9.3	2.5
Southport	6.9	4.4	9.4	2.5

Note that the VLM and IPCC confidence intervals were added in quadrature.

3) *Since the Duck pier pilings are concrete, is it known whether the pier itself is sinking, so that it is not representative of land subsidence in the area?*

As part of NOAA's maintenance program, they routinely (once or twice a year) run a new level from the land-based benchmarks to the gauge. These data show that the pier has not settled.

4) *Using three sentences to dismiss the possibility of deceleration may not satisfy critics.*

We have changed the structure and revised these sections to separate Potential Decrease in Sea Level Rise (now section 5.2) from Potential Increase in Sea Level Rise (now section 5.3). We have revised Section 5.2 based on the comments as follows:

5.2 Potential Decrease in Sea Level Rise

The Science Panel examined the scientific research regarding deceleration of sea level rise, meaning a rate lower than existing published global rates of sea level rise, over the next 30 years. There have been many efforts to detect acceleration or deceleration in the past sea level record. AR5 (Rhein et al. 2013) discusses these studies and concludes, as have others (Houston and Dean 2011, 2013; Houston 2013, Chambers et al. 2012), that strong multi-decadal variations in the tide gauge record make it difficult to detect whether there is a long term acceleration or deceleration using record lengths less than 60 years (see also Section 3.2). While researchers using both tide data and altimetry data have reported analyses that observe deceleration in sea level records (e.g., Houston and Dean 2011, 2013; Ezer 2013), the signal is small and indicative of cyclic or multi-decadal variations. Houston (2013) summarizes the existing studies and concludes that the range of acceleration in the existing record is from -0.01 to 0.01 mm/yr², or just ± 0.18 inches over 30 years, so not a significant factor. There is therefore no justification to apply a global deceleration factor to existing gauge rate projections for the next 30 years.

5) *We suggest a brief introductory paragraph in the Executive Summary and an expanded discussion of GIA in the body of the report.*

A brief note on GIA has been added to the body of the report. However, we have not modified the Executive Summary to include comments on GIA because we are not emphasizing this factor as a result in itself but rather as a contributor to the results.

Section 3.1 Vertical Land Motion (VLM)

This phenomenon also causes some ocean basins to be subsiding as mantle material moves from under the oceans into previously glaciated regions on land.

In addition a reference to satellite data has been added to **Section 8 Recommendations for Updating the Report:**

Continued monitoring of global and regional sea levels using satellite data will improve as the record length is extended, and these data should be reviewed for consideration in future reports. This will also provide the opportunity to examine coincident time frames with varying data sources (i.e., satellite altimetry and tide gauges).

7) *There should be a description of terms and acronyms including Relative Sea Rise (RSL), etc.*

After the Table of Contents a section describing Terms and Acronyms has been added.

This list is referred to by page number in the review

Pg 1 *Ezer and Atkinson 2014 does not appear in the references.*

The reference below has been added to the list of references:

Ezer, T. and L.P. Atkinson, 2014. Accelerated flooding along the U. S. East Coast: On the impact of sea level rise, tides, storms, the Gulf Stream and the North Atlantic Oscillations. *Earth's Future*, 2(8), 362-382, doi:10.1002/2014EF000252

Pg 2 *Fairbanks (1989) does not appear in the references.*

The reference below has been added to the list of references:

Fairbanks, R.G., 1989. A 17,000 year glacio-eustatic sea level record: influence of glacial melting rates on the Younger Dryas event and deep ocean circulation. *Nature*, 342, 637-642.

Pg 4. *Table*

Suggested edits to table using 1993-2010 timeframe have been made.

Pg 7 *Eggleston et al. 2013 should be Eggleston and Pope 2013 and the acronym NCDENR appears without being defined as North Carolina Department of Environment and Natural Resource*

Changes made to revise to Eggleston and Pope 2013 and acronym has been replaced with "NC Department of Environment and Natural Resources"

Pg 9 *Text says, "The present rate of GSL rise is 1.7 mm/yr (Church and White, 2011) ..." Of course, this is not the present rate, but the average rate from 1900 to 2009. The present rate as measured by satellite altimeters from 1993 through the present is 3.2 mm/yr (University of Colorado, 2014).*

The sentence is changed to "...the global sea level rise average rate from 1900 to 2009..."

Pg 10 *Spanger-Siegfried et al. (2014) is a non-peer-reviewed internet article authored by an advocacy group.... We suggest dropping the sentence*

This sentence was deleted and Spanger-Siegfried removed from references.

Pg 9-11 *oceanographic effects*

Figure 5 and references to it have been removed and conclusion has been added that:

At this stage, it is unknown whether oceanographic effects on RSL will persist into the future; however, this is an important area of current oceanographic research which should be followed closely in future sea level rise assessment reports.

Panel feels this discussion is important to bring forward and an area of research that should be followed closely.

Pg 12 a) *The acronym NWLON is never used. B) Text says Yelverton and Hackney 1990, but references say Hackney, C.T. and G.F. Yelverton. 1990.*

Acronym NWLON has been removed.

Citation has been corrected to Hackney and Yelverton 1990

Pg 23 *Sweet and Parker 2014 should be Sweet et al 2014.*

This has been corrected and an additional citation of Sweet and Park 2014 has been added.

Pg 24 *The text says that, "One of the major sources of uncertainty in estimates of sea level rise even over a period as short as 30 years is introduced by our limited understanding of the rates of loss of the Greenland and West Antarctic ice shelves. The rates of melting and ice sheet loss into the sea are highly uncertain and could occur rapidly." These sentences have an element of hyperbole.*

The paragraph has been rephrased as:

The short 30-year period also allows increased confidence in the forecast, relative to a 60 or 100 year forecast during which more rapid climate change is expected. One of the major sources of uncertainty in estimates of sea level rise is the behavior of ice sheets. However, the IPCC states that only the collapse of marine-based sectors of the Antarctic ice sheet, if initiated, could cause global mean sea level to rise substantially about the likely predicted range during the 21st century (Church et al. 2013). As research evolves with more data and our understanding of these phenomena improves, forecasts will be updated. This is one of the many reasons that the Panel recommends updating this report every five years.

Pg 27 *The reference Horton, B.P., W.R. Peltier, S.J. Culver, R. Drummond, S.E. Engelhart, A.C. Kemp, D. Mallinson, E.R. Thieler, S.R. Riggs, D.V. Ames, and K.H. Thomson, 2009 does not appear in the text.*

Citation of this reference has been added to p. 6.

The Science Panel's reply to comments that Professor Bob Dean and I made was thorough and quite responsive.

I highly commend Science Panel members for the many hours they spent and expertise they contributed in developing the Science Panel Update (SPU). Their task was difficult, but they successfully adhered to a tight schedule to produce the SPU on time and in accordance with NC General Assembly Session Law 2012-202. The State of North Carolina is indebted to them for their voluntary service and the fine product they produced. Special recognition must be given to Professor Margery Overton for her leadership as Chair of the SPU. The State also is very much indebted to Mr Frank Gorham, Chairman, Coastal Resource Commission, who set up a process that stayed on schedule and faithfully followed a peer review process.

Projecting future sea level rise is a difficult task, given that there are many uncertainties in everything from local ground motions to local oceanographic processes to global sea level change. The SPU presents two basic approaches to project sea level change over the next 30 years in North Carolina. First, it takes empirical data of relative sea level rise rates (that include ground motions) at five NC gauges and projects the rates into the future. Second, it takes the 2013 projections of global sea level rise made by the Intergovernmental Panel on Climate Change (IPCC) and adds local ground motion determined by Zervas (2014). The first approach provides an estimate of relative sea level rise at the NC gauges if the rise in the future is the same as in the past. The second approach provides an estimate of relative sea level rise if climate projections made by the IPCC occur. These two approaches cover the likely range of sea level rise over the next 30 years.

I believe the SPU is a good contribution to the scientific literature and agree with SPU recommendations for further research and a five-year update. I recommend the highlights of the SPU be submitted to a peer-reviewed journal for publication. Many states and local communities would be interested in the approach.

I discussed the SPU with Professor Bob Dean up to three days before his death, including the conversation Professor Overton and I had about the planned SPU response to our comments. He would have agreed with all of my comments above.

James R. Houston
Director Emeritus
Engineer Research and Development Center
Corps of Engineers



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

CRC-15-05

April 20, 2015

MEMORANDUM

TO: Coastal Resources Commission

FROM: Ken Richardson, Shoreline Management Specialist

SUBJECT: Static Line Exception Rule Amendments and Draft Development Line Rule

At the February 18, 2015 CRC meeting, further consideration was given to the proposed Development Line alternative to the Static Line Exception. During the CRAC's report to the Commission, Debbie Smith, CRAC Chair, affirmed the Council's support for maintaining the Static Line, while replacing the Static Line Exception with the Development Line alternative. The CRAC also expressed their support of the Commission's continued effort to draft Development Line rule language, and recommended that they retain language requiring communities to commit to maintaining beach fill projects.

Following the CRAC report was a brief presentation by the CRC Chair and Division staff outlining respective concerns each has with the current Static Line, Static Line Exception, and the proposed Development Line alternative. The CRC Chair presented specific issues with current rules, stating that communities are discouraged from designing beach fill projects above 300,000 cubic yards in order to avoid getting a static line. Instead, some are designing projects just under the large scale beach fill threshold, consequently resulting in smaller projects offering less protection from storms and erosion. Furthermore, the Chair expressed additional concerns about a local government's realistic ability to identify dependable funding sources for project maintenance; and local government budgets being unduly burdened by having to pay for consulting and engineering services associated with identifying compatible sand sources (geotechnical data collection), project monitoring, and updating Exception Reauthorization Reports as required under current rules (15A NCAC 07J .1201).

DCM Staff followed up with a brief presentation that underscored similarities between the two alternatives (see Table 1). Staff expressed concerns that the proposed rules might allow for seaward encroachment of oceanfront development, and eliminate requirements for a local government to demonstrate their commitment to maintain beach fill projects. The Division stated that while beach fill projects mitigate chronic erosion, they do not eliminate the cause. The Static Line serves as an indicator of where the hazard was prior to the beach fill project, and allowing structures to

potentially be placed seaward of the pre-project vegetation line may put them at greater risk should a beach fill project not be maintained.

Table 1. Revised comparison of allowances under the Static Line Exception Rule amendments proposed by DCM, and the CRC’s Subcommittee’s most recent Development Line alternative recommendations.

Comparing SVL Alternatives	Development Line Alternative	Proposed SVL Amendments
Eliminate Static Line	✓	✗
Assurance of Community Commitment to Maintaining Beach Fill Project	✗	✓
Eliminate Maximum Structure sqft (2,500)	✓	✓
No Structures Seaward of Development Line / Adjacent Structures	✓	✓
Measure Setback from FLSNV	✓	✓
Maintain Setback Requirement	✓	✓
Development Line or SVL Exception Adopted/Approved by CRC	✓	✓
Eliminate 5-Year Waiting Period	✓	✓

Following the discussion, the CRC Chair stated that the objective is not to allow seaward encroachment of structures, and asked the Commission to consider supporting the Division’s proposed alternatives involving Static Line Exception rule changes, in addition to moving forward with drafting Development Line Rule language. Commissioner Renee Cahoon made a motion, seconded by Commissioner Greg Lewis, to move forward with drafting Development Line rule language and defining Development Line delineation criteria. The motion passed unanimously (CRC Minutes, February, 2015).

The CRC then appointed Gregory “Rudi” Rudolph to Chair a subcommittee to develop rule language that would accomplish two objectives; (1) review DCM’s proposed alternative changes to the existing static line rules, and (2) draft the necessary rule language to create a Development Line alternative. The subcommittee felt that its biggest challenges were to:

1. Craft rule language that avoided seaward encroachment of development.
2. Constrain how a development line would be administered in areas with non-linear, or “staggered” development.

3. Reconcile how development currently located on public trust lands, or those considered to be “grossly” seaward of adjacent development would be considered when delineating a Development Line.

The CRC's subcommittee met in Wilmington, NC on March 11, 2015 to discuss its charge. The following summarizes their recommendations on both DCM's proposed alternative rule amendments and the Development Line alternative:

Subcommittee Recommendations: DCM's Proposed Alternative - Static Line Rule Amendments

1. 100 cubic yards per linear foot is too high of a threshold to trigger a static line; the definition of a large-scale project should remain at 300,000 cubic yards.
2. Supported staff's proposed alternative to remove the 2,500 square feet building floor area restriction. Structures still need to meet graduated setbacks based on structure size and setback factor, and cannot be seaward of adjacent neighbor(s) - 15A NCAC 07H.0306(a).
3. Supported staff's proposed alternative to remove the 5-year Static Line Exception request waiting period. This will allow local governments to seek an Exception immediately following a beach fill project - 15A NCAC 07J.1201(b).

Subcommittee Recommendations: Proposed Development Line Rule

1. The Development Line is an alternative to the Static Line Exception, and is a CRC-approved line established by local governments that represents the seaward-most allowable location of oceanfront development subsequent to a large-scale beach fill project.
2. In communities with an approved Development Line, setbacks are measured from the First Line of Stable Natural Vegetation (FLSNV), or measurement line (such as an area designated as an Unvegetated Beach).
3. The Petitioner is defined as a local government, governing body, group of local governments involved in a regional beach fill project, or a qualified homeowner's association as defined in NCGS 47F-1-103-(3) that has the authority to approve the locations of structures on lots within the territorial jurisdiction of the association, and has jurisdiction over 1 mile or more of ocean shoreline.
4. Development Line Delineation Criteria:
 - a. Utilize adjacent neighbor sight-line approach resulting in an average line of structures. Where the seaward edge of existing development is not linear, the petitioner may determine an average line of structures on a case by case basis.
 - b. In no case shall a DL be established seaward of the most seaward structure within the petitioner's oceanfront jurisdiction, or below the mean high water line.
 - c. A Development Line request must apply at least to the entire project area of the large-scale project, and may be extended to the petitioner's entire oceanfront jurisdiction at their request.

5. Development Line Delineation Methods:
 - a. Detailed survey of DL using on-ground observation and survey techniques, or spatially referenced aerial imagery (orthorectified photography).
6. If an approved DL is landward of an existing structure, that structure may remain in place until it is damaged more than 50%. If destroyed or damaged more than 50%, the structure would have to be rebuilt landward of the DL and meet applicable setback requirements.
7. Only the petitioner can request a DL change, not NC DCM.
8. Communities with a DL will not be required to demonstrate a commitment to maintain a beach fill project; therefore, a nourishment plan identifying sand and monetary resources will not be required.

Background Review

At the December 2014 CRC meeting, the Commission discussed two alternatives for utilization of a Static Line for siting oceanfront development in areas with a large scale beach fill project. The first alternative proposed by the Commission Chair involves giving local governments the option to eliminate the use of the static line and static line exception procedures by replacing them with a new “development line” procedure. The general concept is that no new development or expansion of existing structures would be allowed seaward of the approved development line. In addition, new or replacement structures, and the allowable expansion of existing structures, would be determined based on the graduated setback from the existing vegetation line. This concept was further developed by a subcommittee appointed by the CRC Chair (Rudi Rudolph – CRAC, Spencer Rogers - CRAC, Steve Foster – Oak Island, Frank Rush – Emerald Isle, and David Kellam – Figure Eight Island). The proposal envisions communities choosing between three alternatives:

- (1) ***Graduated setbacks associated with the Vegetation Line (existing rules)*** – for a community that does not have a static line, and has/will not receive large-scale beach nourishment, nor wants a Development Line.
- (2) ***Static line (existing rules)*** – for a community that has received large-scale beach nourishment in the past, has a static line that it wishes to keep, or does not yet have an approved Development Line.
- (3) ***Development Line (new rule)*** – for communities that have a static line and wish to replace it with a Development Line, or a community that receives initial large-scale beach nourishment that wishes to have a Development Line instead of a static line.

The Subcommittee's proposal also included repealing the graduated setbacks based on structure size, only requiring that development be sited 30 times the erosion rate from the first line of stable and natural vegetation. More recently, the CRC subcommittee removed this proposal based on a recommendation made by the CRC Chairman.

A second alternative was proposed by DCM staff focusing more narrowly on three amendments to the existing static line exception provisions. The CRC could 1) eliminate the 2,500 square foot maximum building size limit under the static line exception, 2) eliminate the five-year waiting period after an initial large-scale beach fill project (making areas immediately eligible to petition for the exception), and 3) increase the existing 300,000 yds³ definition of "large-scale beach fill projects" as the volumetric trigger for a static line. The trigger would change to a volume per linear foot along the beachfront, based on additional analysis and discussion with the Commission. Structure setbacks would continue to be based on the graduated setbacks from the first line of stable and natural vegetation and be sited no farther seaward than the landward-most adjacent structure. As is currently the case, local governments could petition the Commission to be granted a static line exception.

After discussing the details of the two proposals, DCM Staff was directed to draft rule language (attached) that incorporates the development line concept as well as DCM's proposed alternative amendments to the static line and static line exception procedures. Staff was further directed to retain the graduated setbacks and to change the trigger for a static line from 300,000 cubic yards to an average of 100 cubic yards per linear foot. The draft rule language defines the development line in 7H .0305(10) as the seaward-most location of development in areas that have had a large scale beach fill project. Development is also prohibited from being seaward of the development line in 7H .0306(a)(2). A new rule has been drafted for development line procedures in 7H .1300 by which local governments may petition the Commission for approval of a development line. The draft requirements to petition for a development line include a detailed survey, record of local adoption and documentation of incorporation into local ordinances.

As a reminder, the current rule 15A NCAC 07H.0305(a)(7) requires that oceanfront development setbacks in areas that have received a large-scale beach fill project (greater than 300,000 cubic yards of sediment or any storm protection project constructed by the US Army Corps of Engineers (USACE)) be measured from the Static Vegetation Line, which is the vegetation line in existence within one year prior to the onset of the project. Exceptions to this rule are allowed, provided that the local government has received a Static Line Exception from the Commission. The origins and rationale for the Static Line were presented at the previous meeting and the background memo (CRC-14-34) is attached as reference.

With the incorporated draft amendments, the main difference between the proposed development line concept versus amendments to the existing static line rules is that local governments must demonstrate commitment to long-term beach fill under the existing static line rules. Communities without such a commitment have setbacks based on the vegetation line or the static line (pre-project vegetation line). Also, under the

development line concept, structures would be allowed to encroach oceanward up to the approved development line whereas the existing rules require structures to be no further oceanward than their landward-most adjacent neighbor in most cases.

DCM AND SUBCOMMITTEE RECOMMENDED LANGUAGE (4/6/15)

SUBCOMMITTEE CHAIR RECOMMENDED CHANGES (4/12/15)

15A NCAC 07H .0304AECs WITHIN OCEAN HAZARD AREAS

The ocean hazard AECs contain all of the following areas:

- (1) Ocean Erodible Area. This is the area in which there exists a substantial possibility of excessive erosion and significant shoreline fluctuation. The oceanward boundary of this area is the mean low water line. The landward extent of this area is determined as follows:
 - (a) a distance landward from the first line of stable and natural vegetation as defined in 15A NCAC 07H .0305(a)(5) to the recession line that would be established by multiplying the long-term annual erosion rate times 60, provided that, where there has been no long-term erosion or the rate is less than two feet per year, this distance shall be set at 120 feet landward from the first line of stable natural vegetation. For the purposes of this Rule, the erosion rates are the long-term average based on available historical data. The current long-term average erosion rate data for each segment of the North Carolina coast is depicted on maps entitled "2011 Long-Term Average Annual Shoreline Rate Update" and approved by the Coastal Resources Commission on May 5, 2011 (except as such rates may be varied in individual contested cases, declaratory or interpretive rulings). In all cases, the rate of shoreline change shall be no less than two feet of erosion per year. The maps are available without cost from any Local Permit Officer or the Division of Coastal Management on the internet at <http://www.nccoastalmanagement.net>; and
 - (b) a distance landward from the recession line established in Sub-Item (1)(a) of this Rule to the recession line that would be generated by a storm having a one percent chance of being equaled or exceeded in any given year.
- (2) The High Hazard Flood Area. This is the area subject to high velocity waters (including hurricane wave wash) in a storm having a one percent chance of being equaled or exceeded in any given year, as identified as zone V1-30 on the flood insurance rate maps of the Federal Insurance Administration, U.S. Department of Housing and Urban Development.
- (3) Inlet Hazard Area. The inlet hazard areas are natural-hazard areas that are especially vulnerable to erosion, flooding and other adverse effects of sand, wind, and water because of their proximity to dynamic ocean inlets. This area extends landward from the mean low water line a distance sufficient to encompass that area within which the inlet shall migrate, based on statistical analysis, and shall consider such factors as previous inlet territory, structurally weak areas near the inlet and external influences such as jetties and channelization. The areas identified as suggested Inlet Hazard Areas included in the report entitled INLET HAZARD AREAS, The Final Report and Recommendations to the Coastal Resources Commission, 1978, as amended in 1981, by Loie J. Priddy and Rick Carraway are incorporated by reference and are hereby designated as Inlet Hazard Areas except for:
 - (a) the Cape Fear Inlet Hazard Area as shown on the map does not extend northeast of the Bald Head Island marina entrance channel; and
 - (b) the former location of Mad Inlet, which closed in 1997.In all cases, the Inlet Hazard Area shall be an extension of the adjacent ocean erodible areas and in no case shall the width of the inlet hazard area be less than the width of the adjacent ocean erodible area. This report is available for inspection at the Department of Environment and Natural Resources, Division of Coastal Management, 400 Commerce Avenue, Morehead City, North Carolina or at the website referenced in Sub-item (1)(a) of this Rule. Photo copies are available at no charge.
- (4) Unvegetated Beach Area. Beach areas within the Ocean Hazard Area where no stable natural vegetation is present may be designated as an Unvegetated Beach Area on either a permanent or temporary basis as follows:
 - (a) An area appropriate for permanent designation as an Unvegetated Beach Area is a dynamic area that is subject to rapid unpredictable landform change from wind and wave action. The areas in this category shall be designated following studies by the Division of Coastal Management. These areas shall be designated on maps approved by the Coastal Resources Commission and available without cost from any Local Permit Officer or the

Division of Coastal Management on the internet at the website referenced in Sub-item(1)(a) of this Rule.

- (b) An area that is suddenly unvegetated as a result of a hurricane or other major storm event may be designated as an Unvegetated Beach Area for a specific period of time. At the expiration of the time specified by the Coastal Resources Commission, the area shall return to its pre-storm designation.

History Note: Authority G.S. 113A-107; 113A-107.1; 113A-113; 113A-124; Eff. September 9, 1977; Amended Eff. December 1, 1993; November 1, 1988; September 1, 1986; December 1, 1985; Temporary Amendment Eff. October 10, 1996; Amended Eff. April 1, 1997; Temporary Amendment Eff. October 10, 1996 Expired on July 29, 1997; Temporary Amendment Eff. October 22, 1997; Amended Eff. May 1, 2014; February 1, 2013; January 1, 2010, February 1, 2006; October 1, 2004; April 1, 2004; August 1, 1998.

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.

- (1) Ocean Beaches. Ocean beaches are lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either:
 - (A) the growth of vegetation occurs, or
 - (B) a distinct change in slope or elevation alters the configuration of the landform, whichever is farther landward.
- (2) Nearshore. The nearshore is the portion of the beach seaward of mean low water that is characterized by dynamic changes both in space and time as a result of storms.
- (3) Primary Dunes. Primary dunes are the first mounds of sand located landward of the ocean beaches having an elevation equal to the mean flood level (in a storm having a one percent chance of being equaled or exceeded in any given year) for the area plus six feet. The primary dune extends landward to the lowest elevation in the depression behind that same mound of sand (commonly referred to as the dune trough).
- (4) Frontal Dunes. The frontal dune is deemed to be the first mound of sand located landward of the ocean beach having sufficient vegetation, height, continuity and configuration to offer protective value.
- (5) Vegetation Line. The vegetation line refers to the first line of stable and natural vegetation, which shall be used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to constant flux due to waves, tides, storms and wind, and the more stable upland areas. The vegetation line is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. The Division of Coastal Management or Local Permit Officer shall determine the location of the stable and natural vegetation line based on visual observations of plant composition and density. If the vegetation has been planted, it may be considered stable when the majority of the plant stems are from continuous rhizomes rather than planted individual rooted sets. The vegetation may be considered natural when the majority of the plants are mature and additional species native to the region have been recruited, providing stem and rhizome densities that are similar to adjacent areas that are naturally occurring. In areas where there is no stable natural vegetation present, this line may be established by interpolation between the nearest adjacent stable natural vegetation by on ground observations or by aerial photographic interpretation.
- (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. Because the impact of Hurricane Floyd (September 1999) caused significant portions of the vegetation line in the Town of Oak Island and the Town of Ocean Isle Beach to be relocated landward of its pre-storm position, the static line for areas landward of the beach fill construction in the Town of Oak Island and the Town of Ocean Isle Beach, the onset of which occurred in 2000, shall be defined by the general trend of the vegetation line established by the Division of Coastal Management from June 1998 aerial orthophotography.

- (7) Beach Fill. Beach fill refers to the placement of sediment along the oceanfront shoreline. Sediment used solely to establish or strengthen dunes shall not be considered a beach fill project under this Rule. A large-scale beach fill project shall be defined as any volume of sediment greater than 300,000 cubic yards or any storm protection project constructed by the U.S. Army Corps of Engineers. The onset of construction shall be defined as the date sediment placement begins with the exception of projects completed prior to the effective date of this Rule, in which case the award of contract date will be considered the onset of construction.
- (8) Erosion Escarpment. The normal vertical drop in the beach profile caused from high tide or storm tide erosion.
- (9) Measurement Line. The line from which the ocean hazard setback as described in Rule .0306(a) of this Section is measured in the unvegetated beach area of environmental concern as described in Rule .0304(4) of this Section. Procedures for determining the measurement line in areas designated pursuant to Rule .0304(4)(a) of this Section shall be adopted by the Commission for each area where such a line is designated pursuant to the provisions of G.S. 150B. These procedures shall be available from any local permit officer or the Division of Coastal Management. In areas designated pursuant to Rule .0304(4)(b) of this Section, the Division of Coastal Management shall establish a measurement line that approximates the location at which the vegetation line is expected to reestablish by:
 - (A) determining the distance the vegetation line receded at the closest vegetated site to the proposed development site; and
 - (B) locating the line of stable natural vegetation on the most current pre-storm aerial photography of the proposed development site and moving this line landward the distance determined in Subparagraph (g)(1) of this Rule.The measurement line established pursuant to this process shall in every case be located landward of the average width of the beach as determined from the most current pre-storm aerial photography.

(10) Development Line. The line established in accordance with 15A NCAC 07J.1300 by local governments representing the seaward-most allowable location of oceanfront development. ~~Development lines are approved by the Coastal Resources Commission in accordance with the procedures set forth in 15A NCAC 7J.1300. In areas that have approved development lines, the vegetation line or measurement line shall be used as the reference point for measuring oceanfront setbacks instead of the static vegetation line, subject to the provisions of 15A NCAC 07H.0306(a)(2).~~

(b) For the purpose of public and administrative notice and convenience, each designated minor development permit-letting agency with ocean hazard areas may designate, subject to CRC approval in accordance with the local implementation and enforcement plan as defined 15A NCAC 07I .0500, a readily identifiable land area within which the ocean hazard areas occur. This designated notice area must include all of the land areas defined in Rule .0304 of this Section. Natural or man-made landmarks may be considered in delineating this area.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;

Eff. September 9, 1977;
Amended Eff. December 1, 1992; September 1, 1986; December 1, 1985; February 2, 1981;
Temporary Amendment Eff. October 10, 1996;
Amended Eff. January 1, 1997;
Temporary Amendment Eff. October 10, 1996 Expired on July 29, 1997;
Temporary Amendment Eff. October 22, 1997;
Amended Eff. April 1, 2008; August 1, 2002; August 1, 1998.

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:

(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.

(2) In areas with a development line, the ocean hazard setback line shall be set at a distance in accordance with sub-sections (a)(3) through (9) of this Rule. In no case shall new development be sited seaward of the development line.

(3) In no case shall a development line be created or established below the mean high water line.

(3)(4) 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)(4)(5) 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;
- (B) A building or other structure greater than or equal to 5,000 square feet but less than 10,000 square feet requires a minimum setback of 120 feet or 60 times the shoreline erosion rate, whichever is greater;
- (C) A building or other structure greater than or equal to 10,000 square feet but less than 20,000 square feet requires a minimum setback of 130 feet or 65 times the shoreline erosion rate, whichever is greater;
- (D) A building or other structure greater than or equal to 20,000 square feet but less than 40,000 square feet requires a minimum setback of 140 feet or 70 times the shoreline erosion rate, whichever is greater;
- (E) A building or other structure greater than or equal to 40,000 square feet but less than 60,000 square feet requires a minimum setback of 150 feet or 75 times the shoreline erosion rate, whichever is greater;
- (F) A building or other structure greater than or equal to 60,000 square feet but less than 80,000 square feet requires a minimum setback of 160 feet or 80 times the shoreline erosion rate, whichever is greater;
- (G) A building or other structure greater than or equal to 80,000 square feet but less than 100,000 square feet requires a minimum setback of 170 feet or 85 times the shoreline erosion rate, whichever is greater;
- (H) A building or other structure greater than or equal to 100,000 square feet requires a

- (I) minimum setback of 180 feet or 90 times the shoreline erosion rate, whichever is greater;
- (I) Infrastructure that is linear in nature such as roads, bridges, pedestrian access such as boardwalks and sidewalks, and utilities providing for the transmission of electricity, water, telephone, cable television, data, storm water and sewer requires a minimum setback of 60 feet or 30 times the shoreline erosion rate, whichever is greater;
- (J) Parking lots greater than or equal to 5,000 square feet requires a setback of 120 feet or 60 times the shoreline erosion rate, whichever is greater;
- (K) Notwithstanding any other setback requirement of this Subparagraph, a building or other structure greater than or equal to 5,000 square feet in a community with a static line exception in accordance with 15A NCAC 07J .1200 requires a minimum setback of 120 feet or 60 times the shoreline erosion rate in place at the time of permit issuance, whichever is greater. The setback shall be measured landward from either the static vegetation line, the vegetation line or measurement line, whichever is farthest landward; and
- (L) Notwithstanding any other setback requirement of this Subparagraph, replacement of single-family or duplex residential structures with a total floor area greater than 5,000 square feet shall be allowed provided that the structure meets the following criteria:
 - (i) the structure was originally constructed prior to August 11, 2009;
 - (ii) the structure as replaced does not exceed the original footprint or square footage;
 - (iii) it is not possible for the structure to be rebuilt in a location that meets the ocean hazard setback criteria required under Subparagraph (a)(2)(5) of this Rule;
 - (iv) the structure as replaced meets the minimum setback required under Part (a)(2)(5)(A) of this Rule; and
 - (v) the structure is rebuilt as far landward on the lot as feasible.

~~(3)~~(6) If a primary dune exists in the AEC on or landward of the lot on which the development is proposed, the development shall be landward of the crest of the primary dune, ~~or the ocean hazard setback,~~ or development line, whichever is farthest from vegetation line, static vegetation line, ~~or measurement line,~~ whichever is applicable. For existing lots, however, where setting the development landward of the crest of the primary dune would preclude any practical use of the lot, development may be located oceanward of the primary dune. In such cases, the development may be located landward of the ocean hazard setback but shall not be located on or oceanward of a frontal dune or the development line. The words "existing lots" in this Rule shall mean a lot or tract of land which, as of June 1, 1979, is specifically described in a recorded plat and which cannot be enlarged by combining the lot or tract of land with a contiguous lot(s) or tract(s) of land under the same ownership.

~~(4)~~(7) If no primary dune exists, but a frontal dune does exist in the AEC on or landward of the lot on which the development is proposed, the development shall be set landward of the frontal dune, ~~or landward of the~~ ocean hazard setback, or development line, whichever is farthest from the vegetation line, static vegetation line, or measurement line, whichever is applicable.

~~(5)~~(8) If neither a primary nor frontal dune exists in the AEC on or landward of the lot on which development is proposed, the structure shall be landward of the ocean hazard setback or development line, whichever is more restrictive.

~~(6)~~(9) 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.

~~(7)~~(10) Established common law and statutory public rights of access to and use of public trust lands and waters in ocean hazard areas shall not be eliminated or restricted. Development shall not encroach upon public accessways, nor shall it limit the intended use of the accessways.

~~(8)~~(11) 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 if the

~~beach fill project is not maintained.~~ A development setback measured from the vegetation line ~~provides may provide~~ 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 ~~unless a development line has been approved by the Coastal Resources Commission.~~

~~(9)(12)~~ However, ~~in~~ ~~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)(5)~~ of this Paragraph, a local government ~~or community, group of local governments involved in a regional beach fill project, or qualified owner's association defined in NCGS 47F-1-103-(3) that has the authority to approve the locations of structures on lots within the territorial jurisdiction of the association, and has jurisdiction over at least one (1) mile of ocean shoreline,~~ 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)(5)~~ of this Rule;

~~(B)~~ ~~Total floor area of a building is no greater than 2,500 square feet;~~

~~(C)(B)~~ Development setbacks are calculated from the shoreline erosion rate in place at the time of permit issuance;

~~(D)(C)~~ 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)(D)~~ With the exception of swimming pools, the development defined in 15A NCAC 07H .0309(a) is allowed oceanward of the static vegetation line; and

~~(E)(E)~~ Development is not eligible for the exception defined in 15A NCAC 07H .0309(b).

(b) In order to avoid weakening the protective nature of ocean beaches and primary and frontal dunes, no development is permitted that involves the removal or relocation of primary or frontal dune sand or vegetation thereon which would adversely affect the integrity of the dune. Other dunes within the ocean hazard area shall not be disturbed unless the development of the property is otherwise impracticable. Any disturbance of these other dunes is allowed only to the extent permitted by 15A NCAC 07H .0308(b).

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

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

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

(f) Development shall comply with general management objective for ocean hazard areas set forth in 15A NCAC 07H .0303.

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

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

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

- (2) restore the affected environment; or
 - (3) compensate for the adverse impacts by replacing or providing substitute resources.
- (i) Prior to the issuance of any permit for development in the ocean hazard AECs, there shall be a written acknowledgment from the applicant to the Division of Coastal Management that the applicant is aware of the risks associated with development in this hazardous area and the limited suitability of this area for permanent structures. By granting permits, the Coastal Resources Commission does not guarantee the safety of the development and assumes no liability for future damage to the development.
- (j) All relocation of structures requires permit approval. Structures relocated with public funds shall comply with the applicable setback line as well as other applicable AEC rules. Structures including septic tanks and other essential accessories relocated entirely with non-public funds shall be relocated the maximum feasible distance landward of the present location; septic tanks may not be located oceanward of the primary structure. All relocation of structures shall meet all other applicable local and state rules.
- (k) Permits shall include the condition that any structure shall be relocated or dismantled when it becomes imminently threatened by changes in shoreline configuration as defined in 15A NCAC 07H .0308(a)(2)(B). Any such structure shall be relocated or dismantled within two years of the time when it becomes imminently threatened, and in any case upon its collapse or subsidence. However, if natural shoreline recovery or beach fill takes place within two years of the time the structure becomes imminently threatened, so that the structure is no longer imminently threatened, then it need not be relocated or dismantled at that time. This permit condition shall not affect the permit holder's right to seek authorization of temporary protective measures allowed under 15A NCAC 07H .0308(a)(2).

*History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;
Eff. September 9, 1977;
Amended Eff. December 1, 1991; March 1, 1988; September 1, 1986; December 1, 1985;
RRC Objection due to ambiguity Eff. January 24, 1992;
Amended Eff. March 1, 1992;
RRC Objection due to ambiguity Eff. May 21, 1992;
Amended Eff. February 1, 1993; October 1, 1992; June 19, 1992;
RRC Objection due to ambiguity Eff. May 18, 1995;
Amended Eff. August 11, 2009; April 1, 2007; November 1, 2004; June 27, 1995;
Temporary Amendment Eff. January 3, 2013;
Amended Eff. September 1, 2013.*

SECTION .1200 – STATIC VEGETATION LINE EXCEPTION PROCEDURES

15A NCAC 07J .1201 REQUESTING THE STATIC LINE EXCEPTION

(a) Any local government, group of local governments involved in a regional beach fill project, qualified owner's association defined in NCGS 47F-1-103-(3) that has the authority to approve the locations of structures on lots within the territorial jurisdiction of the association, and has jurisdiction over at least one (1) mile of ocean shoreline,

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 3025 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.

(f) 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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124
Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124
Eff. March 23, 2009.

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.

*History Note: Authority G.S. 113A-107; 113A-113(b)(6), 113A-124
Eff. March 23, 2009.*

SECTION .1300 – DEVELOPMENT LINE PROCEDURES

15A NCAC 07J .1301 REQUESTING THE DEVELOPMENT LINE

(a) Any local government, group of local governments involved in a regional beach fill project, or permit holder herein referred to as the or qualified owner's association with territorial jurisdiction over an area that is subject to ocean hazard area setbacks pursuant to 15A NCAC 07H .0305, may petition the Coastal Resources Commission for a development line for the purposes of siting oceanfront development in accordance with the provisions of this Section. A qualified owner's association is an owner's association defined in NCGS 47F-1-103-(3) that has authority to approve the locations of structures on lots within the territorial jurisdiction of the association and has jurisdiction over at least one (1) mile of ocean shoreline.

(b) A development line request applies to the entire large scale project area as defined in 15A NCAC 7H .0305(a)(7), that triggered a static line and at the petitioner's request may be extended to include the entire oceanfront jurisdiction or legal boundary of the petitioner.

(c) The petitioner shall utilize an adjacent neighbor sight-line approach, resulting in an average line of structures. In areas where the seaward edge of existing development is not linear, the petitioner may determine an average line of construction on a case-by-case basis. In no case shall a development line be established seaward of the most seaward structure within the petitioner's oceanfront jurisdiction.

(d) An existing structure that is oceanward of an approved development line can remain in place until damaged greater than fifty percent in accordance with 15A NCAC 7J .0210 by fire, flood, or other disaster; and can only be replaced landward of the development line, and must meet the applicable ocean hazard setback requirements as defined in 15A NCAC 067 H .0309(a).

(e) A development line request shall be made in writing by the petitioner. A complete development line request shall include the following:

- (1) A detailed survey of the development line using on-ground observation and survey, or aerial imagery along the oceanfront jurisdiction or legal boundary; any local regulations associated with the development line; a record of local adoption of the development by the petitioner line including any meetings or public hearings; and documentation of incorporation of development line into local ordinances or rules and regulations of an owner's association.
- (2) Surveyed development line spatial data in a geographic information systems (GIS) format referencing North Carolina State Plane North American Datum 83 US Survey Foot, to include Federal Geographic Data Committee (FGDC) compliant metadata;

(f) Once a development line is approved by the Coastal Resources Commission, only the petitioner can request a change or reestablishment of the position of the development line.

(g) A development line 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 development line 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.

(h) The Coastal Resources Commission shall consider a development line 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.*

15A NCAC 07J .1302 PROCEDURES FOR APPROVING THE DEVELOPMENT LINE

(a) At the meeting that the development line request is considered by the Coastal Resources Commission, the following shall occur:

- (1) A representative for the petitioner shall orally present the request report described in 15A NCAC 07J .1301. The Chairman of the Coastal Resources Commission may limit the time allowed for oral presentations, comments
- (2) Additional persons parties may provide written or oral comments relevant to the development line request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.

(b) The Coastal Resources Commission shall approve a development line request if the request contains the information required and meets the standards set forth in 15A NCAC 7J. 0301, based on the information presented in 15A NCAC 07J .1301(e)(1) through (3). 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 development line 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..

**15A NCAC 07J .1303 LOCAL GOVERNMENTS AND COMMUNITIES WITH DEVELOPMENT
LINES**

A list of development lines in place for petitioners and any conditions under which the development lines exist, including the date(s) the development lines were approved, shall be maintained by the Division of Coastal Management. The list of development lines shall be available for inspection at the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557.

History Note: Authority G.S. 113A-107; 113A-113(b)(6), 113A-124
Eff..

References:

North Carolina Coastal Resources Commission (CRC) Meeting Minutes. (2015, February 18-19). Atlantic Beach, NC



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

CRC-15-06

April 15, 2015

MEMORANDUM

TO: Coastal Resources Commission

FROM: Mike Lopazanski

SUBJECT: Periodic Review of Existing Rules – 15A NCAC 7B LUP Guidelines
Public Comments and Next Steps

As you recall from the February 2015 CRC meeting, the Commission's 15A NCAC 7B CAMA Land Use Planning Requirements categorizations have been posted for public comment in accordance with the Administrative Procedures Act (APA) requirements for the periodic review of existing rules. As a reminder, the 2013 General Assembly enacted Session Law 2013-413 which added a "Periodic Review and Expiration of Existing Rules" section to the APA (G.S. § 150B-21.3A) requiring agencies to review all of their rules every 10 years under a process and schedule established by the Rules Review Commission. If an agency does not conduct the review, its rules will expire and be removed from the Administrative Code, unless the rule is required to implement or conform to federal law.

At the February meeting, the Commission approved the draft report for 15A NCAC 7B with four rules designated as *Necessary With Substantive Public Interest*, one rule designated as *Necessary Without Substantive Public Interest* and two rules designated as *Unnecessary*. The rules designated as unnecessary (15A NCAC 7B .0602 Examples) cite illustrative examples and (15A NCAC 7B.0901 CAMA Land Use Plan Amendments) are process oriented and are incorporated into other sections of the revised Planning Guidelines approved by the CRC in December 2014. These initial determinations have been posted by OAH and DENR for public comments February 20 - April 26, 2015. As of April 15th, there have been no public comments on the draft determinations. Staff will review with the Commission any comments received between now and the meeting with the intention of approving the final determinations for submission to the Rules Review Commission.

Schedule for Review of 15A NCAC 7B CAMA Land Use Planning Requirements

- Initial determinations approved at the February 18-19, 2015 CRC meeting.
- 60 day public comment period February 20 – April 26, 2015.
- Adopt the final determinations at the April 29-30, 2015 meeting.
- File with OAH before the May 15th deadline for June RRC review.

- RRC submits report to APOC for consultation July 2015.
- Provided the APOC approves the report, the CRC publishes amended rules for public comment September 2015
- Hold public hearing and adopt the amended 7B Land Use Planning Guidelines by the November 2015 Commission meeting.

Attached is the draft report as well as an outline of the Periodic Review Process. I look forward to discussing the next steps with the Commission at the upcoming meeting in Manteo.

Periodic and Expiration of Existing Rules Process

Under the Periodic Review and Expiration of Existing Rules” section to the APA (G.S. § 150B-21.3A), agencies are required to review all of their rules every 10 years under a process and schedule established by the Rules Review Commission. If an agency does not conduct the review, its rules will expire and be removed from the Administrative Code, unless the rule is required to implement or conform to federal law.

The process requires agencies to review their exiting rules and classify them as:

- Necessary with substantive public interest - the agency has received public comment within the last two years; it affects property interest or a person might object to the rule.
- Necessary without substantive public interest – the agency has not received public comment within the last two years or the rules simply provide contact information.
- Unnecessary - the agency determined the rule is obsolete, redundant or otherwise no longer needed.

These classifications must be posted on the Office of Administrative Hearings (OAH) and DENR web sites. Public comments are to be accepted for a period of at least 60 days and agencies are required to respond to each public comment. After the comment period, agencies may amend the final classifications based on public comments, and send an approved final report and public comments received to the RRC.

The RRC will review the final report and public comments to determine if it agrees with the agency classification of its rules. The RRC may change a classification of a rule to “necessary with substantive public interest” but does not have the authority to declare a rule as “unnecessary.” The RRC sends a final report to the Joint Legislative Administrative Procedure Oversight Committee (APOC) for consultation. The final determination on an agency’s rules becomes effective when the APOC reviews the report or on the 61st day after having received the report from the RRC if the APOC does not meet. The APOC may disagree with the Commission’s determination and recommend to the General Assembly that the agency conduct a review of the rule the following year.

Effect of Final Determination

Rules designated as “necessary without substantive public interest” will remain in the NC Administrative Code and rules designated as “unnecessary” will be removed. Rules designated as “necessary with substantive public interest” must be re-adopted as if they were new rules following the usual rulemaking procedures. If the rules are not re-adopted, they will be removed from the Administrative Code.

G.S. 150B-21.3A Report for 15A NCAC Subchapter 07B, CAMA LAND USE PLANNING

Agency -Coastal Resources Commission

Comment Period - 2/20/15-4/26/15

Date Submitted to APO -

Rule Section	Rule Citation	Rule Name	Date and Last Agency Action on the Rule	Agency Determination [150B-21.3A(c)(1)a]	Required to Implement or Conform to Federal Regulation [150B-21.3A(d1)]	Federal Regulation Citation	Public Comment Received [150B-21.3A(c)(1)]	Agency Determination Following Public Comment [150B-21.3A(c)(1)]
SECTION .0600 - INTRODUCTION	15A NCAC 07B .0601	AUTHORITY	Eff. August 1, 2002	Necessary without substantive public interest	No		No	Necessary without substantive public interest
	15A NCAC 07B .0602	EXAMPLES	Eff. August 1, 2002	Unnecessary	No		No	Unnecessary
SECTION .0700 – CAMA LAND USE PLANNING REQUIREMENTS	15A NCAC 07B .0701	PLANNING OPTIONS	Eff. August 1, 2002	Necessary with substantive public interest	No		No	Necessary with substantive public interest
	15A NCAC 07B .0702	ELEMENTS OF CAMA CORE AND ADVANCED CORE LAND USE PLANS	Amended Eff. April 1, 2003	Necessary with substantive public interest	No		No	Necessary with substantive public interest
SECTION .0800 – CAMA LAND USE PLAN REVIEW AND CRC CERTIFICATION	15A NCAC 07B .0801	PUBLIC HEARING AND LOCAL ADOPTION REQUIREMENTS	Amended Eff. January 1, 2007	Necessary with substantive public interest	No		No	Necessary with substantive public interest
	15A NCAC 07B .0802	PRESENTATION TO COASTAL RESOURCES COMMISSION FOR CERTIFICATION	Amended Eff. April 1, 2008	Necessary with substantive public interest	No		No	Necessary with substantive public interest
SECTION .0900 – CAMA LAND USE PLAN AMENDMENTS	15A NCAC 07B .0901	CAMA LAND USE PLAN AMENDMENTS	Amended Eff. November 1, 2009	Unnecessary	No		No	Unnecessary



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

April 17, 2015

MEMORANDUM

CRC-15-07A

TO: Coastal Resources Commission

FROM: Ken Richardson, DCM Shoreline Management Specialist

SUBJECT: Town of Emerald Isle Static Line Exception 5-Year Progress Report

Petitioner, the Town of Emerald Isle (“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 March 24, 2010. Rule 15A NCAC 07J.1204(b) requires 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 necessary 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: Staff’s Report to the Commission summarizing the Town’s Update Report

Attachment B: Relevant Procedural Rules

Note: The Petitioner’s 5-Year Progress Report & Interlocal Agreement are provided as a separate document.

ATTACHMENT A: Staff's Report to the Commission

I. Description of the Affected Area

The Town of Emerald Isle (Town) is located on Bogue Banks in southwestern Carteret County, North Carolina. The town's land area is approximately 5.6 square miles, and is approximately 13 miles long extending from Bogue Inlet on the west to and bordered by Indian Beach on the east. The barrier island is generally oriented in a west-east direction (Figure 1).

Bogue Inlet is a relatively large shallow-draft inlet located between Bogue Banks to the northeast, in Carteret County, and Bear Island to the southwest in Onslow County. Since 1964 the inlet channel has been maintained periodically to a depth of 6 to 8 feet to connect the inlet to the Atlantic Intracoastal Waterway (AIW).

The static vegetation line was established along the eastern 5.9 miles of the town's approximate 11 mile ocean shoreline as a result of a large scale beach nourishment project constructed in 2003. The southwest extent of the static line starts at 6715 Ocean Drive and extends to the northeastern town boundary. The static line rule in effect at the time the Eastern Emerald Isle (Phase II) project was constructed required a static line be established for beach fills exceeding 250,000 cubic yards and a placement rate greater than 50 cubic yards per linear foot (cy/ft.). Although the placement rate in the Western Zone was less than 50 cy/ft., the eastern extent of Emerald Isle (Phase II) was treated as one project and made the average placement rate for the 5.9 miles to be 60.0 cy/ft., thus requiring a static line for the entire project.

The current average annual erosion setback for all of the affected area is 2.0 feet per year. Measuring construction setbacks from the static vegetation line utilizing current setback requirements would render 171 oceanfront structures non-conforming. Since March, 2010 four construction projects have been permitted using the Static Vegetation Line Exception.

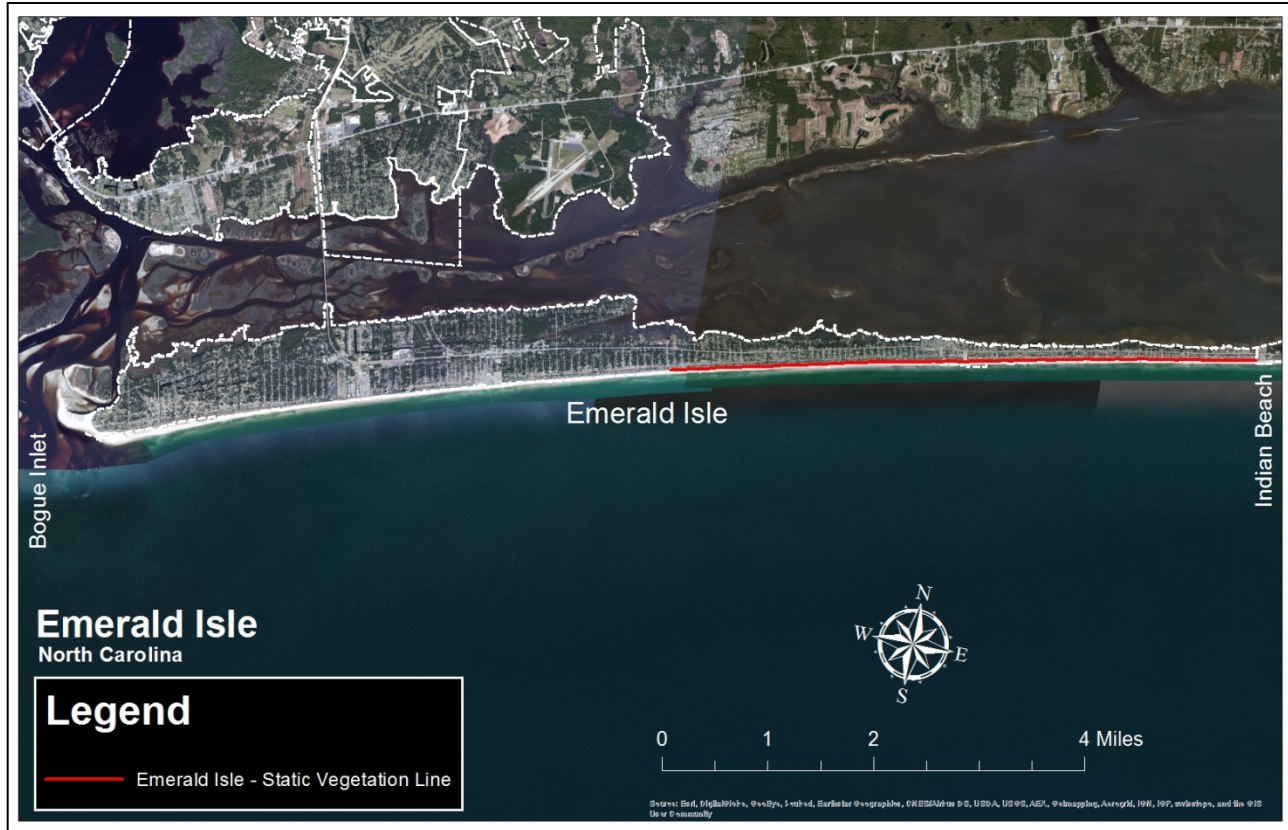


Figure 1. Emerald Isle, North Carolina (NC DCM – GIS, 2015)

II. Summary of Past Nourishment Project and Future Project Maintenance

The Eastern Emerald Isle (Phase II) portion of the Bogue Banks Restoration Project has been nourished on three occasions following initial construction in 2003, with all three instances resulting from volume losses associated with declared natural disasters. The first event was Hurricane *Isabel* which impacted the Bogue Banks area in September 2003 or only 5 months after initial construction of Phase II. The second was Hurricane *Ophelia* which passed through the area in September 2005. The third was Hurricane *Irene* which impacted the area in August 2011. In each case, the Town applied to the Federal Emergency Management Agency (FEMA) for funds to restore the material lost during the storms under Category G of FEMA’s Public Assistance Program. Specifically, the Public Assistance Program allows FEMA to provide funds to restore an “improved” or engineered beach providing the applicant can demonstrate the beach fill project had a designed template and grain size, a maintenance plan, and pre- and post-storm beach profile surveys, and was completed in 2013.

The Town of Emerald Isle dictates when nourishment will be performed once one-half of the initial fill volume is lost to erosion. This periodic nourishment trigger excludes the volume of material placed in the dune and the volume placed in the two taper sections. Therefore, Eastern Emerald Isle will schedule maintenance of the Phase II shoreline when 829,253 cubic yards is lost from the initial fill. This periodic nourishment strategy is also represented in the Town’s current FEMA Monitoring & Maintenance Plan that enables the Town to remain eligible for the cost reimbursement of replacing the volume of sand lost during a federally-declared disaster.

In addition, a target minimum volume for each profile from the foredune (landward most crest of the primary dune) to the outer bar (above -12 ft. NAVD88) was established at 225 cy/ft. during the

formulation of the Bogue Banks Restoration Project. This was determined to be an adequate amount of material to protect from storms based on the condition of the beach after the hurricanes of the 1990s.

With the current development of the Bogue Banks Master Beach Nourishment Plan, these triggers are being revised and nourishment operations and timing reformulated. It is expected that Bogue Banks will begin to operate under the Master Plan in fall/winter 2015.

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 necessary 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)

Both the Town’s original static line exception application report, and this update report (Town, 2010 and 2015) lays out the summary of fill projects in the area as follows:

Project Nourishment History

The Bogue Banks Restoration Plan covers approximately 16.8 miles of the 25 mile long island and extends from the Atlantic Beach/Pine Knoll Shores (AB/PKS) town boundary west to approximately one mile east of Bogue Inlet (Figure 2). The Island-wide project was implemented in three phases as shown in Figure 1, with Phase II (Eastern Emerald Isle) covering the extents of the Emerald Isle static line exception.

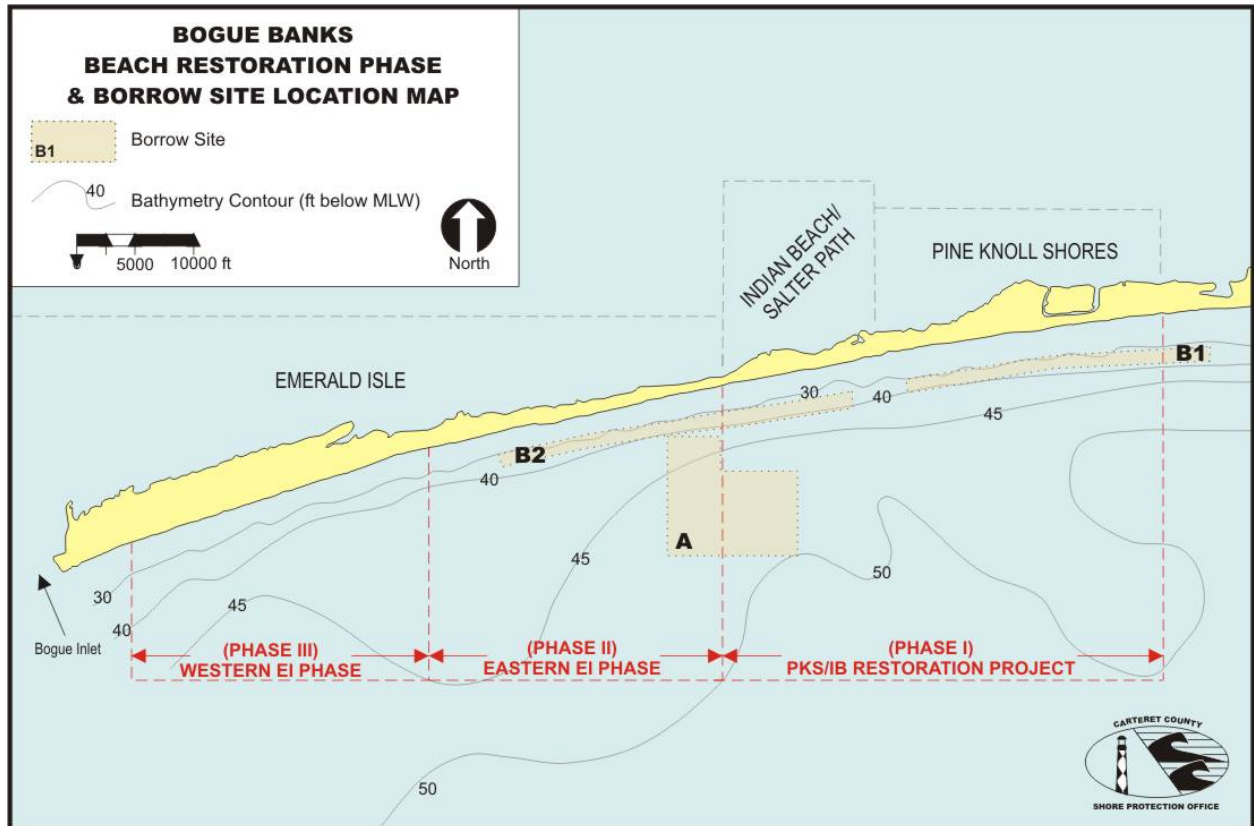


Figure 2. Bogue Banks Restoration Project (Carteret County Shore Protection Office, 2015)

Phase II, the focus of this static line exception review, was constructed in 2003 and covered the eastern 5.9 miles of Emerald Isle, west of the Indian Beach/Emerald Isle town boundary to a point approximately 1.5 miles east of the Bogue Inlet Fishing Pier (Figure 3). Material for Phase II was obtained from borrow areas B2 and A. The total volume placed on the 5.9 mile shoreline segment was 1,867,726 cubic yards which is equivalent to 60.0 cy/ft. Of this total volume, 123,938 cubic yards were used for construction of the dune; 85,282 cubic yards were placed in the two taper sections with the balance of 1,658,506 cubic yards used to construct the new beach seaward of the dune. The Phase II project was divided into Eastern, Middle, and Western Zones as shown in Figure 2 with design volumes of 82 cy/ft., 58 cy/ft., and 35 cy/ft., respectively. Based on after dredging beach profile surveys, the actual volume of material placed in each of the three zones shown in Figure 2 was: 444,800 cubic yards or 34.5 cy/ft. in the Western Zone; 212,500 cubic yards or 54.2 cy/ft. in the Middle Zone; and 1,001,300 cubic yards or 78.8 cy/ft. in the Eastern Zone.

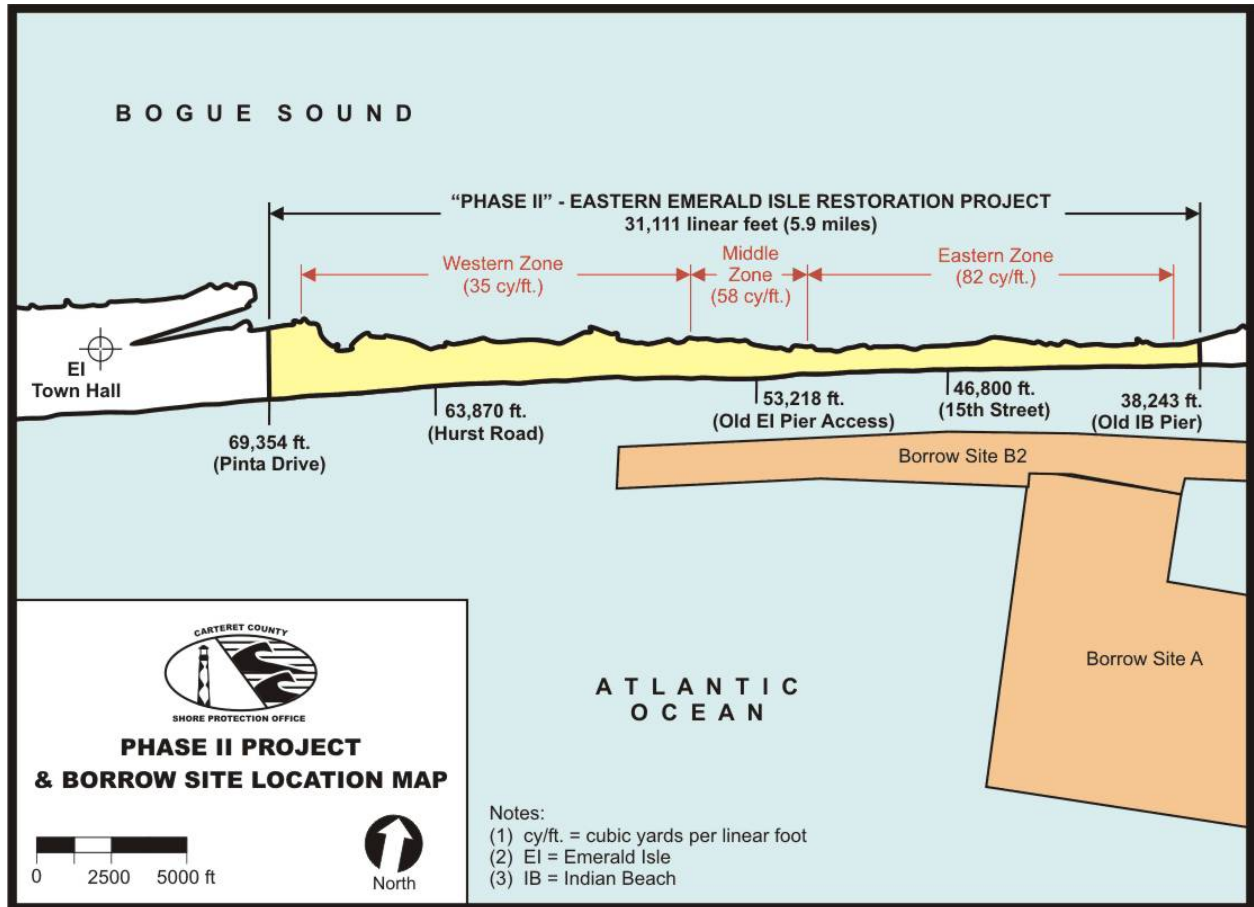


Figure 3. Phase II Restoration Project – Eastern Emerald Isle (*Carteret County Shore Protection Office, 2015*)

The Eastern Emerald Isle (Phase II) portion of the Bogue Banks Restoration Project has been nourished on three occasions following initial construction, with all three instances resulting from volume losses associated with declared natural disasters. The first event was Hurricane *Isabel* which impacted the Bogue Banks area in September 2003 or only 5 months after initial construction of Phase II. The second was Hurricane *Ophelia* which passed through the area in September 2005. The third was Hurricane *Irene* which impacted the area in August 2011. In each case, the Town applied to the Federal Emergency Management Agency (FEMA) for funds to restore the material lost during the storms under Category G of FEMA’s Public Assistance Program. Specifically, the Public Assistance Program allows FEMA to provide funds to restore an “improved” or engineered beach providing the applicant can demonstrate the beach fill project had a designed template and grain size, a maintenance plan, and pre- and post-storm beach profile surveys.

Following the advent of Hurricane *Isabel*, the Town of Emerald Isle was able to demonstrate it met all of the FEMA Public Assistance Program requirements including an engineered beach, a nourishment plan, and monitoring program and was subsequently approved to receive funds to restore the beach to the pre-storm condition. Based on profiles of the beach taken before and after Hurricane *Isabel*, the Town of Emerald Isle was able to substantiate the loss of 121,000 cubic yards of material from two sections of Phase II, one located between County Transects 30 and 36 and the other between County Transects 38 and 43 (Figure 4). Emerald Isle obtained modifications to its original permits from both the Corps of Engineers and the Division of Coastal Management and completed the restoration of the project during March and April 2004. The final

volume of material actually placed along the two eroded sections totaled 156,000 cubic yards. One hundred percent (100%) of the approximately \$1.8 million cost of the restoration project was paid for by FEMA. In addition to obtaining a permit to restore the eroded material, the permit modification included the use of material from the northern sections of the Morehead City Harbor Offshore Dredged Material Disposal Site (ODMDS) located seaward of the Beaufort Inlet ocean bar.

The post-Hurricane *Ophelia* restoration in Emerald Isle, which was also funded by FEMA, included restoration of the fill between County Transects 33 and 45 (Figure 5), located within the Phase II project limits, and between County Transects 10 and 20 (not included in the static line exception process) located in the Phase III segment of the Bogue Banks Restoration Project. As was the case for the Hurricane *Isabel* restoration, the Hurricane *Ophelia* restoration used material from the ODMDS which was transported to the beach via hopper dredges. The post-Hurricane *Ophelia* restoration was accomplished between January and March 2007 with a total of 1,229,800 cubic yards deposited along various sections of Bogue Banks, 344,410 cubic yards of which was placed between County Transects 33 and 45 within the limits of Phase II. The total cost of the restoration was \$13,773,800, all of which was provided by FEMA. Of this total restoration cost, \$3,857,000 can be allocated to the Eastern Emerald Isle (Phase II) project based on the volume of material placed within this reach compared to the total volume placed on Bogue Banks to replace the material lost to Hurricane *Ophelia*. Note that the total cost for the *Ophelia* restoration allocated to the Town of Emerald Isle was \$6,569,000 which included restoration of the Western Emerald Isle (Phase III) portion.

The post-Hurricane *Irene* restoration in Emerald Isle, which was partially funded by FEMA, included fill between County Transects 35 and 45 (Figure 6), located within the Phase II project limits and between County Transects 10 and 16 20 (not included in the static line exception process) located in the Phase III segment of the Bogue Banks Restoration Project. As was the case for the Hurricane *Isabel* and *Ophelia* restorations, the Hurricane *Irene* restoration used material from the ODMDS which was transported to the beach via hopper dredges. The post-Hurricane *Irene* restoration was accomplished between January and March 2013 with a total of 965,011 cubic yards deposited along various sections of the Bogue Banks, 451,600 cubic yards of which was placed between County Transects 35 and 46 within the limits of Phase II. This equated to an average of 36.1 cy/ft. The total cost of the restoration was \$14,951,965, \$7,076,155 of which was provided by FEMA and the rest by the County and Towns of Emerald Isle and Pine Knoll Shores. Note that the total cost for the *Irene* restoration allocated to the Town of Emerald Isle was \$1,443,607 which included restoration of the Western Emerald Isle (Phase III) portion. Appendix A of the Town's 2015 update report contains the plans for the 2013 post-Hurricane *Irene* project, the only project to occur within the last 5 years.

Nourishment Dates	Borrow Area	Placement Area (Stations.)	Pay Yardage (cy)	Cost of Operation
2003	A, B2	25-48	1,658,506	
2004	ODMDS	30-36, 38-43	156,000	\$1,800,000
2007	ODMDS	33-45	344,410	\$6,569,000
2013	ODMDS	35-45	451,600	\$7,076,155

Table 1. Emerald Isle Nourishment History Since 2003. (see 2015 Report for Detailed Station Locations)

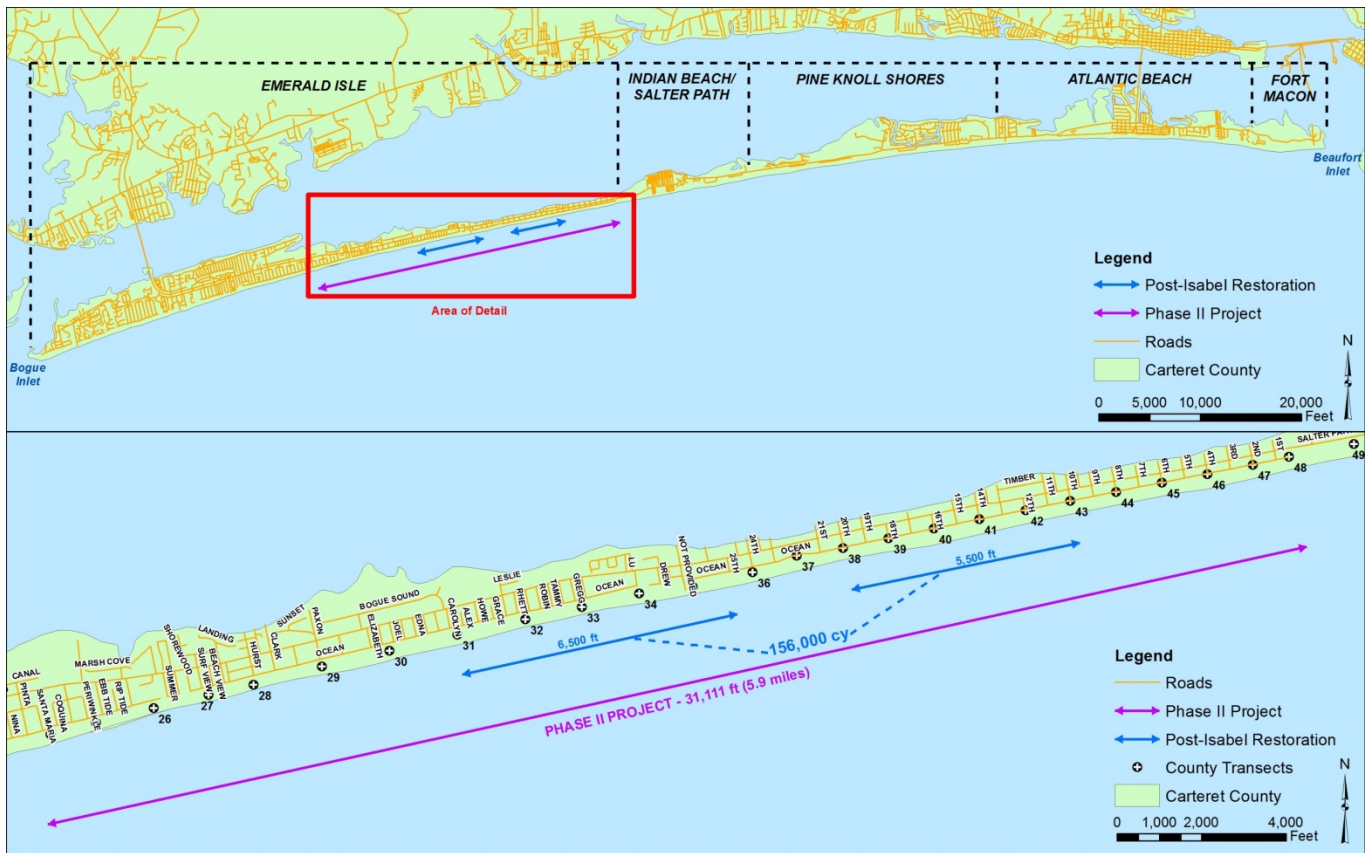


Figure 4. 2004 Post-Isabel Restoration Project at Transects 30-36, 38-43. (Carteret County Shore Protection Office, 2015)

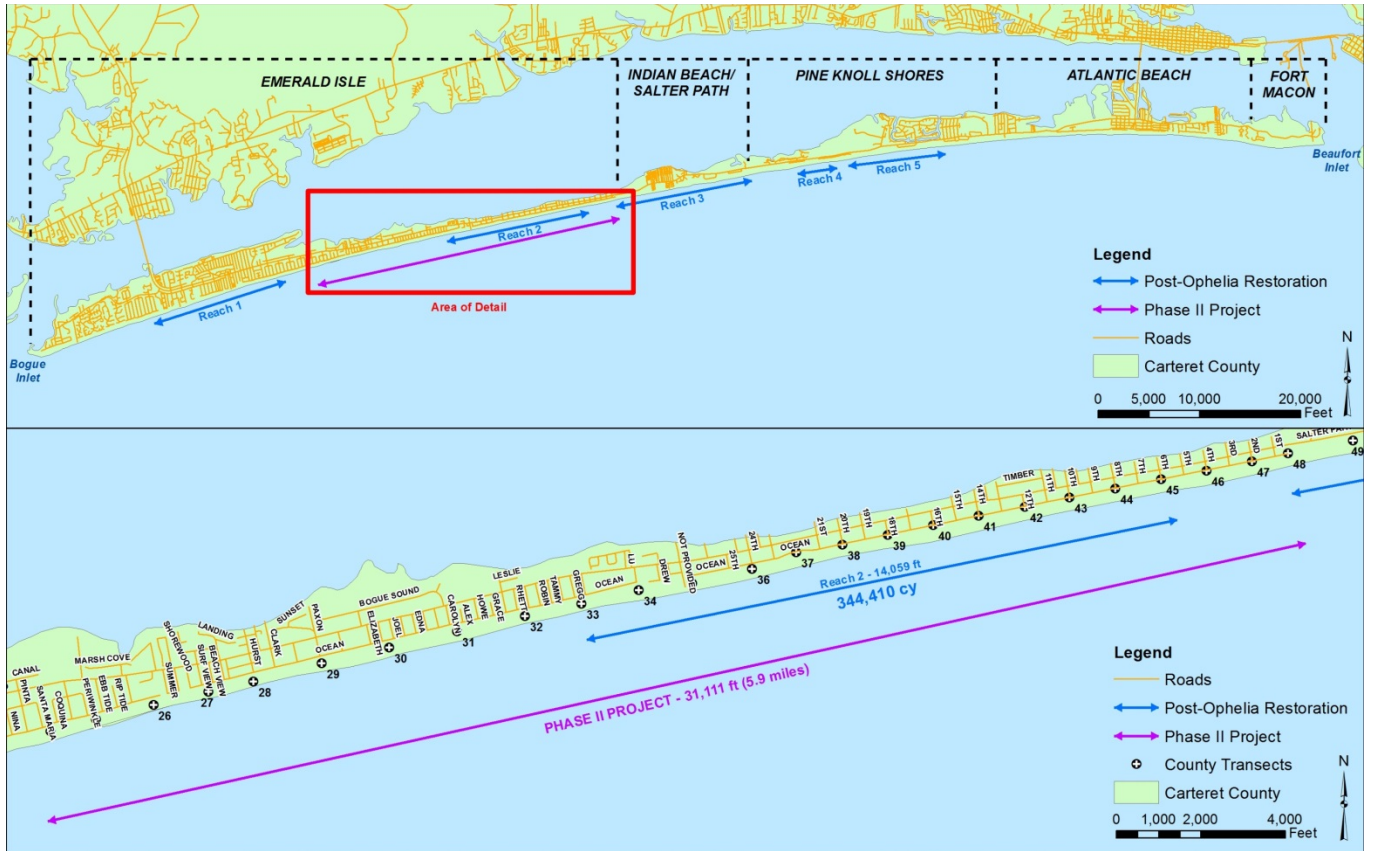


Figure 5. 2007 Post-Ophelia Restoration Project at Transects 33-45 (*Carteret County Shore Protection Office, 2015*)

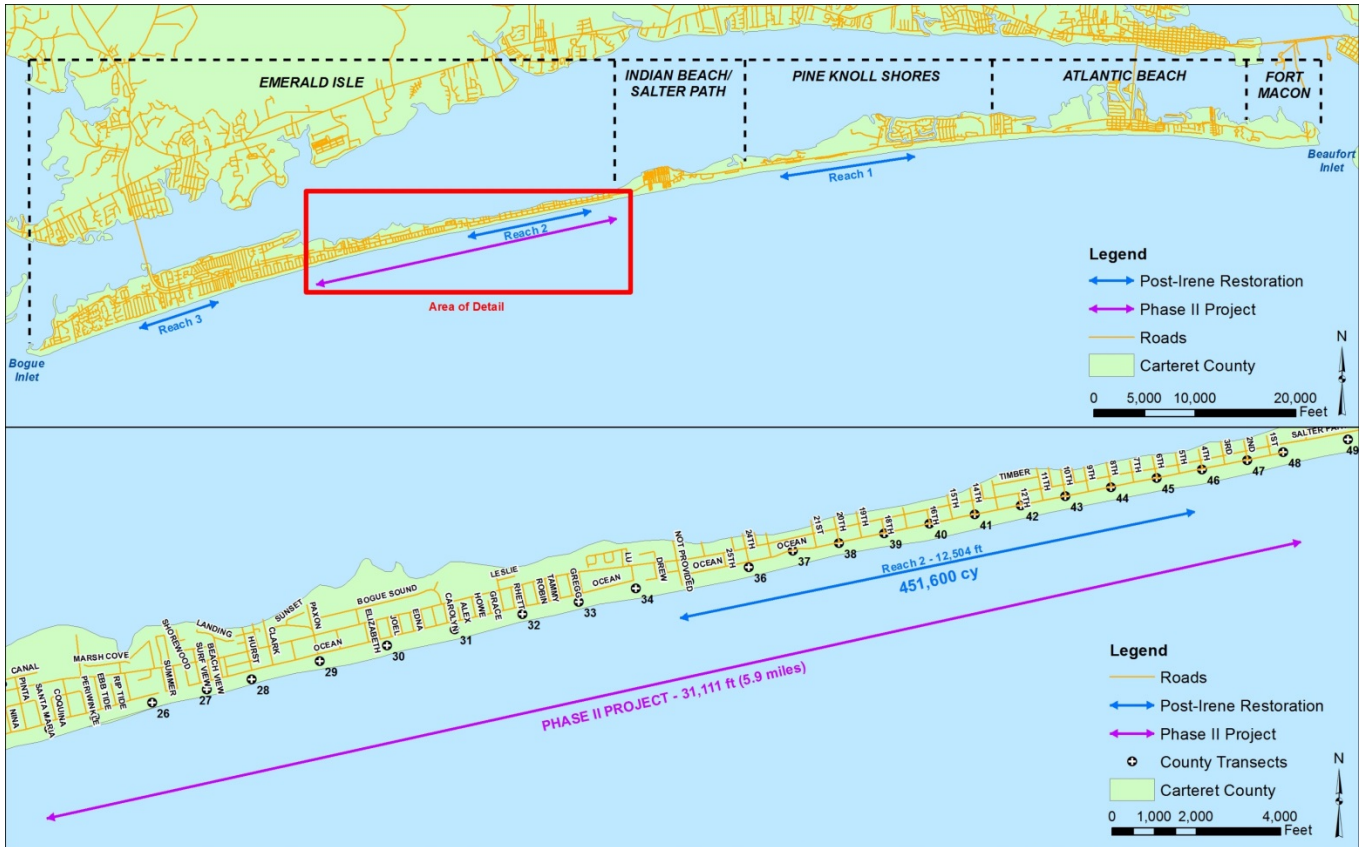


Figure 6. 2013 Post-Irene Restoration Project at Transects 35-45 (Carteret County Shore Protection Office, 2015)

5-Year Progress Report: Fill Projects

Since the Commission granted the Town of Emerald Isle a static line exception in March, 2010. One project has been constructed in 2013, as a result of storm induced erosion (*Hurricane Irene*).

B. Design of the initial fill projects and past/planned maintenance- Second factor per 15A NCAC 07J.1201(d)(2)

Both the Town's original static line exception application report and current report (Town, 2010 & 2015) provides information about the design of the beach fill project for Emerald Isle, and how that project has performed in the past, as follows:

Project Performance

The Phase II (Eastern Emerald Isle) project was divided into an Eastern, Middle, and Western Zone (see Figure 3) with different design volumes in each zone based on the volume from the toe of the dune out to -12 feet North American Vertical Datum (NAVD)88 needed to reach the design volume of 175 cy/ft. and an advanced nourishment volume equal to expected volume losses in that zone over the next 10 years. The design profile volume for the Bogue Banks project was subsequently increased to 225 cy/ft. to account for the volume of material from the landward toe of the dune up to the peak of the dune. The final design volume for each zone is also shown in **Error! Reference source not found.** The Eastern Emerald Isle portion of the project included a dune with a 10-foot wide crest at elevation +14 feet NAVD along the easternmost 2.2 miles of Emerald Isle within the eastern zone. The new dune was only provided in areas where the existing dune was deemed inadequate to provide the desired level of protection. A 959-foot transition or taper section was provided on the east end of the fill and a 531-foot taper on the west end to help control losses of material off the ends of the fill. The beach fill was designed as a variable width horizontal berm at elevation +6.0 feet NAVD. Figure 7 shows the plan view of the Phase II (Eastern Emerald Isle) beach fill project while Figure 8 shows some typical design cross-sections from each of the three zones.

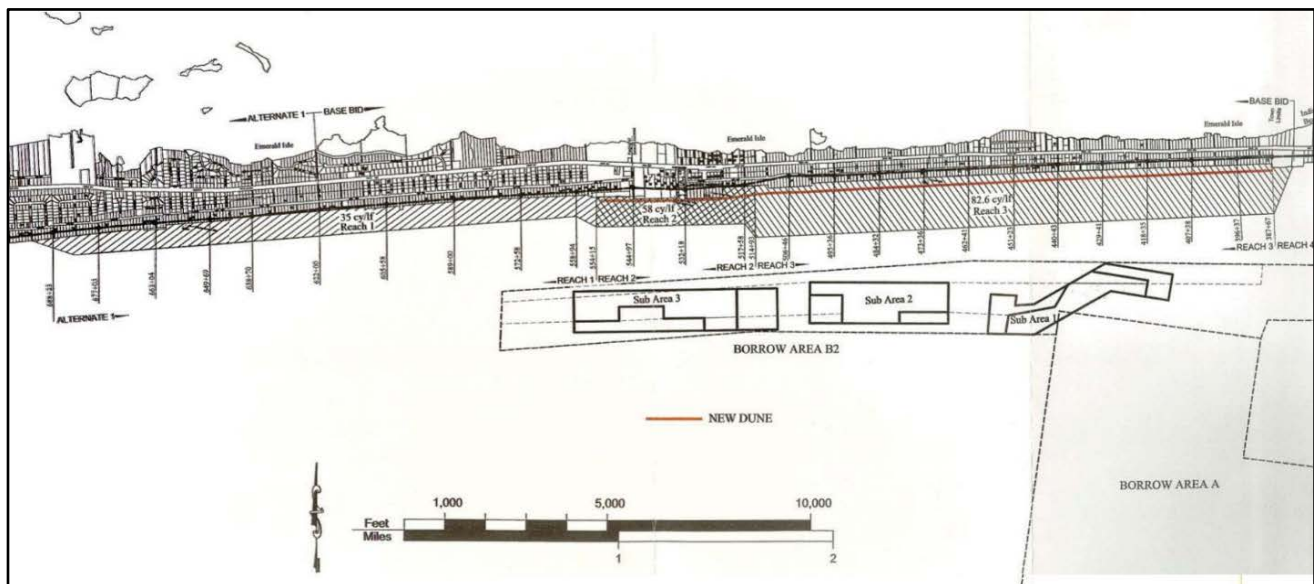


Figure 7. Phase II Plan View (CPE Static Line Report, 2010, M&N Report, 2015)

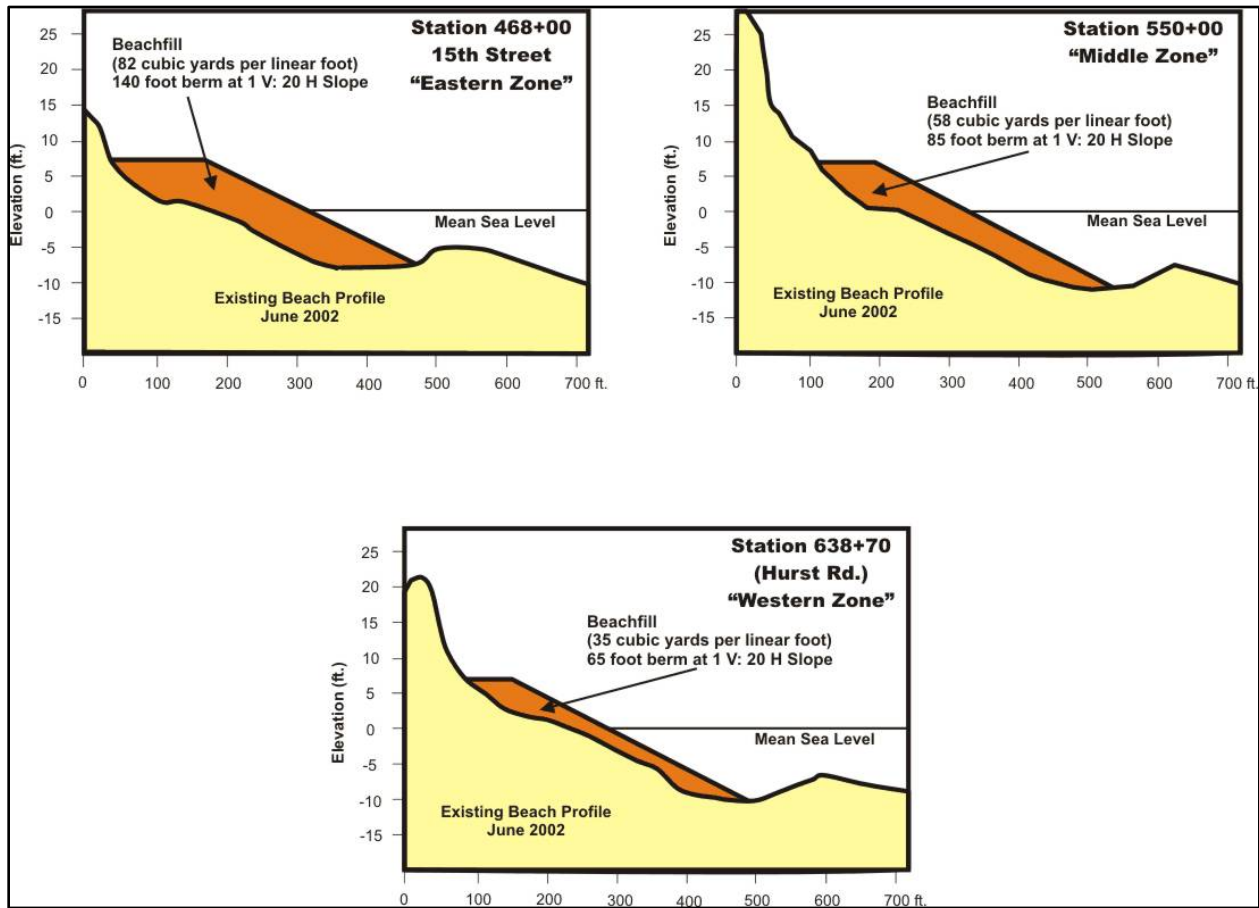


Figure 8. Phase II Example Design Cross-Section Graphic (Carteret County Shore Protection Office, 2015)

The Bogue Banks Beach and Nearshore Mapping Program, established in 2004, monitors the entire island on an annual basis. Each year, profiles are analyzed to determine gains and losses in material to the system. Among the items analyzed, is the amount of material on the beach, from the peak of the dune to the outer bar at -12 feet NAVD88, in comparison to what was in place after the initial restoration project. Table 2 shows the amount of fill, by percent of original placement that existed in the Phase II project area each year of the monitoring. Through the efforts of the three post-storm nourishment projects, there is currently more sand in the western portion of the Phase II project (Emerald Isle Central reach) than there was after the project was constructed. The eastern portion of the Phase II project (Emerald Isle East reach) contains slightly less material than was originally placed but is well above the nourishment trigger of 50% remaining. This portion of Emerald Isle has proven to be a hotspot in the past and is carefully monitored each year. It should be noted that the current volume of material in the Phase II project area is greater than what was in place after the original project was constructed in 2003 (see 2004 results in Table 2) and in 2010 when the original static line exception application was approved.

Reach	Percent Fill Remaining										
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Emerald Isle Central	98.3	98.5	63.5	75.0	178.0	161.6	147.3	148.8	135.1	165.3	165.0
Emerald Isle East	85.1	85.0	62.8	79.0	84.8	60.9	48.0	50.4	35.1	83.6	89.1
Emerald Isle-Phase II	92.0	92.1	63.2	76.9	133.5	113.5	99.9	101.8	87.3	126.3	128.8

Table 2 Percent Fill Remaining From Initial Construction (Phase II) (Carteret County Shore Protection Office, 2015)

Figure 8 shows the average profile volume calculated above -12 ft. NAVD88 for the Emerald Isle Central and Emerald Isle East reaches during each year of monitoring. As can be seen from this figure, the profile volumes have been maintained above the historic trigger of 225 cy/ft. and have also been maintained above the expected new triggers of 211 cy/ft. for Emerald Isle Central and 221 cy/ft. for Emerald Isle East which will be implemented in 2015 under the Bogue Banks Master Beach Nourishment Plan. As with Table 2, this plot also indicates that there is more material in place now than was in place after the original project was constructed in 2003 and in 2010 when the original static line exception application was approved.

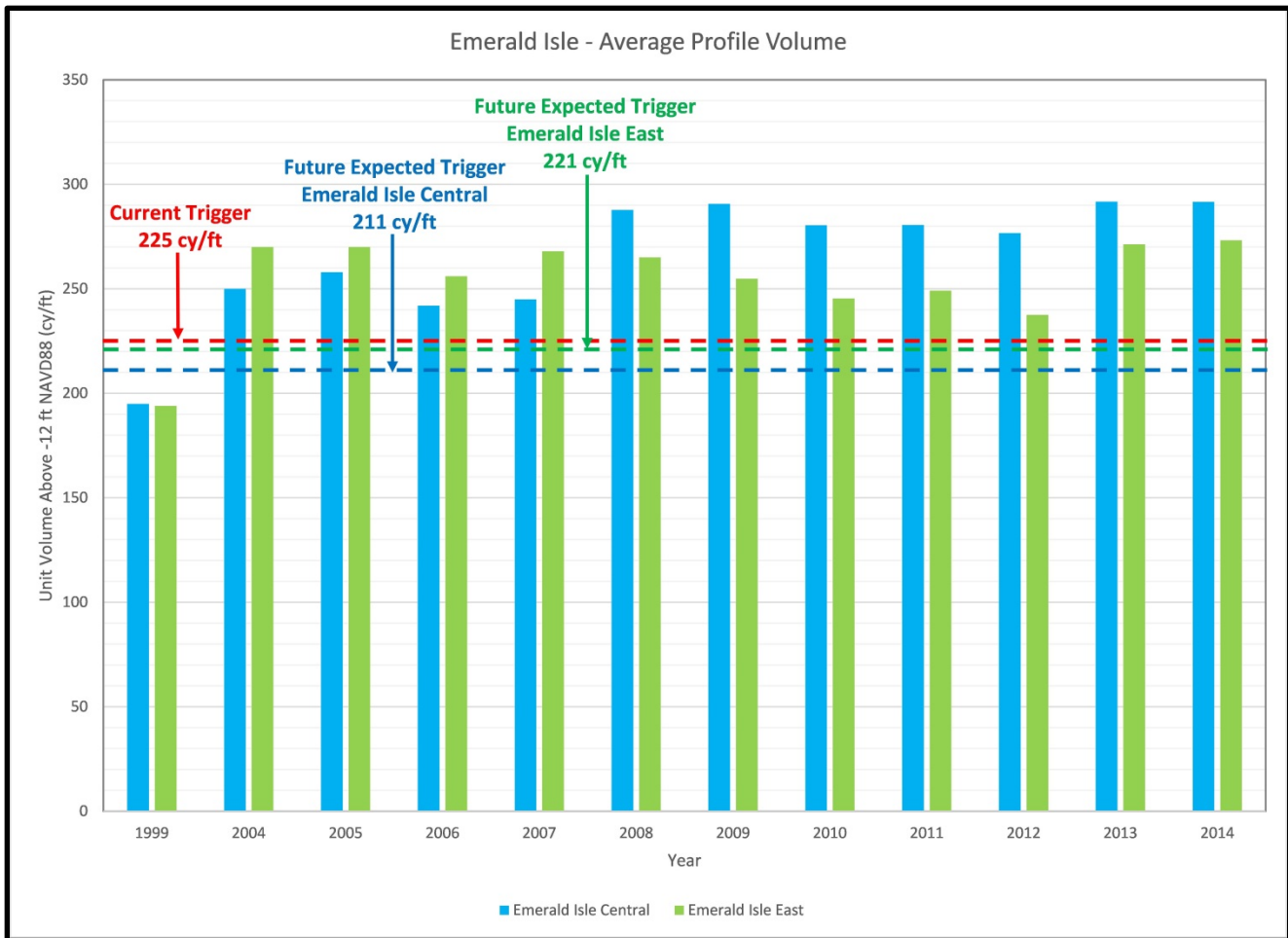


Figure 9. Average Profile Volume Above -12 ft. NAVD88 (Phase II) (Carteret County Shore Protection Office, 2015)

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 March 2010 by the Commission.

Third factor per 15A NCAC 07J.1201(d)(3)

The Town’s static line exception application report (Town, 2015) provides information about the

availability of compatible sediment for future beach fill projects as follows:

Borrow Material Sources

The material from borrow areas B2 and A used for initial construction of the project had a composite mean grain size of 0.44 mm which was much coarser than the native sand mean grain size of 0.30 mm. In order to avoid placing additional large amounts of shell or Calcium Carbonate (CaCO₃) along the town's shoreline, the Town of Emerald Isle opted to use the ODMDS for the subsequent FEMA nourishment events. The ODMDS is expected to have compatible material as most of the sediment in the disposal site was derived from maintenance of the Beaufort Inlet ocean bar channel; particularly the landward portions of the channel which is known to accumulate littoral material directly off the adjacent shorelines of Bogue and Shackleford Banks. Limited sampling was performed in accordance with post-*Isabel* and post-*Ophelia* restoration projects confirming the quality of the material, with an average grain size of approximately 0.31 mm.

As part of the Bogue Banks Master Beach Nourishment Plan, an extensive sediment sampling program was implemented in 2012 to verify the compatibility of existing sediment sources, which had been used previously, as well as possibly locate some new sources. This was part of the permitting requirements to show the quantity and quality of potential sediment sources for the next 50 years. The engineering report identified and quantified the amount of material in upland sources (sand mines), AIWW disposal areas, offshore sources, and inlets. The findings indicate that possible upland sources exist in the amount of 1.4 Mcy while AIWW disposal areas possibly contain up to 1.3 million-cubic yards (Mcy). Offshore sources consist of the new and old ODMDS as well as some small pockets of material off of Emerald Isle, known as Area Y. Together, they contain approximately 22.4 Mcy of compatible material. In addition, both Beaufort Inlet and Bogue Inlet could provide a steady supply of nourishment material from dredging operations over the next fifty years. The periodic dredging of Morehead City Harbor by the USACE could provide approximately 20 Mcy over the next 50 years. The dredging/relocation of Bogue Inlet (approximately every 10 years) and dredging of the AIWW crossing could provide approximately 5.1 Mcy over the next 50 years. Therefore, approximately 50.2 Mcy of material has been identified which is considered enough material to meet the 50 year need of 46.8-51.6 Mcy determined in the Bogue Banks Master Beach Nourishment Plan. Figure 10 shows a summary of the potential sediment sources identified for use over the next 50 years (see 2015 Town Update Report for detailed sediment capability analysis).

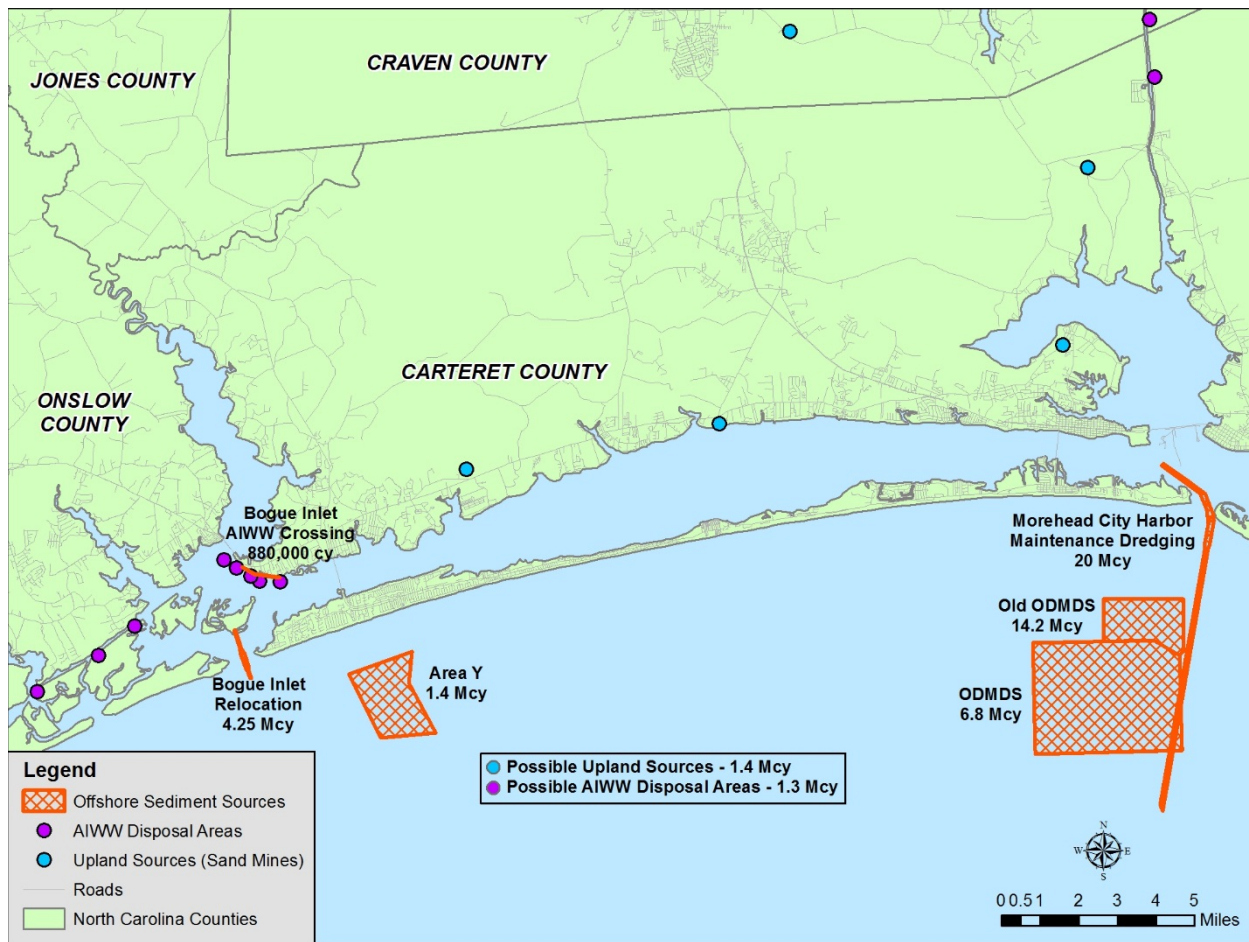


Figure 10 Master Beach Nourishment Plan Potential Sediment Sources (Carteret County Shore Protection Office, 2015)

While more analysis will need to be done on the potential upland sources and AIWW disposal areas before being utilized, the majority of material will be coming from offshore sources and inlets. A detailed analysis of these areas from the 2012 sampling effort, in comparison to the native beach, is provided in the Town’s 2015 update report. The vibracoring was performed by Alpine Ocean Seismic Survey, Inc. (Alpine) while the sediment analysis was performed by Coastal Technology Corporation (Coastal Tech).

5-Year Progress Report: Compatible Sediment

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 2010.

**C. Financial Resources-
Fourth factor per 15A NCAC 07J.1201(d)(4)**

The Shore Protection Office is funded 100% by the portion of the County’s occupancy tax legislatively mandated for beach nourishment, which was instituted in 2001 via SL 2001-381 and after several changes related to a proposed convention center (SL 2005-120, SL 2007-112), is now codified as SL 2013-223. The county currently has \$9M in reserve, and without any major storms, it is anticipated that 6 years will pass before the next project is needed.

5-Year Progress Report: Financial Resources

Condo/cottage rentals dominate the market on Bogue Banks generating approximately \$3.2 million per year while the hotel/motel sector generates, on average, \$1.3 million per year. The Shore Protection Office is funded 100% by the portion of the County's occupancy tax legislatively mandated for beach nourishment, which was instituted in 2001 via SL 2001-381 and after several changes related to a proposed convention center (SL 2005-120, SL 2007-112), is now codified as SL 2013-223.

The remaining fund balance at the conclusion of each fiscal year is permitted to accrue in a reserve account, commonly referred as the "Beach Fund" in an effort to finance some of the large-scale shore protection projects and efforts. The County's occupancy tax rate was established at 5% overall rate via the enacting legislation (SL 2001-381) and the revenues were previously split 50-50 between beach nourishment and the Tourism Development Authority (TDA), representing a 2.5% overall collection rate for both the TDA and beach nourishment. Beginning in FY 2010-11 as stipulated in SL 2007-112, the TDA begun receiving 3% of the 5% collection and the beach nourishment fund received 2%, which effectively changed the cost share from 50%-50% to 60%-40%. Recent changes in the occupancy tax law have been codified in SL 2013-223, which amended SL 2007-112 to allow the collection of an additional 1% (6% total) with the total proceeds being split 50-50 between the TDA and beach nourishment (or 3% from each). This law also raised the cap of the beach nourishment fund from \$15 M to \$30 M.

Utilizing the annualized volume needs estimated as part of the preferred option and the above unit rates, an annualized estimate of funding need was developed. As can be seen in Table 3, utilizing a 25% Town/75% County split would likely not be sustainable for the County fund because the annual need would be roughly \$3.4 M while \$2.4 M is likely to be generated (~50% of total occupancy tax collections). This scenario also requires less cost share overall from the Towns than is currently being generated. However, a scenario with a 33% Town/67% County cost share was also run and the results look much more equitable between the two funding streams. The annualized need versus funds raised for the Towns is quite close to the current funding levels with the exception of Atlantic Beach which does not currently have a dedicated funding source. However, given the possible range of outcomes from the ongoing DMMP, the numbers in this table could become less or more. As for the County annual need versus funding level, the need is still higher (\$3.1 M vs. \$2.4M) but the fund currently has \$9M in reserve and it is hoped that 6 years will pass before the next project is needed. This should allow adequate time for the reserve to build up to a point to where the County fund is also sustainable long-term. The intra-local agreement signed by all the Towns and County also requires them to meet the funding needs even if new taxes or one-time loans are required. The intra-local agreement can be seen in Appendix B of the Town's 2015 Update Report.

Town	Annual Volume Loss (cy)	% of Total Annual Volume Loss	Avg. Placement Unit Cost Per Town	25% Town/75% County Cost Share			33% Town/67% County Cost Share			
				Annual Town Cost (\$)	Annual County Cost (\$)	% of Total Annual County Cost	Annually Generated Taxes for Beach Nourishment	Annual Town Cost (\$)	Annual County Cost (\$)	% of Total Annual County Cost
Emerald Isle	139,913	31%	\$15.00	\$524,674	\$1,574,021	46%	\$675,000	\$692,569	\$1,406,126	46%
Indian Beach/Salter Path	62,567	14%	\$13.00	\$203,343	\$610,028	18%	\$282,406	\$268,412	\$544,959	18%
Pine Knoll Shores	84,795	19%	\$12.25	\$259,685	\$779,054	23%	\$316,500	\$342,784	\$695,955	23%
Atlantic Beach	164,945	36%	\$4.00	\$164,945	\$494,835	14%	TBD	\$217,727	\$442,053	14%
TOTAL	452,220				\$3,457,938				\$3,089,093	
				Avg. Annual County Tax Generated Over Next 6 Years = \$2,440,664						

Table 3 Annualized Estimate of Funding (Carteret County Shore Protection Office, 2015)

IV. Staff's Recommendation

The Commission, through 15A NCAC 07J.1204(c), directs Staff to provide a recommendation to the Commission on 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.

ATTACHMENT B: 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.

(f) 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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6), 113A-124 Eff. March 23, 2009.

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 lays 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).

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.

- (1) Ocean Beaches. Ocean beaches are lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either:
 - (A) the growth of vegetation occurs, or
 - (B) a distinct change in slope or elevation alters the configuration of the landform, whichever is farther landward.
- (2) Nearshore. The nearshore is the portion of the beach seaward of mean low water that is characterized by dynamic changes both in space and time as a result of storms.
- (3) Primary Dunes. Primary dunes are the first mounds of sand located landward of the ocean beaches having an elevation equal to the mean flood level (in a storm having a one percent chance of being equaled or exceeded in any given year) for the area plus six feet. The primary dune extends landward to the lowest elevation in the depression behind that same mound of sand (commonly referred to as the dune trough).
- (4) Frontal Dunes. The frontal dune is deemed to be the first mound of sand located landward of the ocean beach having sufficient vegetation, height, continuity and configuration to offer protective value.
- (5) Vegetation Line. The vegetation line refers to the first line of stable and natural vegetation, which shall be used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to constant flux due to waves, tides, storms and wind, and the more stable upland areas. The

vegetation line is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. The Division of Coastal Management or Local Permit Officer shall determine the location of the stable and natural vegetation line based on visual observations of plant composition and density. If the vegetation has been planted, it may be considered stable when the majority of the plant stems are from continuous rhizomes rather than planted individual rooted sets. The vegetation may be considered natural when the majority of the plants are mature and additional species native to the region have been recruited, providing stem and rhizome densities that are similar to adjacent areas that are naturally occurring. In areas where there is no stable natural vegetation present, this line may be established by interpolation between the nearest adjacent stable natural vegetation by on ground observations or by aerial photographic interpretation.

- (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. Because the impact of Hurricane Floyd (September 1999) caused significant portions of the vegetation line in the Town of Oak Island and the Town of Ocean Isle Beach to be relocated landward of its pre-storm position, the static line for areas landward of the beach fill construction in the Town of Oak Island and the Town of Ocean Isle Beach, the onset of which occurred in 2000, shall be defined by the general trend of the vegetation line established by the Division of Coastal Management from June 1998 aerial orthophotography.

V. References

(Town, 2015) - Moffat & Nichol 2015, Town of Emerald Isle, NC Static Line Exception Application Report, Prepared for the Town of Emerald Isle by Moffat and Nichol, Raleigh, North Carolina

(Town, 2010) - CPE 2010, Emerald Isle, NC Static Line Exception Application Report, Prepared for the Town of Emerald Isle by Coastal Planning & Engineering, Wilmington, North Carolina

Carteret County Shore Protection Office Preservation Plan. Retrieved from <http://www.carteretcountync.gov/313/Preservation-Plan>.



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

April 17, 2015

MEMORANDUM

CRC-15-07B

TO: Coastal Resources Commission

FROM: Ken Richardson, DCM Shoreline Management Specialist

SUBJECT: Town of Indian Beach and Salter Path Static Line Exception 5-Year Progress Report

Petitioner, the Town of Indian Beach and Salter Path (“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 March 24, 2010. Rule 15A NCAC 07J.1204(b) requires 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 necessary 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: Staff’s Report to the Commission summarizing the Town’s Update Report

Attachment B: Relevant Procedural Rules

Note: The Petitioner’s 5-Year Progress Report & Interlocal Agreement are provided as a separate document.

ATTACHMENT A: Staff's Report to the Commission

I. Description of the Affected Area

The Town of Indian Beach and the unincorporated area known as Salter Path (which is under the jurisdiction of Carteret County) applied for and received an exception from the static line in accordance with procedures outlined in 15A NCAC 07J.1201 from the North Carolina Coastal Resources Commission on March 24, 2010.

The Town of Indian Beach (Town) is located on Bogue Banks in southwestern Carteret County, North Carolina. The town's land area is approximately 1.5 square miles, and is less than 2 miles long bordered by Emerald Isle on the west, Pine Knoll Shores on the east (Figure 1), and separated by the unincorporated area known as Salter Path. Salter Path's oceanfront shoreline is less than 1 mile in length. The barrier island is generally oriented in a west-east direction.

A static vegetation line was established along 2.4 miles of shoreline fronting the Town of Indian Beach and Village of Salter Path as a result of a large scale beach nourishment project constructed in 2001-2002. The location of the static vegetation line with setback requirements (15A NCAC 07h .0306) has rendered over 70 single family homes and 2 large condominiums non-conforming. Approximately 60 of the single family homes are less than 5,000 square feet.

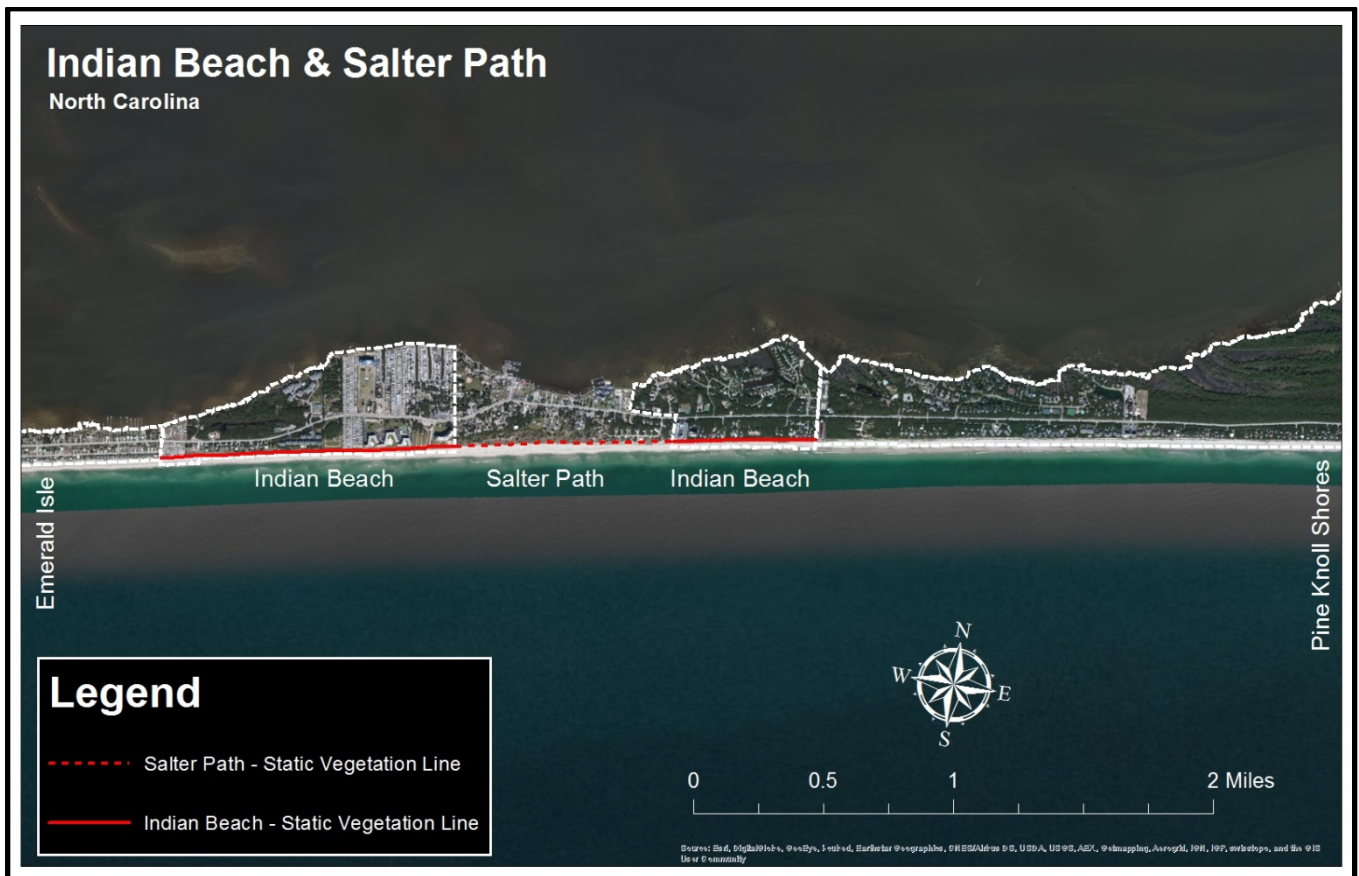


Figure 1. Indian Beach & Salter Path, North Carolina (NC DCM – GIS, 2015)

II. Summary of Past Nourishment Project and Future Project Maintenance

The Bogue Banks Restoration Plan covers approximately 16.8 miles of the 25 mile long island and extends from the Atlantic Beach/Pine Knoll Shores (AB/PKS) town boundary west to approximately one mile east of Bogue Inlet (Figure 2). The Island-wide project was implemented in three phases, as shown in Figure 2, with Phase I (Indian Beach/Salter Path and Pine Knoll Shores) covering the extents of the Indian Beach/Salter Path and Pine Knoll Shores static line exceptions.

Phase I was constructed between 2001 and 2002 and covered the 4.5 miles of ocean shoreline fronting the Town of Pine Knoll Shores and 2.4 miles along the shoreline segment that includes the Town of Indian Beach and the Village of Salter Path (the focus of this static line exception report) (Figure 3). Material to construct Phase I was obtained primarily from the offshore borrow areas designated as B1 and B2. Construction of Phase I was halted prior to the April 30 permit deadline due to turtle takes, resulting in a reduction in the volume of material placed along both Indian Beach/Salter Path and Pine Knoll Shores. Based on after construction profile surveys, the amount surveyed in place along the Indian Beach/Salter Path shorelines totaled 456,994 cubic yards or about 41% less than the contract amount. The Town of Pine Knoll Shores received 1,276,586 cubic yards or about 9% less than the original contract amount. The work stoppage resulted in two areas or “gaps” along the Indian Beach/Salter Path shoreline that did not receive any substantial fill volume. One gap was located approximately between County Transects 48 and 50 on the west end of Indian Beach and the other approximately between County Transects 51 and 53 in Salter Path. Part of the gap located between County Transects 51 and 53 lies within the Roosevelt State Park. Even though fill material was not placed directly in these areas, the two gaps soon equilibrated with material moving into the gaps from the adjacent beach fill areas.

The Indian Beach/Salter Path portion of the Phase I Bogue Banks Restoration Project has been renourished on two occasions since initial construction. The first renourishment occurred between February and March 2004 as part of Phase I of the Section 933 project associated with the USACE maintenance of the Morehead City Harbor federal navigation project, and the second project occurred between January and March 2007 and was carried out to replace material lost during Hurricane *Ophelia* which struck the area in September 2005.

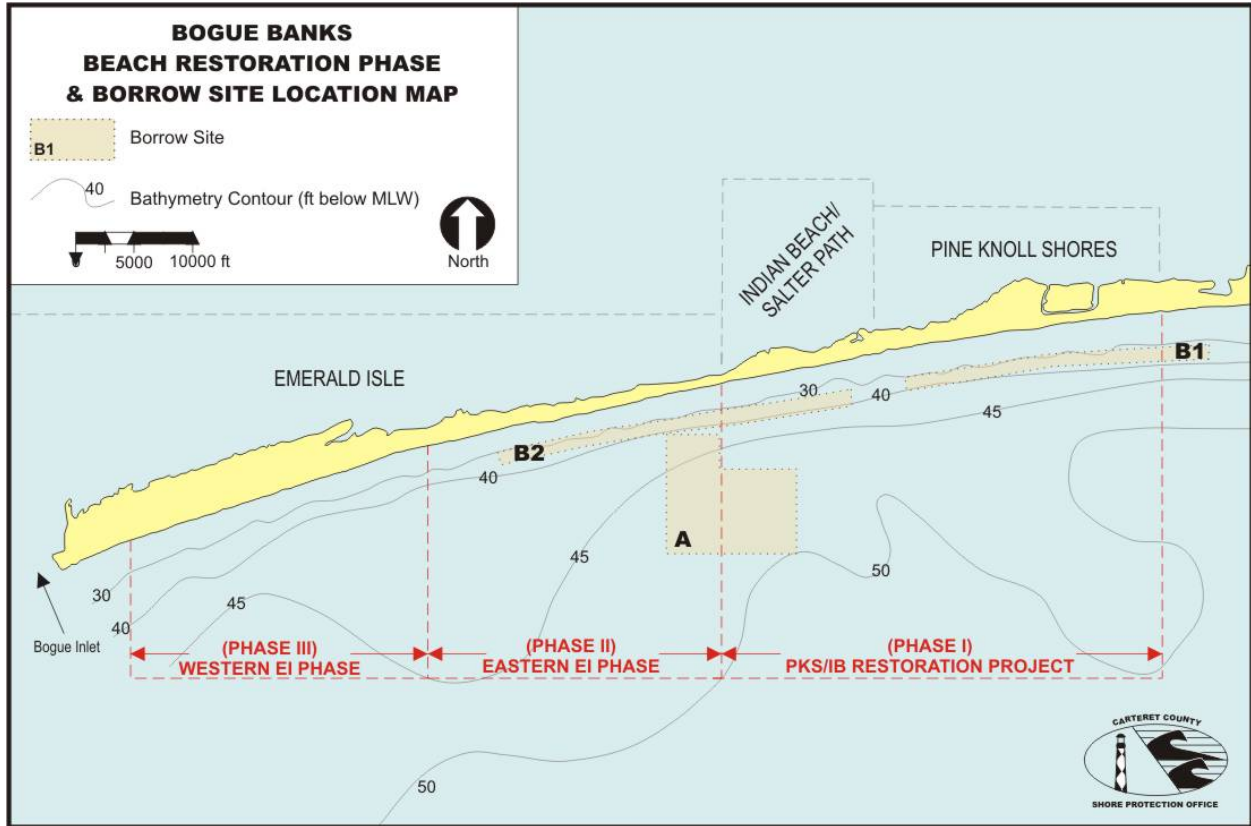


Figure 2. Bogue Banks Restoration Project (Carteret County Shore Protection Office, 2015)

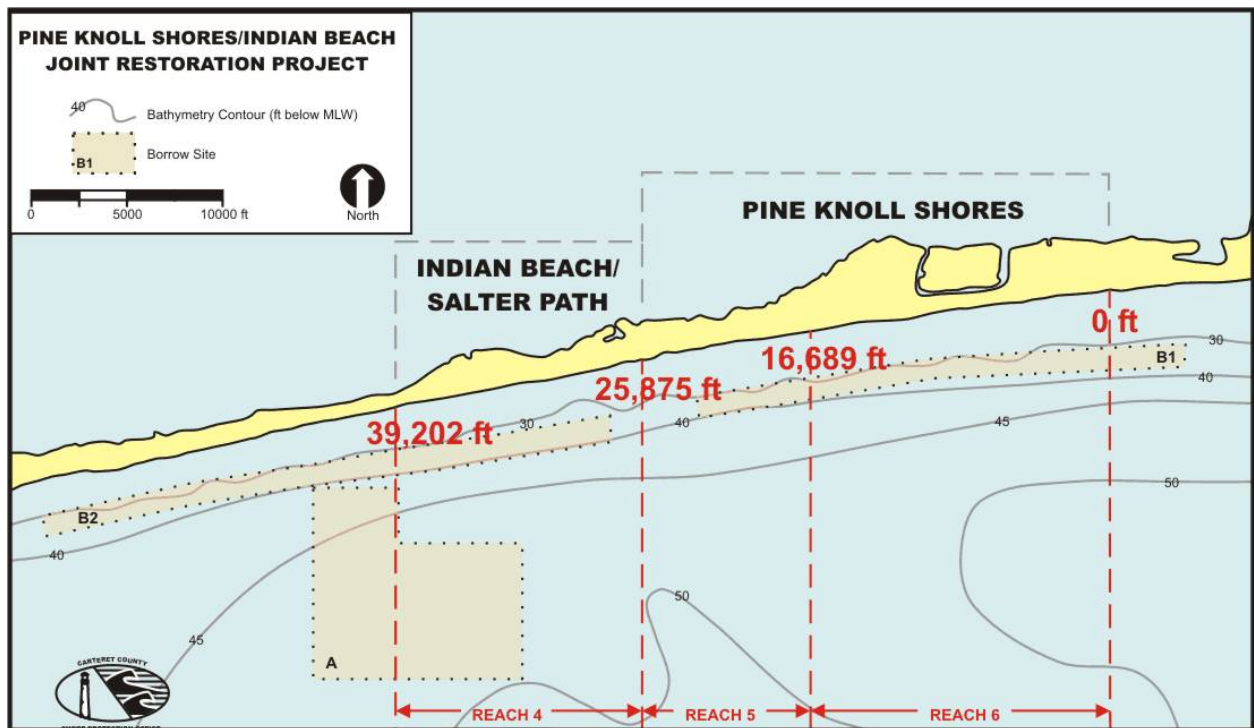


Figure 3. Phase I Restoration Project – Indian Beach/Salter Path and Pine Knoll Shores (Carteret County Shore Protection Office, 2015)

Figure 4 shows the future nourishment plan for Bogue Banks and the Phase I (Indian Beach/Salter Path and Pine Knoll Shores) project area for non-storm losses. It is estimated that the Indian Beach/Salter Path portion of the Phase I project area will require 375,402 cy of nourishment every 6 years.

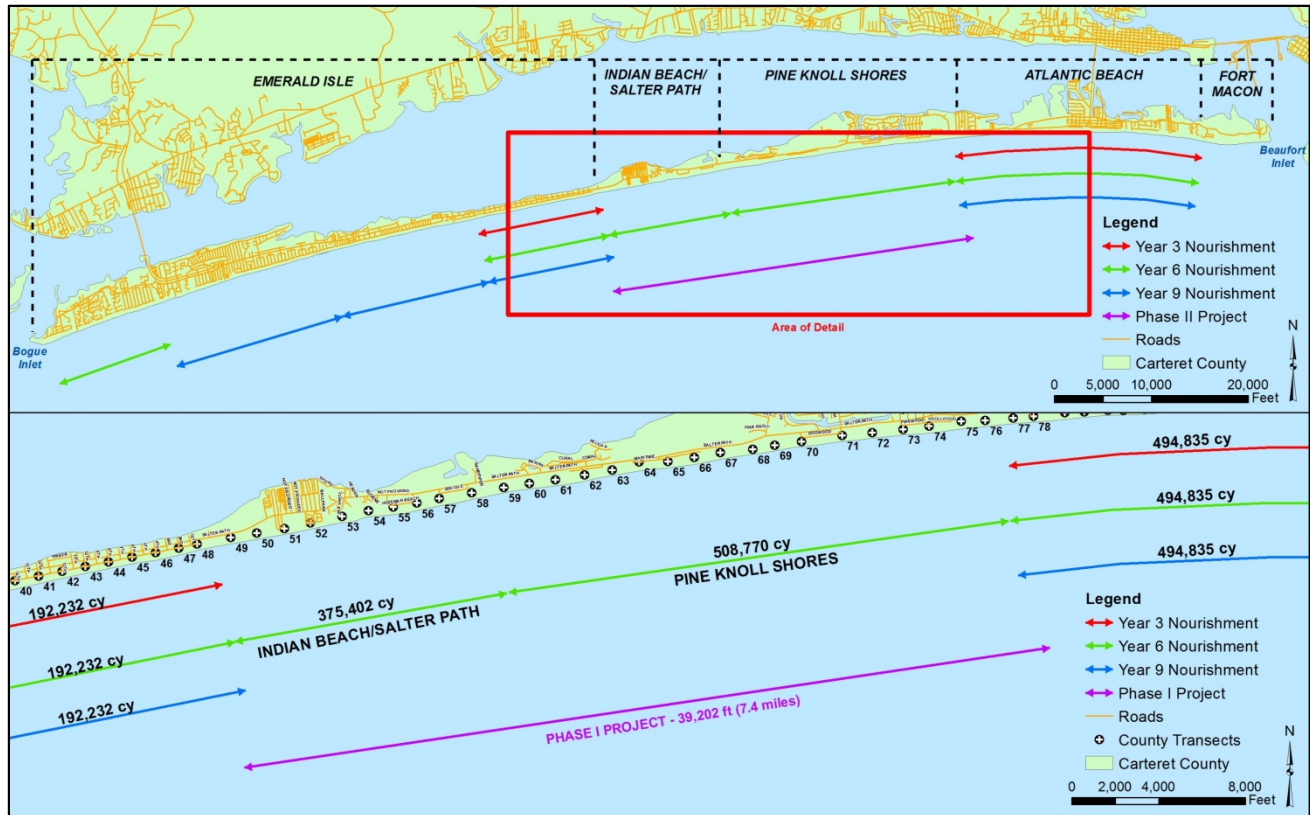


Figure 4. Bogue Banks Master Beach Nourishment Plan (Carteret County Shore Protection Office, 2015)

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 necessary 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)**

Both the Town's original static line exception application report and this update report (Towns, 2010 and 2015) contain the summaries of fill projects in the area as follows:

Project Nourishment History

The Indian Beach/Salter Path portion of the Phase I Bogue Banks Restoration Project has been renourished on two occasions since initial construction. The first renourishment occurred between February and March 2004 as part of Phase I of the Section 933 project associated with the USACE maintenance of the Morehead City Harbor federal navigation project. Phase I of the Section 933 project also included a relatively short segment on the west end of Pine Knoll Shores (Figure 6). Section 933 of the Water Resources Development Act of 1986 allows the State and local sponsors to cost share with the federal government in the added cost of depositing material in areas other than the least cost disposal site. Under normal operating conditions, the material removed from the Beaufort Inlet bar channel would be deposited offshore in the Offshore Dredged Material Disposal Site (ODMDS) or in a near shore disposal mound situated immediately west of the inlet's ebb tide delta. For the Section 933 project, Weeks Marine, the firm contracted by USACE to perform the work, used hopper dredges (*BE Lindholm* and the *RN Weeks*) to haul the material to mooring sites located immediately offshore of Indian Beach/Salter Path and Pine Knoll Shores. From the mooring sites the material was pumped to the beach via a submerged pipeline. Phase I of the Section 933 project placed 630,094 cubic yards of material along the entire shoreline of Indian Beach/Salter Path and 69,189 cubic yards on the western 2,500 feet of Pine Knoll Shores.

A second renourishment operation occurred between January and March 2007 and was carried out to replace material lost during Hurricane *Ophelia* which struck the area in September 2005. Following the advent of Hurricane *Ophelia* in September 2005, Indian Beach/Salter Path, along with the other island communities, applied to FEMA for funds to restore the material lost during *Ophelia* under Category G of FEMA's Public Assistance Program. Specifically, the Public Assistance Program allows FEMA to provide funds to restore an "improved" or engineered beach providing the applicant can demonstrate the beach fill project had a designed template and grain size, a maintenance plan, and pre- and post-storm beach profile surveys. In its application, Indian Beach/Salter Path as well as the other towns along the island included in the Bogue Banks Restoration project were able to demonstrate they met all of the FEMA requirements including an engineered beach, a nourishment plan, and monitoring program and was subsequently approved to receive reimbursement funds to restore the beach to the pre-storm condition. The post-Hurricane *Ophelia* restoration in Indian Beach/Salter Path included restoration of the fill between County Transects 48 and 58 (Figure 7), located within the Phase I project limits. The Hurricane *Ophelia* restoration used material from the ODMDS which was transported to the beach via hopper dredges. The post-Hurricane *Ophelia* restoration was accomplished between January and March 2007 with a total of 1,229,800 cubic yards deposited along various sections of the Bogue Banks, 319,113 cubic yards of which was placed between County Transects 48 and 58 within the limits of Phase I. The total cost of the restoration was \$13,773,800 all of which was provided by FEMA. Of this total restoration cost, \$3,893,200 was be allocated to the Indian Beach/Salter Path project based on the

volume of material placed within this reach compared to the total volume placed on Bogue Banks to replace the material lost to Hurricane *Ophelia*.

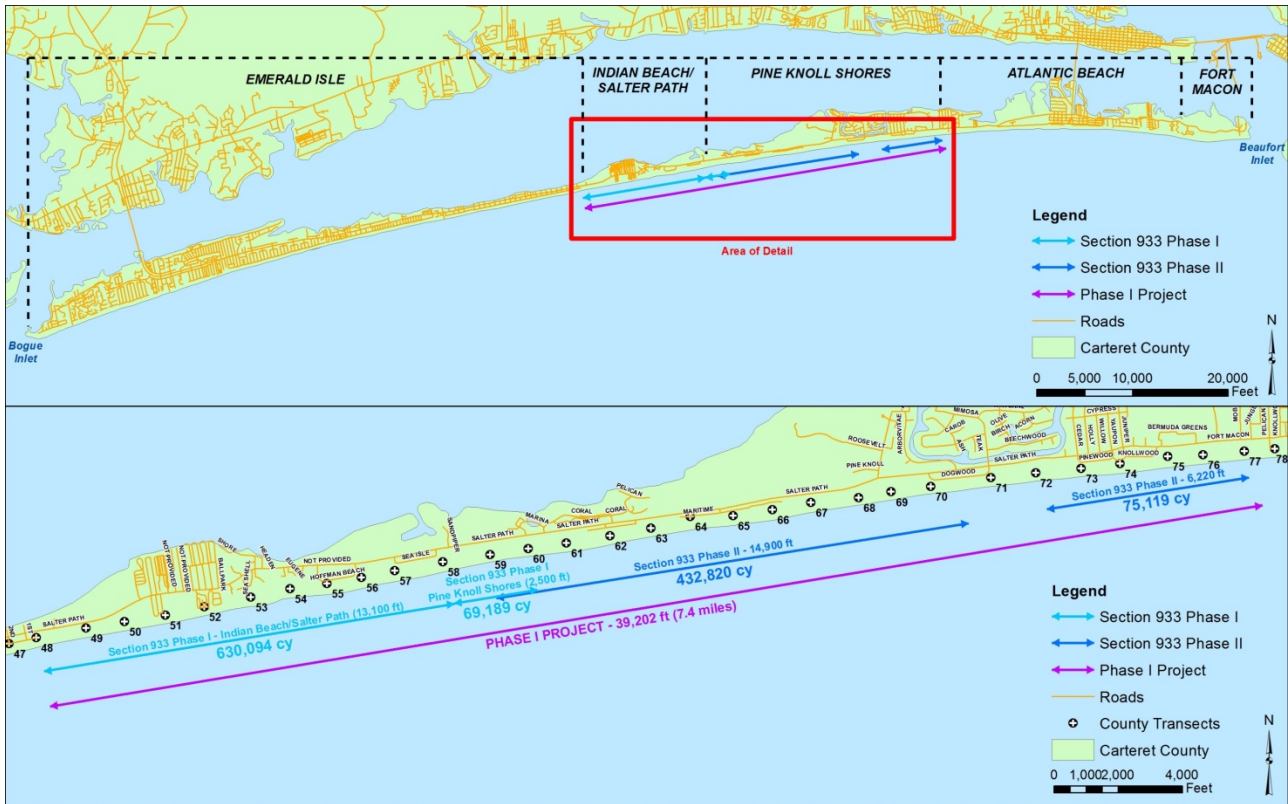


Figure 5. USACE Section 933 Project Phase I and Phase II (2004, 2007) (Carteret County Shore Protection Office, 2015)

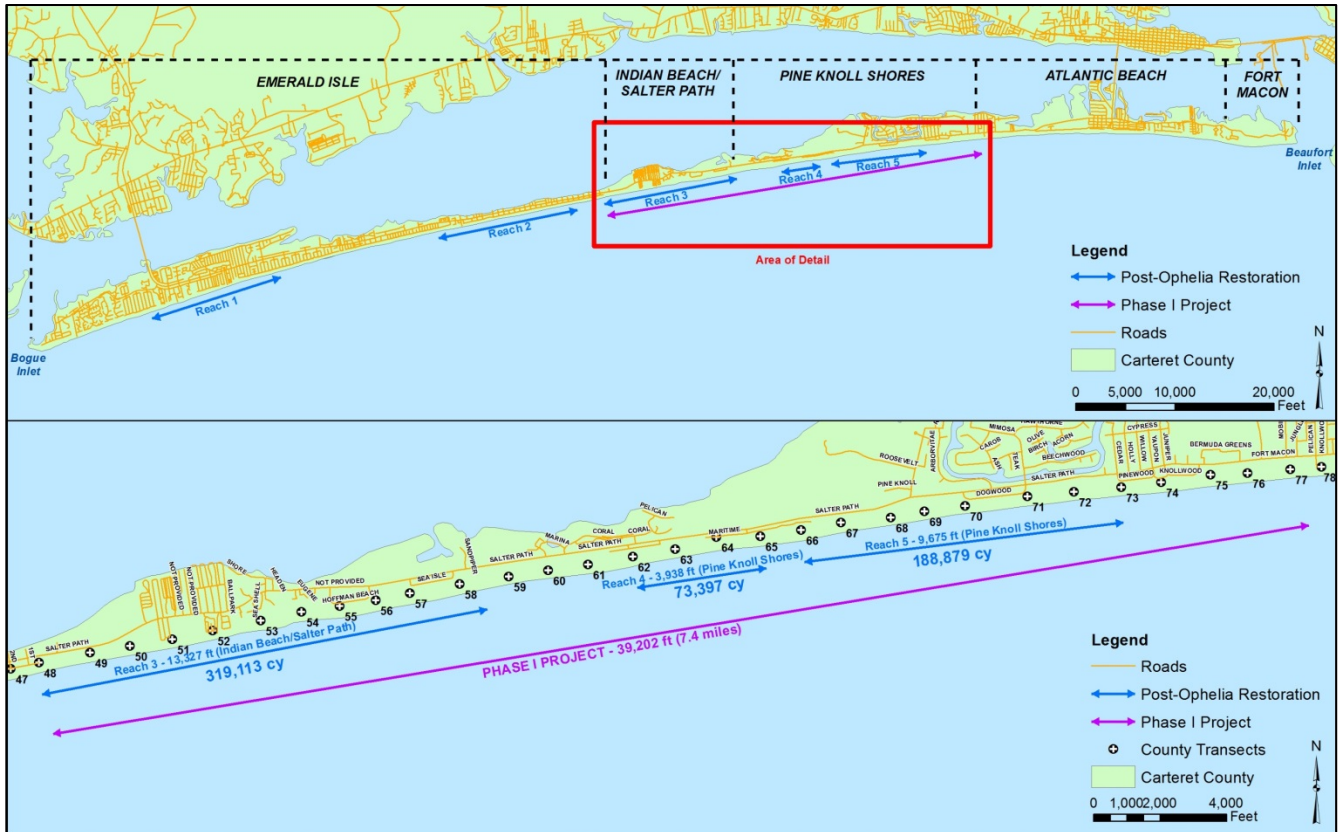


Figure 6. Post-Ophelia Restoration Project (2007) (Carteret County Shore Protection Office, 2015)

Nourishment Dates	Borrow Area	Placement Area/Transects	Pay Yardage (cy)	Cost of Operation
2002	B1, B2	51-53	456,994	
2004	ODMS	Entire Length	630,094	
2007	ODMDS	48-58	319,113	\$3,893,200

Table 1. Indian Beach & Salter Path Nourishment History Since 2002. (see 2015 Report for Detailed Station Locations)

5-Year Progress Report: Fill Projects

Since the Commission granted the Town of Indian Beach & Salter Path a static line exception in March, 2010, no projects have been constructed.

**B. Design of the initial fill projects and past/planned maintenance-
Second factor per 15A NCAC 07J.1201(d)(2)**

Both the Town’s original static line exception application report and current report (Towns, 2010 & 2015) provides information about the design of the beach fill project for the Town of Indian Beach & area known as Salter Patch, and how that project has performed in the past, as follows:

Project Performance

The Phase I project (Indian Beach/Salter Path and Pine Knoll Shores) was divided into three reaches (see Figure 3) with different design volumes in each reach based on the volume from the toe of the dune out to -12 ft. NAVD88 needed to reach the design volume of 175 cy/ft. and an advanced nourishment volume equal to expected volume losses in that zone over the next 10 years. The design profile volume for the Bogue Banks project was subsequently increased to 225 cy/ft. to account for the volume of material from the landward toe of the dune up to the peak of the dune. The Indian Beach/Salter Path portion of the project (Reach 4) was designed as a variable width horizontal berm at elevation +6.0 feet NAVD. Figure 8 shows the plan view of the Indian Beach/Salter Path portion (Reach 4) of the Phase I beach fill project while Figure 10 shows a typical design cross-section from the Indian Beach/Salter Path reach of Phase I with an average fill volume of 54.5 cy/ft. Figure 10 and Figure 11 display some example pre- and post-nourishment profiles from the Phase I project.

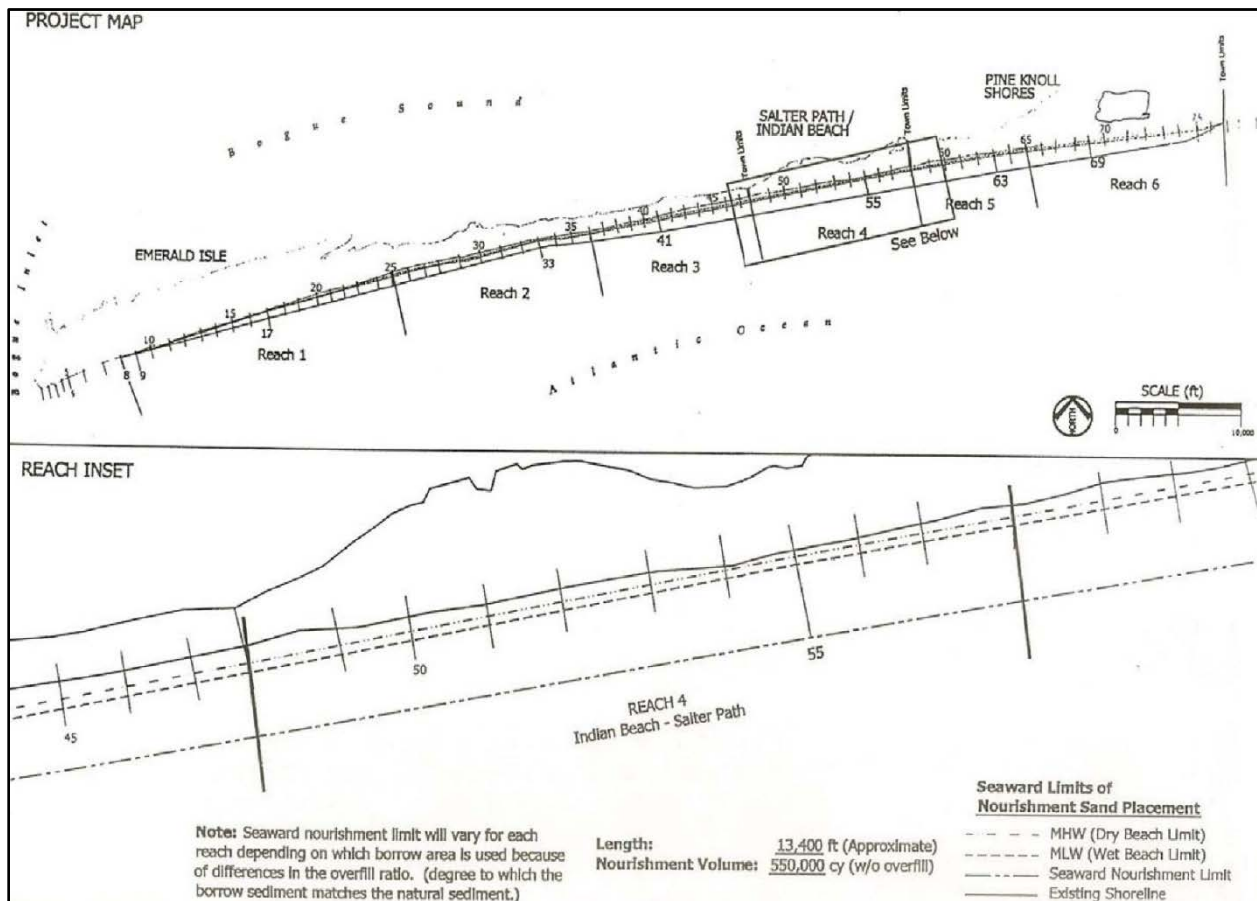


Figure 7. Phase I Plan View – Indian Beach/Salter Path Reach 4 (2010 CPE Static Line Report, 2015 Town Update Report)

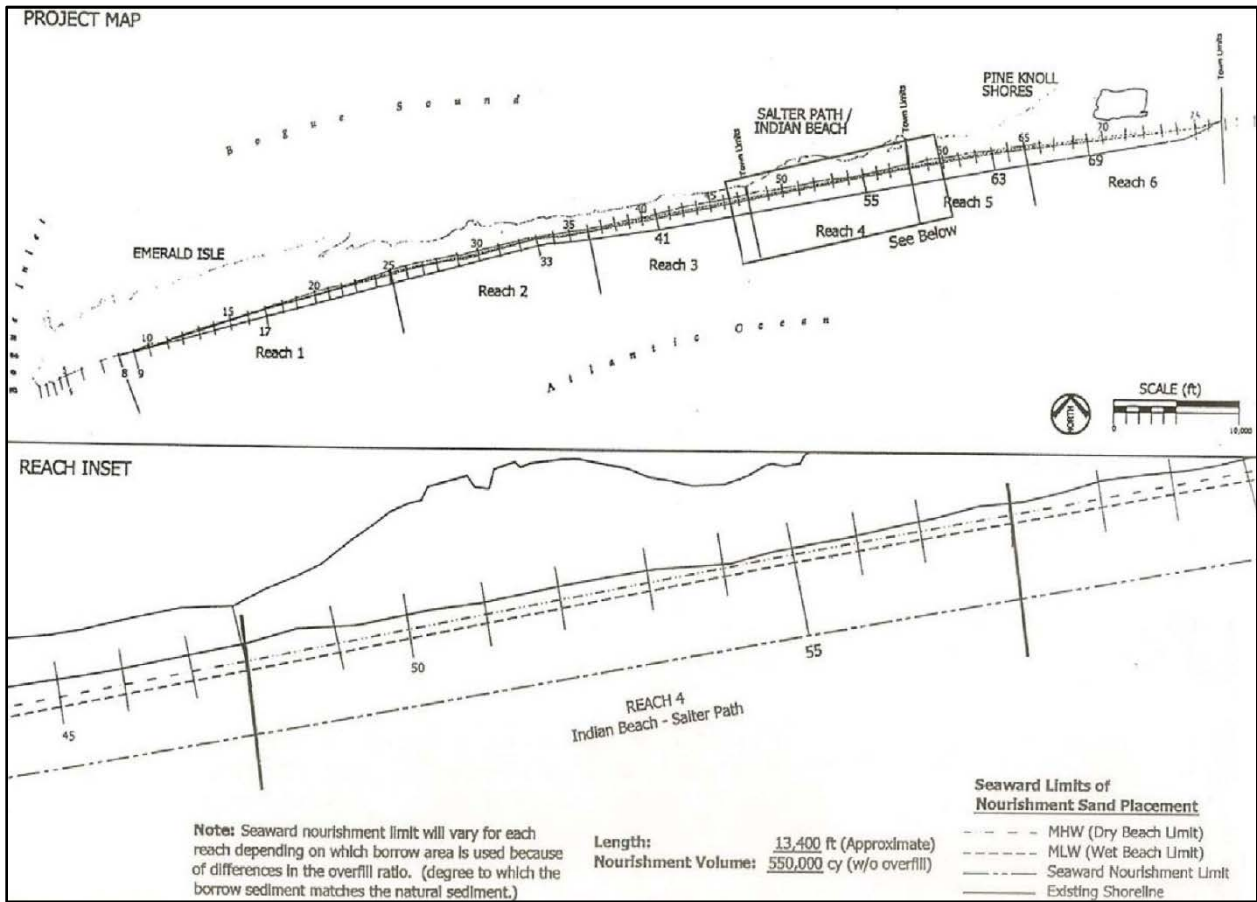


Figure 8. Phase I Plan View – Indian Beach/Salter Path Reach 4 (2010 CPE Static Line Report, 2015 Town Update Report)

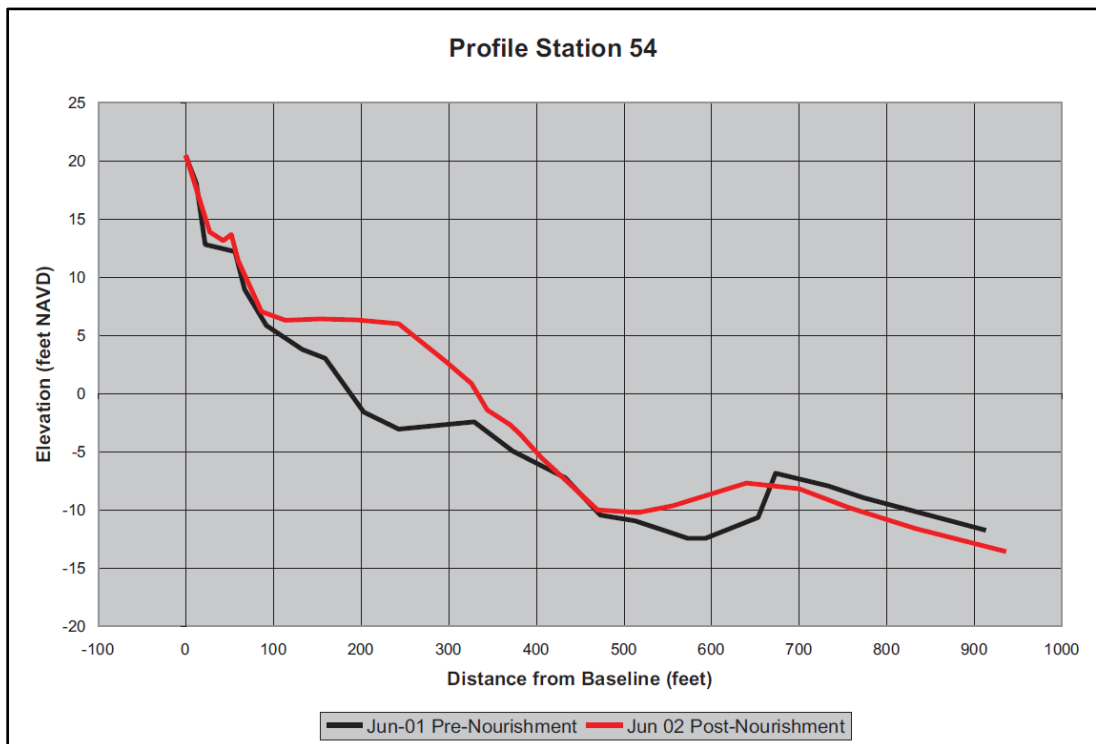


Figure 9. Profile Station 54 Pre- and Post-Nourishment Example (2010 CPE Static Line Report, 2015 Town Update Report)

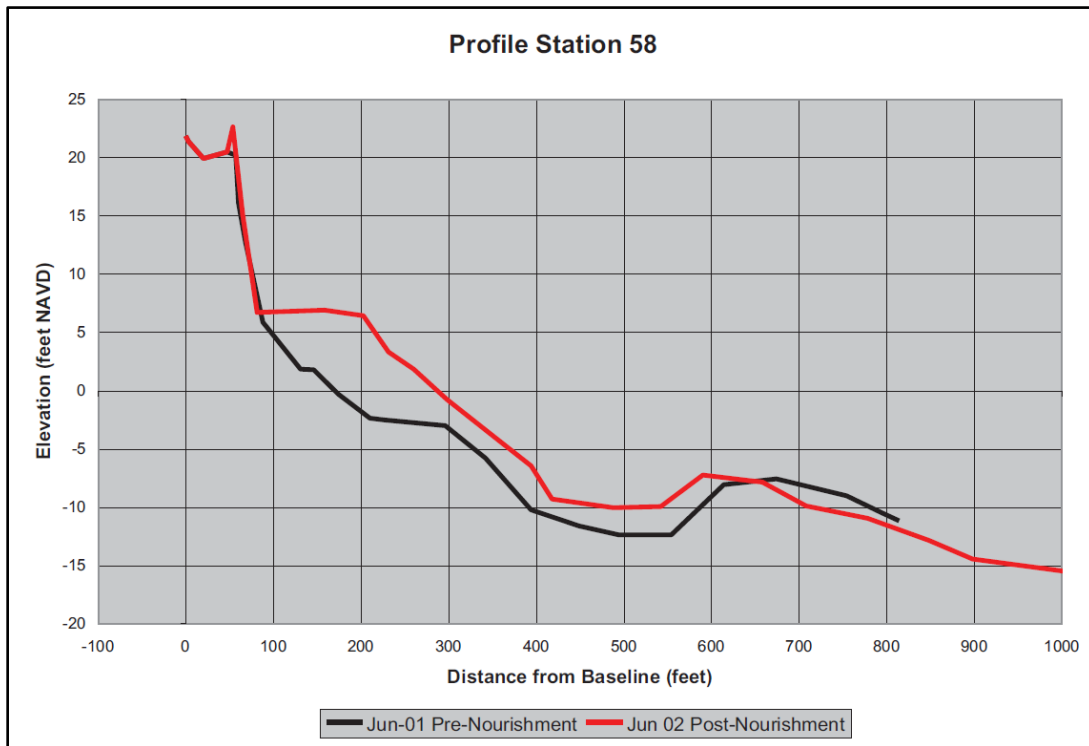


Figure 10. Profile Station 58 Pre- and Post-Nourishment Example (2010 CPE Static Line Report, 2015 Town Update Report)

The Bogue Banks Beach and Nearshore Mapping Program, established in 2004, monitors the entire island on an annual basis. Each year, profiles are analyzed to determine gains and losses in material to the system. Among the items analyzed is the amount of material on the beach, from the peak of the dune to the outer bar at -12 ft. NAVD88, in comparison to what was in place after the initial restoration project. Table 2 shows the amount of fill, by percent of original placement that existed in the Indian Beach/Salter Path portion of the Phase I project area each year of the monitoring. Please note that the result in 2004 was greatly influenced by the Section 933 project that was completed at the same time as the first monitoring survey. As can be seen, through the efforts of the Section 933 and post-storm nourishment projects, there is currently more sand in the Indian Beach/Salter Path area than there was after the initial project was constructed.

Reach	Percent Fill Remaining										
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Indian Beach/Salter Path-Phase I	232.6	214	162.6	188.8	232.4	213.2	193.6	207.4	170.4	174.1	176.7

Table 2. Percent Fill Remaining From Initial Construction (Indian Beach/Salter Path Phase I) (Carteret County Shore Protection Office, 2015)

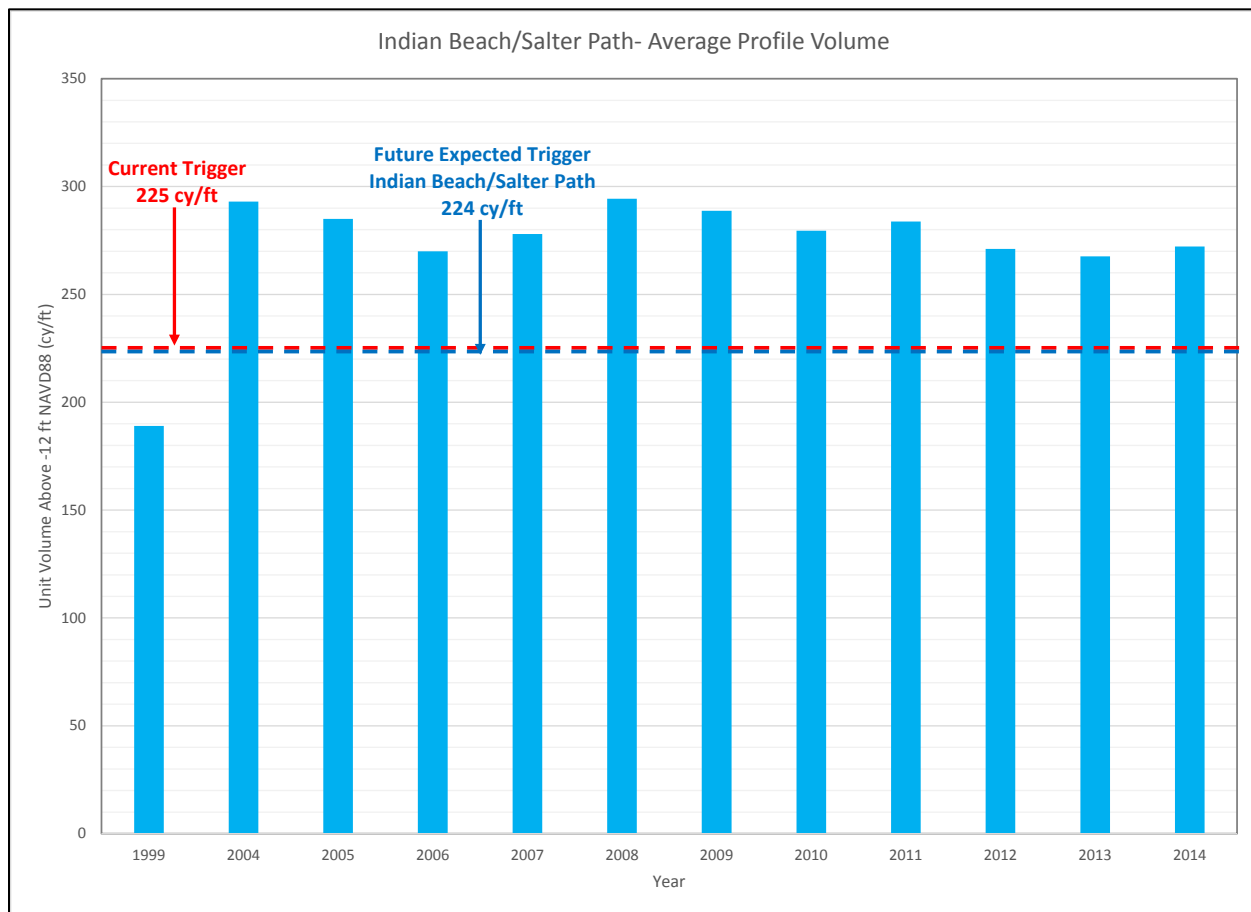


Figure 11. Average Profile Volume Above -12 ft. NAVD88 (Indian Beach/Salter Path - Phase I) (Carteret County Shore Protection Office, 2015)

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 March 2010 by the Commission.

Third factor per 15A NCAC 07J.1201(d)(3)

The Town’s static line exception application report (Towns, 2015) provides information about the availability of compatible sediment for future beach fill projects as follows:

Borrow Material Sources

The material from borrow areas B2 and B1 used for initial construction of the Bogue Banks Restoration Project had a composite mean grain size of 0.44 mm which was much coarser than the native sand mean grain size of 0.30 mm. In that regard, the borrow material seemed ideal for beach nourishment purposes as material coarser than the native is known to provide a more stable beach fill. However, the coarseness of the material in these two borrow areas was primarily due to relatively high shell or CaCO₃ content which averaged 44% based on post-placement samples of the material. Material for the USACE Section 933 projects came directly from Beaufort Inlet. In order to avoid placing additional large amounts of shell or CaCO₃ along the town’s shoreline, the Town of Pine Knoll Shores opted to use the ODMDS for the subsequent post-*Ophelia* FEMA nourishment

event. The ODMDS is expected to have compatible material as most of the sediment in the disposal site was derived from maintenance of the Beaufort Inlet ocean bar channel; particularly the landward portions of the channel which is known to accumulate littoral material directly off the adjacent shorelines of Bogue and Shackleford Banks. Limited sampling was performed in accordance with post-*Isabel* and post-*Ophelia* restoration projects confirming the quality of the material in the ODMDS, with an average grain size of approximately 0.31 mm.

As part of the Bogue Banks Master Beach Nourishment Plan, an extensive sediment sampling program was implemented to verify the compatibility of existing sediment sources, which had been used previously, as well as possibly locate some new sources. This was part of the permitting requirements to show the quantity and quality of potential sediment sources for the next 50 yrs. The engineering report identified and quantified the amount of material in upland sources (sand mines), AIWW disposal areas, offshore sources, and inlets. The findings indicate that possible upland sources exist in the amount of 1.4 Mcy while AIWW disposal areas possibly contain up to 1.3 Mcy. Offshore sources consist of the new and old ODMDS as well as some small pockets of material off of Emerald Isle known as Area Y. Together, they contain approximately 22.4 Mcy of compatible material. In addition, both Beaufort Inlet and Bogue Inlet could provide a steady supply of nourishment material from dredging operations over the next fifty years. The periodic dredging of Morehead City Harbor by the USACE could provide approximately 20 Mcy over the next 50 years. The dredging/relocation of Bogue Inlet (approximately every 10 years) and dredging of the AIWW crossing could provide approximately 5.1 Mcy over the next 50 yrs. Therefore, approximately 50.2 Mcy of material has been identified which is considered enough material to meet the 50 year need of 46.8-51.6 Mcy determined in the Bogue Banks Master Beach Nourishment Plan. Figure 13 shows a summary of the potential sediment sources identified for use over the next 50 years.

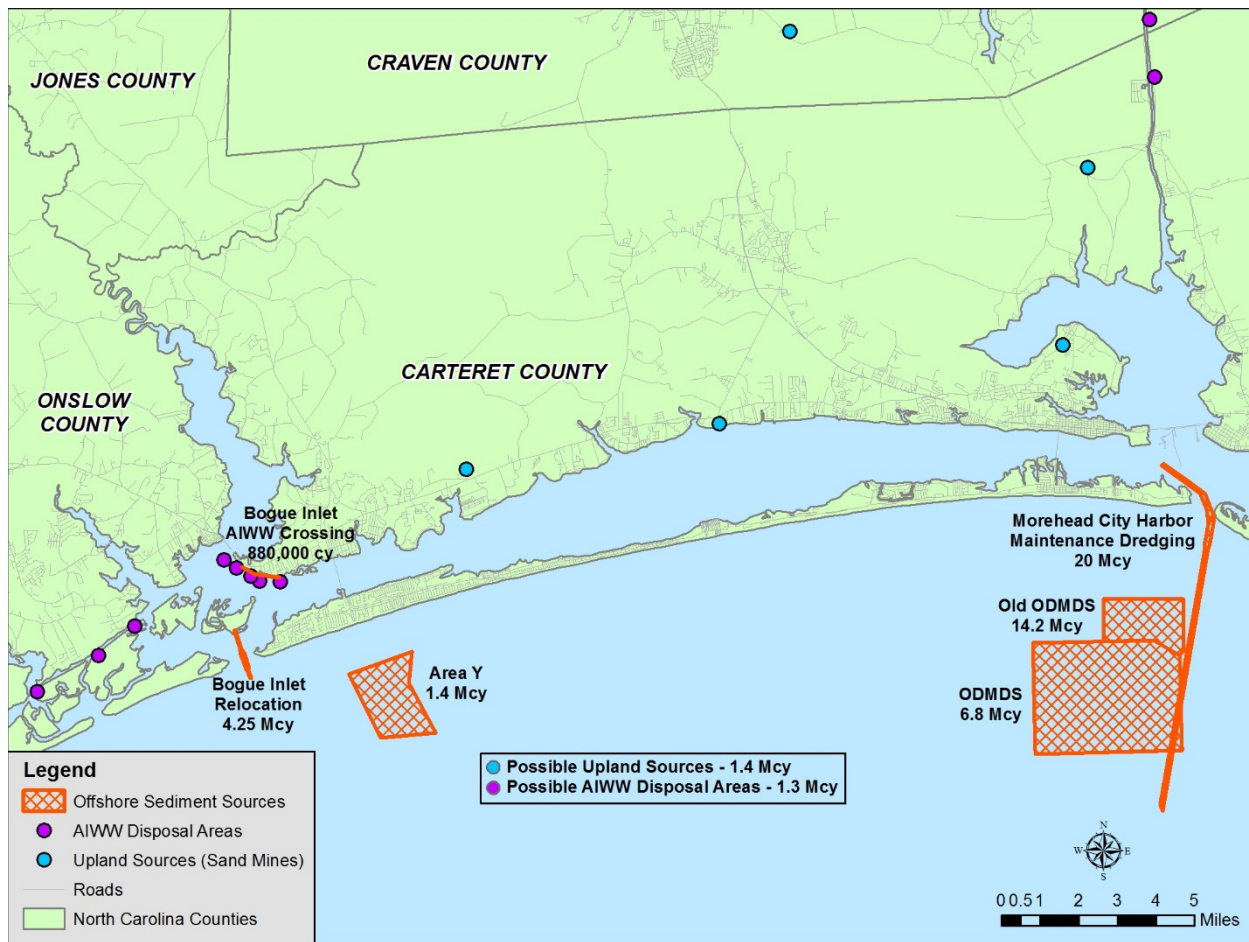


Figure 12. Master Beach Nourishment Plan Potential Sediment Sources (Carteret County Shore Protection Office, 2015)

5-Year Progress Report: Compatible Sediment

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 2010.

C. Financial Resources- Fourth factor per 15A NCAC 07J.1201(d)(4)

The Shore Protection Office is funded 100% by the portion of the County’s occupancy tax legislatively mandated for beach nourishment, which was instituted in 2001 via SL 2001-381 and after several changes related to a proposed convention center (SL 2005-120, SL 2007-112), is now codified as SL 2013-223. The county currently has \$9M in reserve, and without any major storms, it is anticipated that 6 years will pass before the next project is needed.

5-Year Progress Report: Financial Resources

Condo/cottage rentals dominate the market on Bogue Banks generating approximately \$3.2 million per year while the hotel/motel sector generates, on average, \$1.3 million per year. The Shore Protection Office is funded 100% by the portion of the County’s occupancy tax legislatively mandated for beach nourishment, which was instituted in 2001 via SL 2001-381 and after several changes related to a proposed convention center (SL 2005-120, SL 2007-112), is now codified as SL 2013-223.

The remaining fund balance at the conclusion of each fiscal year is permitted to accrue in a reserve account, commonly referred as the “Beach Fund” in an effort to finance some of the large-scale shore protection projects and efforts. The County’s occupancy tax rate was established at 5% overall rate via the enacting legislation (SL 2001-381) and the revenues were previously split 50-50 between beach nourishment and the Tourism Development Authority (TDA), representing a 2.5% overall collection rate for both the TDA and beach nourishment. Beginning in FY 2010-11 as stipulated in SL 2007-112, the TDA began receiving 3% of the 5% collection and the beach nourishment fund received 2%, which effectively changed the cost share from 50%-50% to 60%-40%. Recent changes in the occupancy tax law have been codified in SL 2013-223, which amended SL 2007-112 to allow the collection of an additional 1% (6% total) with the total proceeds being split 50-50 between the TDA and beach nourishment (or 3% from each). This law also raised the cap of the beach nourishment fund from \$15 M to \$30 M.

Utilizing the annualized volume needs estimated as part of the preferred option and the above unit rates, an annualized estimate of funding need was developed. As can be seen in Table 3, utilizing a 25% Town/75% County split would likely not be sustainable for the County fund because the annual need would be roughly \$3.4 M while \$2.4 M is likely to be generated (~50% of total occupancy tax collections). This scenario also requires less cost share overall from the Towns than is currently being generated. However, a scenario with a 33% Town/67% County cost share was also run and the results look much more equitable between the two funding streams. The annualized need versus funds raised for the Towns is quite close to the current funding levels with the exception of Atlantic Beach which does not currently have a dedicated funding source. However, given the possible range of outcomes from the ongoing DMMP, the numbers in this table could become less or more. As for the County annual need versus funding level, the need is still higher (\$3.1 M vs. \$2.4M) but the fund currently has \$9M in reserve and it is hoped that 6 years will pass before the next project is needed. This should allow adequate time for the reserve to build up to a point to where the County fund is also sustainable long-term. The intra-local agreement signed by all the Towns and County also requires them to meet the funding needs even if new taxes or one-time loans are required. The intra-local agreement can be seen in Appendix B of the Town’s 2015 Update Report.

Town	Annual Volume Loss (cy)	% of Total Annual Volume Loss	Avg. Placement Unit Cost Per Town	25% Town/75% County Cost Share			33% Town/67% County Cost Share			
				Annual Town Cost (\$)	Annual County Cost (\$)	% of Total Annual County Cost	Annually Generated Taxes for Beach Nourishment	Annual Town Cost (\$)	Annual County Cost (\$)	% of Total Annual County Cost
Emerald Isle	139,913	31%	\$15.00	\$524,674	\$1,574,021	46%	\$675,000	\$692,569	\$1,406,126	46%
Indian Beach/Salter Path	62,567	14%	\$13.00	\$203,343	\$610,028	18%	\$282,406	\$268,412	\$544,959	18%
Pine Knoll Shores	84,795	19%	\$12.25	\$259,685	\$779,054	23%	\$316,500	\$342,784	\$695,955	23%
Atlantic Beach	164,945	36%	\$4.00	\$164,945	\$494,835	14%	TBD	\$217,727	\$442,053	14%
TOTAL	452,220				\$3,457,938				\$3,089,093	
				Avg. Annual County Tax Generated Over Next 6 Years = \$2,440,664						

Table 3. Annualized Estimate of Funding (Carteret County Shore Protection Office, 2015)

IV. Staff's Recommendation

The Commission, through 15A NCAC 07J.1204(c), directs Staff to provide a recommendation to the Commission on 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.

ATTACHMENT B: 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.

(f) 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.**

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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 lays 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).

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.

- (1) Ocean Beaches. Ocean beaches are lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either:
 - (A) the growth of vegetation occurs, or
 - (B) a distinct change in slope or elevation alters the configuration of the landform, whichever is farther landward.
- (2) Nearshore. The nearshore is the portion of the beach seaward of mean low water that is characterized by dynamic changes both in space and time as a result of storms.
- (3) Primary Dunes. Primary dunes are the first mounds of sand located landward of the ocean beaches having an elevation equal to the mean flood level (in a storm having a one percent chance of being equaled or exceeded in any given year) for the area plus six feet. The primary dune extends landward to the lowest elevation in the depression behind that same mound of sand (commonly referred to as the dune trough).
- (4) Frontal Dunes. The frontal dune is deemed to be the first mound of sand located landward of the ocean beach having sufficient vegetation, height, continuity and configuration to offer protective value.
- (5) Vegetation Line. The vegetation line refers to the first line of stable and natural vegetation, which shall be used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to constant flux due to waves, tides, storms and wind, and the more stable upland areas. The vegetation line is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. The Division of Coastal Management or Local Permit Officer shall determine the location of the stable and natural vegetation line based on visual observations of plant composition and density. If the vegetation has been planted, it may be considered stable when the majority of the plant stems are from continuous rhizomes rather than planted individual rooted sets. The vegetation may be considered

natural when the majority of the plants are mature and additional species native to the region have been recruited, providing stem and rhizome densities that are similar to adjacent areas that are naturally occurring. In areas where there is no stable natural vegetation present, this line may be established by interpolation between the nearest adjacent stable natural vegetation by on ground observations or by aerial photographic interpretation.

- (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. Because the impact of Hurricane Floyd (September 1999) caused significant portions of the vegetation line in the Town of Oak Island and the Town of Ocean Isle Beach to be relocated landward of its pre-storm position, the static line for areas landward of the beach fill construction in the Town of Oak Island and the Town of Ocean Isle Beach, the onset of which occurred in 2000, shall be defined by the general trend of the vegetation line established by the Division of Coastal Management from June 1998 aerial orthophotography.

V. References

(Towns, 2015) - Moffat & Nichol 2015, Town of Emerald Isle, NC Static Line Exception Application Report, Prepared for the Town of Emerald Isle by Moffat and Nichol, Raleigh, North Carolina

Towns, 2010) - CPE 2010, Emerald Isle, NC Static Line Exception Application Report, Prepared for the Town of Emerald Isle by Coastal Planning & Engineering, Wilmington, North Carolina

Carteret County Shore Protection Office Preservation Plan. Retrieved from <http://www.carteretcountync.gov/313/Preservation-Plan>.



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

April 17, 2015

MEMORANDUM

CRC-15-07C

TO: Coastal Resources Commission

FROM: Ken Richardson, DCM Shoreline Management Specialist

SUBJECT: Town of Pine Knoll Shores Static Line Exception 5-Year Progress Report

Petitioner, the Town of Pine Knoll Shores (“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 March 24, 2010. Rule 15A NCAC 07J.1204(b) requires 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: Staff’s Report to the Commission summarizing the Town’s Update Report

Attachment B: Relevant Procedural Rules

Note: The Petitioner’s 5-Year Progress Report & Interlocal Agreement are provided as a separate document.

ATTACHMENT A: Staff's Report to the Commission

I. Description of the Affected Area

The Town of Pine Knoll Shores (Town) is located on Bogue Banks in southwestern Carteret County, North Carolina. The town's land area is approximately 2.5 square miles, and is approximately 4.5 miles long bordered by Indian Beach on the west to and by Atlantic Beach on the east (Figure 1). The barrier island is generally oriented in a west-east direction.

The static vegetation line was established along the town's approximate 4.5 mile ocean shoreline following construction of Phase I in November of 2001 and April 2002 and included design specifications that triggered a static line and therefore satisfied a requirement of 15A NCAC 07J .1201

The static line rule in effect at the time the Indian Beach/Salter Path and Pine Knoll Shores joint Restoration Project (Phase I) project was constructed required a static line be established for beach fills exceeding 250,000 cubic yards and a placement rate greater than 50 cubic yards per foot (cy/ft.). Even with a reduction in the contracted placement, the placement rate at Indian Beach/Salter Path was approximately 50 cy/ft. and 54 cy/ft. at Pine Knoll Shores. Therefore, the Phase I project placement rate of 53 cy/ft. deemed the entire project area be subject to the static line requirement by the Division of Coastal Management (DCM).

The static line in Pine Knoll Shores extends the entire 4.5 mile oceanfront from County Transect 58, at Ocean Glen Condominiums, to County Transect 77, just west of the pier at the Pine Knoll Shores/Atlantic Beach border. The erosion rate setback for the entire area with the static line is 2. There are currently 214 oceanfront lots within the static line extents of which 39 are currently vacant. No permits have been issued using the Static Vegetation Line Exception.



Figure 1. Pine Knoll Shores, North Carolina (NC DCM – GIS, 2015)

II. Summary of Past Nourishment Project and Future Project Maintenance

Phase I was constructed between 2001 and 2002 and covered the 2.4 miles of ocean shoreline fronting the Town of Indian Beach and the Village of Salter Path and 4.5 miles along the shoreline segment that includes the Town of Pine Knoll Shores (the focus of this static line exception report) (Figure 2). Material to construct Phase I was obtained primarily from the offshore borrow areas designated as B1 and B2. Construction of Phase I was halted prior to the April 30 permit deadline due to turtle takes, resulting in a reduction in the volume of material placed along both Indian Beach/Salter Path and Pine Knoll Shores. Based on after construction profile surveys, the amount surveyed in place along the Indian Beach/Salter Path shorelines totaled 456,994 cubic yards or about 41% less than the contract amount. The Town of Pine Knoll Shores received 1,276,586 cubic yards or about 9% less than the original contract amount.

Since initial construction, the Pine Knoll Shores portion of Phase I Bogue Banks Restoration Project has been renourished on four occasions; 1) beach fill placed in during maintenance of Morehead City Harbor (2004); 2) Part of Phase II of the Section 933 project associated with the USACE maintenance of the Morehead City Harbor federal navigation project (2007); 3) The next project occurred between January and March 2007 and was carried out to replace material lost during Hurricane *Ophelia* which struck the area in September 2005 (2007); and 4) and most recently, the post-Hurricane *Irene* restoration in Pine Knoll Shores, which was partially funded by FEMA, included fill between County Transects 62 and 71, located within the Phase I project limits of the Bogue Banks Restoration Project (2013).

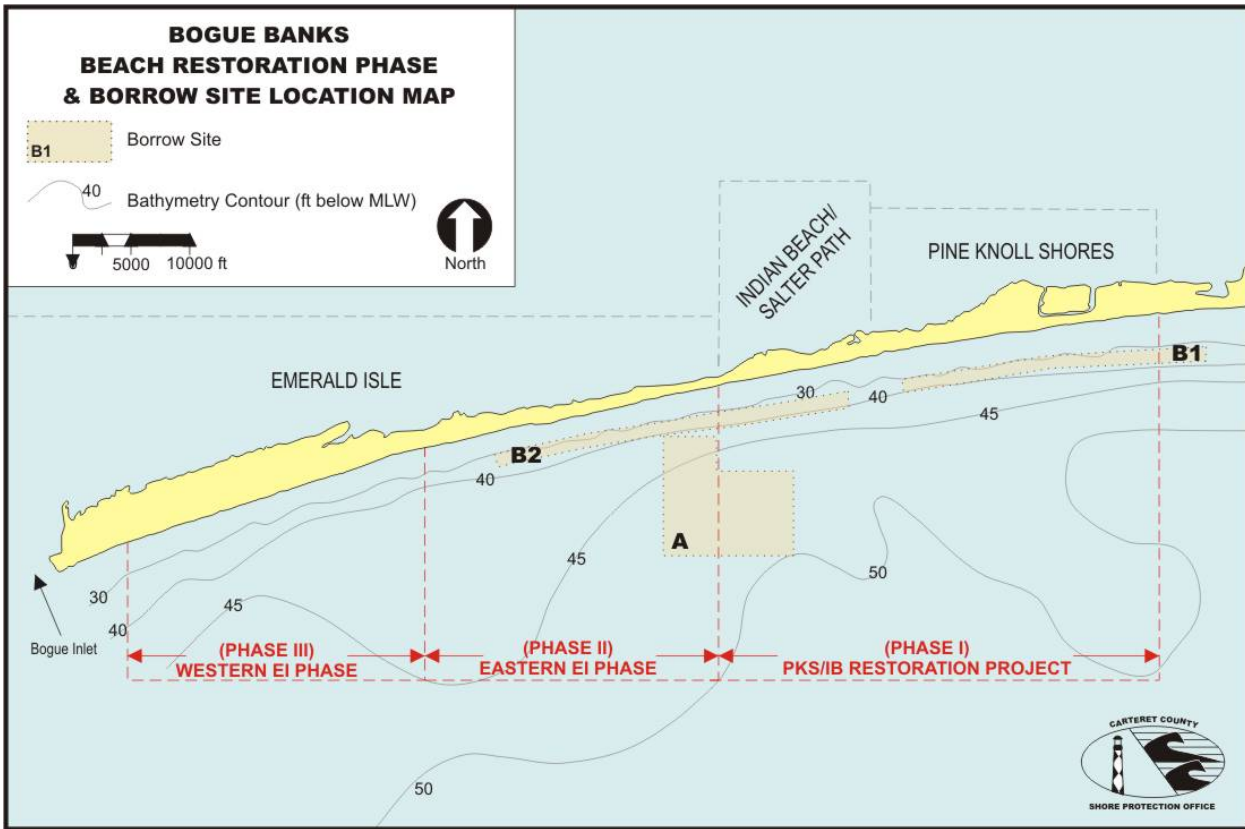


Figure 2. Bogue Banks Restoration Project (Carteret County Shore Protection Office, 2015)

Figure 3 shows the future nourishment plan for Bogue Banks and the Phase I (Indian Beach/Salter Path and Pine Knoll Shores) project area for non-storm losses. It is estimated that the Pine Knoll Shores portion of the Phase I project area will require 508,770 cubic yards of nourishment every 6 years.

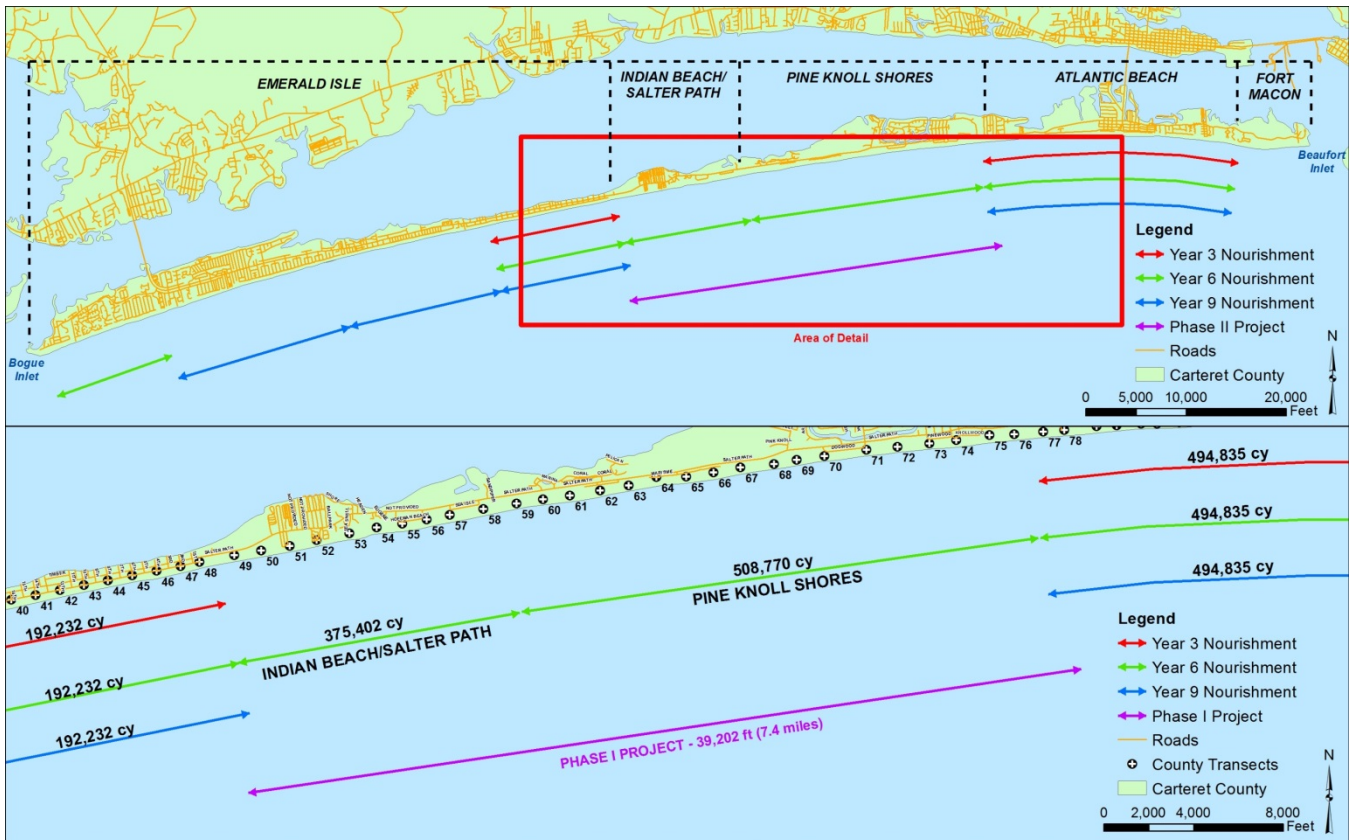


Figure 3. Bogue Banks Master Beach Nourishment Plan (Carteret County Shore Protection Office, 2015)

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 necessary 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)

Both the Town’s original static line exception application report and this update report (Town, 2010 and 2015) contain the summaries of fill projects in the area as follows:

Project Nourishment History

The Bogue Banks Restoration Plan covers approximately 16.8 miles of the 25 mile long island and extends from the Atlantic Beach/Pine Knoll Shores (AB/PKS) town boundary west to approximately one mile east of Bogue Inlet (Figure 4). The Island-wide project was implemented in three phases, as shown in Figure 3, with Phase I (Indian Beach/Salter Path and Pine Knoll Shores) covering the extents of the Indian Beach and Pine Knoll Shores static line exceptions.

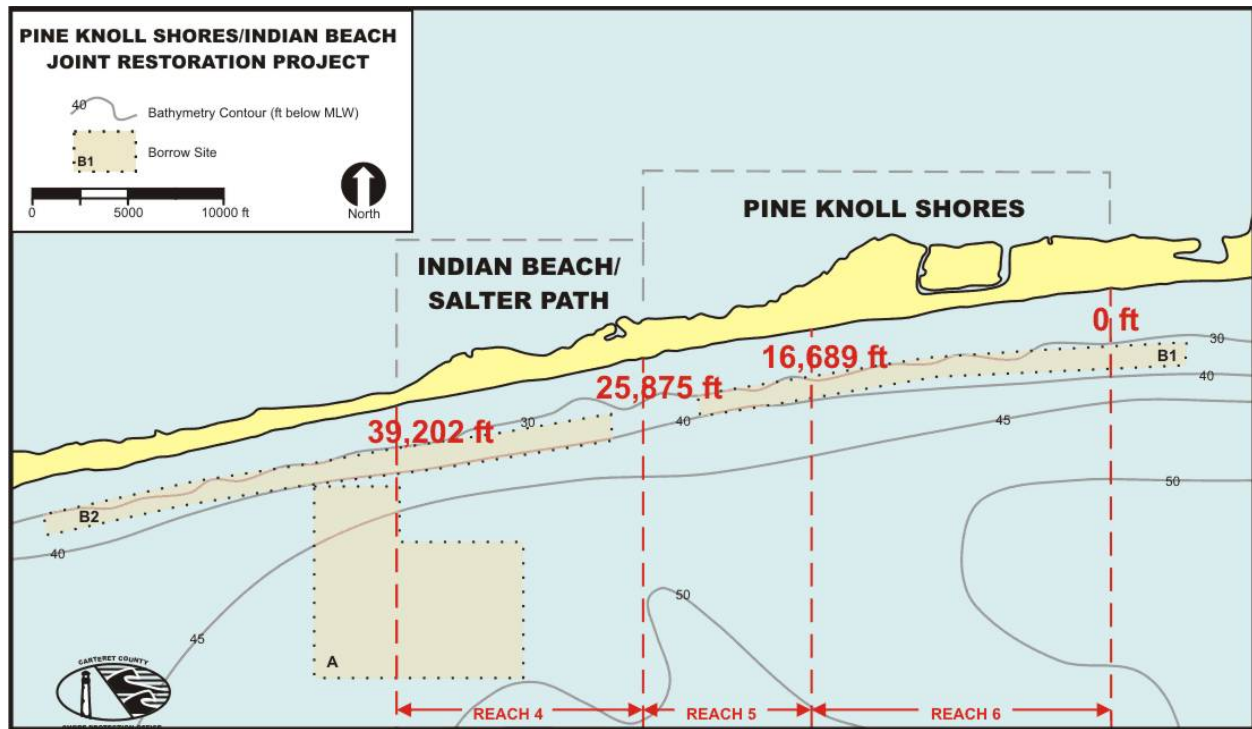


Figure 4. Phase I Restoration Project – Indian Beach/Salter Path and Pine Knoll Shores (Carteret County Shore Protection Office, 2015)

Phase I was constructed between 2001 and 2002 and covered the 2.4 miles of ocean shoreline fronting the Town of Indian Beach and the Village of Salter Path and 4.5 miles along the shoreline segment that includes the Town of Pine Knoll Shores (the focus of this static line exception report) (Figure 4). Material to construct Phase I was obtained primarily from the offshore borrow areas designated as B1 and B2. Construction of Phase I was halted prior to the April 30 permit deadline due to turtle takes, resulting in a reduction in the volume of material placed along both Indian Beach/Salter Path and Pine Knoll Shores. Based on after construction profile surveys, the amount surveyed in place along the Indian Beach/Salter Path shorelines totaled 456,994 cubic yards or about 41% less than the contract amount. The Town of Pine Knoll Shores received 1,276,586 cubic yards or about 9% less than the original contract amount.

The Pine Knoll Shores portion of the Phase I Bogue Banks Restoration Project has been renourished on four occasions since initial construction. The first renourishment was a small portion of the USACE Section 933 Phase I project in 2004, of which the majority of the nourishment was located in Indian Beach/Salter Path. The second two renourishments occurred concurrently as part of the USACE Section 933 Phase II project and the FEMA post-Hurricane *Ophelia* project in 2007. The fourth project occurred in 2013 as part of the post-Hurricane *Irene* Restoration project.

The first renourishment occurred between February and March 2004 as part of Phase I of the Section 933 project associated with the USACE maintenance of the Morehead City Harbor federal navigation project. Section 933 of the Water Resources Development Act of 1986 allows the State and local sponsors to cost share with the federal government in the added cost of depositing material in areas other than the least cost disposal site. Under normal operating conditions, the material removed from the Beaufort Inlet bar channel would be deposited offshore in the Offshore Dredged Material Disposal Site (ODMDS) or in a near shore disposal mound situated immediately west of the inlet's ebb tide delta. For the Section 933 project, Weeks Marine, the firm contracted by USACE to perform the work, used hopper dredges (*BE Lindholm* and the *RN Weeks*) to haul the material to mooring sites located immediately offshore of Indian

Beach/Salter Path and Pine Knoll Shores. From the mooring sites the material was pumped to the beach via a submerged pipeline. Phase I included a relatively short segment on the west end of Pine Knoll Shores (Figure 5). Phase I of the Section 933 project placed 630,094 cubic yards of material along the entire shoreline of Indian Beach/Salter Path and 69,189 cubic yards on the western 2,500 feet of Pine Knoll Shores.

The second renourishment occurred between January and March 2007 as part of Phase II of the Section 933 project associated with the USACE maintenance of the Morehead City Harbor federal navigation project. The work was also contracted to Weeks Marine by the USACE. All of the material removed from the bar channel during Phase II of the Section 933 project was deposited on the beach in two locations within the town limits of Pine Knoll Shores. The locations of the two beach nourishment areas are shown in Figure 5. Approximately 507,939 cy of material was placed in these two reaches.

A third renourishment operation also occurred between January and March 2007 and was carried out to replace material lost during Hurricane *Ophelia* which struck the area in September 2005. Following the advent of Hurricane *Ophelia* in September 2005, the Town of Pine Knoll Shores, along with the other island communities applied to FEMA for funds to restore the material lost during *Ophelia* under Category G of FEMA's Public Assistance Program. Specifically, the Public Assistance Program allows FEMA to provide funds to restore an "improved" or engineered beach providing the applicant can demonstrate the beach fill project had a designed template and grain size, a maintenance plan, and pre- and post-storm beach profile surveys. In its application, Pine Knoll Shores as well as the other towns along the island included in the Bogue Banks Restoration project were able to demonstrate they met all of the FEMA requirements including an engineered beach, a nourishment plan, and monitoring program and was subsequently approved to receive reimbursement funds to restore the beach to the pre-storm condition. The post-Hurricane *Ophelia* restoration in Pine Knoll Shores included restoration of the fill along two reaches (Reach 4 and Reach 5) between County Transects 62-65 and 66-74 (Figure 6), respectively, located within the Phase I project limits. The Hurricane *Ophelia* restoration used material from the ODMDS which was transported to the beach via hopper dredges. The post-Hurricane *Ophelia* restoration was accomplished between January and March 2007 with a total of 1,229,800 cubic yards deposited along various sections of the Bogue Banks, 262,276 cubic yards of which was placed between County Transects 62 and 74 in Pine Knoll Shores, within the limits of Phase I. 73,387 cubic yards was placed in Reach 4 and 188,879 cubic yards was placed in Reach 5. The total cost of the restoration was \$13,773,800 all of which was provided by FEMA. Of this total restoration cost, \$3,311,582 was allocated to the Pine Knoll Shores project based on the volume of material placed within this reach compared to the total volume placed on Bogue Banks to replace the material lost to Hurricane *Ophelia*.

Most recently, the post-Hurricane *Irene* restoration in Pine Knoll Shores, which was partially funded by FEMA, included fill between County Transects 62 and 71 (Figure 7), located within the Phase I project limits of the Bogue Banks Restoration Project. As was the case for the Hurricane *Ophelia* restoration, the Hurricane *Irene* restoration used material from the ODMDS which was transported to the beach via hopper dredges. The post-Hurricane *Irene* restoration was accomplished between January and March 2013 with a total of 965,011 cubic yards deposited along various sections of the Bogue Banks, 315,221 cubic yards of which was placed between County Transects 62 and 71 in Pine Knoll Shores, within the limits of Phase I. This equated to an average of placement density of 24.4 cy/ft. The total cost of the restoration was \$14,951,965, \$7,076,155 of which was provided by FEMA and the rest by the County and Towns of Emerald Isle and Pine Knoll Shores. Note that the total cost for the *Irene* restoration allocated to the Town of Pine Knoll Shores was \$511,798. Appendix A contains the plans for the 2013 post-Hurricane *Irene* project, the only project to occur within the last 5 years.

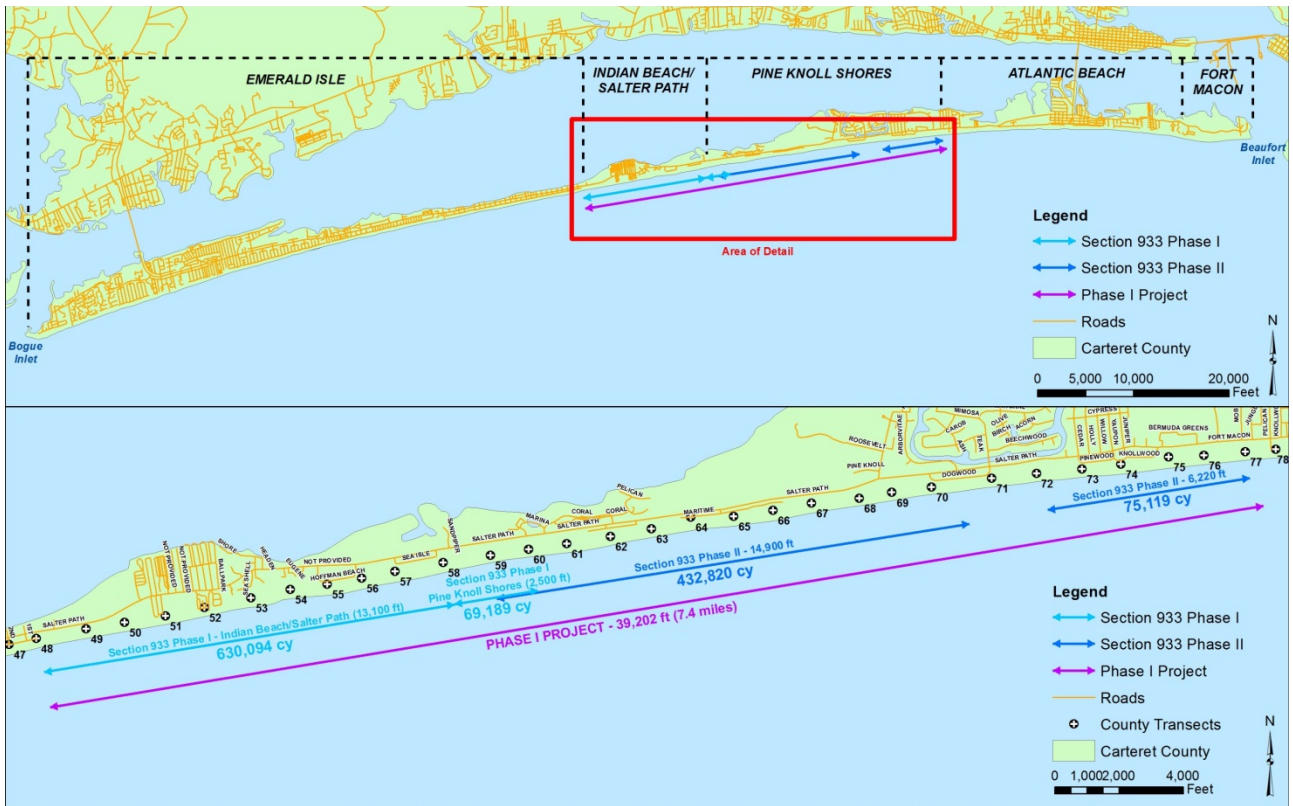


Figure 5. USACE Section 933 Project Phase I and Phase II (2004, 2007) (Carteret County Shore Protection Office, 2015)

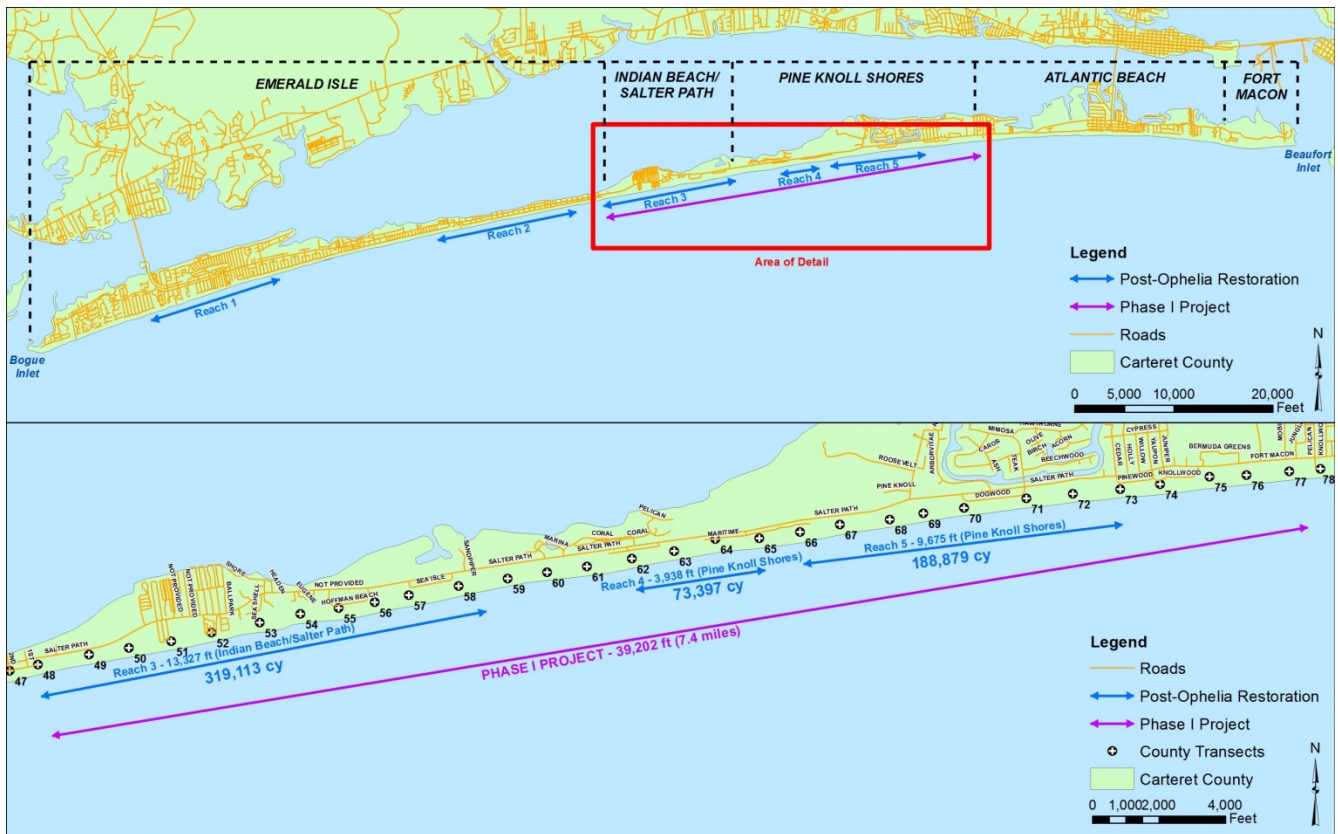


Figure 6. Post-Ophelia Restoration Project (2007) (Carteret County Shore Protection Office, 2015)

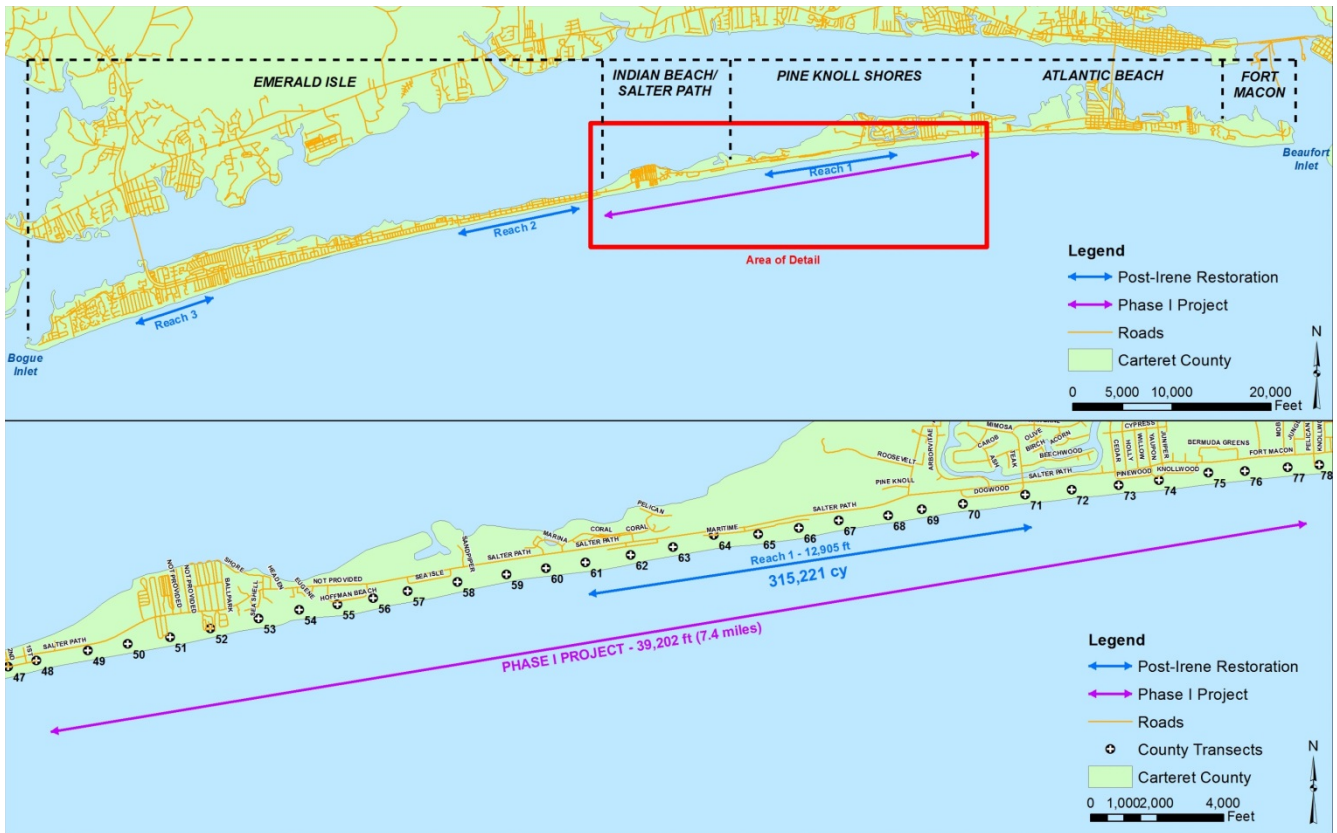


Figure 7. Post-Irene Restoration Project (2013) (Carteret County Shore Protection Office, 2015)

Nourishment Dates	Borrow Area	Placement Area/Transects	Pay Yardage (cy)	Cost of Operation
2002	B1, B2	Town	1,276,586	
2004	MHC Harbor/Bft. Inlet	Town-West (2,500ft)	69,189	
2007	MHC Harbor/Bft. Inlet	Two Sections	507,939	
2007	ODMDS	62-65, 66-74	262,276	\$3,311,582
2013	ODMDS	62-71	315,221	\$511,798

Table 1. Pine Knoll Shoes Nourishment History Since 2002. (see 2015 Report for Detailed Station Locations)

5-Year Progress Report: Fill Projects

Since the Commission granted the Town of Pine Knoll Shores a static line exception in March, 2010, one project was constructed in 2013, as a result of storm induced erosion (*Hurricane Irene, August, 2011*)

**B. Design of the initial fill projects and past/planned maintenance-
Second factor per 15A NCAC 07J.1201(d)(2)**

Both the Town’s original static line exception application report and current report (Town, 2010 & 2015) provides information regarding the design of the beach fill project for Pine Knoll Shores, and how that project has performed in the past, as follows:

Project Performance

Phase I of the project (Indian Beach/Salter Path and Pine Knoll Shores) into three reaches (Figure 8) with different design volumes in each reach based on the volume from the toe of the dune out to -12 ft NAVD88 needed to reach the design volume of 175 cy/ft and an advanced nourishment volume equal to expected volume losses in that zone over the next 10 years. The design profile volume for the Bogue Banks project was subsequently increased to 225 cy/ft to account for the volume of material from the landward toe of the dune up to the peak of the dune. The Pine Knoll Shores portion of the project was divided into two reaches (Reach 5 and 6). A 1,000-foot transition or taper section was provided on the east end of the fill. A taper section was not required on the west end of the fill as the project was constructed as a continuous fill through Indian Beach/Salter Path. The beach fill was designed as a variable width horizontal berm at elevation +6.0 feet NAVD with an average fill volume of 54.8 cy/ft in Reach 5 and 58.7 cy/ft in Reach 6.

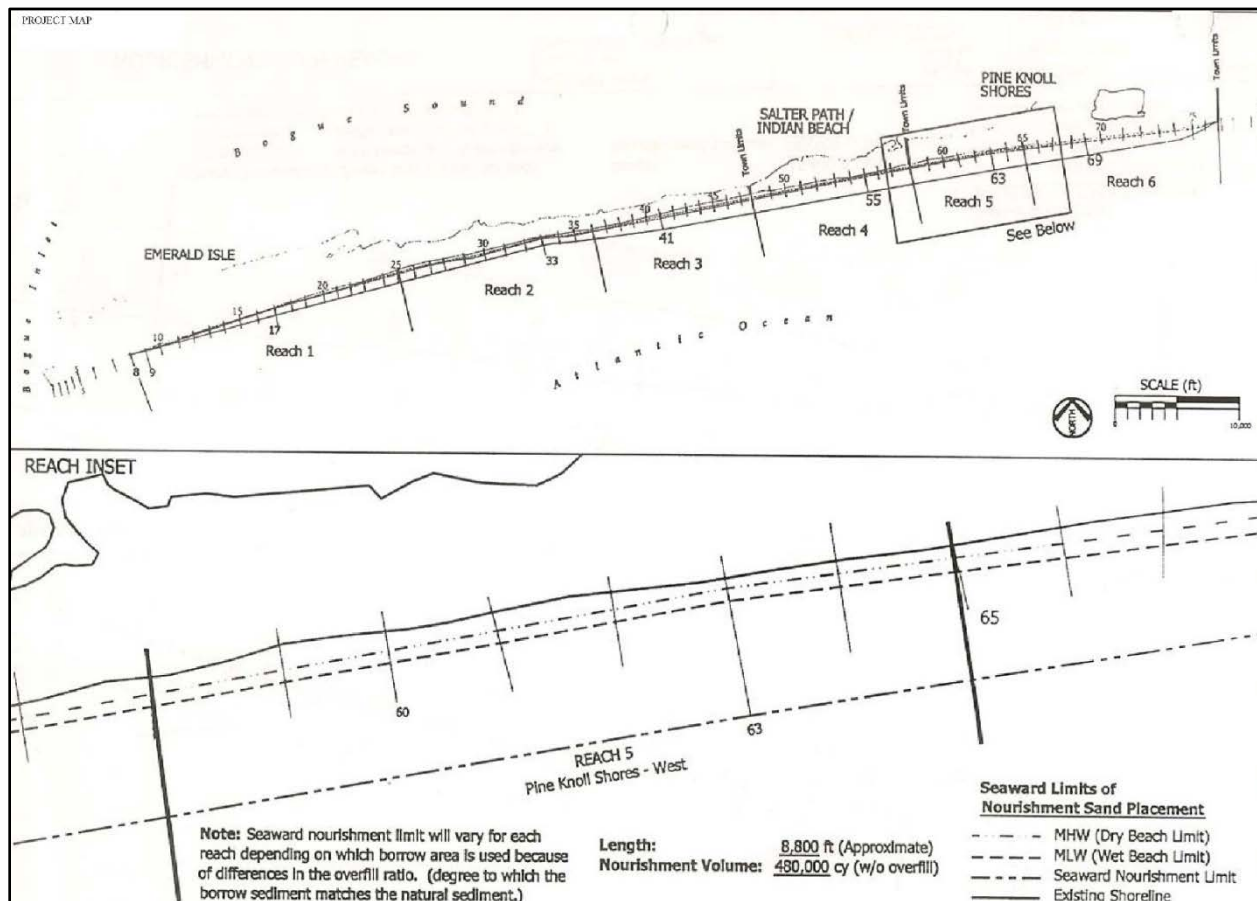


Figure 8. Phase I Plan View – Pine Knoll Shores Reach 5 (2010 CPE Static Line Report, 2015 Town’s Update Report)

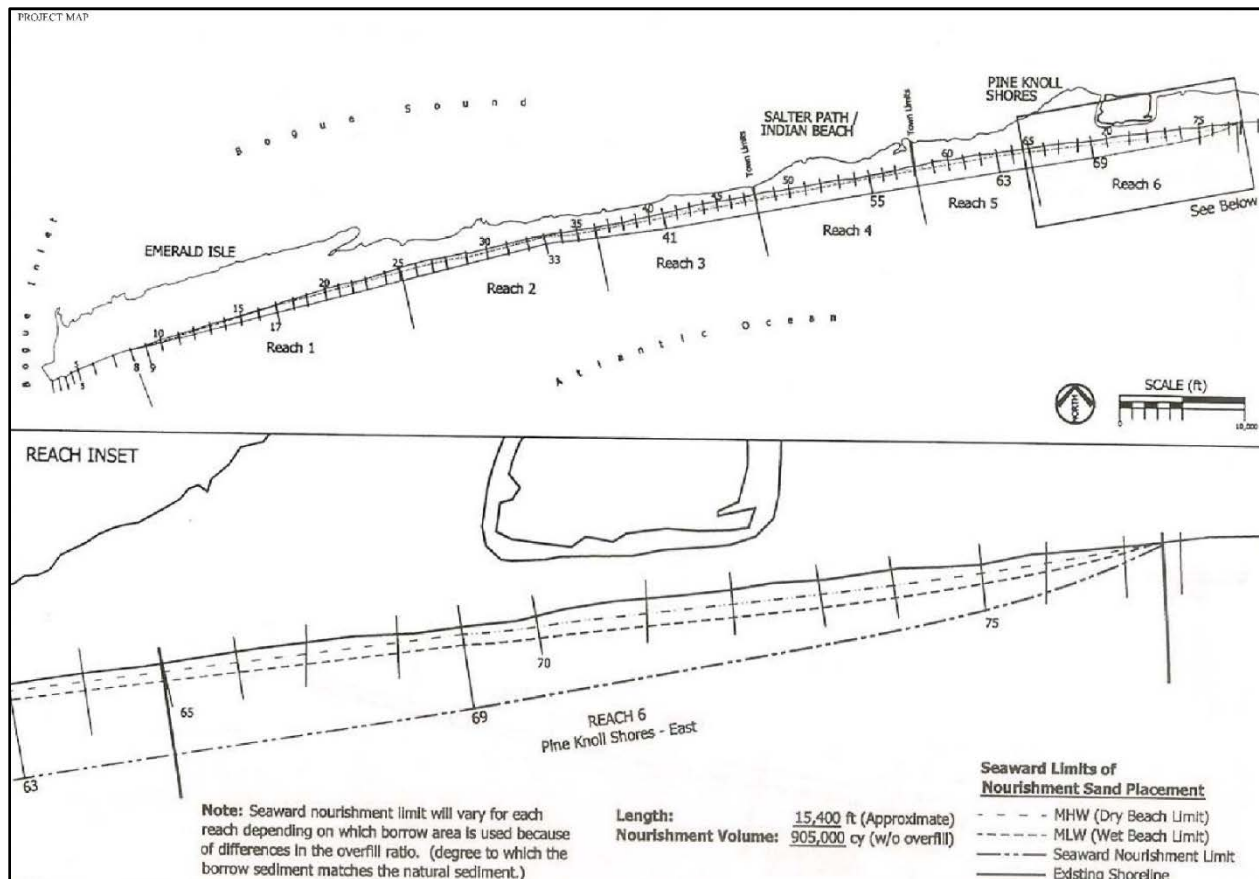


Figure 9. Phase I Plan View – Pine Knoll Shores Reach 6 (2010 CPE Static Line Report, 2015 Town’s Update Report)

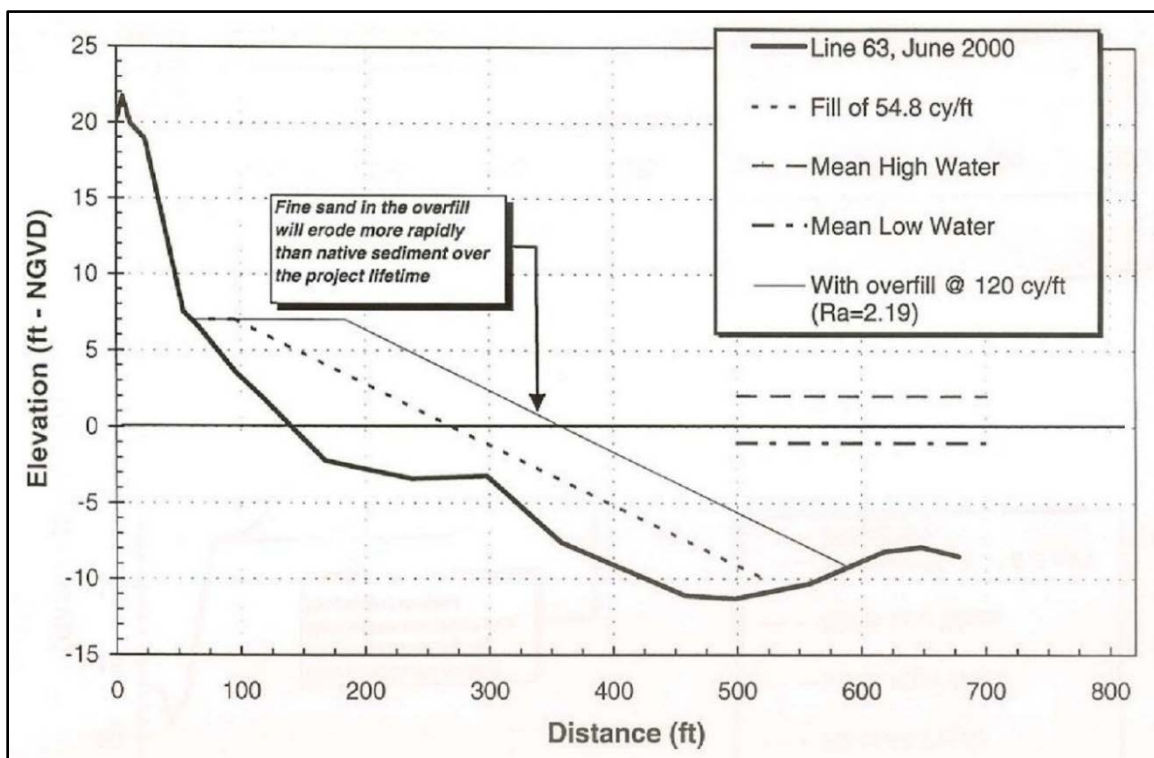


Figure 10. Pine Knoll Shores Phase I Example Cross-Section - Reach 5 (2010 CPE Static Line Report, 2015 Town’s Update Report)

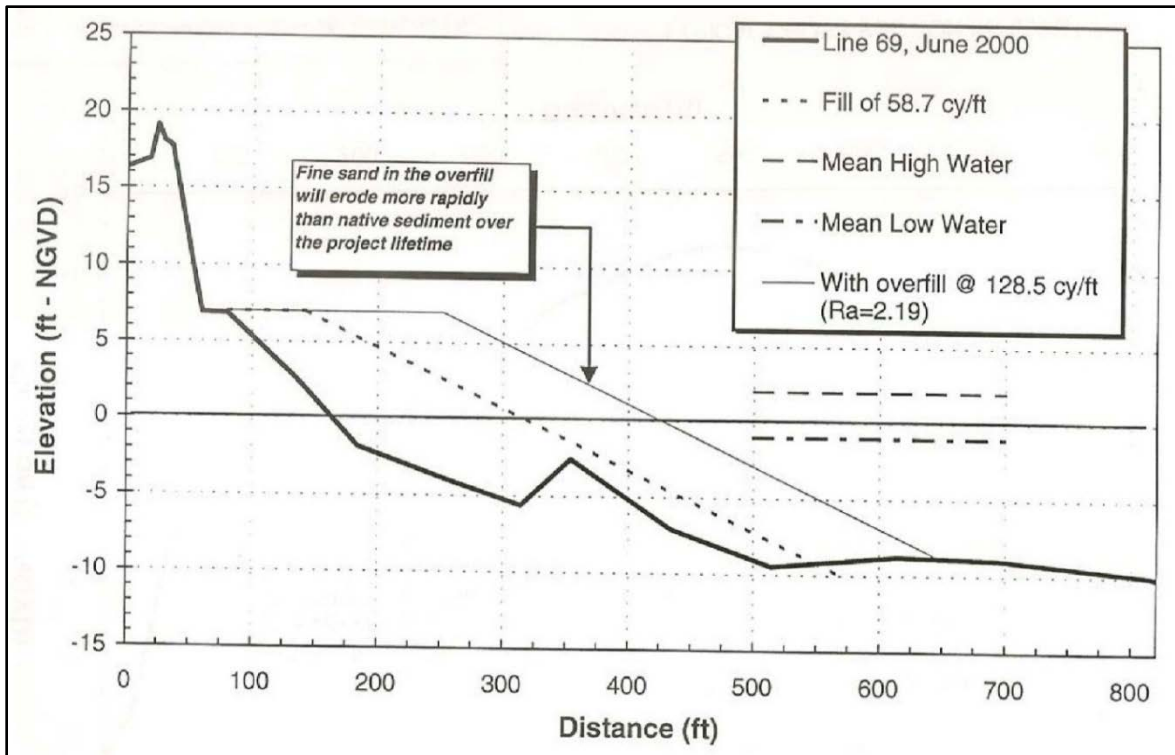


Figure 11. Pine Knoll Shores Phase I Example Cross-Section - Reach 6 (2010 CPE Static Line Report, 2015 Town's Update Report)

The Bogue Banks Beach and Nearshore Mapping Program, established in 2004, monitors the entire island on an annual basis. Each year, profiles are analyzed to determine gains and losses in material to the system. Among the items analyzed is the amount of material on the beach, from the peak of the dune to the outer bar at -12 ft NAVD88, in comparison to what was in place after the initial restoration project. Table 2 shows the amount of fill, by percent of original placement that existed in the Pine Knoll Shores portion of the Phase I project area each year of the monitoring. As can be seen, through the efforts of the Section 933 and post-storm nourishment projects, there is currently more sand in the Pine Knoll Shores portion of the Phase I project overall than there was only 2 years after the project was constructed (see 2004 results in Table 2). While the eastern portion of the Phase I project (Pine Knoll Shores East reach) contains slightly less material than was originally placed, it is well above the nourishment trigger of 50% remaining.

Reach	Percent Fill Remaining										
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Pine Knoll Shores-West	92.5	122.4	91.7	157.8	168.8	165.0	150.0	145.2	128.5	136.0	137.6
Pine Knoll Shores-East	65.8	59.4	34.4	119.8	125.7	107.7	99.7	94.5	64.7	103.8	95.8
Pine Knoll Shores-Phase I	76.0	83.5	56.4	134.4	142.2	129.7	119.0	113.9	89.1	116.1	111.8

Table 2. Percent Fill Remaining From Initial Construction (Pine Knoll Shores Phase I)(Carteret County Shore Protection Office, 2015)

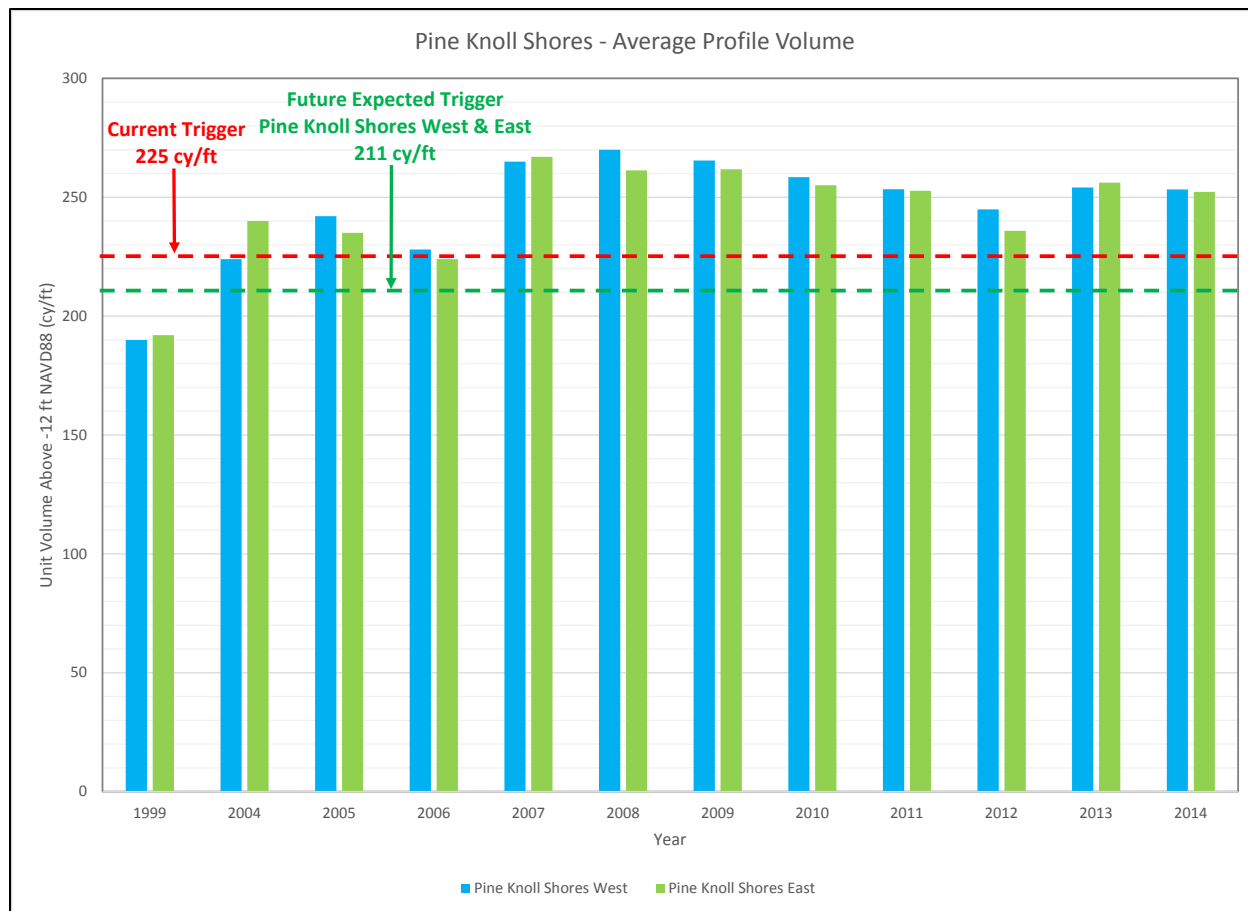


Figure 12. Average Profile Volume Above -12 ft NAVD88 (Pine Knoll Shores - Phase I) (Carteret County Shore Protection Office, 2015)

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 March 2010 by the Commission.

Third factor per 15A NCAC 07J.1201(d)(3)

The Town's static line exception application report (Town, 2015) provides information about the availability of compatible sediment for future beach fill projects as follows:

Borrow Material Sources

The material from borrow areas B2 and B1 used for initial construction of the Bogue Banks Restoration Project had a composite mean grain size of 0.44 mm which was much coarser than the native sand mean grain size of 0.30 mm. In that regard, the borrow material seemed ideal for beach nourishment purposes as material coarser than the native is known to provide a more stable beach fill. However, the coarseness of the material in these two borrow areas was primarily due to relatively high shell or CaCO₃ content which averaged 44% based on post-placement samples of the material. Material for the USACE Section 933 projects came directly from Beaufort Inlet. In order to avoid placing additional large amounts of shell or CaCO₃ along the town's shoreline, the Town of Pine Knoll Shores opted to use the ODMDS for the subsequent post-*Ophelia* FEMA nourishment event. The ODMDS is expected to have compatible material as most of the sediment in the disposal site was derived from maintenance of the Beaufort Inlet

ocean bar channel; particularly the landward portions of the channel which is known to accumulate littoral material directly off the adjacent shorelines of Bogue and Shackleford Banks. Limited sampling was performed in accordance with post-*Isabel* and post-*Ophelia* restoration projects confirming the quality of the material in the ODMDS, with an average grain size of approximately 0.31 mm.

As part of the Bogue Banks Master Beach Nourishment Plan, an extensive sediment sampling program was implemented to verify the compatibility of existing sediment sources, which had been used previously, as well as possibly locate some new sources. This was part of the permitting requirements to show the quantity and quality of potential sediment sources for the next 50 yrs. The engineering report identified and quantified the amount of material in upland sources (sand mines), AIWW disposal areas, offshore sources, and inlets. The findings indicate that possible upland sources exist in the amount of 1.4 Mcy while AIWW disposal areas possibly contain up to 1.3 Mcy. Offshore sources consist of the new and old ODMDS as well as some small pockets of material off of Emerald Isle known as Area Y. Together, they contain approximately 22.4 Mcy of compatible material. In addition, both Beaufort Inlet and Bogue Inlet could provide a steady supply of nourishment material from dredging operations over the next fifty years. The periodic dredging of Morehead City Harbor by the USACE could provide approximately 20 Mcy over the next 50 years. The dredging/relocation of Bogue Inlet (approximately every 10 years) and dredging of the AIWW crossing could provide approximately 5.1 Mcy over the next 50 yrs. Therefore, approximately 50.2 Mcy of material has been identified which is considered enough material to meet the 50 year need of 46.8-51.6 Mcy determined in the Bogue Banks Master Beach Nourishment Plan. Figure 13 shows a summary of the potential sediment sources identified for use over the next 50 years.

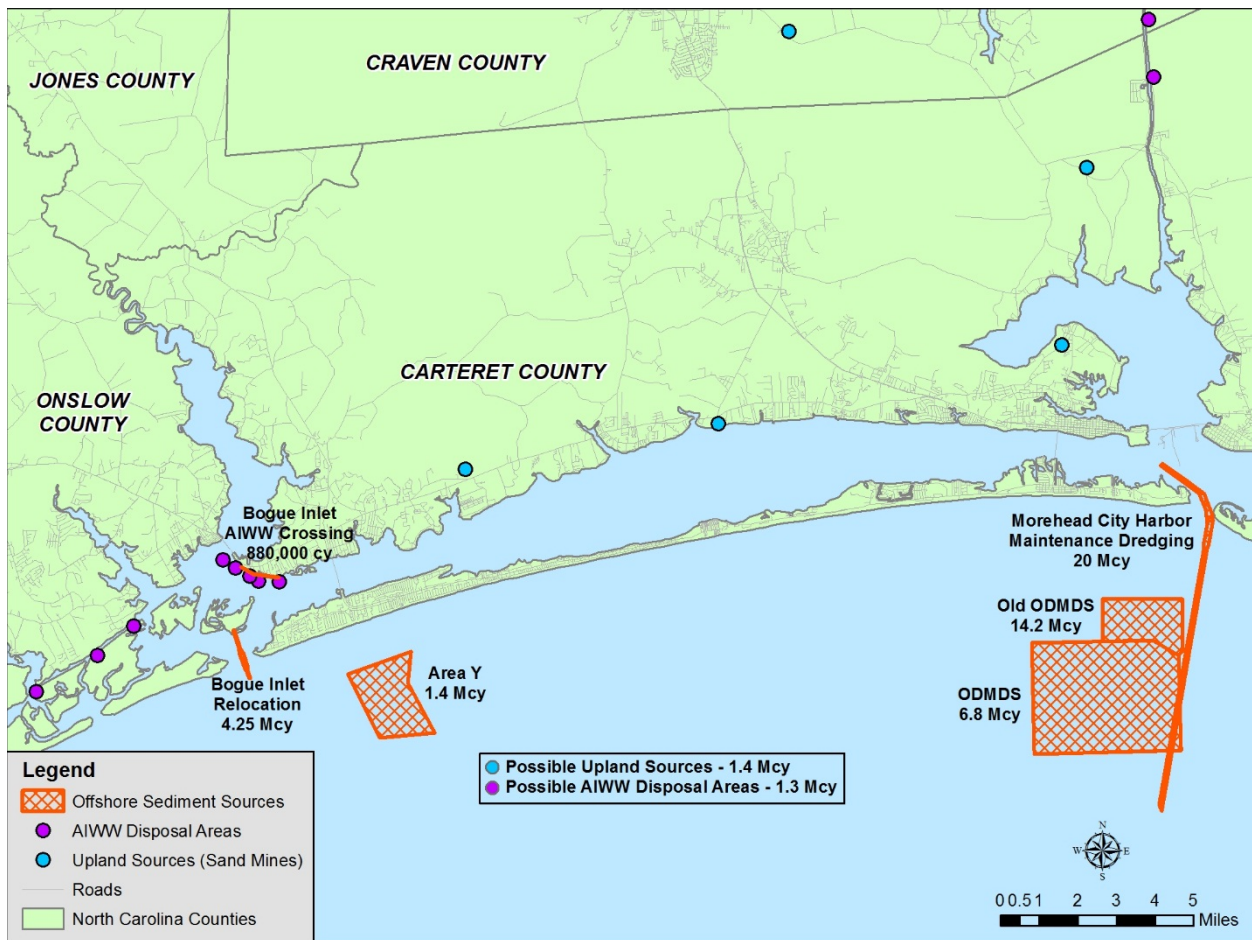


Figure 13. Master Beach Nourishment Plan Potential Sediment Sources (Carteret County Shore Protection Office, 2015)

5-Year Progress Report: Compatible Sediment

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 2010.

C. Financial Resources- Fourth factor per 15A NCAC 07J.1201(d)(4)

The Shore Protection Office is funded 100% by the portion of the County's occupancy tax legislatively mandated for beach nourishment, which was instituted in 2001 via SL 2001-381 and after several changes related to a proposed convention center (SL 2005-120, SL 2007-112), is now codified as SL 2013-223. The county currently has \$9M in reserve, and without any major storms, it is anticipated that 6 years will pass before the next project is needed.

5-Year Progress Report: Financial Resources

Condo/cottage rentals dominate the market on Bogue Banks generating approximately \$3.2 million per year while the hotel/motel sector generates, on average, \$1.3 million per year. The Shore Protection Office is funded 100% by the portion of the County's occupancy tax legislatively mandated for beach nourishment, which was instituted in 2001 via SL 2001-381 and after several changes related to a proposed convention center (SL 2005-120, SL 2007-112), is now codified as SL 2013-223.

The remaining fund balance at the conclusion of each fiscal year is permitted to accrue in a reserve account, commonly referred as the "Beach Fund" in an effort to finance some of the large-scale shore protection projects and efforts. The County's occupancy tax rate was established at 5% overall rate via the enacting legislation (SL 2001-381) and the revenues were previously split 50-50 between beach nourishment and the Tourism Development Authority (TDA), representing a 2.5% overall collection rate for both the TDA and beach nourishment. Beginning in FY 2010-11 as stipulated in SL 2007-112, the TDA begun receiving 3% of the 5% collection and the beach nourishment fund received 2%, which effectively changed the cost share from 50%-50% to 60%-40%. Recent changes in the occupancy tax law have been codified in SL 2013-223, which amended SL 2007-112 to allow the collection of an additional 1% (6% total) with the total proceeds being split 50-50 between the TDA and beach nourishment (or 3% from each). This law also raised the cap of the beach nourishment fund from \$15 M to \$30 M.

Utilizing the annualized volume needs estimated as part of the preferred option and the above unit rates, an annualized estimate of funding need was developed. As can be seen in Table 3, utilizing a 25% Town/75% County split would likely not be sustainable for the County fund because the annual need would be roughly \$3.4 M while \$2.4 M is likely to be generated (~50% of total occupancy tax collections). This scenario also requires less cost share overall from the Towns than is currently being generated. However, a scenario with a 33% Town/67% County cost share was also run and the results look much more equitable between the two funding streams. The annualized need versus funds raised for the Towns is quite close to the current funding levels with the exception of Atlantic Beach which does not currently have a dedicated funding source. However, given the possible range of outcomes from the ongoing DMMP, the numbers in this table could become less or more. As for the County annual need versus funding level, the need is still higher (\$3.1 M vs. \$2.4M) but the fund currently has \$9M in reserve and it is hoped that 6 years will pass before the next project is needed. This should allow adequate time for the reserve to build up to a point to where the County fund is also sustainable long-term. The intra-local agreement signed by all the Towns and County also requires them to meet the funding needs even if new taxes or one-time loans are required. The intra-local agreement can be seen in Appendix B of the Town's 2015 Update Report.

				25% Town/75% County Cost Share			33% Town/67% County Cost Share			
Town	Annual Volume Loss (cy)	% of Total Annual Volume Loss	Avg. Placement Unit Cost Per Town	Annual Town Cost (\$)	Annual County Cost (\$)	% of Total Annual County Cost	Annually Generated Taxes for Beach Nourishment	Annual Town Cost (\$)	Annual County Cost (\$)	% of Total Annual County Cost
Emerald Isle	139,913	31%	\$15.00	\$524,674	\$1,574,021	46%	\$675,000	\$692,569	\$1,406,126	46%
Indian Beach/Salter Path	62,567	14%	\$13.00	\$203,343	\$610,028	18%	\$282,406	\$268,412	\$544,959	18%
Pine Knoll Shores	84,795	19%	\$12.25	\$259,685	\$779,054	23%	\$316,500	\$342,784	\$695,955	23%
Atlantic Beach	164,945	36%	\$4.00	\$164,945	\$494,835	14%	TBD	\$217,727	\$442,053	14%
TOTAL	452,220				\$3,457,938				\$3,089,093	
					Avg. Annual County Tax Generated Over Next 6 Years = \$2,440,664					

Table 3. Annualized Estimate of Funding (Carteret County Shore Protection Office, 2015)

IV. Staff's Recommendation

The Commission, through 15A NCAC 07J.1204(c), directs Staff to provide a recommendation to the Commission on 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.

ATTACHMENT B: 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.

(f) 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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6), 113A-124 Eff. March 23, 2009.

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 lays 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).

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.

- (1) Ocean Beaches. Ocean beaches are lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either:
 - (A) the growth of vegetation occurs, or
 - (B) a distinct change in slope or elevation alters the configuration of the landform, whichever is farther landward.
- (2) Nearshore. The nearshore is the portion of the beach seaward of mean low water that is characterized by dynamic changes both in space and time as a result of storms.
- (3) Primary Dunes. Primary dunes are the first mounds of sand located landward of the ocean beaches having an elevation equal to the mean flood level (in a storm having a one percent chance of being equaled or exceeded in any given year) for the area plus six feet. The primary dune extends landward to the lowest elevation in the depression behind that same mound of sand (commonly referred to as the dune trough).
- (4) Frontal Dunes. The frontal dune is deemed to be the first mound of sand located landward of the ocean beach having sufficient vegetation, height, continuity and configuration to offer protective value.

- (5) **Vegetation Line.** The vegetation line refers to the first line of stable and natural vegetation, which shall be used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to constant flux due to waves, tides, storms and wind, and the more stable upland areas. The vegetation line is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. The Division of Coastal Management or Local Permit Officer shall determine the location of the stable and natural vegetation line based on visual observations of plant composition and density. If the vegetation has been planted, it may be considered stable when the majority of the plant stems are from continuous rhizomes rather than planted individual rooted sets. The vegetation may be considered natural when the majority of the plants are mature and additional species native to the region have been recruited, providing stem and rhizome densities that are similar to adjacent areas that are naturally occurring. In areas where there is no stable natural vegetation present, this line may be established by interpolation between the nearest adjacent stable natural vegetation by on ground observations or by aerial photographic interpretation.
- (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. Because the impact of Hurricane Floyd (September 1999) caused significant portions of the vegetation line in the Town of Oak Island and the Town of Ocean Isle Beach to be relocated landward of its pre-storm position, the static line for areas landward of the beach fill construction in the Town of Oak Island and the Town of Ocean Isle Beach, the onset of which occurred in 2000, shall be defined by the general trend of the vegetation line established by the Division of Coastal Management from June 1998 aerial orthophotography.

V. References

(Town, 2015) - Moffat & Nichol 2015, Town of Emerald Isle, NC Static Line Exception Application Report, Prepared for the Town of Emerald Isle by Moffat and Nichol, Raleigh, North Carolina

(Town, 2010) - CPE 2010, Emerald Isle, NC Static Line Exception Application Report, Prepared for the Town of Emerald Isle by Coastal Planning & Engineering, Wilmington, North Carolina

Carteret County Shore Protection Office Preservation Plan. Retrieved from <http://www.carteretcountync.gov/313/Preservation-Plan>.



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

April 17, 2015

MEMORANDUM

CRC-15-07D

TO: Coastal Resources Commission

FROM: Ken Richardson, DCM Shoreline Management Specialist

SUBJECT: Town of Atlantic Static Line Exception 5-Year Progress Report

Petitioner, the Town of Atlantic 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 March 24, 2010. Rule 15A NCAC 07J.1204(b) requires 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 necessary 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: Staff’s Report to the Commission summarizing the Town’s Update Report

Attachment B: Relevant Procedural Rules

Note: The Petitioner’s 5-Year Progress Report & Interlocal Agreement are provided as a separate document.

ATTACHMENT A: Staff's Report to the Commission

I. Description of the Affected Area

The Town of Atlantic Beach (Town) applied for and received an exception from the static line in accordance with procedures outlined in 15A NCAC 07J.1201 from the North Carolina Coastal Resources Commission on March 24, 2010.

The Town is located on eastern portion of Bogue Banks in southeastern Carteret County, North Carolina. The town's land area is approximately 2.7 square miles, and approximately 4.5 miles long, bordered by Pine Knoll Shores on the west, Fort Macon State Park on the east (Figure 1). The barrier island is generally oriented in a west-east direction.

A static vegetation line was established along most of the ocean shoreline of Atlantic Beach as a result of two beach disposal operations associated with the maintenance of the Morehead City Harbor federal navigation project (MCH). The first disposal operation occurred in 1986 and covered approximately the eastern half of the town's 4.5 mile shoreline extending west from the Atlantic Beach/Fort Macon State Park boundary (AB/FM). The second disposal operation occurred in 1994 and covered most of the remaining portion of the town's shoreline, ending approximately 2,000 feet east of the town's west boundary with Pine Knoll Shores (AB/PKS).

The location of the static line combined with setback requirements (15A NCAC 07h .0306), has rendered at least 60 ocean front structures in Atlantic Beach non-conforming. The static line in Atlantic Beach and Fort Macon extends almost the entire length of Atlantic Beach from just west of Lee Drive to the Fort Macon Terminal Groin. The erosion rate setback factor for the area with the static line in Atlantic Beach is 2 (or times the erosion rate). The western 2,500 ft. of Fort Macon has a setback factor of 2.5 while the remainder of the area has a setback factor of 2. There are currently 278 oceanfront lots within the extent of the static line of which 13 are currently vacant.



Figure 1. Atlantic Beach, North Carolina (NC DCM – GIS, 2015)

II. Summary of Past Nourishment Project and Future Project Maintenance

The beach fill project for the Town of Atlantic Beach is totally dependent on material deposited along its shoreline during construction and maintenance of the MCH federal navigation project. Although the USACE has traditionally placed dredged material at the Offshore Dredged Material Disposal Site (ODMDS), more recently, the material has been placed onto Atlantic Beach and Fort Macon at more frequent intervals (Figure 2).

While a newly revised Dredged Material Management Plan (DMMP) has not been finalized, the final plan will likely resemble the IOP three year cycle. In which case, Atlantic Beach and Fort Macon can anticipate receiving material about every third year. It is anticipated that the DMMP will include an agreement with Carteret County for future cost sharing in nourishment plans to place material further west on Bogue Banks instead of the nearshore disposal area. Material could potentially be placed westward of the Circle in Atlantic Beach, to the eastern edge of Pine Knoll Shores. At a minimum, it is expected that an average of 400,000 cy/yr. (Year 1 volume of 1,200,000 cubic yards split over three years) would be placed from Fort Macon to the Circle at Atlantic Beach.

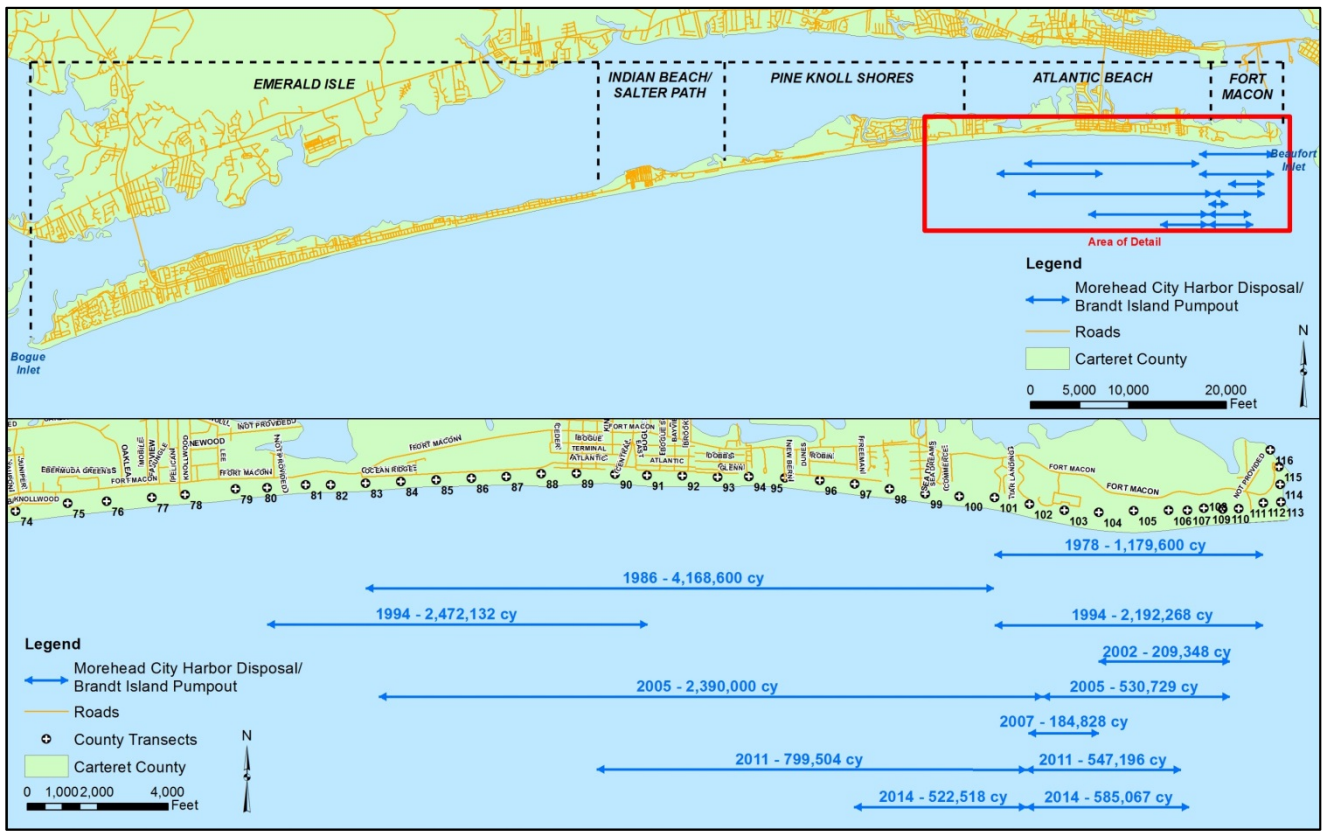


Figure 2. Atlantic Beach & Fort Macon Nourishment History (Carteret County Shore Protection’s Update Office, 2015)

Atlantic Beach is not currently part of Bogue Banks Master Plan since only federal funds are used to place dredged material on the beach. If federal funding were to be cut in the future, Atlantic Beach would have the opportunity to participate in the Bogue Banks Master Beach Nourishment Plan with the neighboring towns of Emerald Isle, Indian Beach/Salter Path and Pine Knoll Shores. However, the Bogue Banks Master Beach Nourishment Plan is being developed to provide long-term shoreline stabilization and equivalent level of protection along Bogue Banks 25 mile oceanfront including the area of Atlantic Beach?. Development of a 50-year programmatic EIS is currently in the final stages, which would result in a single permit to cover the next 50 years of nourishment operations on Bogue Banks. As part of the EIS, an engineering report was developed to provide insight into the future sand needs and availability.

Atlantic Beach currently has more material in place now than was in place in 2010 when the original static line exception application was approved. It should be noted that Atlantic Beach continues to have the highest profile volumes among the towns which make up Bogue Banks (Emerald Isle, Indian Beach/Salter Path, and Pine Knoll Shores) due to regular maintenance associated with USACE Morehead City Harbor (MHCH) project and Beaufort Inlet navigation dredging projects.

While it is expected that Atlantic Beach would not be an immediate participant in the Master Plan due to its beach fill projects being completed at one hundred percent federal cost, the cost projection analyses indicate that funding for the Master Plan is sustainable whether Atlantic Beach participates or not. It is anticipated that maintenance projects associated with the Bogue Banks Master Plan should be sustainable for at least the next 25 years with recommendations to track expenditures over next 5-10 years and adjust as needed. Analyses conducted for the Town’s 2015

Static Line Exception update report do not include any state or federal funding above what is currently expected for the Morehead City Harbor Project. Any additional state or federal funds would extend the long-term sustainability of the project.

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 necessary 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)

Both the Town’s original static line exception application report (Town, 2010) and this update report (Town, 2015) lay out the summaries of fill projects in the area as follows:

Project Nourishment History

Historically, the USACE original project design to deepen the Morehead City Harbor (MHCH) from 35-foot mean low water (MLW) to 40 feet MLW in the early 1970’s, included the least cost disposal of material from the Inner Harbor would involve the temporary storage of material in an upland disposal area known as Brandt Island, and once full, the Brandt Island disposal area would be pumped-out with the material being distributed along the shoreline on the east end of Bogue Banks. The estimated time between pump-out operations was 8 to 10 years. The designated beach disposal area for the MCH project eventually evolved to include approximately 7 miles of shoreline on the east end of Bogue Banks beginning at the Fort Macon terminal groin and extending west into the Town of Pine Knoll Shores (Figure 2). However, given funding and equipment limitations, disposal of the material removed from Brandt Island never extended all the way to the Atlantic Beach/Pine Knoll Shores town limit. In addition, direct placement from the Outer Harbor has occurred at varying time intervals in both Fort Macon and Atlantic Beach. The timing of the direct placement was interspersed with years of offshore disposal to the nearshore berm or ODMDS.

The following summarizes disposal history since 1978:

- 1978 Disposal: 1,179,600 cy of material from the Turning Basin, Range C, and Range B were placed along the Ft. Macon shoreline during construction of the 40-foot MLW deepening project.
- 1986 Disposal: The upland recycling facility of Brandt Island was excavated (“pumped-out”) for the first time with 3,918,484 cy placed along Atlantic Beach and Ft. Macon. An additional 250,116 cy of channel and basin material was pumped directly to the beach disposal area resulting in a total of 4,168,600 cy being placed on the beach.
- 1994 Disposal: A total of 4,664,400 cy of material was placed along the least cost corridor of Atlantic Beach and Ft. Macon, including; the second pump-out of Brandt Island (2,473,700 cy), Inner Harbor deepening material associated with the 45-foot MLW project (1,725,000 cy), and routine Inner Harbor maintenance (465,700 cy).
- 2002 Disposal: 209,348 cy of material maintained from Range B and a portion of Range C were directly placed along the beaches of Ft. Macon.
- 2005 Disposal: 2,390,000 cy and 530,729 cy of material were placed along Atlantic Beach and Ft. Macon, respectively (2,920,729 cy total) in association with the third Brandt Island pump-out and routine Inner Harbor maintenance.
- 2007 Disposal: 184,828 cy of material maintained from Range B and a portion of Range C were directly placed along the beaches of Ft. Macon, discreetly along the bath house region of the State Park shoreline.
- 2011 Disposal: A total of 1,346,700 cy of material was dredged from Range B, the Cutoff, and Range A and placed along Atlantic Beach and Fort Macon. Fort Macon received 547,196 cy while Atlantic Beach received 799,504 cy, extending from the AB/FMSP boundary west to the Circle.
- 2014 Disposal: A total of 1,107,585 cy of material was dredged from Range B and Range A and placed along Atlantic Beach and Fort Macon. Fort Macon received 585,067 cy while Atlantic Beach received 522,518 cy, extending from the AB/FMSP boundary west to Freeman Lane.

Due to the poor quality of material removed from Brandt Island during the 2005 pump-out operation, the USACE has indicated the revised DMMP will not include the disposal of the Brandt Island material on the east end of Bogue Banks. USACE sampling of the shoal material throughout the Harbor in preparation of the revised DMMP has identified a portion Range C, all of Range B and the Cutoff, and a portion of Range A to shoal with beach compatible material. Therefore, the material shoaling these sections of the harbor will be targeted for disposal along the Atlantic Beach and Fort Macon shorelines.

5-Year Progress Report: Fill Projects

Since the Commission granted the Town of Atlantic Beach a static line exception in March,

2010, two projects have been constructed placing dredge disposal on Atlantic Beach and Fort Macon State Park (2011 and 2014).

**B. Design of the initial fill projects and past/planned maintenance-
Second factor per 15A NCAC 07J.1201(d)(2)**

Both the Town's original static line exception application report (Town, 2010) and current report (Town, 2015) provides information about the design of the beach fill project for the Town of Atlantic Beach, and how that project has performed in the past, as follows:

Project Performance

The design template for the disposal of the 1986 Brandt Island material along Atlantic Beach included a variable width horizontal berm at elevation +10 ft. NAVD with the material allowed to assume its natural angle of repose seaward of the berm crest. Shortly after placement, vertical scarps became prevalent along the entire beach fill area. The formation of the vertical scarps was attributed to the +10 ft. NAVD elevation of the berm which was about 4 feet above the elevation of normal wave run-up. Subsequent nourishment operations lowered the berm elevation to +6 ft. NAVD which allow normal wave and tide action to overtop the berm thus preventing the formation of vertical scarps. Through the course of a year, tides and wave vary and can produce a natural crest elevation of the berm greater than 6 ft. NAVD which in turn can result in the formation of scarps. However, by lowering the design elevation of the berm, the scarps that do form are normally less than a foot high and are short lived. Figure 3 and Figure 4 show comparative plots of typical profiles along Atlantic Beach beginning in September 1981, prior to the first Brandt Island pump-out in 1986, through June 2014. The profile comparisons show that the beach continues to be maintained well seaward of the 1981 (pre-project) shoreline.

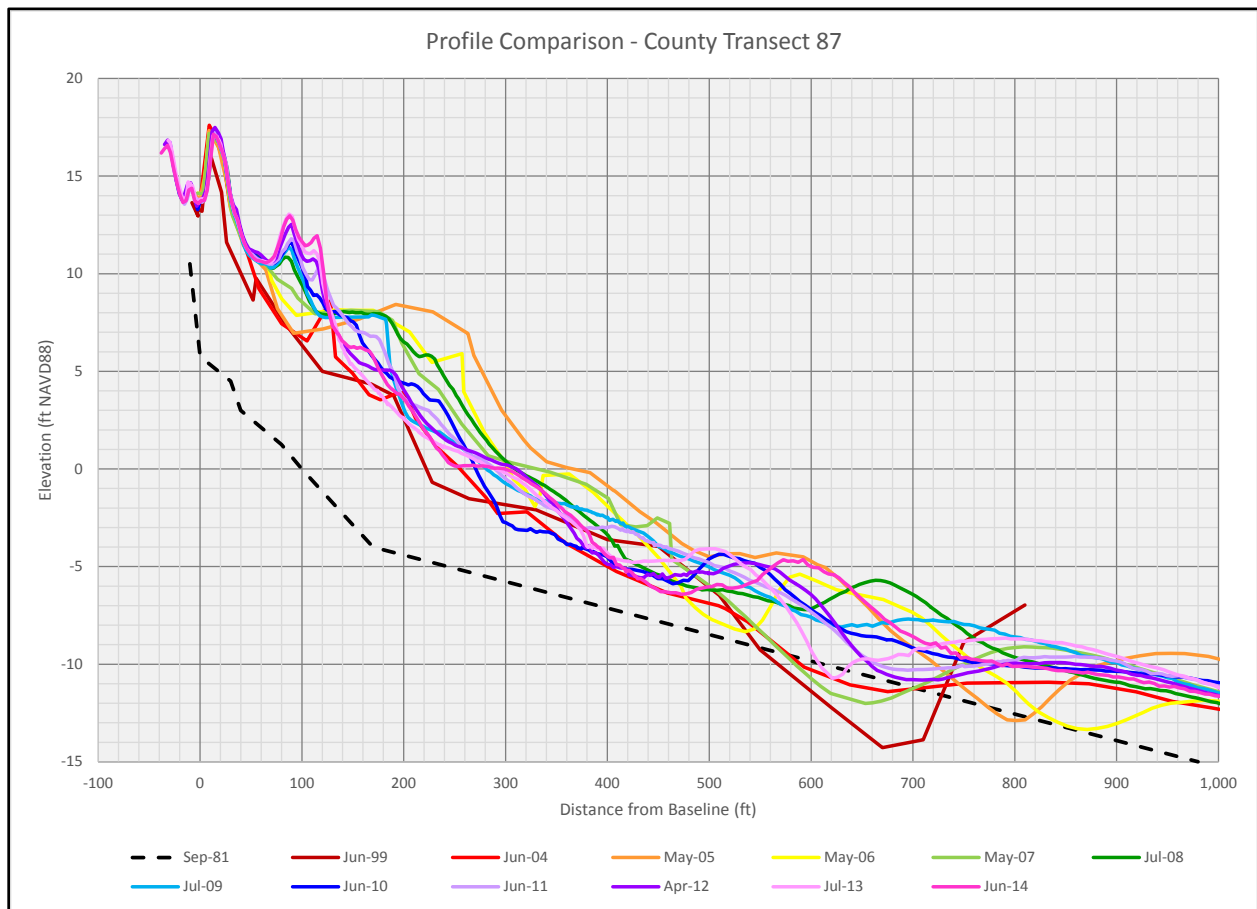


Figure 3. Profile Comparisons for County Transect 87 (Carteret County Shore Protection Office, 2015)

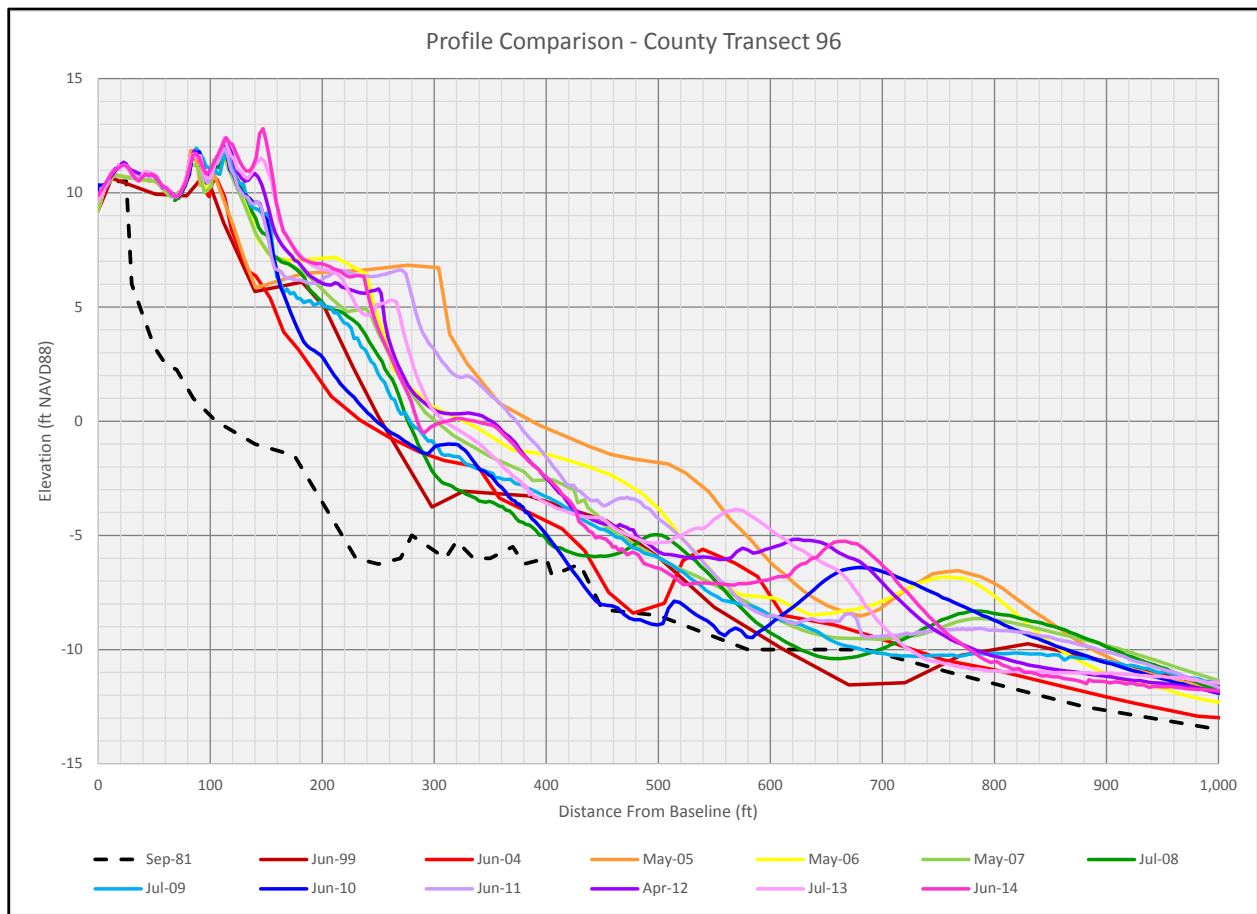


Figure 4. Profile Comparisons for County Transect 96 (Carteret County Shore Protection Office, 2015)

The Bogue Banks Beach and Nearshore Mapping Program, established in 2004, monitors the entire island on an annual basis. Each year, profiles are analyzed to determine gains and losses in material to the system. Among the items analyzed, is the amount of material on the beach, from the peak of the dune to the outer bar at -12 ft. NAVD88. Figure 5 shows the average profile volume from each year of monitoring in addition to an initial survey which was taken in 1999 to assess the state of the beach after the hurricanes of the 1990's in preparation for planning of the Bogue Banks Restoration Project. As can be seen, through the efforts of the Morehead City Harbor federal navigation project, Atlantic Beach has maintained a significant amount of material, well above the historic island wide trigger of 225 cy/ft. and the possible future trigger of 254 cy/ft. if Atlantic Beach were to participate in the Master Plan. This plot also indicates that there is more material in place now than was in place in 2010 when the original static line exception application was approved. It should be noted that Atlantic Beach continues to have the highest profile volumes among the towns which make up Bogue Banks (Emerald Isle, Indian Beach/Salter Path, and Pine Knoll Shores).

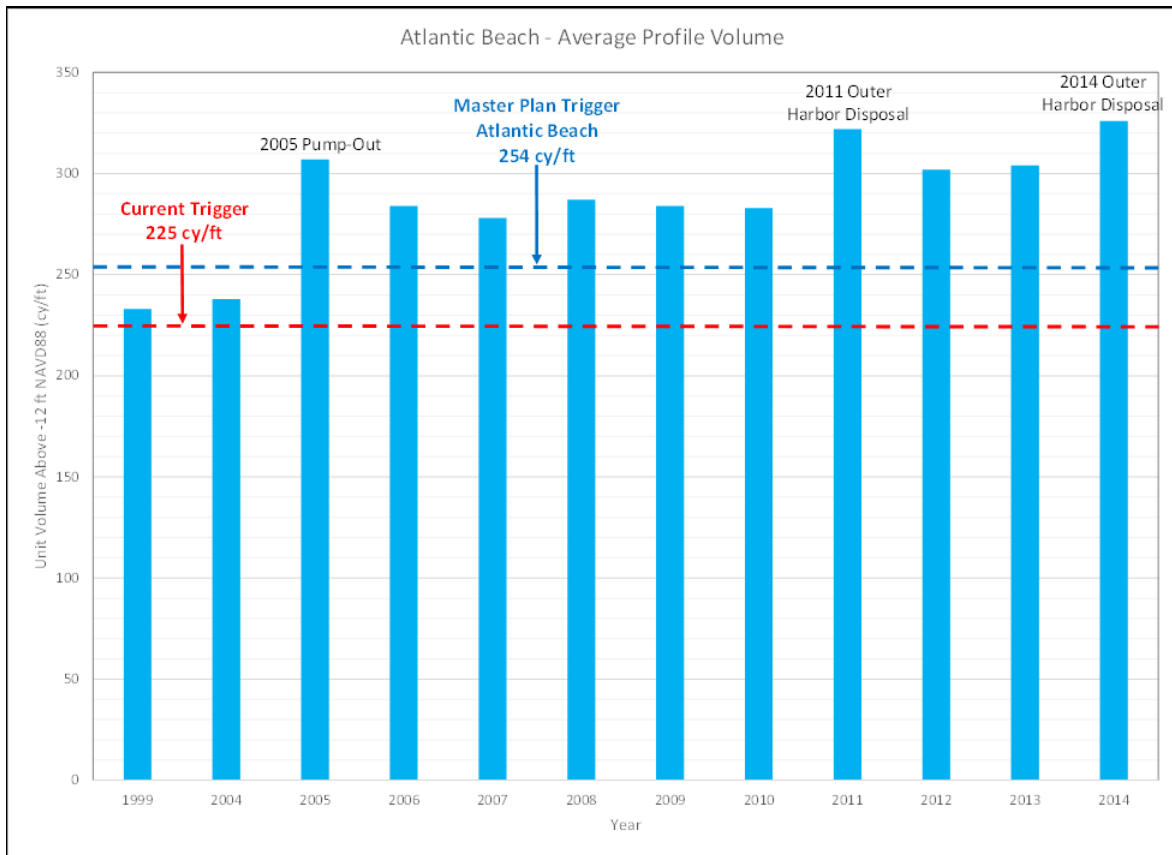


Figure 5 Atlantic Beach Profile Volume (Carteret County Shore Protection Office, 2015)

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 March 2010 by the Commission.

Third factor per 15A NCAC 07J.1201(d)(3)

The Town’s static line exception application report (Town, 2015) provides information about the availability of compatible sediment for future beach fill projects as follows:

Borrow Material Sources

Material removed from navigation channels is considered by the USACE to be compatible with the native material if the silt content (i.e., material with a grain size equal to or less than 0.0625 mm) is less than 10%. This is the same standard adopted by the State for beach nourishment emanating from the maintenance of navigation channels (15A NCAC 07H .0312).

Historically, material from the Inner Harbor (Range B, Range C, and the Turning Basin) has been transferred, stored, and subsequently pumped out of Brandt Island. Based on observations by the local municipalities, the dredged material pumped to Atlantic Beach from Brandt Island has been comprised of sand with a preponderance of mud. These observations are consistent with the provenance of sediments entering the Inner Harbor, which are mostly fine grained. The USACE 2001 Section 111 Report (USACE 2001) estimates that only 69% of Inner Harbor material pumped onto Atlantic Beach and Fort Macon has been beach quality. Material from the Turning Basin and

the northern portion of Range C is generally considered not to be of beach quality while material from the southern portion of Range C and Range B is considered to generally be beach compatible. The Outer Harbor (Range A and the Cutoff) tends to have coarser grained material, which is more similar to the native beach. It is estimated that almost 100% of this material beach quality. Figure 6 shows the compatible and non-compatible portions of the Morehead City Harbor.

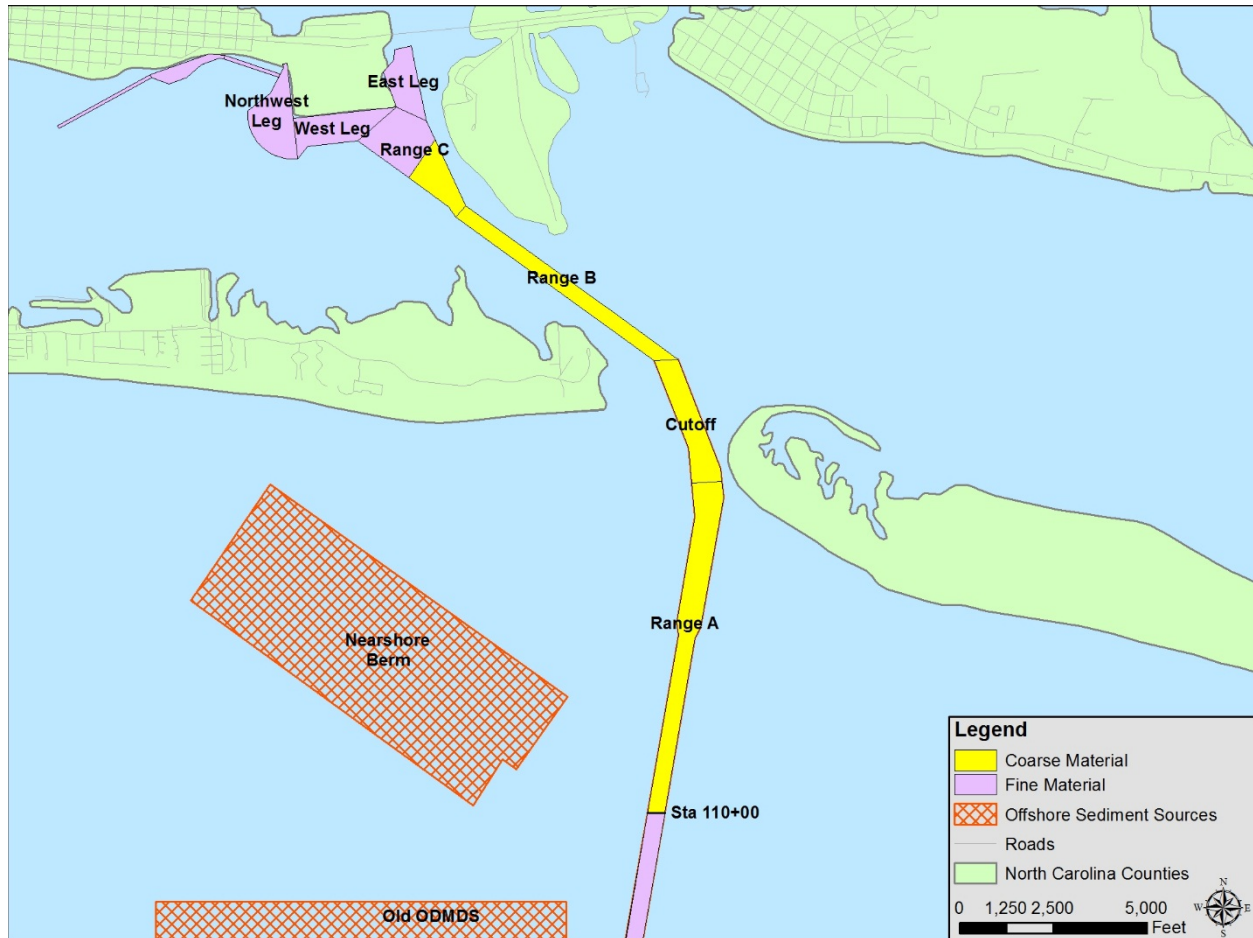


Figure 6 Morehead City Harbor Material Compatibility (Carteret County Shore Protection Office, 2015)

If federal funding were to be eliminated, Atlantic Beach would have the opportunity to participate in the Bogue Banks Master Beach Nourishment Plan. As part of the Bogue Banks Master Beach Nourishment Plan, an extensive sediment sampling program was implemented to verify the compatibility of existing sediment sources, which had been used previously, as well as possibly locate new sources. This was part of the permitting requirements to show the quantity and quality of potential sediment sources for the next 50 yrs. The engineering report identified and quantified the amount of material in upland sources (sand mines), AIWW disposal areas, offshore sources, and inlets. The findings indicate that possible upland sources exist in the amount of 1.4 Mcy while AIWW disposal areas possibly contain up to 1.3 Mcy. Offshore sources consist of the new and old ODMDS as well as some small pockets of material off of Emerald Isle known as Area Y. Together, they contain approximately 22.4 Mcy of compatible material. In addition, both Beaufort Inlet and Bogue Inlet could provide a steady supply of nourishment material from dredging operations over the next fifty years. The periodic dredging of Morehead City Harbor by the USACE could provide approximately 20 Mcy over the next 50 years. The dredging/relocation of Bogue Inlet (approximately every 10 years) and dredging of the AIWW crossing could provide approximately 5.1 Mcy over the next 50 yrs. Therefore, approximately 50.2 Mcy of material has been identified which is considered enough material to meet the 50 year need of 46.8-51.6 Mcy determined in the Bogue

Banks Master Beach Nourishment Plan. Figure 7 shows a summary of the potential sediment sources identified for use over the next 50 years.

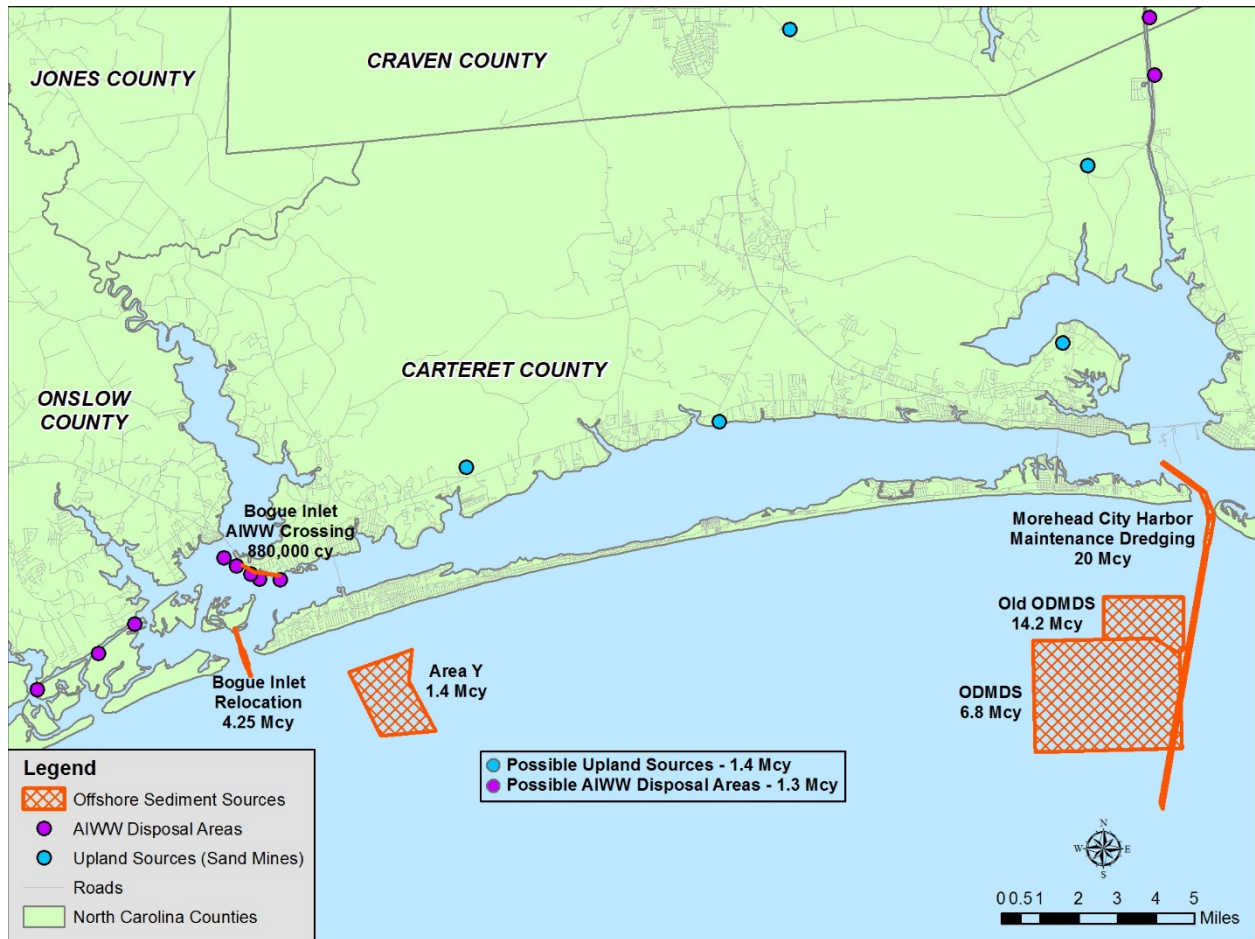


Figure 7 Master Beach Nourishment Plan Potential Sediment Sources (Carteret County Shore Protection Office, 2015)

5-Year Progress Report: Compatible Sediment

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 2010.

C. Financial Resources- Fourth factor per 15A NCAC 07J.1201(d)(4)

The Shore Protection Office is funded 100% by the portion of the County's occupancy tax legislatively mandated for beach nourishment, which was instituted in 2001 via SL 2001-381 and after several changes related to a proposed convention center (SL 2005-120, SL 2007-112), is now codified as SL 2013-223. The county currently has \$9M in reserve, and without any major storms, it is anticipated that 6 years will pass before the next project is needed.

5-Year Progress Report: Financial Resources

Condo/cottage rentals dominate the market on Bogue Banks generating approximately \$3.2 million per year while the hotel/motel sector generates, on average, \$1.3 million per year. The Shore Protection Office is funded 100% by the portion of the County's occupancy tax legislatively mandated for beach nourishment, which was instituted in 2001 via SL 2001-381 and after several changes related to a proposed convention center (SL 2005-120, SL 2007-112), is now codified as SL 2013-223.

The remaining fund balance at the conclusion of each fiscal year is permitted to accrue in a reserve account, commonly referred as the "Beach Fund" in an effort to finance some of the large-scale shore protection projects and efforts. The County's occupancy tax rate was established at 5% overall rate via the enacting legislation (SL 2001-381) and the revenues were previously split 50-50 between beach nourishment and the Tourism Development Authority (TDA), representing a 2.5% overall collection rate for both the TDA and beach nourishment. Beginning in FY 2010-11 as stipulated in SL 2007-112, the TDA begun receiving 3% of the 5% collection and the beach nourishment fund received 2%, which effectively changed the cost share from 50%-50% to 60%-40%. Recent changes in the occupancy tax law have been codified in SL 2013-223, which amended SL 2007-112 to allow the collection of an additional 1% (6% total) with the total proceeds being split 50-50 between the TDA and beach nourishment (or 3% from each). This law also raised the cap of the beach nourishment fund from \$15 M to \$30 M.

Utilizing the annualized volume needs estimated as part of the preferred option and the above unit rates, an annualized estimate of funding need was developed. As can be seen in Table 3, utilizing a 25% Town/75% County split would likely not be sustainable for the County fund because the annual need would be roughly \$3.4 M while \$2.4 M is likely to be generated (~50% of total occupancy tax collections). This scenario also requires less cost share overall from the Towns than is currently being generated. However, a scenario with a 33% Town/67% County cost share was also run and the results look much more equitable between the two funding streams. The annualized need versus funds raised for the Towns is quite close to the current funding levels with the exception of Atlantic Beach which does not currently have a dedicated funding source. However, given the possible range of outcomes from the ongoing DMMP, the numbers in this table could become less or more. As for the County annual need versus funding level, the need is still higher (\$3.1 M vs. \$2.4M) but the fund currently has \$9M in reserve and it is hoped that 6 years will pass before the next project is needed. This should allow adequate time for the reserve to build up to a point to where the County fund is also sustainable long-term. The intra-local agreement signed by all the Towns and County also requires them to meet the funding needs even if new taxes or one-time loans are required. The intra-local agreement can be seen in Appendix B of the Town's 2015 Update Report.

				25% Town/75% County Cost Share			33% Town/67% County Cost Share			
Town	Annual Volume Loss (cy)	% of Total Annual Volume Loss	Avg. Placement Unit Cost Per Town	Annual Town Cost (\$)	Annual County Cost (\$)	% of Total Annual County Cost	Annually Generated Taxes for Beach Nourishment	Annual Town Cost (\$)	Annual County Cost (\$)	% of Total Annual County Cost
Emerald Isle	139,913	31%	\$15.00	\$524,674	\$1,574,021	46%	\$675,000	\$692,569	\$1,406,126	46%
Indian Beach/Salter Path	62,567	14%	\$13.00	\$203,343	\$610,028	18%	\$282,406	\$268,412	\$544,959	18%
Pine Knoll Shores	84,795	19%	\$12.25	\$259,685	\$779,054	23%	\$316,500	\$342,784	\$695,955	23%
Atlantic Beach	164,945	36%	\$4.00	\$164,945	\$494,835	14%	TBD	\$217,727	\$442,053	14%
TOTAL	452,220				\$3,457,938				\$3,089,093	
				Avg. Annual County Tax Generated Over Next 6 Years = \$2,440,664						

Table 1 Annualized Estimate of Funding (Carteret County Shore Protection Office, 2015)

Another aspect of the Atlantic Beach project that makes it unique compared to other beach nourishment projects along Bogue Banks is the disposal of the Morehead City Harbor maintenance and construction

material on the east end of Bogue Banks is accomplished at 100% federal cost, i.e., local cost sharing for the disposal operation is not required. As a result, the Town of Atlantic Beach has relied on federal funding for the MCH navigation project to maintain the beach and has not needed a separate funding source in the past.

The total contribution needed from the Town of Atlantic Beach to assure dredged material is distributed along the entire length of its shoreline over the planning period is estimated to be \$217,727 per year, equal to 33% of the total project cost to cover areas west of the Circle. It should also be noted that predominant sediment transport in the area is east to west and that sediment has rarely been placed in Atlantic Beach west of the Circle.

IV. Staff's Recommendation

The Commission, through 15A NCAC 07J.1204(c), directs Staff to provide a recommendation to the Commission on 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 or included, 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.

ATTACHMENT B: 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.

(f) 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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124 Eff. March 23, 2009.

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.

History Note: Authority G.S. 113A-107; 113A-113(b)(6), 113A-124 Eff. March 23, 2009.

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 lays 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).

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.

- (1) Ocean Beaches. Ocean beaches are lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either:
 - (A) the growth of vegetation occurs, or
 - (B) a distinct change in slope or elevation alters the configuration of the landform, whichever is farther landward.
- (2) Nearshore. The nearshore is the portion of the beach seaward of mean low water that is characterized by dynamic changes both in space and time as a result of storms.
- (3) Primary Dunes. Primary dunes are the first mounds of sand located landward of the ocean beaches having an elevation equal to the mean flood level (in a storm having a one percent chance of being equaled or exceeded in any given year) for the area plus six feet. The primary dune extends landward to the lowest elevation in the depression behind that same mound of sand (commonly referred to as the dune trough).
- (4) Frontal Dunes. The frontal dune is deemed to be the first mound of sand located landward of the ocean beach having sufficient vegetation, height, continuity and configuration to offer protective value.
- (5) Vegetation Line. The vegetation line refers to the first line of stable and natural vegetation, which shall be used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to

constant flux due to waves, tides, storms and wind, and the more stable upland areas. The vegetation line is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. The Division of Coastal Management or Local Permit Officer shall determine the location of the stable and natural vegetation line based on visual observations of plant composition and density. If the vegetation has been planted, it may be considered stable when the majority of the plant stems are from continuous rhizomes rather than planted individual rooted sets. The vegetation may be considered natural when the majority of the plants are mature and additional species native to the region have been recruited, providing stem and rhizome densities that are similar to adjacent areas that are naturally occurring. In areas where there is no stable natural vegetation present, this line may be established by interpolation between the nearest adjacent stable natural vegetation by on ground observations or by aerial photographic interpretation.

- (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. Because the impact of Hurricane Floyd (September 1999) caused significant portions of the vegetation line in the Town of Oak Island and the Town of Ocean Isle Beach to be relocated landward of its pre-storm position, the static line for areas landward of the beach fill construction in the Town of Oak Island and the Town of Ocean Isle Beach, the onset of which occurred in 2000, shall be defined by the general trend of the vegetation line established by the Division of Coastal Management from June 1998 aerial orthophotography.

V. References

(Town 2015 Report) - Moffat & Nichol 2015, Town of Emerald Isle, NC Static Line Exception Application Report, Prepared for the Town of Emerald Isle by Moffat and Nichol, Raleigh, North Carolina

(Town 2010 Report) - CPE 2010, Emerald Isle, NC Static Line Exception Application Report, Prepared for the Town of Emerald Isle by Coastal Planning & Engineering, Wilmington, North Carolina

Carteret County Shore Protection Office Preservation Plan. Retrieved from <http://www.carteretcountync.gov/313/Preservation-Plan>.

TITLE 15A – DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Notice is hereby given in accordance with G.S. 150B-21.2 that the Coastal Resources Commission intends to amend the rule cited as 15A NCAC 07H .0304 and repeal the rule cited as 15A NCAC 07K .0213.

Link to agency website pursuant to G.S. 150B-19.1(c): <http://www.nccoastalmanagement.net/web/cm/proposed-rules>

Proposed Effective Date: *August 1, 2015*

Public Hearings:

Date: *April 28, 2015*

Time: *5:00 p.m.*

Location: *Currituck County, Corolla Public Library, 1123 Ocean Trail, Corolla, NC 27927*

Date: *April 30, 2015*

Time: *1:15 p.m.*

Location: *Dare County Administration Building, Board of Commissioners Meeting Room, 954 Marshall C. Collins Drive, Manteo, NC 27954*

Date: *May 11, 2015*

Time: *5:00 p.m.*

Location: *Carteret County, NC Division of Coastal Management, 400 Commerce Ave, Morehead City, NC 28557*

Date: *May 12, 2015*

Time: *3:00 p.m.*

Location: *Brunswick County, Oak Island Town Hall, 4601 E. Oak Island Drive, Oak Island, NC 28465*

Date: *May 12, 2015*

Time: *7:00 p.m.*

Location: *New Hanover County, New Hanover County Government Center, 230 Government Center Drive, Wilmington, NC 28403*

Date: *May 14, 2015*

Time: *3:00 p.m.*

Location: *Pender County, Surf City Town Hall, 214 N. New River Drive, Surf City, NC 28445*

Date: *May 14, 2015*

Time: *5:00 p.m.*

Location: *Onslow County, Onslow County Public Library, 1330 Highway 210, Sneads Ferry, NC 28460*

Date: *May 19, 2015*

Time: *1:00 p.m.*

Location: *Ocracoke, Ocracoke Volunteer Fire Department, 822 Irvin Garrish Hwy, Ocracoke, NC 27960*

Reason for Proposed Action: *Rules 15A NCAC 07H .0304 outlines the subcategories of Areas of Environmental Concern (AEC) within the broader Ocean Hazard AEC Rule 15 NCAC 07K .0213 is an exemption for single family residences constructed in the High Hazard Flood AEC. The proposed rule change repeals the High Hazard Flood AEC and the corresponding exemption from Coastal Area Management Act permitting requirements. The Coastal Resources Commission (CRC) is proposing to repeal the High Hazard Flood AEC, which is identified as the Velocity Zones on Flood Insurance Rate maps administered by the national Flood Insurance Program (NFIP). Changes to the NFIP and to the NC Building Code parallel the CRC requirements for construction in these areas. Since the CRC has required all residential and commercial structures within the Ocean Hazard AEC to comply with the NC Building Code, including the Coastal and Flood Plain Construction Standards and local flood damage prevention ordinances required by the NFIP, the CRC requirements are no longer necessary.*

Comments may be submitted to: *Braxton Davis, 400 Commerce Ave, Morehead City, NC 28557, phone (252) 808-2808*

Comment period ends: *June 1, 2015*

Procedure for Subjecting a Proposed Rule to Legislative Review: *If an objection is not resolved prior to the adoption of the rule, a person may also submit written objections to the Rules Review Commission after the adoption of the Rule. If the Rules Review Commission receives written and signed objections after the adoption of the Rule in accordance with G.S. 150B-21.3(b2) from 10 or more persons clearly requesting review by the legislature and the Rules Review Commission approves the rule, the rule will become effective as provided in G.S. 150B-21.3(b1). The Commission will receive written objections until 5:00 p.m. on the day following the day the Commission approves the rule. The Commission will receive those objections by mail, delivery service, hand delivery, or*

facsimile transmission. If you have any further questions concerning the submission of objections to the Commission, please call a Commission staff attorney at 919-431-3000.

Fiscal impact (check all that apply).

- State funds affected
- Environmental permitting of DOT affected
- Analysis submitted to Board of Transportation
- Local funds affected
- Substantial economic impact (≥\$1,000,000)
- Approved by OSBM
- No fiscal note required by G.S. 150B-21.4

CHAPTER 07 - COASTAL MANAGEMENT

CHAPTER 07H - STATE GUIDELINES FOR AREAS OF ENVIRONMENTAL CONCERN

SECTION .0300 - OCEAN HAZARD AREAS

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

The ocean hazard AECs contain all of the following areas:

- (1) Ocean Erodible Area. This is the area in which there exists a substantial possibility of excessive erosion and significant shoreline fluctuation. The oceanward boundary of this area is the mean low water line. The landward extent of this area is determined as follows:
 - (a) a distance landward from the first line of stable and natural vegetation as defined in 15A NCAC 07H .0305(a)(5) to the recession line that would be established by multiplying the long-term annual erosion rate times 60, provided that, where there has been no long-term erosion or the rate is less than two feet per year, this distance shall be set at 120 feet landward from the first line of stable natural vegetation. For the purposes of this Rule, the erosion rates are the long-term average based on available historical data. The current long-term average erosion rate data for each segment of the North Carolina coast is depicted on maps entitled "2011 Long-Term Average Annual Shoreline Rate Update" and approved by the Coastal Resources Commission on May 5, 2011 (except as such rates may be varied in individual contested cases, declaratory or interpretive rulings). In all cases, the rate of shoreline change shall be no less than two feet of erosion per year. The maps are available without cost from any Local Permit Officer or the Division of Coastal Management on the internet at <http://www.nccoastalmanagement.net>; and
 - (b) a distance landward from the recession line established in Sub-Item (1)(a) of this Rule to the recession line that would be generated by a storm having a one percent chance of being equaled or exceeded in any given year.
- ~~(2) The High Hazard Flood Area. This is the area subject to high velocity waters (including hurricane wave wash) in a storm having a one percent chance of being equaled or exceeded in any given year, as identified as zone VI-30 on the flood insurance rate maps of the Federal Insurance Administration, U.S. Department of Housing and Urban Development.~~
- ~~(3)~~(2) Inlet Hazard Area. The inlet hazard areas are natural-hazard areas that are especially vulnerable to erosion, flooding and other adverse effects of sand, wind, and water because of their proximity to dynamic ocean inlets. This area extends landward from the mean low water line a distance sufficient to encompass that area within which the inlet shall migrate, based on statistical analysis, and shall consider such factors as previous inlet territory, structurally weak areas near the inlet and external influences such as jetties and channelization. The areas identified as suggested Inlet Hazard Areas included in the report entitled INLET HAZARD AREAS, The Final Report and Recommendations to the Coastal Resources Commission, 1978, as amended in 1981, by Loie J. Priddy and Rick Carraway are incorporated by reference and are hereby designated as Inlet Hazard Areas except for:
 - (a) the Cape Fear Inlet Hazard Area as shown on the map does not extend northeast of the Bald Head Island marina entrance channel; and
 - (b) the former location of Mad Inlet, which closed in 1997.
 In all cases, the Inlet Hazard Area shall be an extension of the adjacent ocean erodible areas and in no case shall the width of the inlet hazard area be less than the width of the adjacent ocean erodible area. This report is available for inspection at the Department of Environment and Natural Resources, Division of Coastal Management, 400 Commerce Avenue, Morehead City, North Carolina or at the website referenced in Sub-item (1)(a) of this Rule. Photo copies are available at no charge.
- ~~(4)~~(3) Unvegetated Beach Area. Beach areas within the Ocean Hazard Area where no stable natural vegetation is present may be designated as an Unvegetated Beach Area on either a permanent or temporary basis as follows:
 - (a) An area appropriate for permanent designation as an Unvegetated Beach Area is a dynamic area that is subject to rapid unpredictable landform change from wind and wave action. The areas in this category shall be designated following studies by the Division of Coastal Management. These areas shall be designated on maps approved by the Coastal Resources Commission and available without cost from any Local Permit Officer or the Division of Coastal Management on the internet at the website referenced in Sub-item (1)(a) of this Rule.

- (b) An area that is suddenly unvegetated as a result of a hurricane or other major storm event may be designated as an Unvegetated Beach Area for a specific period of time. At the expiration of the time specified by the Coastal Resources Commission, the area shall return to its pre-storm designation.

Authority G.S. 113A-107; 113A-107.1; 113A-113; 113A-124.

SUBCHAPTER 07K - ACTIVITIES IN AREAS OF ENVIRONMENTAL CONCERN WHICH DO NOT REQUIRE A COASTAL AREA MANAGEMENT ACT PERMIT

SECTION .0200 - CLASSES OF MINOR MAINTENANCE AND IMPROVEMENTS WHICH SHALL BE EXEMPTED FROM THE CAMA MAJOR DEVELOPMENT PERMIT REQUIREMENT

15A NCAC 07K .0213 SINGLE FAMILY RESIDENCES EXEMPTED FROM THE CAMA PERMIT REQUIREMENTS WITHIN THE HIGH HAZARD FLOOD AREA OF ENVIRONMENTAL CONCERN

~~(a) All single family residences, including associated infrastructure, accessory structures or structural additions to an existing single family structure, constructed within the High Hazard Flood Area of Environmental Concern are exempt from the CAMA permit requirements provided that the development is consistent with all other applicable CAMA permit standards and local land use plans and/or rules in effect at the time the exemption is granted including the following conditions and limitations:~~

- ~~(1) The development shall not be located within the Ocean Erodible or Inlet Hazard Areas of Environmental Concern.~~
- ~~(2) Any building shall be on pilings and comply with the North Carolina Building Code and the local flood damage prevention ordinance as required by the National Flood Insurance Program.~~
- ~~(3) The development does not require any permission, licensing, approval, certification or authorization, licensing or approval from any state or federal agency.~~

~~(b) Prior to commencing any work under this exemption, the Department of Environment and Natural Resources (DENR) representative or local CAMA permitting officer must be notified of the proposed activity to allow on site review. Notification shall be given 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 closest to the development;~~
- ~~(2) the dimensions of the proposed house, driveway, landscaping or other accessory developments proposed on the property; and~~
- ~~(3) a signed AEC hazard notice indicating the property owner is aware of the special risks and conditions associated with development in this area. The DENR representative or local CAMA permitting officer shall provide the applicable notice form to the landowner.~~

~~(c) The applicant for a permit exemption must submit with the request a check or money order payable to the Department of Environment and Natural Resources (DENR) or local permitting authority in the sum of fifty dollars (\$50.00).~~

Authority G.S. 113A-103(5)(a); 113A-113(b)(6); 113A-118(d)(2); 113A-119.1.

Fiscal Analysis

Repeal of High Hazard Flood AEC
Amendments to 15A NCAC 7H .0304(2) and 15A NCAC 7K .0213

Prepared by

Mike Lopazanski
NC Division of Coastal Management
(252) 808-2808 Ext. 223

September 17, 2014

Basic Information

Agency	DENR, Division of Coastal Management (DCM) Coastal Resources Commission
Title	AECs Within Ocean Hazard Area – The High Hazard Flood Area; Single Family Residences Exempted From the CAMA Permit Requirements Within the High Hazard Flood Area of Environmental Concern
Citation	15A NCAC 7H .0304(2) and 15A NCAC 07K .0213
Description of the Proposed Rule	07K. 0304 outlines the subcategories of Areas of Environmental Concern (AEC) within the broader Ocean Hazard AEC. Rule 07K .0213 is an exemption for single family residences constructed in the High Hazard Flood AEC. The proposed rule changes repeals the High Hazard Flood AEC and the corresponding exemption from Coastal Area Management Act permitting requirements.
Agency Contact	Mike Lopazanski, Policy & Planning Section Chief Mike.Lopazanski@ncdenr.gov (252) 808-2808 ext 223
Authority	113A-107; 113A-107.1; 113A-113; 113A-124
Impact Summary	State government: Yes Local government: Yes Substantial impact: No Private entities: Yes
Necessity	The Coastal Resources Commission (CRC) is proposing to repeal the High Hazard Flood AEC, which is identified as the Velocity Zones on Flood Insurance Rate Maps administered by the National Flood Insurance Program (NFIP). Changes to the NFIP and to the NC Building Code parallel the CRC requirements for construction in these areas. Since the CRC has required all residential and commercial structures within the Ocean Hazard AEC to comply with the NC Building Code, including the Coastal and Flood Plain Construction Standards and local flood damage prevention ordinances required by the NFIP, the CRC requirements are no longer necessary. Also, the agency is repealing the corresponding exemption for single family residences from Coastal Area Management Act permitting requirements. These changes are consistent with G.S. 150B-19.1(b) which requires agencies to identify existing rules that are unnecessary, unduly burdensome, or inconsistent with the principles set forth in 150B-19.1(a) and modify them to reduce regulatory burden.

Summary

The High Hazard Flood (HHF) AEC, identified as the V-Zones on Flood Insurance Rate Maps (FIRM), was established by the Commission Resources Commission (CRC) in 1979 with the intent of providing consistency in construction standards with those of the National Flood Insurance Program (NFIP). Since that time, the CRC has required all residential and commercial structures within the Ocean Hazard AEC (which includes the HHF AEC) to comply with the NC Building Code, including the Coastal and Flood Plain Construction Standards and local flood damage prevention ordinances required by the NFIP, and to be supported by pilings.

The NC Building Code sets standards for piling-supported buildings within Coastal High Hazard Flood Areas (NFIP V-Zones), Ocean Hazard Areas (CRC AEC) and Flood Plain Areas (US Army Corps of Engineers). Typical single family structures must comply with the NC Building Code and local flood damage prevention ordinances in these areas as required by the NFIP.

Single-family residences located in the HHF AEC are currently exempted from CAMA permit requirements (15A NCAC 7K .0213) provided that they are not within the Ocean Erodible or Inlet Hazard AECs, are constructed on pilings and comply with the NC Building Code and local flood damage prevention ordinances as required by the NFIP. A \$50 fee for the issuance of an exemption letter is usually paid to the local permitting authority or to the Division of Coastal Management if there is not a local Coastal Area Management Act (CAMA) permitting program in the jurisdiction.

Since the CRC rules defer to the NC Building Code and require adherence to NFIP and local flood prevention standards, the Commission is proposing to repeal the High Hazard Flood AEC. This would remove approximately 10,000 properties from CRC permitting jurisdiction under the HHF AEC. It should be noted that since the V-Zones can extend to the soundside of some areas, not all properties would be completely removed from all CAMA permitting jurisdiction as the Coastal Shorelines AEC and its associated development standards would still apply in these areas. A repeal of the HHF AEC would also not affect the permitting jurisdiction of the remaining Ocean Hazard AECs (Ocean Erodible & Inlet Hazard) and would not affect the setback requirements associated with oceanfront development.

The amendments to 15A NCAC 7H .0304(2) and 15A NCAC 7K .0213 would apply to property owners within the CRC's Ocean Hazard AEC that are located solely within the V-Zones as designated on FEMA FIRMs. These properties would no longer be subject to CAMA permit requirements. Property owners would only need to comply with The NC Building Code standards for piling-supported buildings within Coastal High Hazard Flood Areas (NFIP V-Zones), Flood Plain Area standards set by the US Army Corps of Engineers and local flood damage prevention ordinances as required by the NFIP.

The Division of Coastal Management and local permitting programs issued 119 Exemptions for single family structures within the HHF AEC over the past five years or an average of 24 per

year. The cost of the Exemption is \$50. The Division has also issued five (5) CAMA Major Permits over the past five years or an average of one (1) per year at a cost of \$400 per Major permit.

The economic impacts of this proposed rule change are potential financial benefits to property owners, who would no longer need to apply for a CAMA permit Exemption under 15A NCAC 7K .0213 or a CAMA Major Permit. Total financial benefits will be approximately \$1,600 per year. Assuming an annual maximum savings of \$1,600 the 10-year present value of the benefits of the proposed rule change to property owners is approximately \$11,000 using a 7% discount rate.

These amendments will have no impact on NC Department of Transportation (NC DOT) projects as DCM Staff estimate the number of NC DOT permits solely in the HHF AEC to be negligible. While NC DOT would be eligible for the Exemption under 15A NCAC 7K .0213, it is unlikely that NC DOT would be involved in the construction of a single family residence. There will be a \$200 per year net savings to the Division of Coastal Management due to a reduction in the reimbursement rates paid to local governments for processing Exemptions. There will be a loss of \$1,800 in permit receipts and reimbursements to local governments.

The proposed effective date of these amendments is April 1, 2015.

Introduction and Purpose

The Coastal Area Management Act (CAMA) requires permits for development in Areas of Environmental Concern (AEC) as designated by the Coastal Resources Commission (CRC). AECs are the foundation of the CRC's permitting program for coastal development and are defined in CAMA (G.S. 113A-113) as areas of natural importance that may be susceptible to erosion or flooding; or may have environmental, social, economic, or aesthetic values that make it valuable to the state. The CRC classifies areas as AECs to protect them from incompatible development that may cause irreversible damage to property, public health, or the environment. AECs cover almost all coastal waters and about three percent of the land in the 20 coastal counties.

The CRC has established four broad categories of AECs:

- The Estuarine and Ocean System;
- The Ocean Hazard System;
- Public Water Supplies; and
- Natural and Cultural Resource Areas.

The Ocean Hazard System is comprised of oceanfront lands and the inlets that connect the ocean to the sounds. The CRC has designated three subcategories within the ocean hazard AEC:

1. **The Ocean Erodible AEC** (15A NCAC 7H .0304(1)) covers North Carolina's beaches and any other oceanfront lands that are subject to long-term erosion and significant shoreline changes. The seaward boundary of this AEC is the mean low water line. The landward limit of the AEC is measured from the first line of stable natural vegetation and is determined by adding a distance equal to 60 times the long-term, average annual erosion rate for that stretch of shoreline, to the distance of erosion expected during a major storm (100-year storm).

2. *The High Hazard Flood AEC* (15A NCAC 7H .0304(2)) covers lands subject to flooding, high waves, and heavy water currents during a major storm. These are the lands identified as coastal flood with velocity hazard, or "V zones," on flood insurance rate maps prepared by FEMA. The high hazard flood AEC often overlaps with the ocean erodible and inlet hazard AECs.

3. *The Inlet Hazard AEC* (15A NCAC 7H .0304(3)) covers the lands next to ocean inlets. Each area is mapped based on a statistical analysis of inlet migration, previous inlet locations, narrow or low lands near the inlet, and the influence of man-made features, such as jetties and channel dredging projects.

The High Hazard Flood (HHF) AEC was not one of the original AECs adopted by the CRC in 1977. The HHF AEC was established by the Commission in 1979 after reviewing implementation of existing AECs, with the intent of providing consistency in construction standards with those of the National Flood Insurance Program (NFIP). Since that time, the CRC has required all residential and commercial structures within the Ocean Hazard AEC (which includes the HHF AEC) to comply with the NC Building Code, including the Coastal and Flood Plain Construction Standards and local flood damage prevention ordinances required by the NFIP, and to be supported by pilings. The intent of the rule was to allow for foundation stability during major storm events when the ocean shoreline could move significantly inland for a period of time. During these periods, scour could cause concrete slab or block foundation supported buildings to collapse. In some areas, these requirements were more stringent than the NC Building Code.

After the hurricanes of the 1990's, FEMA updated the Flood Insurance Rate Maps (FIRM) for many coastal barrier island communities. This update resulted in expansion of the velocity zones, and in doing so, expanded the permitting jurisdiction of the CRC since the HHF AEC is identified as the V-Zones on the FIRM. The NC Building Code sets standards for piling-supported buildings within Coastal High Hazard Flood Areas (NFIP V-Zones), Ocean Hazard Areas (CRC AEC) and Flood Plain Areas (US Army Corps of Engineers). Typical single family structures must comply with the NC Building Code and local flood damage prevention ordinances in these areas as required by the NFIP.

Single-family residences located in the HHF AEC are currently exempted from CAMA permit requirements (15A NCAC 7K .0213) provided that they are not within the Ocean Erodible or Inlet Hazard AECs, are constructed on pilings and comply with the NC Building Code and local flood damage prevention ordinances as required by the NFIP. No other HHF AEC-specific development standards are required; however, the property owner must sign an AEC "hazard notice" acknowledging that special risks and conditions associated with development in this area. A \$50 fee for the issuance of an exemption letter is usually paid to the local permitting authority or to the Division of Coastal Management if there is not a local CAMA permitting program in the jurisdiction.

Since the Commission's rules defer to the NC Building Code and require adherence to NFIP and local flood prevention standards, the CRC is proposing to repeal the High Hazard Flood AEC. This would remove approximately 10,000 properties from CRC permitting jurisdiction under the

HHF AEC. It should be noted that since the V-Zones can extend to the soundside of some areas, not all properties would be completely removed from all CAMA permitting jurisdiction as the Coastal Shorelines AEC and its associated development standards would still apply in these areas. A repeal of the HHF AEC would also not affect the permitting jurisdiction of the remaining Ocean Hazard AECs (Ocean Erodible & Inlet Hazard) and would not affect the setback requirements associated with oceanfront development.

Description of Rule Amendment

Subchapter 15A NCAC 7H of the Coastal Resources Commission's rules outline the state guidelines for Areas of Environmental Concern (AEC), including the provision for AECs and their associated development standards. 15A NCAC 7H .0300 establishes the Ocean Hazard category of AEC with 15A NCAC 7H .0304(2) designating the High Hazard Flood AEC as the "...area subject to high velocity waters (including hurricane wave wash) in a storm having a one percent chance of being equaled or exceeded in any given year, as identified as zone V1-30 on the flood insurance rate maps of the Federal Insurance Administration, U.S. Department of Housing and Urban Development." Repealing 15A NCAC 7H .0304(2) will remove approximately 10,433 properties from CRC permitting requirements. With the repeal of the High Hazard Flood AEC, the exemption for single family residence under 15A NCAC 7K .0213 is unnecessary.

Cost or Neutral Impacts

Private Property Owners:

The proposed rule amendments would apply to property owners solely within V-Zones as designated by FEMA and the National Flood Insurance Program. Specifically, property owners seeking to build single family residences in these areas would no longer need a CAMA permit exemption.

Over the past five years, a total of 119 Exemptions have been issued under 15A NCAC 7K .0213 for an average of approximately 24 per year. The average number of applications for the Exemption over this timeframe is considered to be typical and it is assumed that there would continue to be 24 Exemptions issued in the future absent the rule change.

In order to estimate the potential cost savings to property owners, it is assumed that 24 property owners per year would not have to pay the \$50 exemption fee resulting in an estimated savings of \$1,200 in permit fees per year. Property owners will also likely see a benefit in the form of reduced time spent applying for an Exemption under 15A NCAC 7K .0213.

With regard to other CAMA Permits, the Division has issued five (5) Major Permits for development solely within the High Hazard Flood AEC over the past five (5) years for an average of one (1) Major Permit per year. The average number of applications for Major Permits over this timeframe is considered to be typical and it is assumed that there would continue to be one (1) Major Permit issued per year in the future.

In order to estimate the potential cost savings to property owners relative to Major CAMA Permit, it is assumed that one (1) property owner per year would not have to pay the typical \$400 fee resulting in an estimated savings of \$400 in permit fees per year. Property owners will also

likely see a benefit in the form of reduced time spent applying for a Major Permit which can take up to 75 days to be issued.

When the permit fee cost savings associated with the permit exemption for single family structures is added to the permit fee savings associated with CAMA Major Permits, there is an estimate annual savings of \$1,600, plus time savings, per year to property owners currently within the High Hazard Flood AEC.

NC Department of Transportation (NC DOT):

Pursuant to G.S. 150B-21.4, the proposed amendments to 15A NCAC 7H .034(2) will not affect environmental permitting for the NC DOT. While it is possible that NC DOT would apply for a permit solely within the HHF AEC, DCM Staff have determined that the number of NC DOT CAMA permits over the past ten years has been negligible. While NC DOT would be eligible for the 15A NCAC 7K .0213 Exemption and its associated uses, it is unlikely that NC DOT will be involved in such a project.

Local Government:

While local governments would be eligible for the exemption and its associated uses, they are typically not involved in these types of projects. In the past five years, there have been no local government projects involving the single family residence exemption. However, the CAMA Minor Permit Program is administered by local governments that have CRC approved Implementation and Enforcement Programs. Local governments collect the \$50 fee associated with the 7K .0213 Exemption. Local governments are also reimbursed by the Division \$25 per exemption processed. The elimination of the AEC and the corresponding Exemption is anticipated to result in a decrease in permitting receipts to local governments participating in the Minor Permitting Program of \$1,200 and decreased reimbursements from the Division of \$600 for a net loss in permit fees and reimbursements of \$1,800 per year.

Division of Coastal Management (DCM):

The Division of Coastal Management reimburses local governments for administration of the Minor Permit Program at a rate of \$25 per exemption. The repeal of the High Hazard Flood AEC and elimination of the corresponding Exemption under 7K .0213 will result in a savings to the Division of \$600 in reimbursement costs (\$25 per Exemption, 24 Exemptions per year) to local governments for issuing Exemptions. The Division will also see a reduction of \$400 per year in Major Permit fees (one Major Permit per year at \$400) resulting in a net savings to the Division of \$200 per year.

These amendments do not reflect significant changes in how various projects are reviewed or permitted by the Division of Coastal Management, and the Division does anticipate significant changes in permitting receipts due to the proposed action.

Cost/Benefits Summary

Property Owners:

The amendments to 15A NCAC 7H .0304(2) and 15A NCAC 7K .0213 would apply to property owners within the CRC's Ocean Hazard AEC that are located solely within the V-Zones (High Hazard Flood AEC) as designated on FEMA FIRMs. These properties would no longer be

subject to CAMA permit requirements. The Division of Coastal Management estimates that approximately 24 permit Exemptions and one CAMA Major Permit per year are issued within the High Hazard Flood AEC. When the permit fee cost savings associated with the permit exemption for single family structures (\$1,200 total) is added to the permit fee savings associated with CAMA Major Permits, there is an estimate annual savings of \$1,600 in permit fees per year to property owners currently within the High Hazard Flood AEC.

The economic impacts of this proposed rule change are potential financial benefits to property owners, who may experience a \$50 to \$400 savings in permit fees. Total financial benefits will be approximately \$1,600 each year. Assuming an annual maximum savings of \$1,600 the 10-year present value of the benefits of the proposed rule change to property owners is approximately \$11,000, using a 7% discount rate.

Table 1. Fiscal Impact Summary

Affected Party	Cost/Year	Savings/Year	Total/Year
Property Owners	\$0	\$1,600	\$1,600
NC DOT	\$0	\$0	\$0
Local Governments	\$1,800	\$0	-\$1,800
Division of Coastal Mgmt	\$400	\$600	\$200



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

MEMORANDUM

CRC 15-11

TO: Coastal Resources Commission

FROM: Frank Jennings, District Manager, Northeastern District
Division of Coastal Management

SUBJECT: Sandbags and Beach Fill Projects

At the last meeting, the Commission was given a presentation by Mike Lopazanski about the history of sandbags and how the Division has implemented the rules of the Commission regarding sandbags. Following the Commission meeting the Division received an inquiry about sandbags and beach nourishment projects. Specifically it was asked if private property owners can contribute to either dredge spoil projects or beach nourishment in order to allow the covering of sandbags or infill to add more sand to beach areas. A goal, in this case, is to have the bags covered when a nourishment project is in progress. DCM staff agree this may be possible through contractual arrangements with the project sponsor. However, there are several related issues/rules for discussion involved with this request and a presentation will be made at the April meeting with a focus on sandbag permit conditions, existing rule language and implementation issues.



North Carolina Department of Environment and Natural Resources

Pat McCrory
GovernorDonald R. van der Vaart
Secretary

April 15, 2015

MEMORANDUM

TO: Coastal Resources Commission

FROM: Tancred Miller
Division of Coastal Management

SUBJECT: Use of Geotextile Sandbags for Temporary Erosion Control Structures

At your February meeting, Spencer Rogers presented to you about problems he perceived with enforcing your sandbag regulations, and proposed geotextile mono-tubes as an alternative that he believes could resolve some of the problems. The challenges that Spencer identified with the existing rules were trouble enforcing the six-foot height limit, the large footprint created by a 20-foot base, the amount of debris created when bags are damaged or destroyed, the cost to install multiple bags, and the difficulties in enforcing removal after permits have expired.

The February presentation was largely similar to a presentation that Spencer made to the CRC on this subject in July 2010. Following the July 2010 meeting staff discussed Spencer's concerns with the existing rules, and researched the pros and cons of geotextile mono-tube structures. Staff presented those findings to the CRC at their September 2010 meeting, comparing the existing multi-bag approach to the mono-tube alternative. At that time, staff's position was that the unknowns associated with mono-tube performance on the beach were significant enough that that they should be tried first via the variance process, should willing property owners be willing to test them. Assuming the test tubes perform satisfactorily over a period time, an amendment to the CRC's rule on sandbag dimensions would be justified.

Staff's position is the same as in 2010, that applications to install geotextile tubes are best evaluated through the variance process at this time. Staff will have a presentation on this topic at your April meeting.