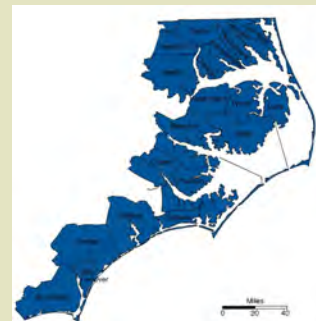




The CAMA and Barrier Island Development



**Tara MacPherson
District Manager
North Carolina Division Of Coastal Management (DCM)
Wilmington**





DCM Aerial
Surveillance
Figure 8 Island



CAMA ...

Balances competing coastal pressures through development
permitting under the rules of the CRC.

When does development on a
Barrier Island trigger a CAMA
Permit??



Division of Coastal Management (DCM)

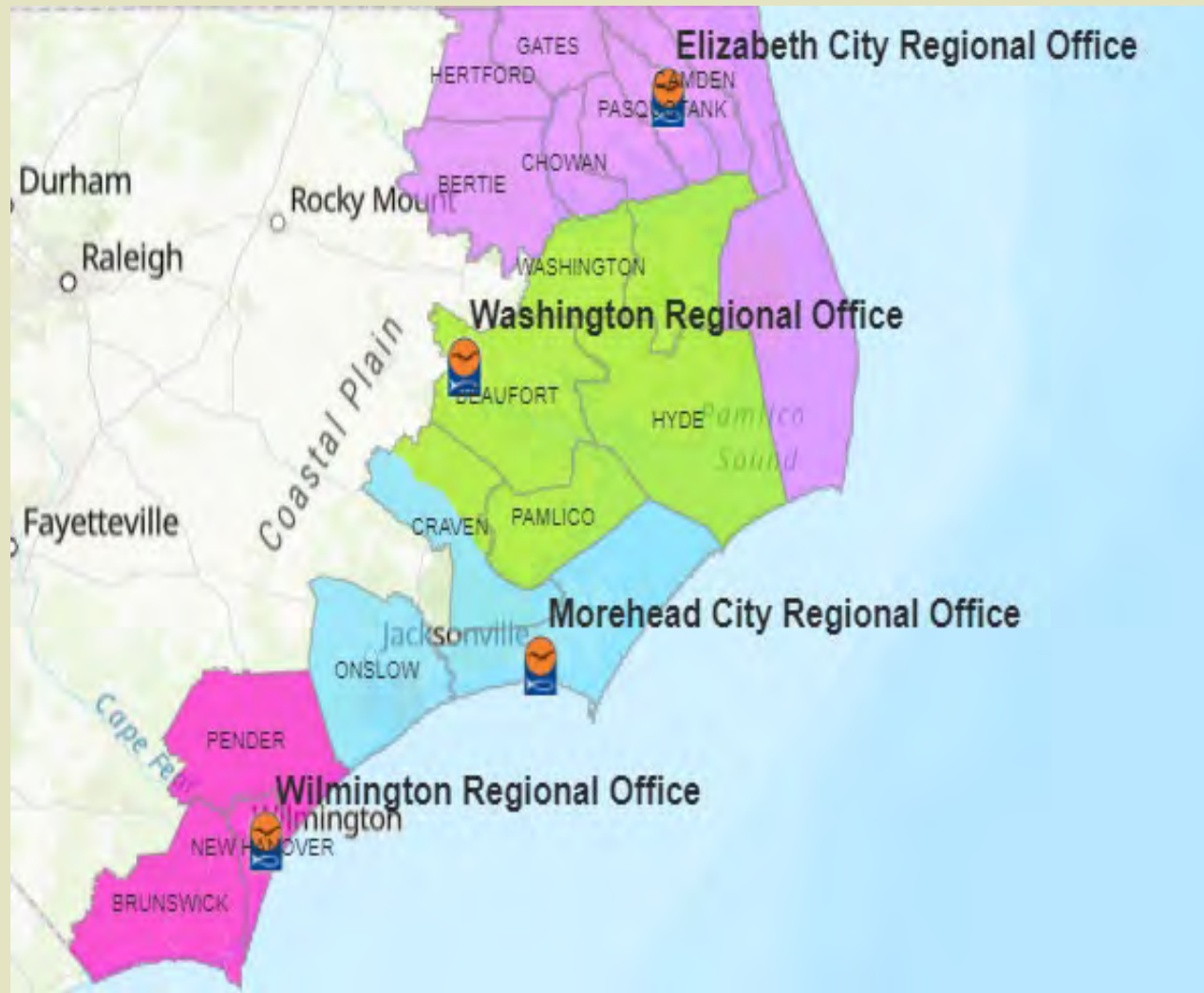
The DCM carries out:

- NC Dredge and Fill Law of 1969
- Coastal Zone Management Act of 1972
- The State's Coastal Area Management Act (CAMA) of 1974

...in the 20 coastal counties, using rules and policies of the N.C. Coastal Resources Commission, known as the CRC. The division serves as staff to the CRC.



CAMA Counties



**DCM has four different
field offices**



Areas of Environmental Concern (AECs)

Ocean Hazard Areas

- Ocean Erodible Area
- Inlet Hazard Area
- Unvegetated Beach Area



Estuarine System

- Public trust waters and submerged lands, estuarine waters, coastal wetlands, and coastal (non-ocean) shorelines
- Estuarine Shoreline Areas





CAMA Permits are required if you are undertaking development in an AEC:

Any activity in an AEC involving, requiring, consisting of the construction or enlargement of a structure; excavation; dredging; filling; dumping; removal of clay, silt, sand, gravel or minerals; bulkheading, driving of pilings; clearing or alteration of land as an adjunct of construction; alteration or removal of sand dunes; alteration of the shore, bank, or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake, or canal.



Ocean Hazard AECs

Ocean Erodible Area



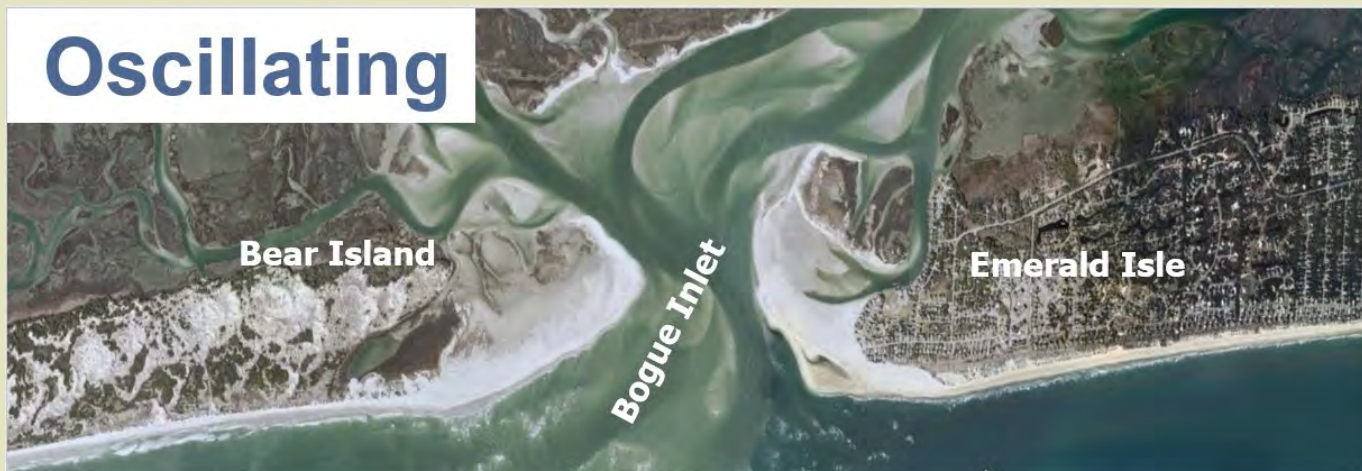
Holden Beach, NC

8/10/2020 8:36



Inlet Hazard Areas

Oscillating



Migrating





Inlet Hazard Areas (IHA)

Areas especially vulnerable to erosion and flooding due to proximity to ocean inlets





Unvegetated Beach Area



Oak Island, NC
Post- Hurricane Isaias

8/10/2020 8:33



Ocean Erodeable AEC:

How to determine the AEC: Long term annual erosion rate X 90.

-With a 2 ft. erosion rate the AEC extends 180 ft. from the FLSNV.

****Example: 2 ft. erosion rate 2 ft./yr. x 90 – 180 ft. AEC from FLSNV**





Ocean Erodible Area Setbacks & Frontal Dune Systems

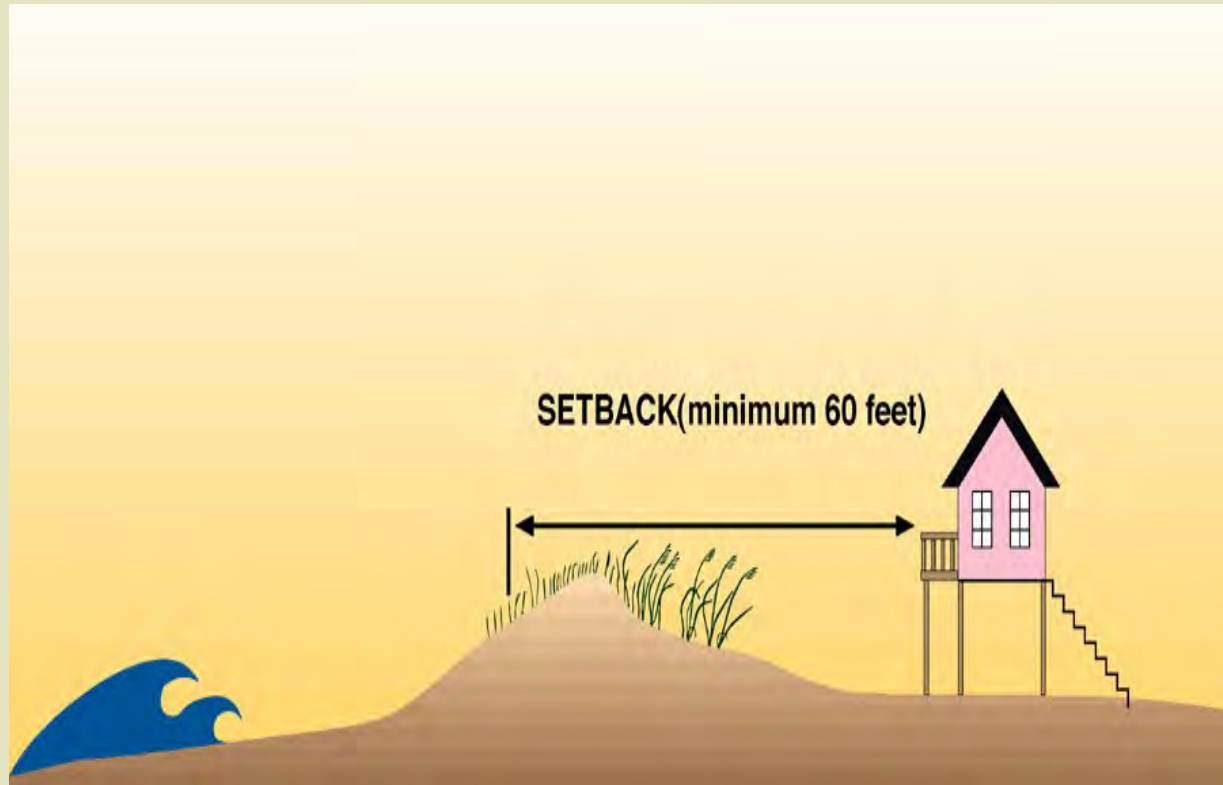
*How to determine
building setbacks:*

*Multiply the Long Term
annual erosion rate x
30.*

Example:

**Erosion rate is 2 ft. / yr.
x 30 = 60 ft. building
setback for a home
<5000 sq. ft.**

****Pulled from FLSNV or
defined Pre-Project
Vegetation Line!**





DCM MAP VIEWER

NC Interactive Maps & Data | NC



deq.nc.gov/about/divisions/division-coastal-management/interactive-maps-data#Tab-InteractiveMaps-11413

Gmail YouTube Imported Home - INTEGRATE... Apps - Dynamics 365 Organization banne... Switzerland Inn | Sta... Maps Fion Ferry Schedule NC High Peaks Mou... Sign In | Costco Laserliche Public Se... Vantaca Home All Bookmarks

FRAUD ALERT
Be aware of multiple fraudulent text scams requesting payment for NCDMV fees, fines or tolls. NCDMV will NEVER request payment by text. Please report it as spam and delete. [Learn More](#)

An official website of the State of North Carolina [How you know](#)

NC.GOV AGENCIES JOBS SERVICES [Select Language](#)

 Divisions AccessDEQ Outreach & Education Energy & Climate News About 

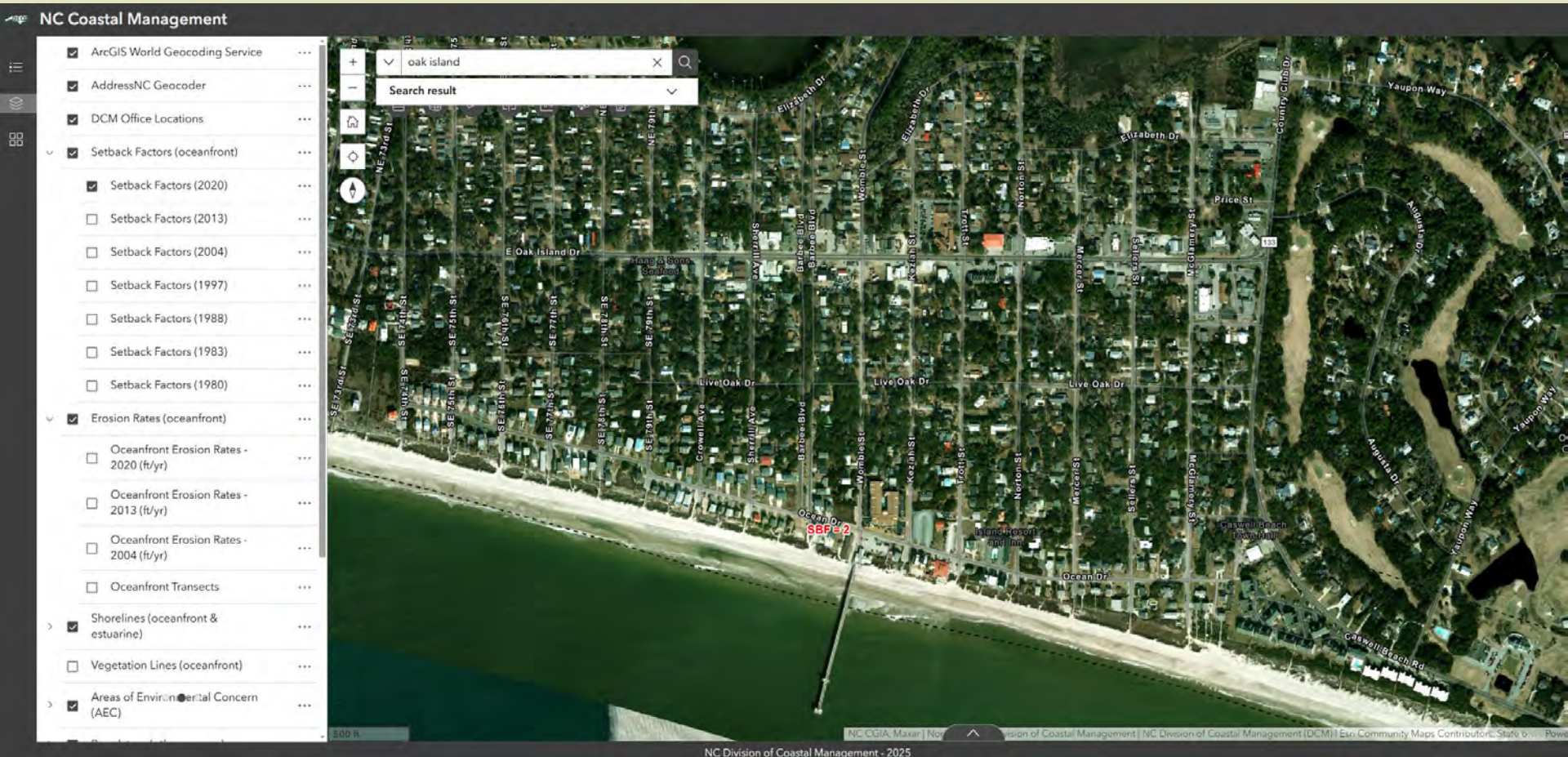
Home > About > Divisions > Division of Coastal Management > Coastal Management GIS Data

Interactive Maps & Data

What is GIS? **Interactive Maps** GIS Data

- [DCM Interactive Map Viewer](#)
- [N.C. Beach & Waterfront Access](#)
- [NC Coastal Access Grant Dashboard](#)
- [Find a Field Rep](#)
- [Resilient Coastal Communities Dashboard](#)
- [Clean Marina Program](#)

NC DCM setback and erosion rates are online!





FLSNV – Location 7H .0305(5)

- Most commonly found at the boundary between dry-sand beach and more stable upland areas





FLSNV – Vegetative Species

Sea Oats





FLSNV – Vegetative Species

American Beach Grass



Bitter Panicum





Frontal Dunes

- **Per 7H.0305(4)**
 - The first mound of sand that has stable & natural vegetation (FLSNV).



Division of Coastal Management



DCM Staff Photo

Division of Coastal Management



DCM Staff Photo

**Division of
Coastal Management**



DCM Staff Photo

“Oceanfront Construction Setbacks – 101”



Static Vegetation Lines: How do you get one?



Pre-Project Line

Setback
Line

Defined large-scale beach
fill project: *"greater than
300,000 cubic yards"*



180 Ft. AEC

60 ft.
setback

60 ft.
setback

Pre -Project Line

FLSNV

© 2016 Google

Google earth

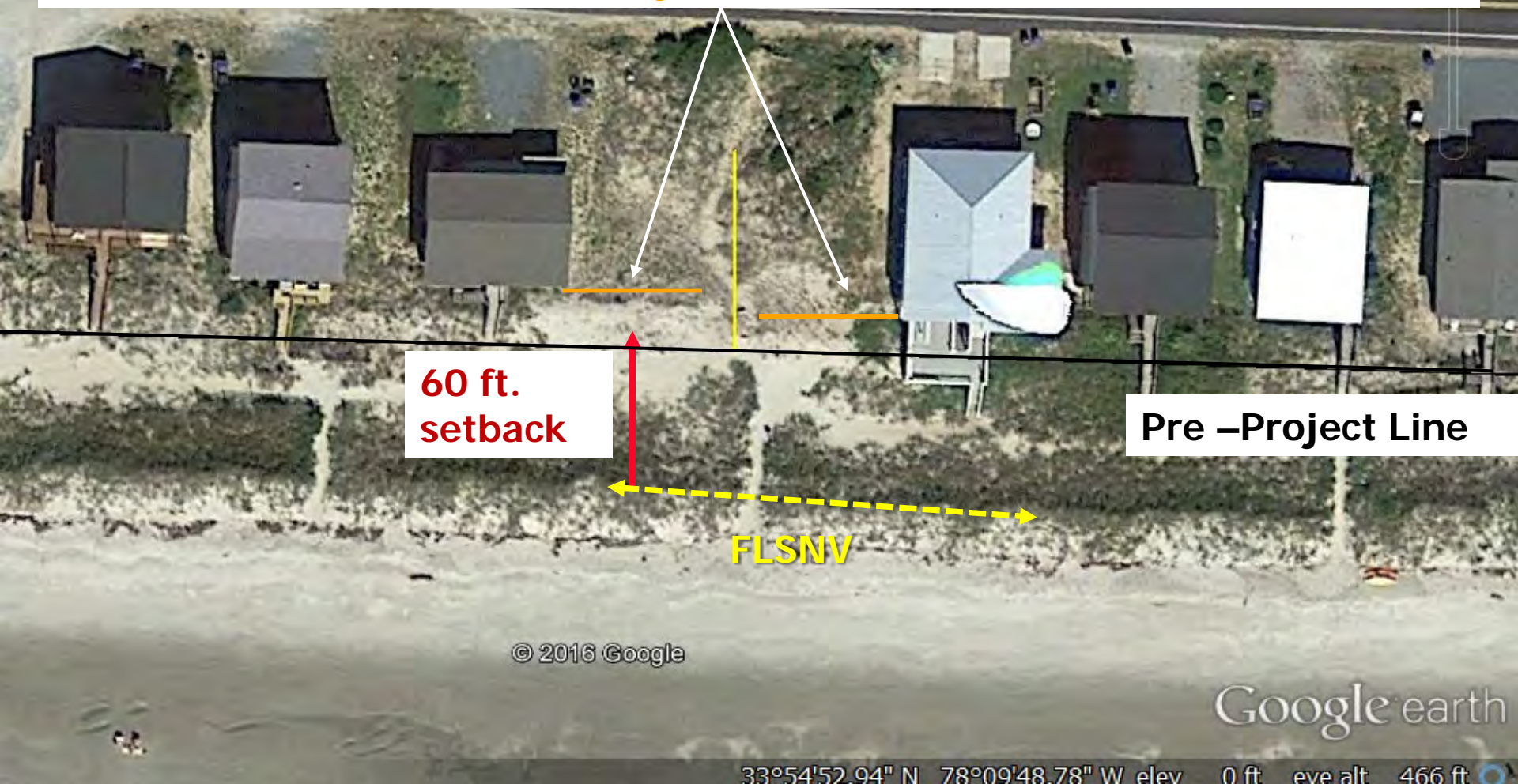
33°54'52.94" N 78°09'48.78" W elev 0 ft eye alt 466 ft



Beach Management Plan - 15A NCAC 07H .0306 GENERAL USE STANDARDS FOR OCEAN HAZARD AREAS

- A local government, group of local governments involved in a regional beach fill project, or qualified "owners' association" as defined in G.S. 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 mile of ocean shoreline, may petition the Coastal Resources Commission for approval of a "Beach Management Plan" in accordance with 15A NCAC 07J .1200.
- If the request for a Beach Management Plan is approved, the Coastal Resources Commission shall allow development setbacks to be measured from a vegetation line that is oceanward of the pre-project vegetation line.

****New structure cannot extend any further waterward than the landward most adjacent structure****



**60 ft.
setback**

Pre -Project Line

FLSNV

© 2016 Google

Google earth

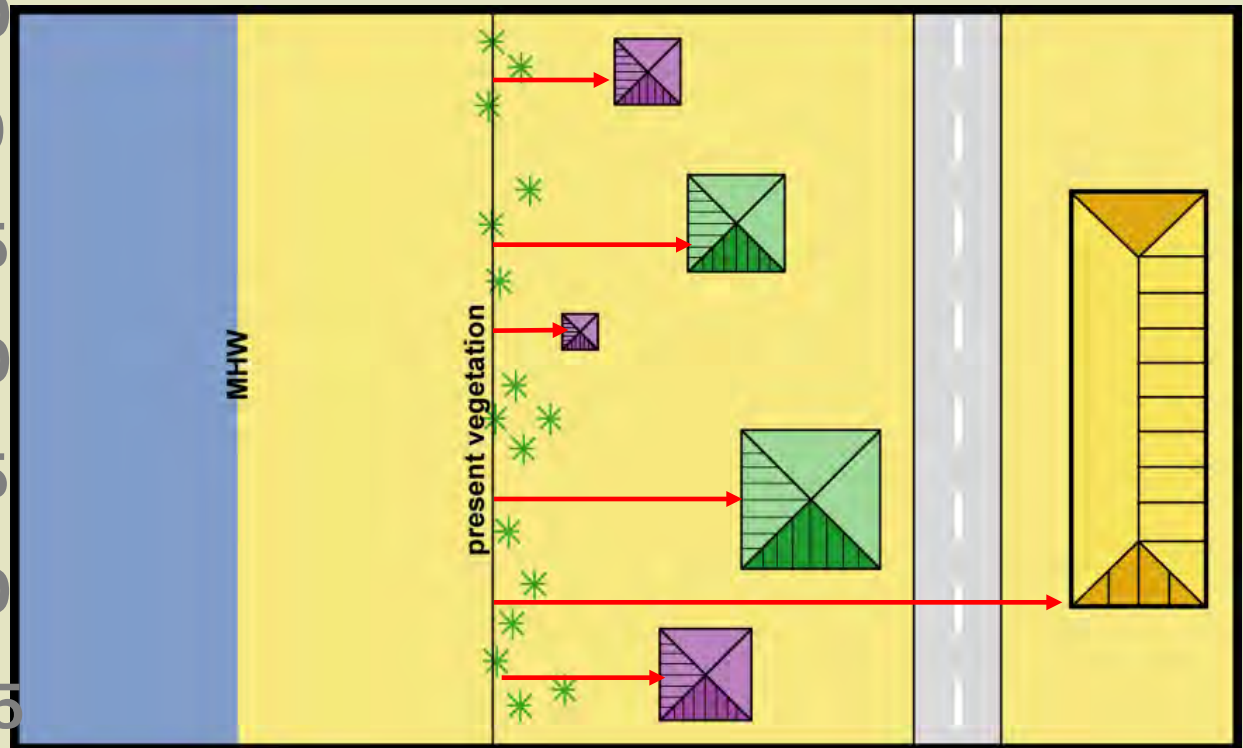
33°54'52.94" N 78°09'48.78" W elev 0 ft eye alt 466 ft

Graduated Oceanfront Construction Setbacks

Graduated erosion-based setbacks based on size of structures and long-term erosion rates

Minimum Setback Factor ("erosion rate") = 2 feet/year

- <5,000 sqft... x30
- 5-10K sqft.... x60
- 10-20K sqft... x65
- 20-40K sqft... x70
- 40-60K sqft... x75
- 60-80K sqft... x80
- 80-100K sqft . x85
- >100K sqft... x90



15A NCAC 07H .0306(a)(5)





Total Floor Area

- (A) The total sq. ft. area of heated or air-conditioned space;**
- (B) The total sq. ft. of parking elevated above ground level; and**
- (C) The total sq. ft. of non-heated or non-air-conditioned areas elevated above ground level, excluding attic space that is not designated to be load bearing.**

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



15A NCAC 07H .0309 USE STANDARDS FOR OCEAN HAZARD AREAS: EXCEPTIONS

- Campsites
- Parking areas w/clay, packed sand, gravel
- Elevated decks- 500 sf (structurally detached)
- Beach accessways
- Unenclosed, uninhabitable gazebos- up to 200sf
- Single story sheds <200sf
- Temp. amusement stands
- Sand fencing
- Swimming pools



Sand Fencing Exemption 7K .0212

Recommended dune plant species

- Sea Oats (*Uniola paniculata*)
- American Beachgrass (*Ammophila breviligulata*)
- Bitter Panicum (*Panicum amarum*)
- Saltmeadow Hay (*Spartina patens*)





Elevated Beach Access Exemption 7K .0207

- Structural accessways over frontal dunes - Public or private residential use, 6 ft in width, and must not alter dune or clear vegetation.





Beach Matting Access 7K .0207



- **Public and Private use** for ADA compliant access, 6 ft in width, and must not alter dune and extend more than 6' from the waterward toe of dune
- Any extensions further into the public trust beach area would require a Minor Permit and coordination with resource agencies such as NC WRC and USFWS



Why have setbacks for new development?

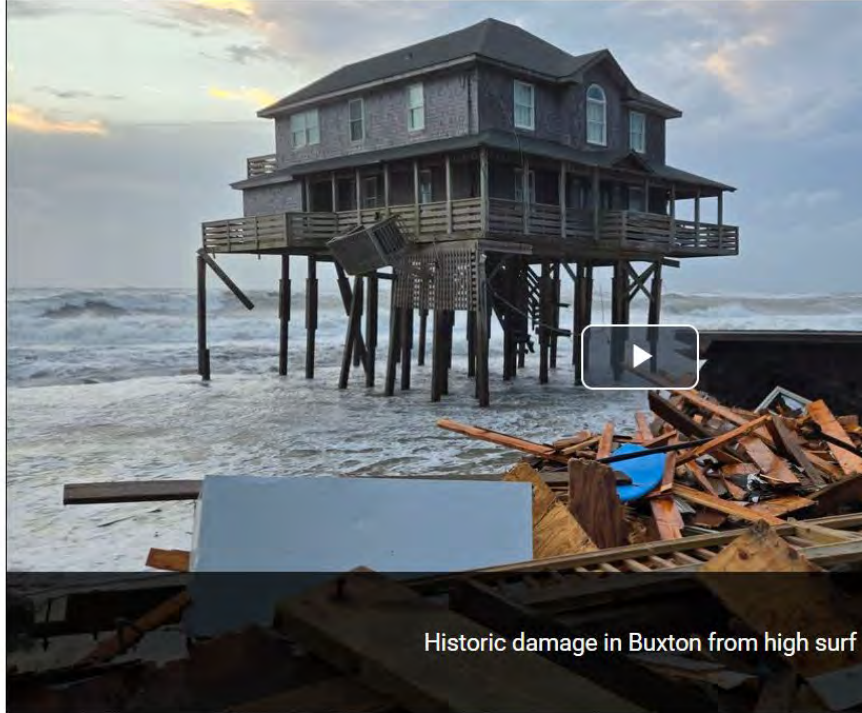


Buxton, NC 9/16/25

Six houses fall into sea in 24 hours in Outer Banks as hurricanes pass offshore

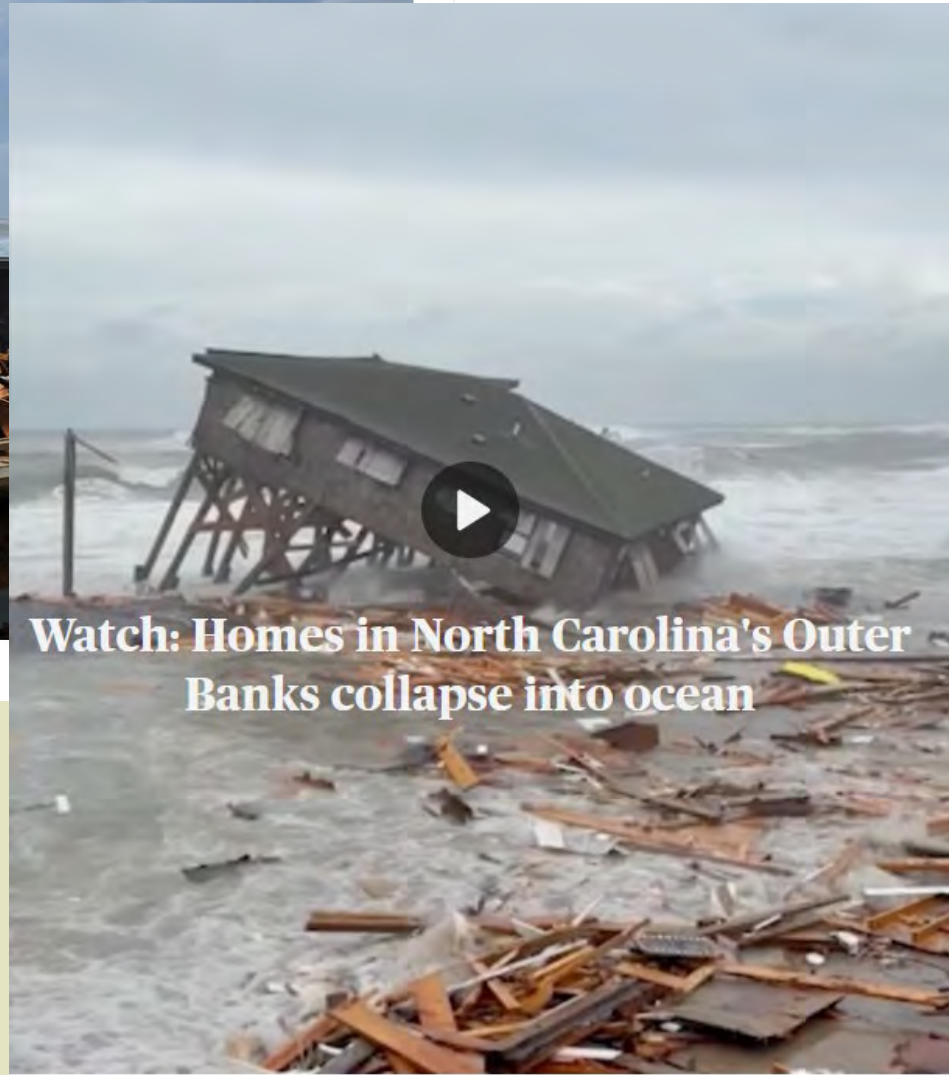
Six beachfront homes collapsed into the Atlantic Ocean in less than 24 hours as hurricanes passed offshore.

Posted 3:13 PM Sep 30, 2025 — Updated 8:42 AM today

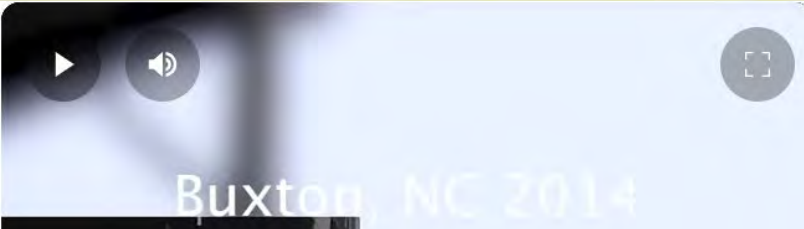


Historic damage in Buxton from high surf

By WRAL Staff



Watch: Homes in North Carolina's Outer Banks collapse into ocean



2014



What 10yrs of Erosion Looks Like



Buxton, NC 2025

Search "erosion"



@brettbarley

Subscribe

What 10yrs of EROSION Looks Like



Hurricane FLORENCE September 2018



Topsail Island
9. 27.18





15A NCAC 07H .0303

MANAGEMENT OBJECTIVE OF OCEAN HAZARD AREAS

- ~ Minimizing losses to life and property resulting from storms and long-term erosion,
- ~ Preventing encroachment of permanent structures on public beach areas,
- ~ Preserving the natural ecological conditions of the barrier dune and beach systems, and
- ~ Reducing the public costs of inappropriately sited development

BUILDING ON THE OCEANFRONT

An Informational Guide for Property Owners Building in Ocean H

Understanding Ocean Hazard Areas

Ocean Hazard Areas are designated due to their high vulnerability to natural forces such as hurricanes, storm surge, long-term erosion, and shifting shorelines. These areas include oceanfronts, inlets, and erosion-prone beaches and are categorized as Ocean Erodible Areas, Inlet Hazard Areas, Unvegetated Beach Areas, or State Ports Inlet Management Areas of Environmental Concern (AECs) based on location and shoreline characteristics. Building in these AECs requires extra care, guided by well-established rules from the Coastal Resources Commission (CRC) to protect both property and public safety.

Why Specific Rules Exist

Structures in these AECs are at significantly higher risk of damage or destruction due to natural events. To reduce this risk, North Carolina's Coastal Area Management Act (CAMA) requires careful placement of buildings through regulated setbacks and other development standards.

Setbacks and Why They Matter

A setback is the minimum distance a structure must be located from the oceanfront (usually measured from the stable and natural vegetation line as determined by DCM/Local Permitting Officer). It is calculated using the long-term average annual erosion rate at your location, multiplied by a factor based on the size of your structure. The minimum setback is 60 feet.

These setbacks help reduce risk by placing buildings further away from erosion zones, protecting your structures from loss.

Why You Should Care

Barrier islands are constantly in cases, the shoreline can erode during a single storm. Building better protection for your investment structures constructed too close to the ocean before the expected lifespan.

Permit Conditions & Requirements

When you're issued a CAMA for the oceanfront, be aware that

- There is no guarantee of storm or erosion damage
- The CRC/DCM assumes
- If imminently threatened, relocated, dismantled, or temporary protection used

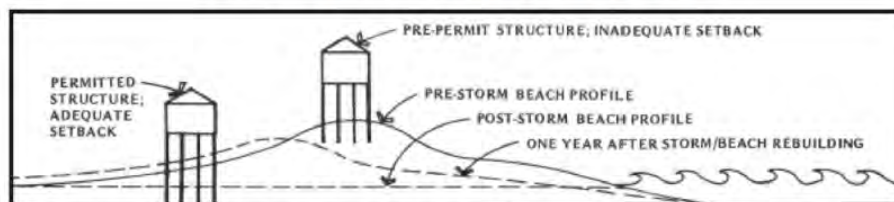
When Must Setbacks Be

If construction is delayed or significantly alters the shoreline begins, setbacks may need to be building can begin. It is important to follow rules and either your CAMA or DCM Representative to ensure requirements are met prior to construction.

How Can You Protect Your

Shoreline protection rules include measures like seawalls, jetties and revetments. However, coastal beach nourishment, temporary fencing, beach bulldozing and other may be permissible under specific

OCEAN HAZARD AREA NOTICE



Before you build, know your property and its specific risk characteristics:

1. The long-term average annual erosion rate where your property is located is _____ feet per year and requires a _____ foot setback for your _____ square foot structure. This rate is updated every 5 years and established using a combination of aerial imagery, mean high water data, and statistical analysis.
2. Erosion rates are a measure of historic erosion and are not a prediction of future erosion.
3. Ocean shorelines can erode suddenly due to storms, or chronically due to natural processes. Erosion can be minor or severe and may be temporary or permanent.
4. This location may be subject to storm surge and ocean overwash with wave action.

Permit Officer Contact and Property Information

Robb Mairs or Genevieve Ivec

910-796-7215 DEQ Main Office

NC DEQ Division of Coastal Management

Property Owner Name

robb.mairs@deq.nc.gov
genevieve.ivec@deq.nc.gov

Property Address

By signing below, you acknowledge that you've read this notice and reviewed the relevant CRC guidance. It's important to confirm current erosion rates and setbacks with the Local Permit Officer (LPO) and to remember that permits are valid for three years. Before beginning construction, take time to recheck site conditions, and be aware that work should not begin or continue if the permit has expired. This helps ensure your project stays compliant and protects your investment.

Property Owner Signature

Date



Sandbags

- If community is actively pursuing inlet relocation or stabilization project, sandbags may remain in place for up to 8 years from date of approval, Bags can be used to protect septic systems.

New River Inlet



Shallotte Inlet



Tubbs Inlet



Beach Bulldozing

GP 1800 (15A NCAC
7H.1800) allows beach
bulldozing landward of
MLW



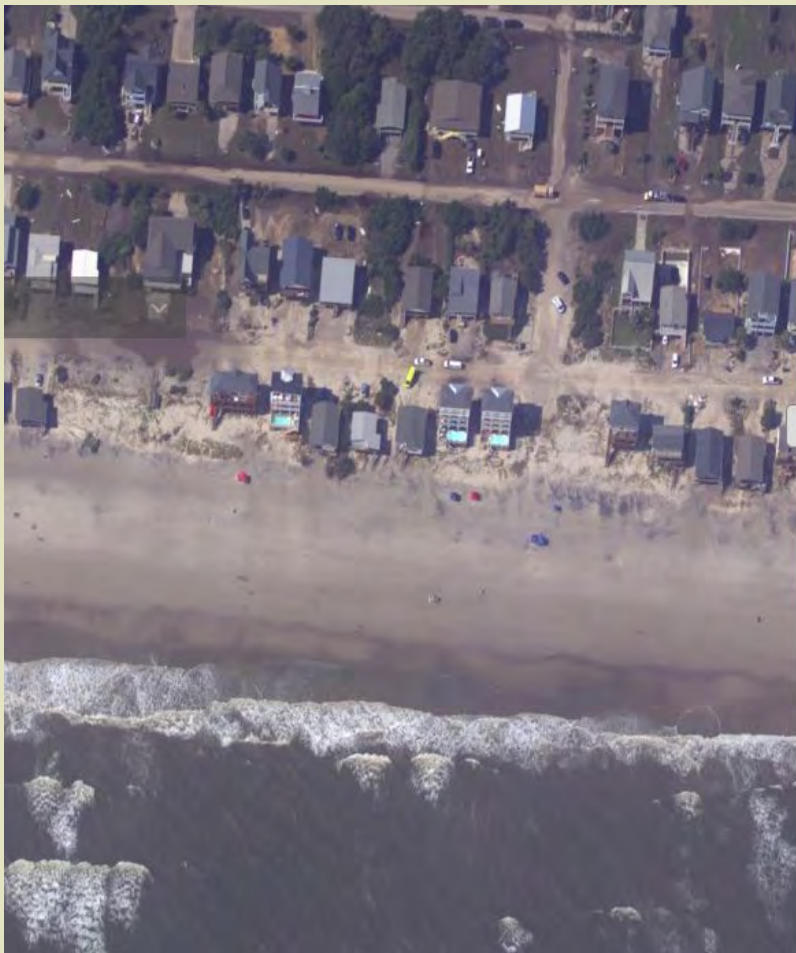


Question:

“I have an oceanfront property under contract and I need to know if it is “re-buildable””



Vegetation lines can change overnight...





The Estuarine System 7H .0200





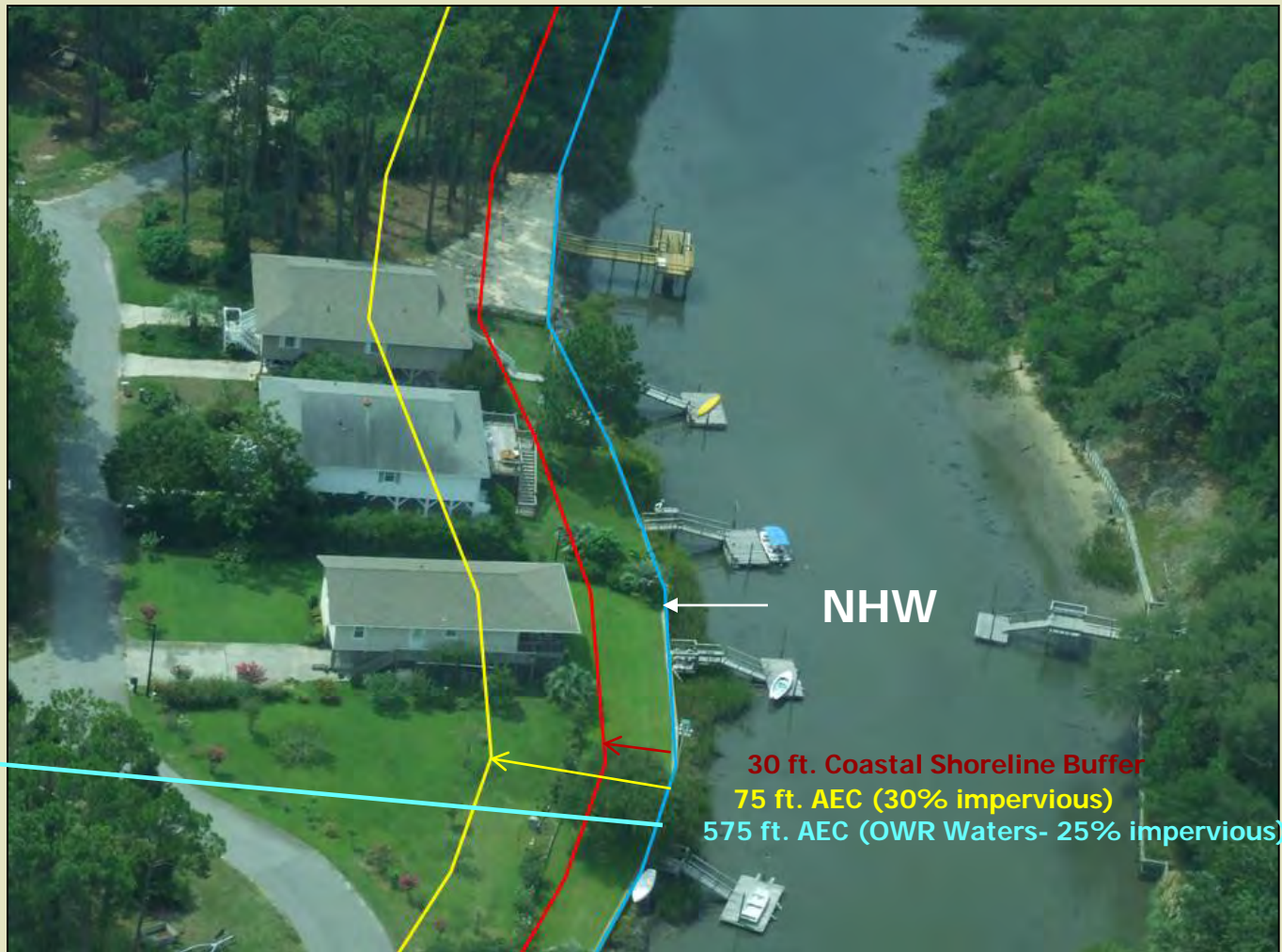
AECs in the Estuarine System

- Coastal Shoreline (above NHW)
 - ✓ Estuarine Shoreline
 - ✓ Public Trust Shoreline
- Coastal Wetlands
- Public Trust Areas
- Estuarine Waters





Coastal Shoreline AEC



NHW

30 ft. Coastal Shoreline Buffer
75 ft. AEC (30% impervious)
575 ft. AEC (OWR Waters- 25% impervious)



Estuarine vs. Public Trust Shoreline



A wide-angle photograph of a large wooden deck. In the center of the deck is a rectangular area covered with bright green artificial turfgrass. This turf area is surrounded by a 30-foot buffer zone containing various coastal plants, including a large spiky plant in the center and several smaller shrubs. In the background, there is a body of water, a wooden pier with many white chairs, and a line of trees under a cloudy sky.

**No Artificial Turfgrass
Within the 30-Foot Buffer**



Water Classifications

Estuarine Shoreline

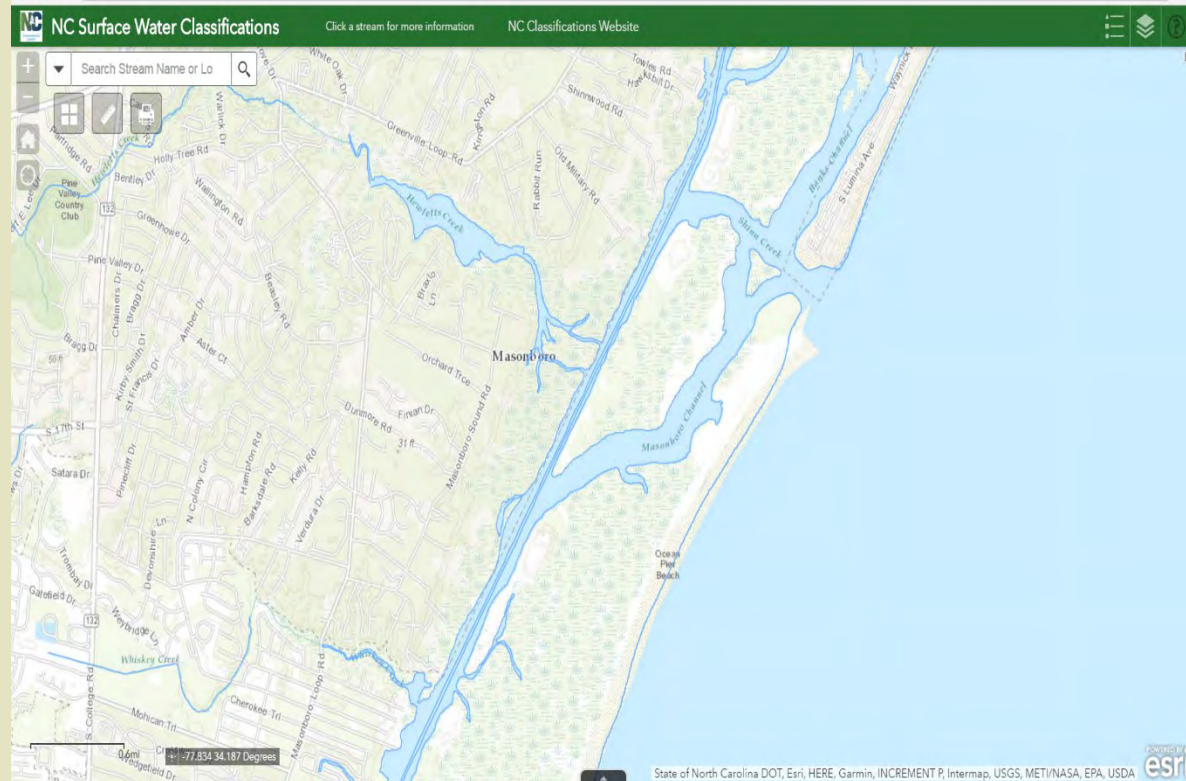
AEC extends 75 ft. from
NHW

-Max Allowed 30%
impervious surface

ORW Estuarine Shoreline AEC

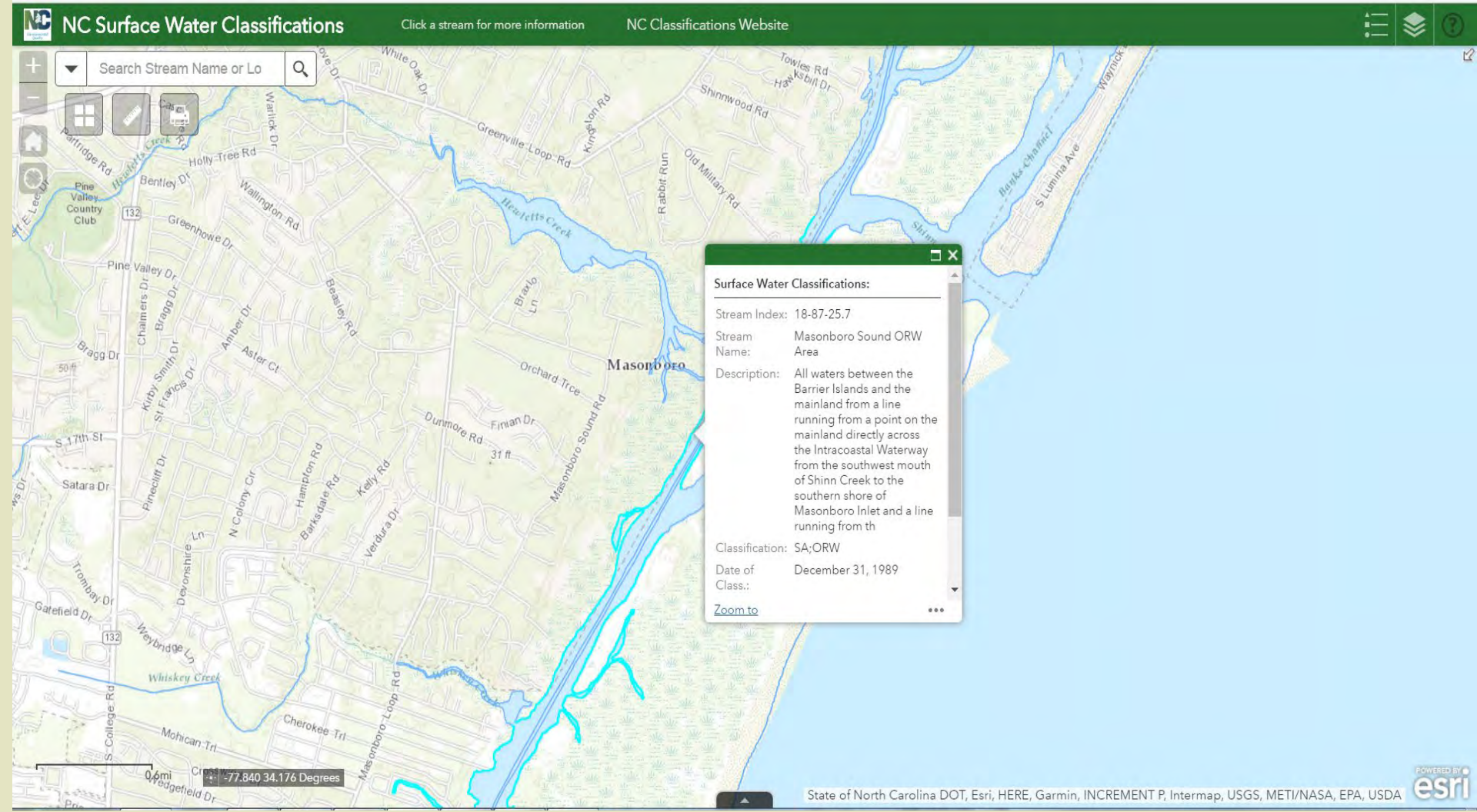
extends 575 ft. from
NHW

-Max Allowed 25%
impervious surface





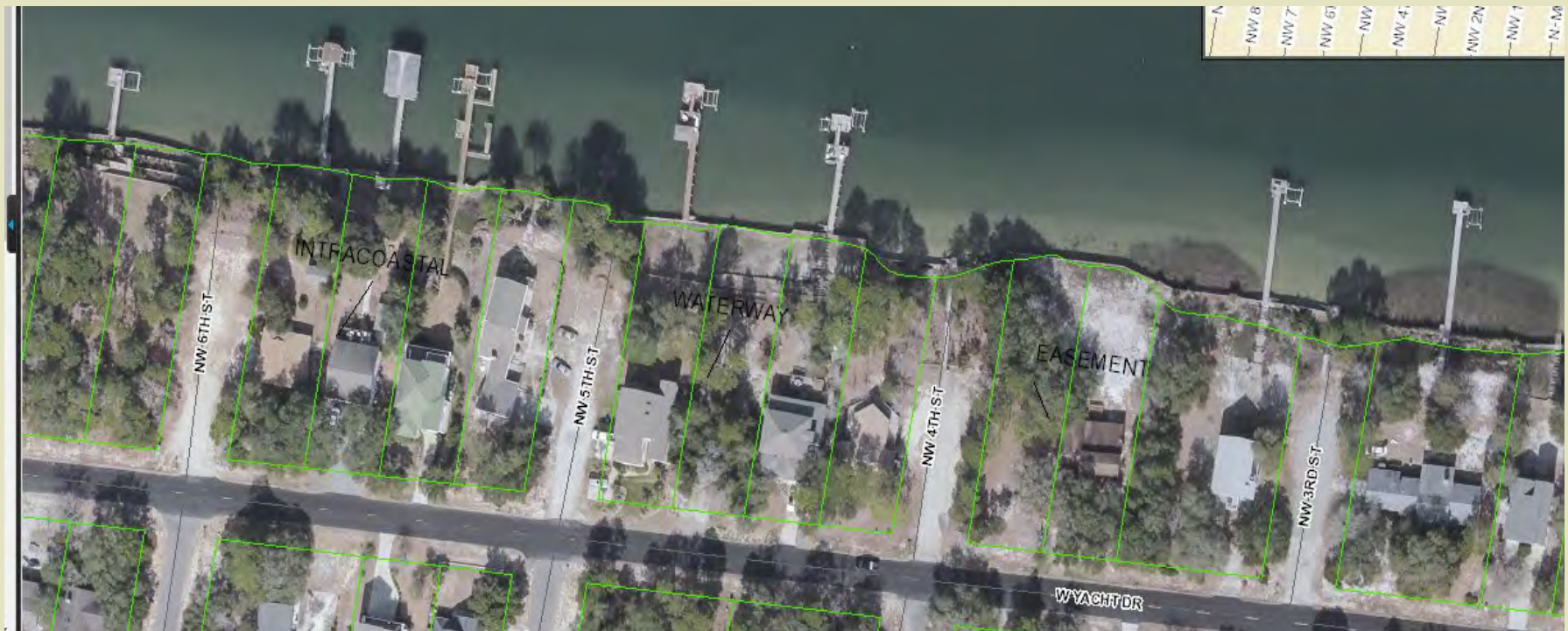
ORW-Outstanding Resource Waters





Property along the AIWW in the Estuarine Shoreline AEC may have USACE Easements

- ~ No development in these areas without USACE Consent.
Contact USACE Real Estate Office





What about Coastal and Section 404 Wetlands?





Coastal Wetlands

- Presence of at least one of the ten species listed in 15A NCAC 7H.0205.
- Subject to regular or irregular tidal flooding





Coastal Wetland species



Cat-tails



Sawgrass



Bulrush



Cord Grass



Salt Grass



Salt Meadow Grass

Division of Coastal Management



Glasswort



Sea Lavender



Salt Reed Grass

VS

INVASIVE





Why is Coastal Marsh Important?

- first line of defense for estuarine shoreline erosion (natural buffer)
- waterfowl and wildlife habitat
- nutrient and sediment traps for organic/inorganic
- pollutants and nutrients uptake
- Nursery area for juvenile fish and shellfish (90% of commercial/recreational fish species are dependant on wetlands)



07H.0205 (e) Alteration of Coastal Wetlands

- Mowing or cutting of Coastal Wetlands
- Exempt from permit requirements of CAMA:
 - Cut to no less than 2', as measured from substrate, at any time
 - Cut to no less than 6" once between each December 1 and March 31
 - No alteration of substrate, i.e. rutting
 - All clippings remain in place as they fall
 - If no pier access over marsh, may create 4' wide or less access path cut to no less than 6"



U.S. ARMY

US Army Corps
of Engineers®

WETLAND EXAMPLES



****Section 404 type wetlands that are not tidal are regulated by the US Army Corps and the Division of Water Resources. Contact a US Army Corps to verify any non-coastal wetland lines**.**

US Army Corps Contacts



Brunswick	David Moose	david.e.moose@usace.army.mil	910-251-4810
-----------	-------------	--	--------------

New Hanover	Brad Shaver	brad.e.shaver@usace.army.mil	910-251-4611
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Pender	Gary Beecher	gary.h.beecher@usace.army.mil	910-251-4694
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Question:

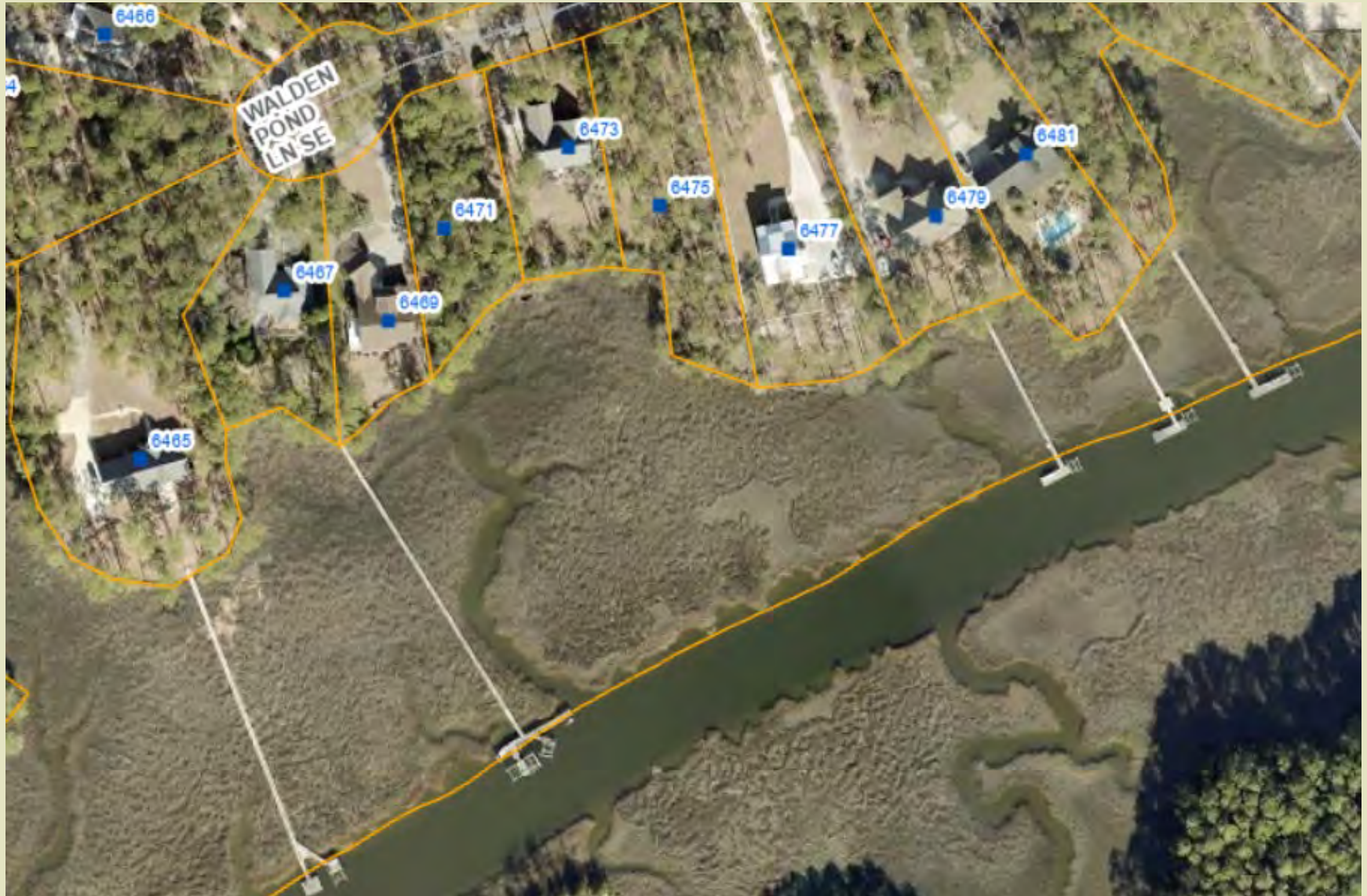
“Can my client build a pier on the lot we have under contract”?



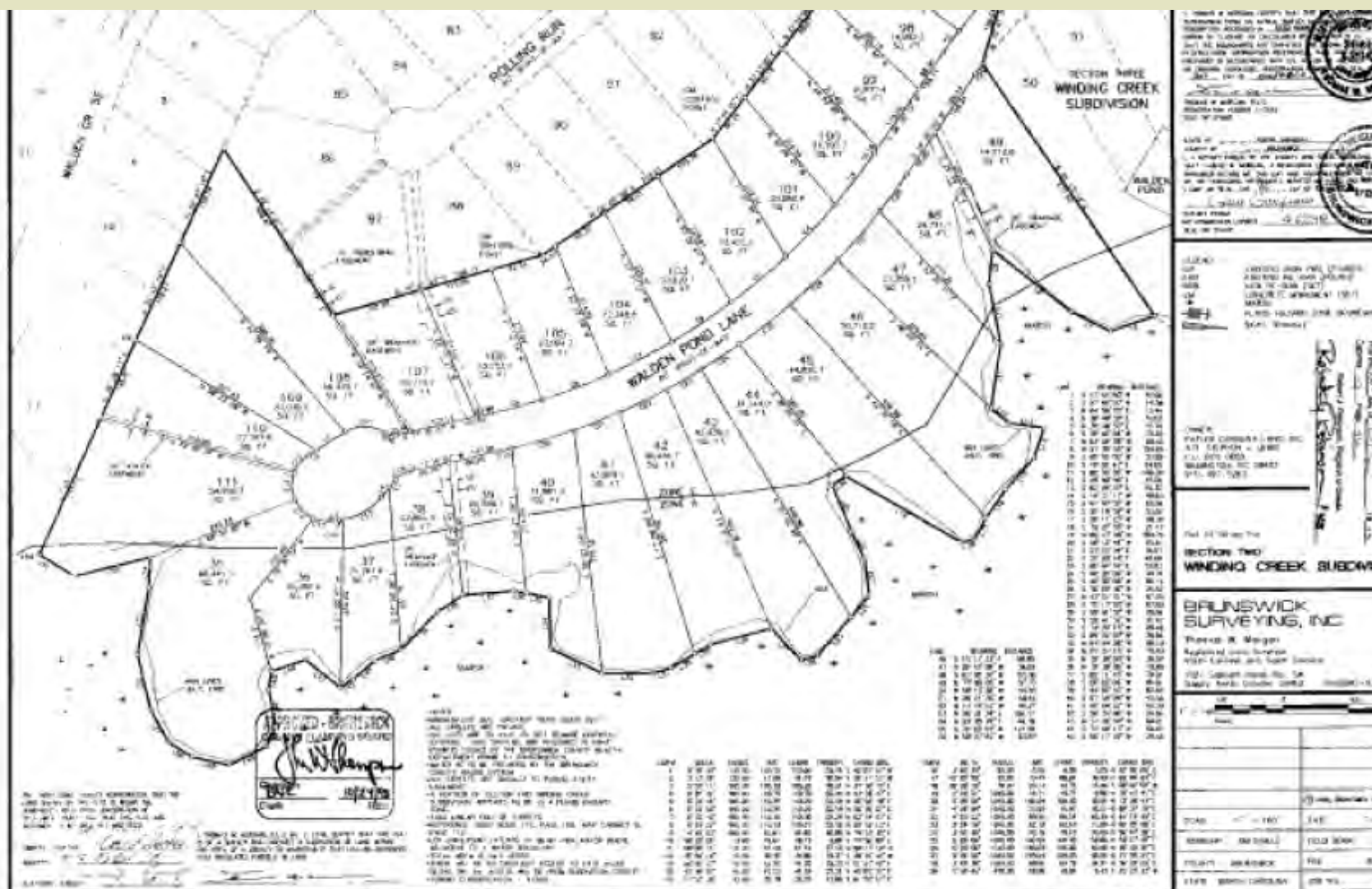
How to determine if a parcel is riparian?

1. **Deed** – Meets and bounds
2. **Plat Map**- Do property lines follow MHW?
3. **Survey** – Does Mean or Normal High Water cross the property line?

Division of Coastal Management



Division of Coastal Management



10-24-95

3:28 PM

Division of Coastal Management



NOTES:

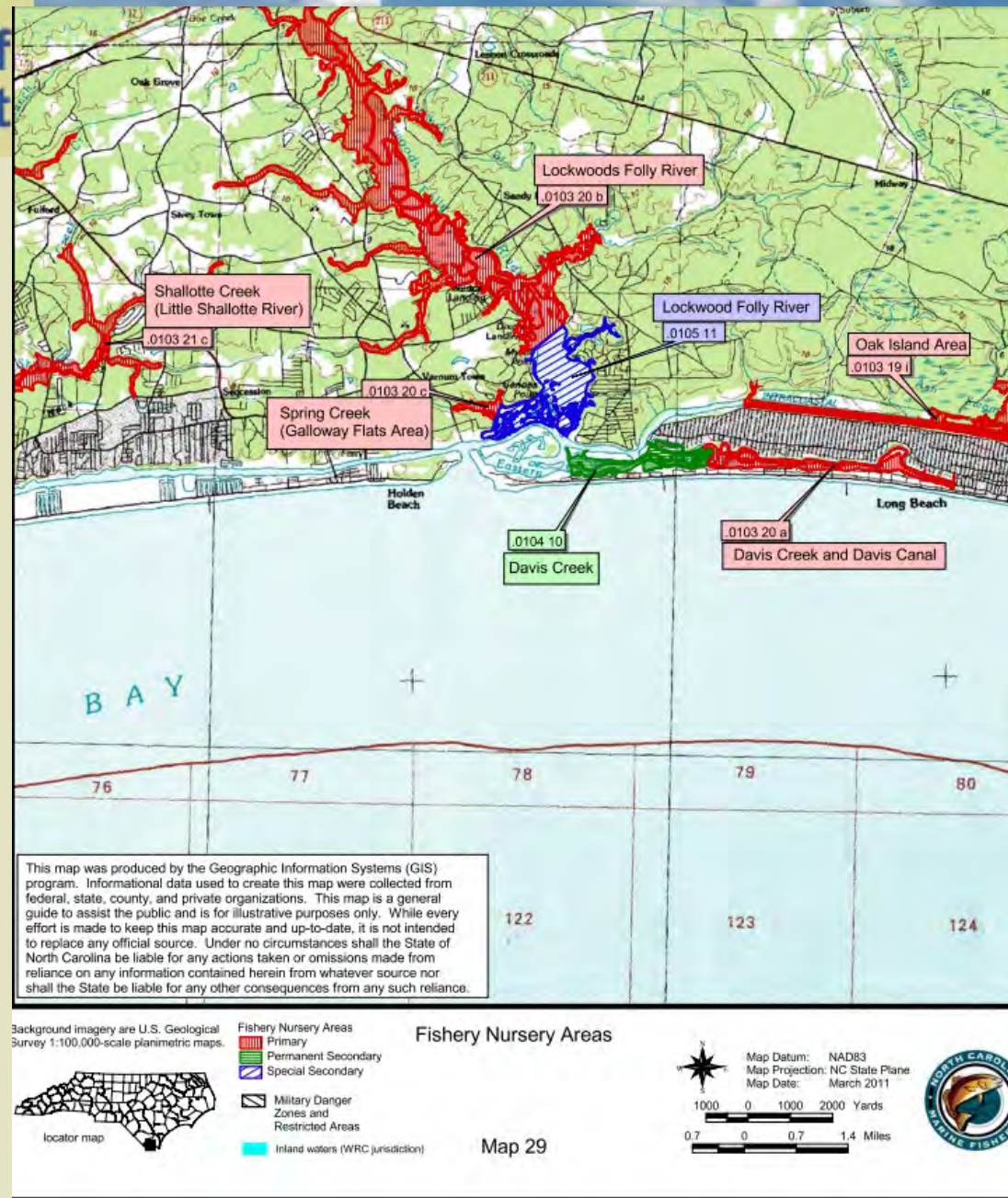
- MINIMUM LOT SIZE: GREATER THAN 15000 SQ.FT.
- ALL STREETS ARE PRIVATE
- ALL LOTS ARE TO HAVE ON SITE SEWAGE DISPOSAL SYSTEMS. SAID SYSTEMS ARE REQUIRED TO HAVE PERMITS ISSUED BY THE BRUNSWICK COUNTY HEALTH DEPARTMENT PRIOR TO CONSTRUCTION.
- WATER IS TO BE PROVIDED BY THE BRUNSWICK COUNTY WATER SYSTEM.
- ALL STREETS ARE SUBJECT TO PUBLIC UTILITY EASEMENT.
- A PORTION OF SECTION TWO WINDING CREEK SUBDIVISION APPEARS TO BE IN A FLOOD HAZARD ZONE.
- 1360 LINEAR FEET OF STREETS
- REFERENCE: DEED BOOK 172, PAGE 169; MAP CABINET W, PAGE 112.
- LOT OWNERSHIP EXTENDS TO MEAN HIGH WATER WHERE ADJACENT TO A WATER BOUNDARY.
- TOTAL AREA IS 24.2 ACRES
- THERE WILL BE NO DRIVEWAY ACCESS TO LOTS ALONG BETHEL RD. ALL ACCESS WILL BE FROM SUBDIVISION STREETS
- ZONING CLASSIFICATION - R7500

**Run of
channel**

Riparian Corridor Line

PNA- Primary Nursery Areas

Proposed docking
facilities in these areas
must have at least 24 “
of water at NLW





Piers and Bulkheads

- **Linear ft. of shoreline x 8 =** amount of platform allowed over water
- **Floating boatlifts** are not counted as boatslips but count towards allowed platform area, must meet riparian setbacks and depths for PNA.
- **Drip lines** are used for calculations for water dependent development.
- **Bulkheads/riprap** for erosion control at NHW line and landward of all wetlands or major permit review.





Permitting



Permitting Mechanisms:

Minor Permits

- issued by local governments consistent w/CRC-established standards **for non-water dependent projects only.**
- ****NO WETLAND IMPACTS****

Major Permits and General Permits

- Activities that are proposed below the NWL or NHW (water dependent)
- Requires review from other State and Federal Agencies= Major CAMA Permit



“Umbrella Permitting”

Federal Agencies	State Agencies
U.S. Army Corps of Engineers	Division of Water Quality
U.S. Fish and Wildlife Service	Division of Marine Fisheries
Environmental Protection Agency	Division of Transportation
National Marine Fisheries Service	Division of Land Resources
	Wildlife Resources Commission
	Department of Cultural Resources
	Division of Public Health
	State Property Office
+ Local Government	Community Assistance



Maintenance and Repair 7K .0103

Maintenance and Repair : If proposed work is less than 50% of the total value of the structure a Certificate of Exemption from requiring a CAMA permit may be issued. (Does not alleviate the necessity of obtaining other state, federal or local authorization).

****All work must be done within the original project footprint.**





Replacement of Existing Structures 7J .0210 Non-Water Dependent Structures



The market value of the structure **shall not include the value of the land.** The information provided by the applicant may include any of the following: (i) an appraisal; (ii) the replacement cost with depreciation for age of the structure and quality of construction; or (iii) the tax assessed value



Question – What is a CAMA Line??

- Normal or Mean High Water Line
- Coastal Wetland Line
- 30 ft. buffer Line
- 75 ft. AEC Line
- Ocean Hazard Setback Line



When does development on a Barrier Island trigger a CAMA Permit??

1. Is the proposed project in one of the 20 coastal counties???
2. Is the proposed project in an AEC?
3. Does the proposed project fit the definition of development?



Wilmington Regional Office DCM

Robb Mairs- Regulatory Chief/Acting Minor permit Coordinator

[**robb.mairs@deq.nc.gov**](mailto:robb.mairs@deq.nc.gov)

Tara MacPherson –District Manager

[**tara.macpherson@ncdenr.gov**](mailto:tara.macpherson@ncdenr.gov)

Genny Ivec–Pender County and Topsail Island

[**genevieve.ivec@deq.nc.gov**](mailto:genevieve.ivec@deq.nc.gov)

Phil D'Angelis–Northern NHTCo (WB, Fig 8) and Hampstead

[**phil.dangelis@deq.nc.gov**](mailto:phil.dangelis@deq.nc.gov)

Hannah Mitchell- Southern NHTCo (CB/KB)

[**hannah.mitchell@deq.nc.gov**](mailto:hannah.mitchell@deq.nc.gov)

Courtney Milliron-E. Brunswick County (OKI/HB)

[**courtney.milliron@deq.nc.gov**](mailto:courtney.milliron@deq.nc.gov)

Austin Turbitt–W. Brunswick Co. (OIB/SB)

[**austin.turbitt@deq.nc.gov**](mailto:austin.turbitt@deq.nc.gov)



Questions?



**DCM- Wilmington
DEQ Regional Office
910-796-7215
tara.macpherson@deq.nc.gov**