

# IHA and OEA Long-Term Average Annual Erosion Rates & Setback Factors Update & Rule Amendments

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# Discussion Outline:



## Rule Amendments

- 15A NCAC 07H .0304
- 15A NCAC 07H .0310



## Inlet Hazard Areas

- Boundaries
- Erosion Rates



## Ocean Erodible Areas

- Boundaries
- Erosion Rates

# Rule

## Amendment:

AECs within the Ocean Hazard Area

**15A NCAC 07H.0304(1)**

*Ocean Erodible Areas*

*Reference updated erosion rate study*

### 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 where 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 the distance landward from the vegetation line as defined in 15A NCAC 07H .0305(a)(5) to the recession line established by multiplying the

- (1) Ocean Erodible Area. This is the area where 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 the distance landward from the vegetation line as defined in 15A NCAC 07H .0305(a)(5) to the recession line established by multiplying the long-term annual erosion rate times 90; 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 180 feet landward from the vegetation line. 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 rates for each segment of the North Carolina coast is depicted on maps in the report entitled "North Carolina 2019 Oceanfront Setback Factors & Long-Term Average Annual Erosion Rate Update Study" ("North Carolina 2025 Oceanfront Setback Factors & Long-Term Average Annual Erosion Rate Update Study: Methods Report" and approved by the Coastal Resources Commission on February 28, 2019 (except as such rates may be varied in individual contested cases or in declaratory or interpretive rulings) April 16, 2026. In all cases, the rate of shoreline change shall be no less than two feet of erosion per year. The report and maps are available without cost from any Local Permit Officer or from the Division of Coastal Management on the internet at <http://www.nccoastalmanagement.net>, online at <https://www.deq.nc.gov/coastal-management/north-carolina-2025-oceanfront-setback-factors-long-term-average-annual-erosion-rate-update-study/open>.

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 Item (1) of this Rule.

- (b) An area that is unvegetated as a result of a hurricane or other major storm event may be designated by the Coastal Resources Commission as an Unvegetated Beach Area for a specific period of time, or until the vegetation has re-established in accordance with 15A NCAC 07H .0305(a)(5). At the expiration of the time specified or the re-establishment of the vegetation, the area shall return to its pre-storm designation.
- (c) The Commission designates as temporary unvegetated beach areas those oceanfront areas of:
  - (i) Surf City and North Topsail Beach in which the vegetation line as shown on the United States National Oceanic and Atmospheric Administration imagery dated

# Rule

## Amendment:

AECs within the Ocean Hazard Area

**15A NCAC 07H.0304(2)**

*Inlet Hazard Areas*

*Reference updated IHA boundaries & erosion rate reports*

- (2) ~~Inlet Hazard Area. The inlet hazard areas are natural hazard~~ These are areas that are subject to inlet migration, rapid and severe erosion, and flooding 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 encompassing that area within which the inlet migrates, 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, terminal groins, and channelization. The areas on the maps identified as 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 “Inlet Hazard Area Boundaries, 2025 Update: Science Panel Recommendations to the North Carolina Coastal Resources Commission” and approved by the Coastal Resources Commission on April 16, 2026 are incorporated by reference and are hereby designated as Inlet Hazard Areas, except for: for inlets defined as State Port Inlet Management Areas in Item (4) of this Rule. The report and maps are available from the Division of Coastal Management online at <https://www.deq.nc.gov/coastal-management/documents/north-carolina-2025-inlet-hazard-area-ih-a-boundary-update/open>.
- (a) ~~the location of a former inlet which has been closed for at least 15 years;~~
  - (b) ~~inlets that due to shoreline migration, no longer include the current location of the inlet;~~ and
  - (c) ~~inlets providing access to a State Port via a channel maintained by the United States Army Corps of Engineers.~~
- 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. The current long-term average erosion rate data for each Inlet Hazard Area is depicted on maps entitled “North Carolina 2025 Oceanfront Setback Factors & Long-Term Average Annual Erosion Rate Update Study: Methods Report” and approved by the Coastal Resources Commission on April 16, 2026. In all cases, the rate of shoreline change shall be no less than two feet of erosion per year. This report is available for inspection at the Department of Environmental Quality, Division of Coastal Management, 400 Commerce Avenue, Morehead City, North Carolina or at the website referenced in Item (1) of this Rule. The report and maps are available from the Division of Coastal Management online at <https://www.deq.nc.gov/coastal-management/north-carolina-2025-inlet-hazard-area-ih-a-erosion-rate-setback-factors-update-study/open>.

# Rule

## Amendment:

AECs within the Ocean  
Hazard Area

**15A NCAC 07H.0304(3)**

*Unvegetated Beach Areas*

*Removes Unvegetated  
Beach AEC designations at  
Surf City, N. Topsail, & Oak  
Island*

~~(e) The Commission designates as temporary unvegetated beach areas those oceanfront areas of:~~

~~(i) Surf City and North Topsail Beach in which the vegetation line as shown on the United States National Oceanic and Atmospheric Administration imagery dated September 17, 2018 was destroyed as a result of Hurricane Florence in September 2018; and~~

~~(ii) Oak Island in which the vegetation line as shown on the United States National Oceanic and Atmospheric Administration and Geological Survey imagery dated August 4, 2020 was destroyed as a result of Hurricane Isaias in August 2020.~~

~~The designation AEC boundaries can be found on the Division's website at <https://files.nc.gov/ncdeq/Coastal%20Management/GIS/unvegetated-beach-aec.pdf> and <https://files.nc.gov/ncdeq/Coastal%20Management/GIS/unveg-beachAEC-Oak-Island.zip>. This designation shall continue until such time as the stable and natural vegetation has reestablished, or until the area is permanently designated as an unvegetated beach area pursuant to Sub-Item (3)(a) of this Rule.~~

# Rule Amendment:

## 15A NCAC 07H .0310

### Inlet Hazard Areas

*Setbacks inside IHAs based on inlet erosion rates instead of adjacent OEAs.*

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

(a) Inlet Hazard Areas of Environmental Concern ~~as are defined by Rule .0304~~ 15A NCAC 07H .0304 (2). ~~of this Section are subject to inlet migration, rapid and severe changes in watercourses, flooding and strong tides.~~ Due to the extremely hazardous nature of the Inlet Hazard Areas, all development within these areas shall be permitted in accordance with 15A NCAC 07H .0306 and the following standards:

- (1) ~~All development in the inlet hazard area shall be set back from the vegetation line a distance equal to the setback required in the adjacent ocean hazard area.~~The Inlet Hazard Area setback for development shall be determined by the long-term erosion rate as defined in Rule 15A NCAC 07H .0304(2) and measured in a landward direction from the vegetation line as defined in 15A NCAC 07H .0305(5), the pre-project vegetation line as defined in 15A NCAC 07H .0305(6), or the measurement line as defined in 15A NCAC 07H .0305(9), whichever is applicable;
- (2) Permanent structures shall be permitted at a density of no more than one ~~commercial or residential~~ unit per 15,000 square feet of land area on lots subdivided or created after July 23, 1981;
- (3) Only ~~residential structures of four units or less or non-residential~~ structures of less than 5,000 square feet total floor area ~~as defined in Rule 15A NCAC 07H .0306(a)(2)~~ shall be allowed within the ~~inlet hazard area~~ Inlet Hazard Area, except that access roads to those areas and maintenance and replacement of existing bridges shall be allowed;

*Emergency Rule Eff. September 11, 1981, for a period of 120 days to expire on January 8, 1982;  
Temporary Amendment Eff. October 30, 1981, for a period of 70 days to expire on January 8,  
1982;  
Amended Eff. April 1, 1999; April 1, 1996; December 1, 1992; December 1, 1991; March 1, 1988;  
Readopted Eff. December 1, 2020;  
Amended Eff. August 1, 2022.*

# Rule Amendment:

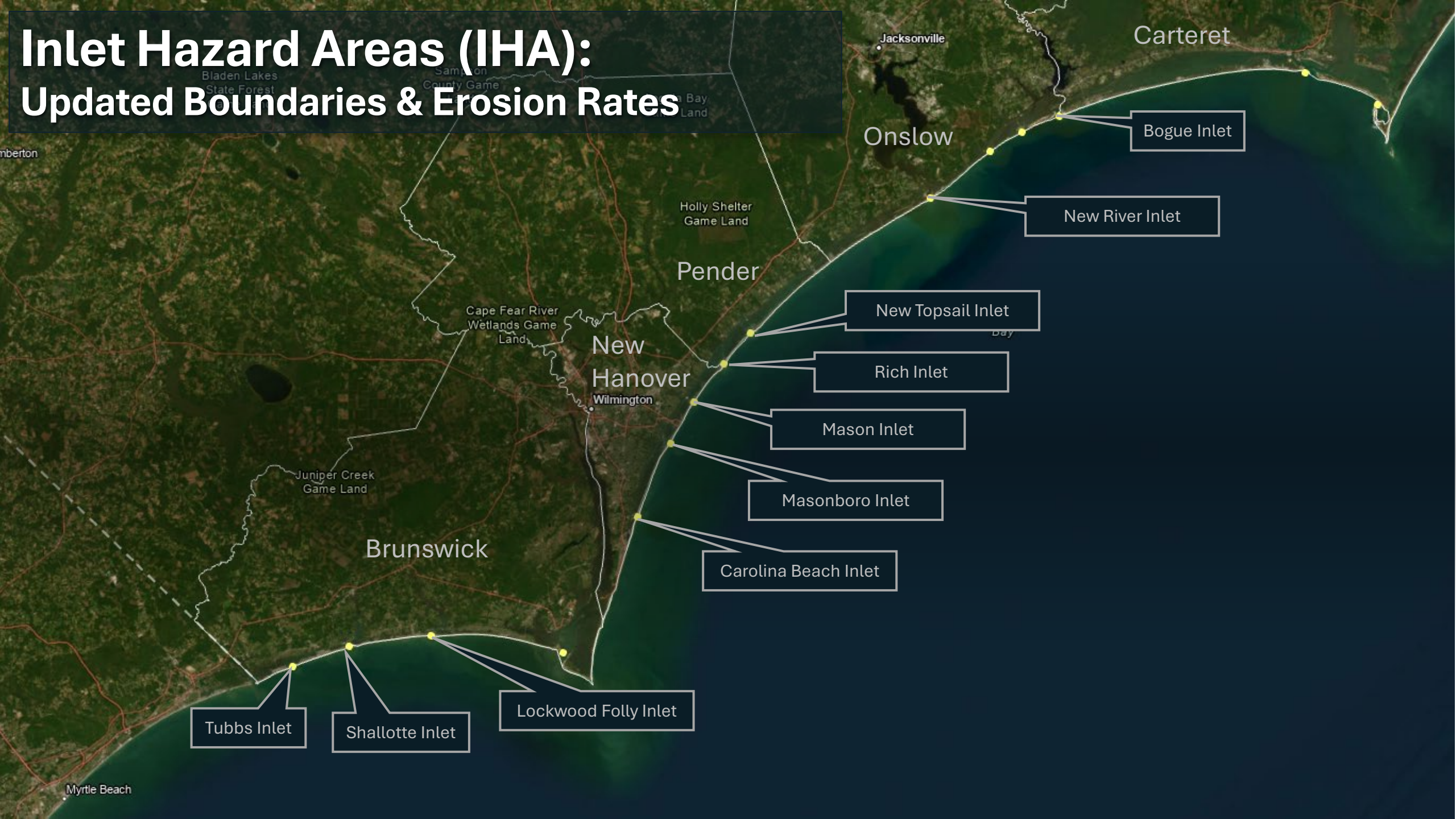
## 15A NCAC 07H .0310

### Inlet Hazard Areas

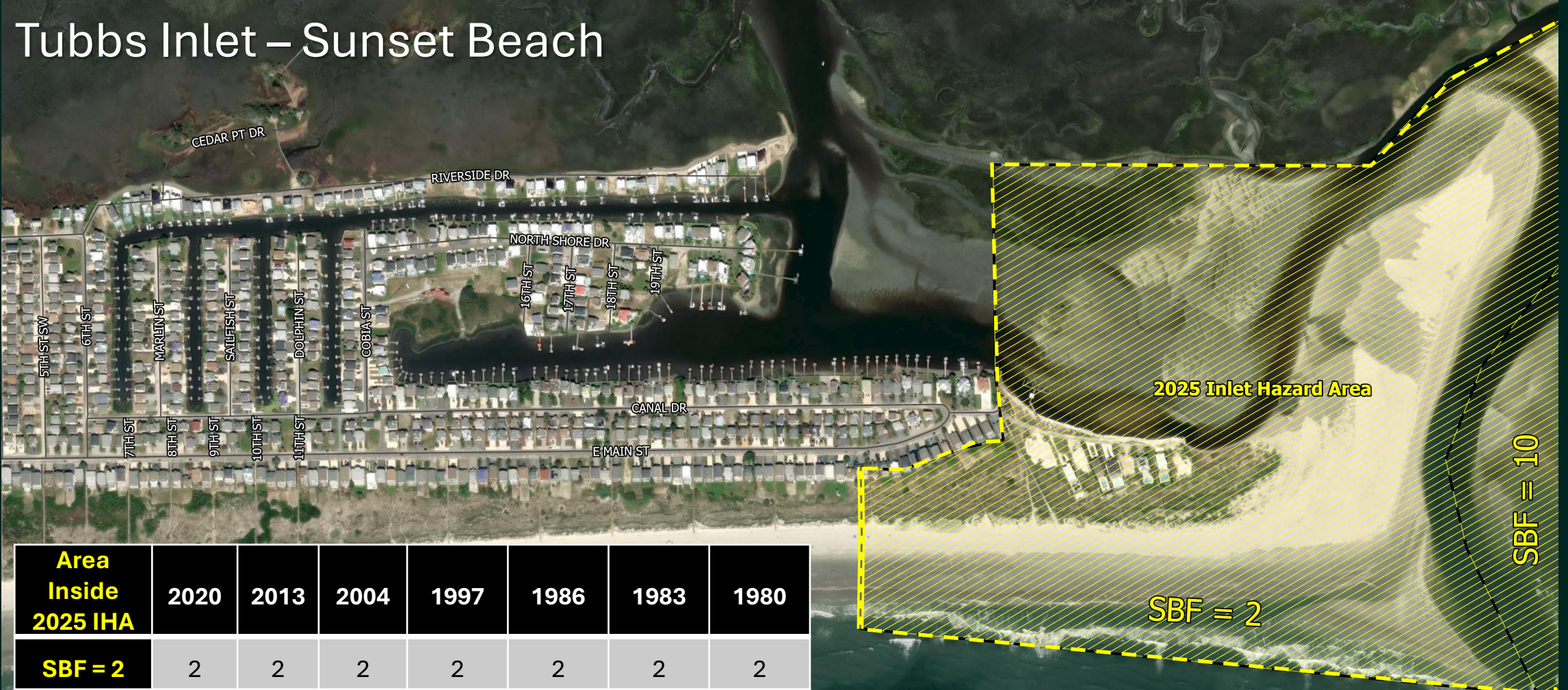
*Limits seaward  
encroachment of new  
development or  
replacement*

- (4) On a lot where new development is proposed, the development shall be set landward in accordance with the following criteria:
- (A) 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 habitable building or structure;
  - (B) The alignment shall be measured from the most oceanward point of the adjacent building or structure's roof line, including roofed decks, if applicable. An "adjacent" property is one that shares a boundary line with the site of the proposed development;
  - (C) When no adjacent buildings or structures exist, or the configuration of a lot, street, or shoreline 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 Director of the Division of Coastal Management based on an approximation of the average seaward-most positions of the rooflines of adjacent structures along the same shoreline, extending 500 feet in either direction;
  - (D) If no structures exist within this distance, the proposed structure must meet the applicable setback from the vegetation line, pre-project vegetation line, or measurement line, which ever is applicable, and will not be held to the landward-most adjacent structure or an average line of structures, and;
  - (E) The structure is located as far landward on the lot as feasible.
- (5) Replacement of a structure shall be allowed provided the structure meets the following criteria:
- (A) the structure as replaced does not exceed the original footprint or square footage;
  - (B) the structure meets the required setback defined in this Rule; and
  - (C) the structure is rebuilt as far landward on the lot as feasible.

# Inlet Hazard Areas (IHA): Updated Boundaries & Erosion Rates



# Tubbs Inlet – Sunset Beach



Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	2	2	2	2	2	2	2

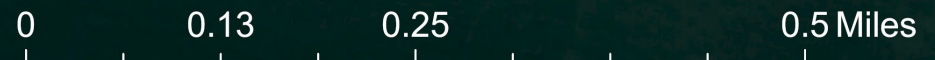
## 2025 Inlet Hazard Area Setback Factors Sunset Beach at Tubbs Inlet

Legend

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2023 Imagery

NOTE: SBF = Setback Factor



# Tubbs Inlet – Ocean Isle



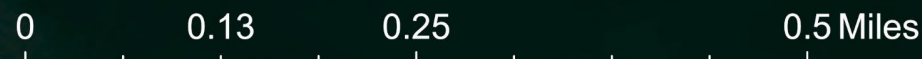
**2025 Inlet Hazard Area Setback Factors**  
*Ocean Isle Beach at Tubbs Inlet*

**Legend**

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2023 Imagery

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 10</b>	2	2	2	2	2	2	2
<b>SBF = 2</b>	2	2	2	2	2	2	2



# Shallotte Inlet – Ocean Isle



## 2025 Inlet Hazard Area Setback Factors

*Ocean Isle Beach at Shallotte Inlet*

Legend

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2024 Imagery

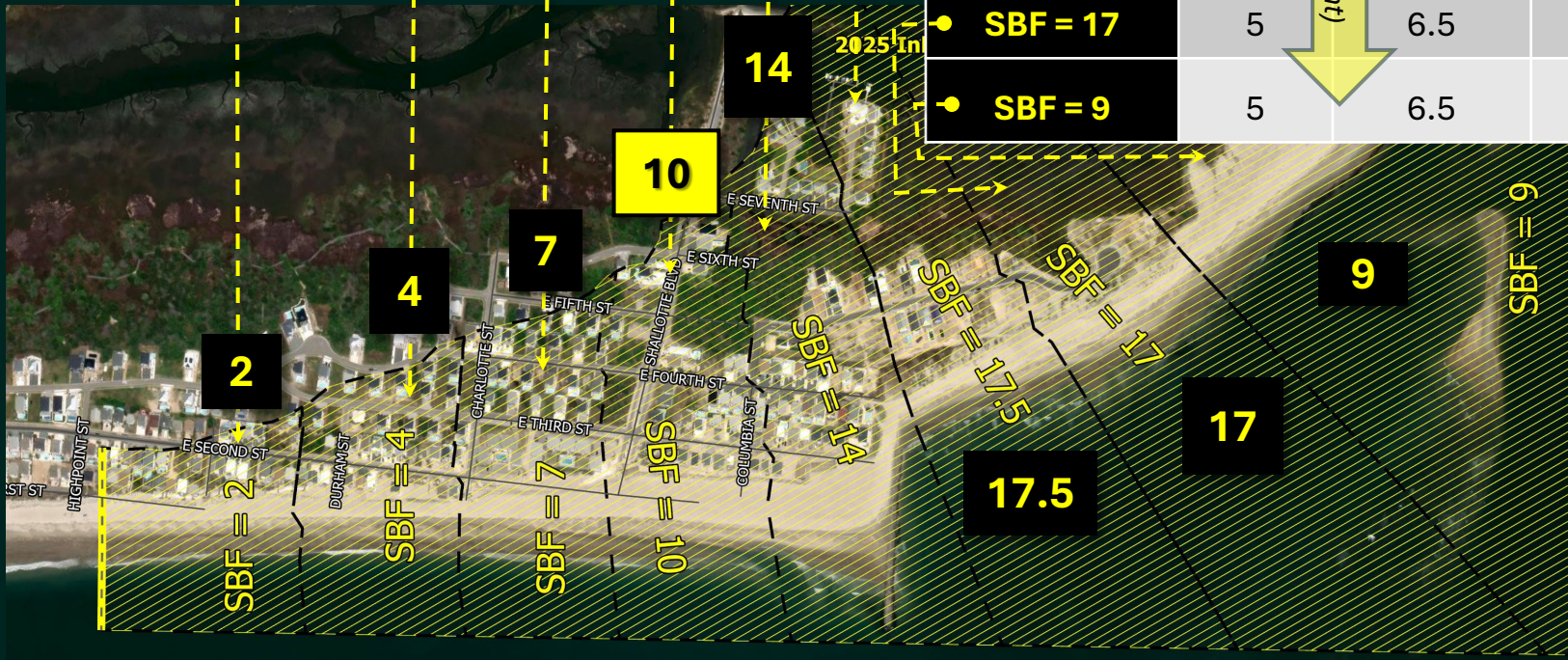
NOTE: SBF = Setback Factor



# Shallotte Inlet – Ocean Isle

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
● SBF = 2	2	2 to 4	2	2	2	2 to 3	2
● SBF = 4	2 to 4	4	2	2	2	3	2
● SBF = 7	4	4 to 6.5	2 to 4.5	2	2	3	2
● SBF = 10	5	6.5	4.5	2	2	3	2
● SBF = 14	5	6.5	4.5	2	2	3	2
● SBF = 17.5	5	6.5	4.5	2	2	3	2
● SBF = 17	5	6.5	4.5	2	2	3	2
● SBF = 9	5	6.5	4.5	2	2	3	2

IHA (current)

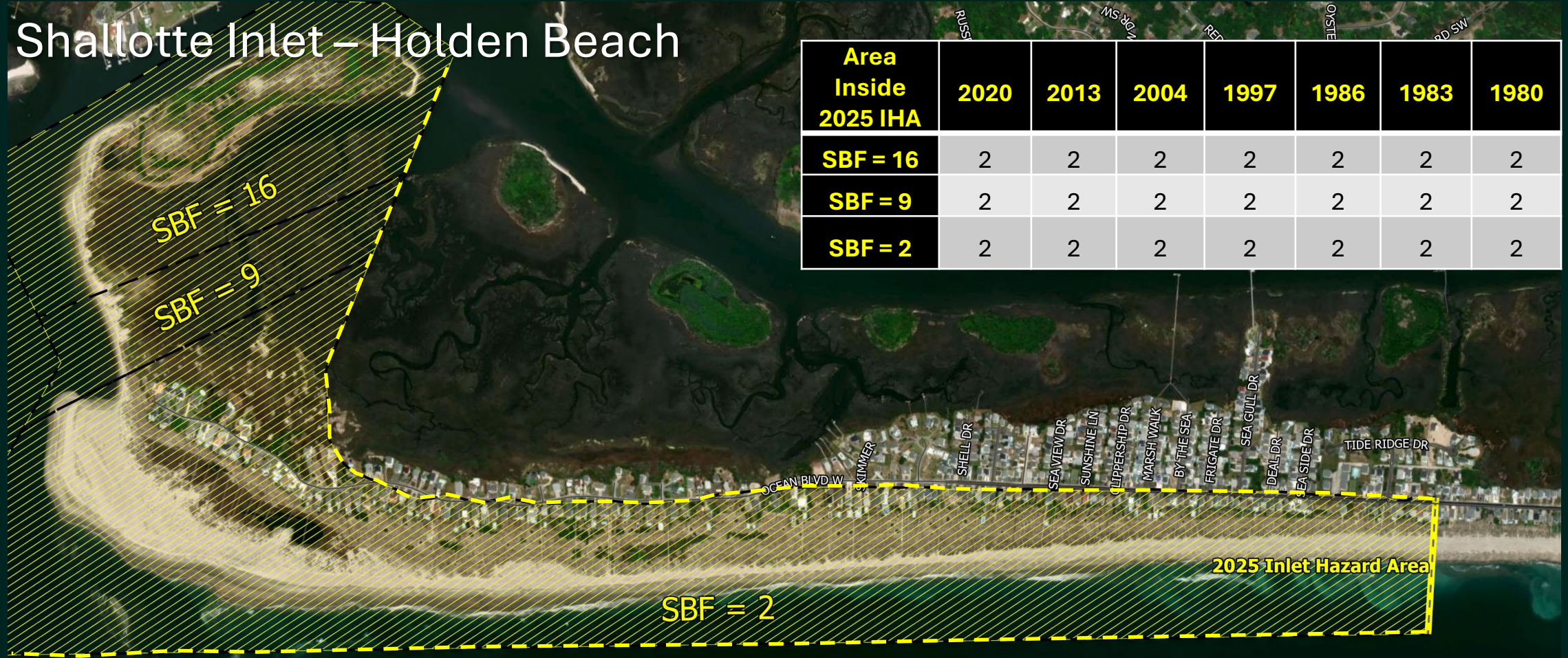


Current Rule 15A NCAC 07H.0310(a)(1)

“...setback required in the adjacent Ocean Hazard Area.”

# Shallotte Inlet – Holden Beach

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 16</b>	2	2	2	2	2	2	2
<b>SBF = 9</b>	2	2	2	2	2	2	2
<b>SBF = 2</b>	2	2	2	2	2	2	2



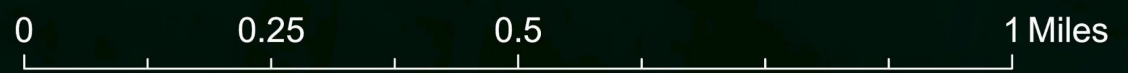
## 2025 Inlet Hazard Area Setback Factors Holden Beach at Shallotte Inlet

**Legend**

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

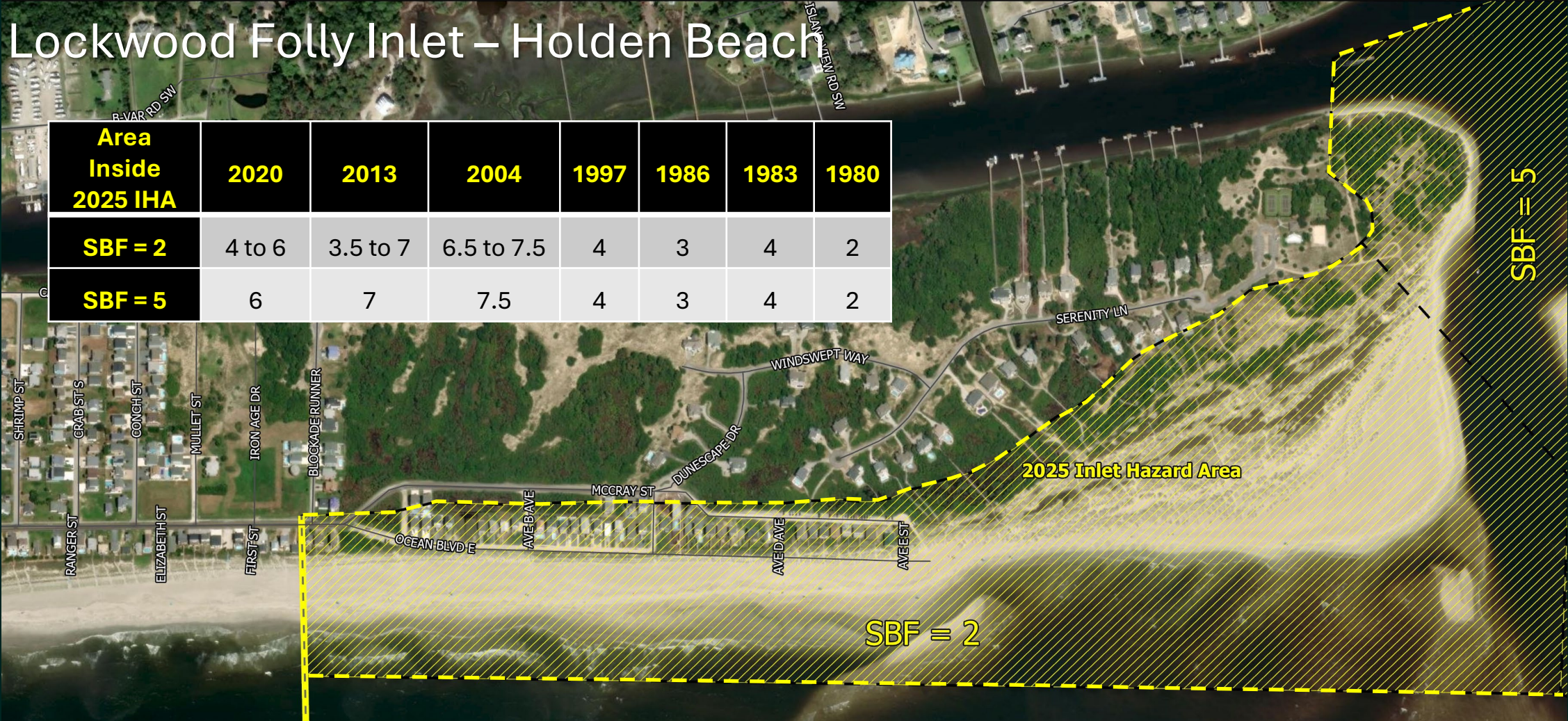
2024 Imagery

NOTE: SBF = Setback Factor



# Lockwood Folly Inlet – Holden Beach

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	4 to 6	3.5 to 7	6.5 to 7.5	4	3	4	2
<b>SBF = 5</b>	6	7	7.5	4	3	4	2



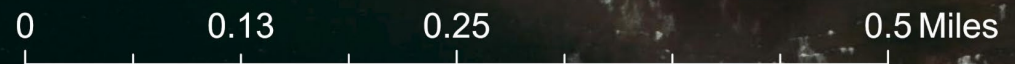
## 2025 Inlet Hazard Area Setback Factors Holden Beach at Lockwood Folly Inlet

Legend

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2024 Imagery

NOTE: SBF = Setback Factor



# Lockwood Folly Inlet – Oak Island

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	2	2	2	2	2	2 to 4	2



## 2025 Inlet Hazard Area Setback Factors Oak Island at Lockwood Folly Inlet

**Legend**

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

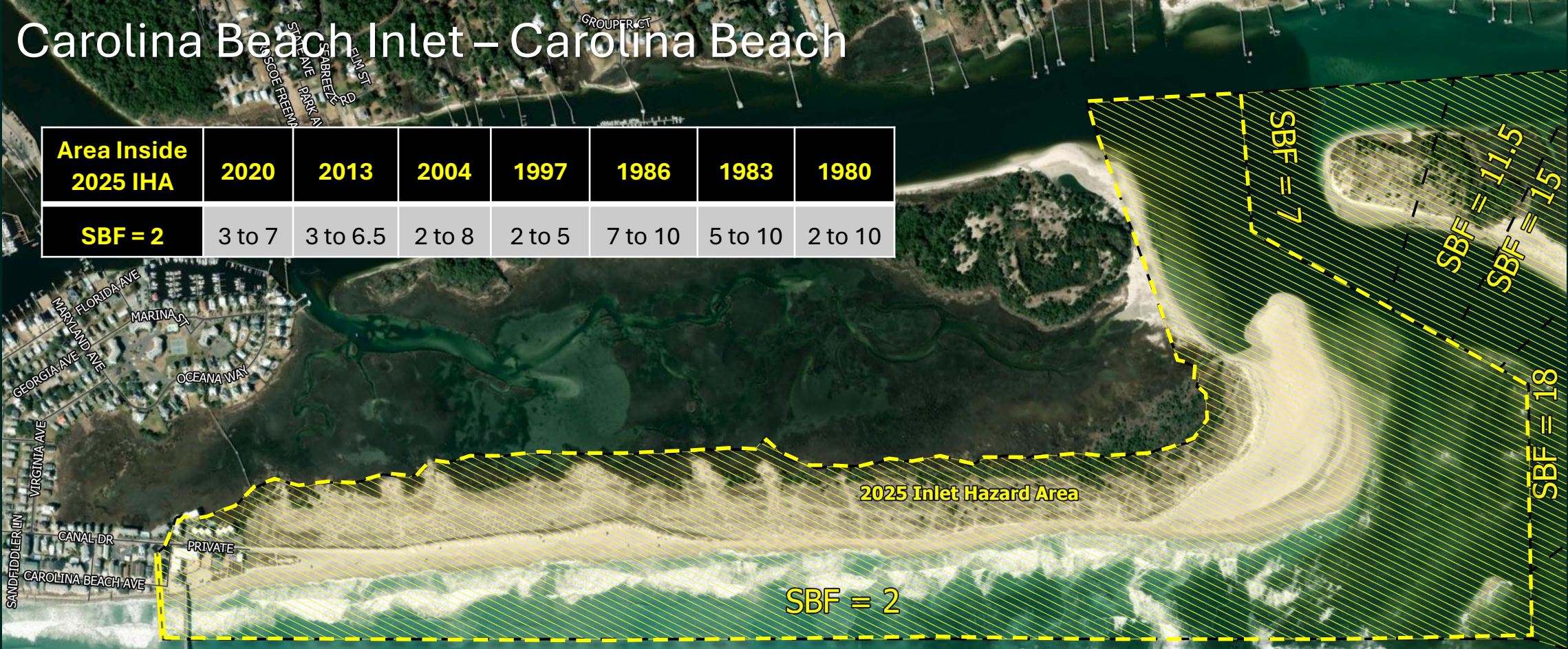
2024 Imagery

**NOTE: SBF = Setback Factor**



# Carolina Beach Inlet – Carolina Beach

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	3 to 7	3 to 6.5	2 to 8	2 to 5	7 to 10	5 to 10	2 to 10



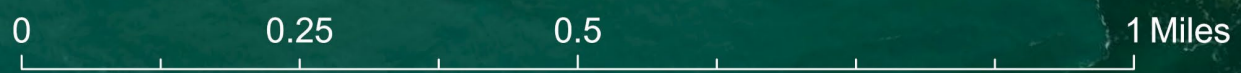
## 2025 Inlet Hazard Area Setback Factors Carolina Beach at Carolina Beach Inlet

Legend

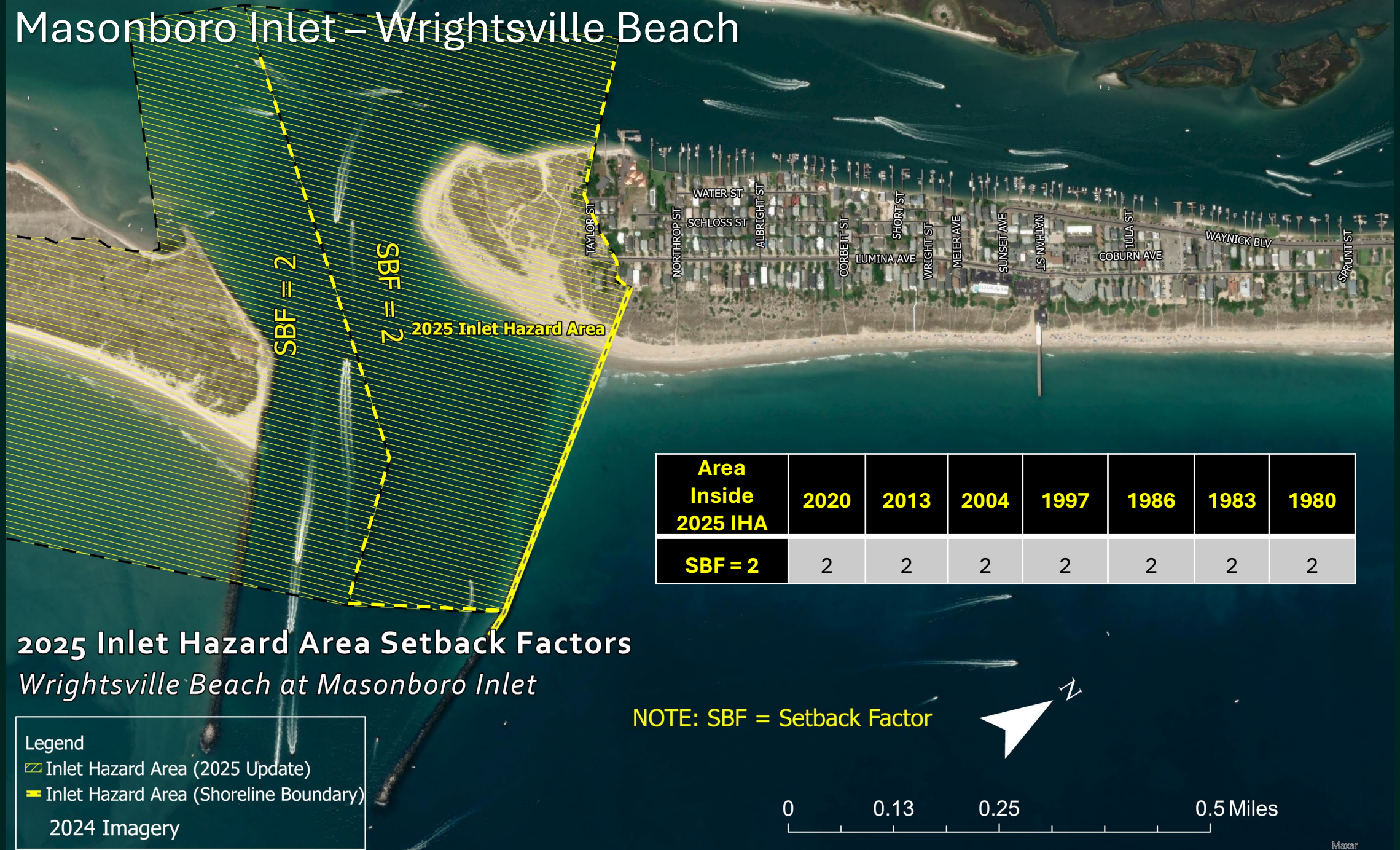
- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2024 Imagery

NOTE: SBF = Setback Factor



# Masonboro Inlet – Wrightsville Beach



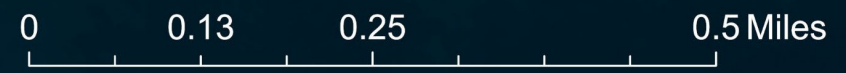
**SBF = 2**  
**SBF = 2**  
**2025 Inlet Hazard Area**

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	2	2	2	2	2	2	2

## 2025 Inlet Hazard Area Setback Factors Wrightsville Beach at Masonboro Inlet

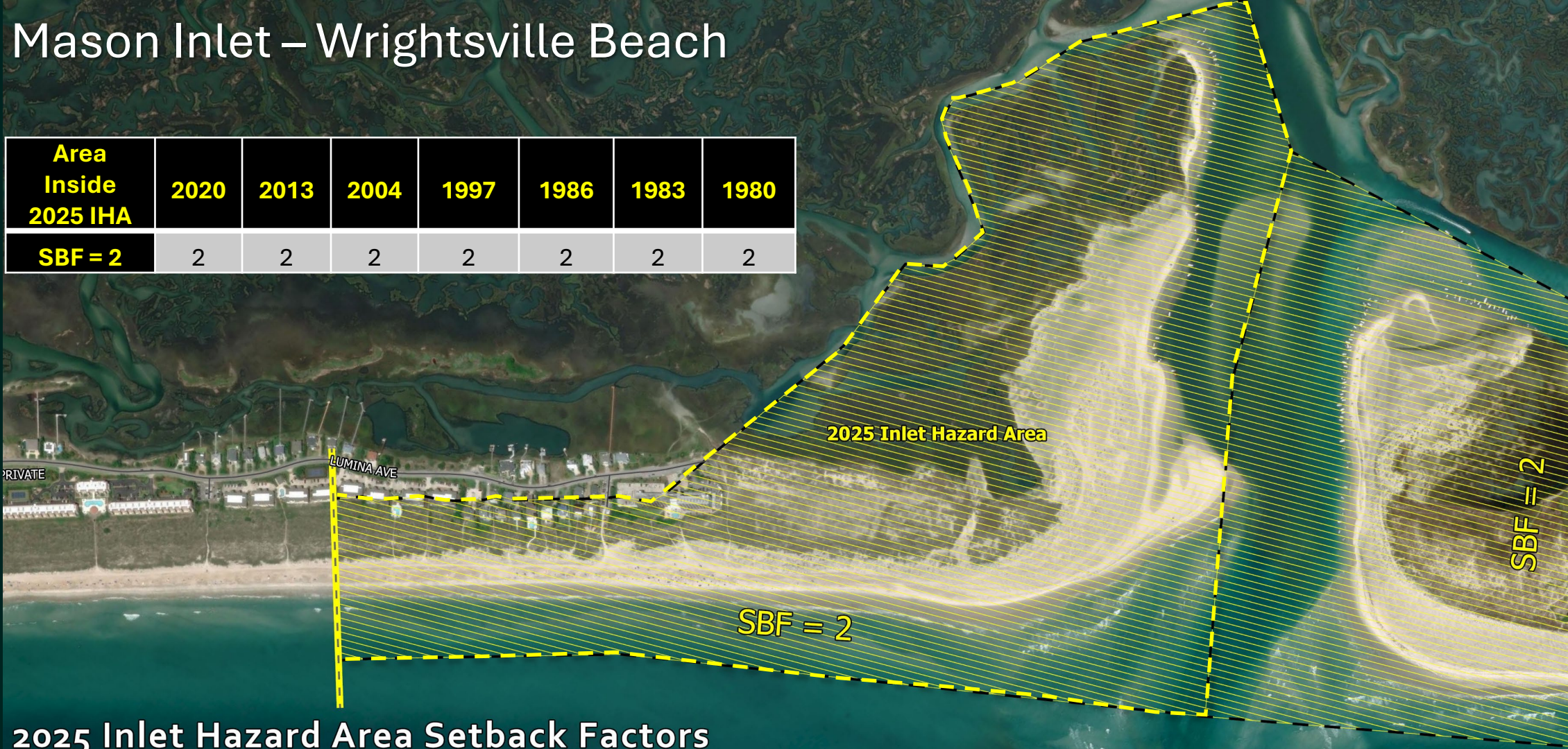
**Legend**  
 ▨ Inlet Hazard Area (2025 Update)  
 - - Inlet Hazard Area (Shoreline Boundary)  
 2024 Imagery

**NOTE: SBF = Setback Factor**



# Mason Inlet – Wrightsville Beach

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	2	2	2	2	2	2	2



## 2025 Inlet Hazard Area Setback Factors

*Wrightsville Beach at Mason Inlet*

**Legend**

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2024 Imagery

NOTE: SBF = Setback Factor



# Mason Inlet – Figure Eight Island



Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	2	2	2	2	2	5	2.3



## 2025 Inlet Hazard Area Setback Factors

*Figure Eight Island at Mason Inlet*

### Legend

-  Inlet Hazard Area (2025 Update)
  -  Inlet Hazard Area (Shoreline Boundary)
- 2024 Imagery

**NOTE: SBF = Setback Factor**



# Rich Inlet – Figure Eight Island

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	2	2	2	2	2	2	2.3
<b>SBF = 3.5</b>	2	2	2	2	2	2	2.3
<b>SBF = 5</b>	2	2	2	2	2	2	2.3
<b>SBF = 2</b>	2	2	2	2	2	2	2.3



## 2025 Inlet Hazard Area Setback Factors

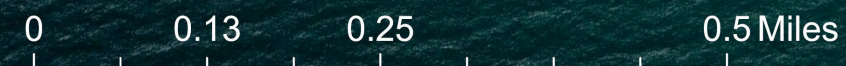
Figure Eight Island at Rich Inlet

Legend

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2024 Imagery

NOTE: SBF = Setback Factor



# New Topsail Inlet – Topsail Beach

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	2	2	2	2	2	2	2



## 2025 Inlet Hazard Area Setback Factors Topsail Beach at New Topsail Inlet

**Legend**

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2024 Imagery

NOTE: SBF = Setback Factor



# New River Inlet – North Topsail Beach

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
<b>SBF = 2</b>	2	2	2	2	2	2	2.5
<b>SBF = 2.5</b>	2	2	2	2	2	2	2.5
<b>SBF = 5</b>	2	2	2	2	2	2	2.5
<b>SBF = 7</b>	2	2	2	2	2	2	2.5
<b>SBF = 6</b>	2	2	2	2	2	2	2.5
<b>SBF = 10</b>	2	2	2	2	2	2	2.5

IHA (current)

IHA (current)



**2025 Inlet Hazard Area Setback Factors**  
*North Topsail Beach at New River Inlet*

**Legend**

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2024 Imagery

NOTE: SBF = Setback Factor



# Bogue Inlet – Emerald Isle

2025 Inlet Hazard Area

SBF = 2

Area Inside 2025 IHA	2020	2013	2004	1997	1986	1983	1980
SBF = 2	2	2	2	3	5	3	NA

## 2025 Inlet Hazard Area Setback Factors Emerald Isle at Bogue Inlet

Legend

- Inlet Hazard Area (2025 Update)
- Inlet Hazard Area (Shoreline Boundary)

2024 Imagery

NOTE: SBF = Setback Factor



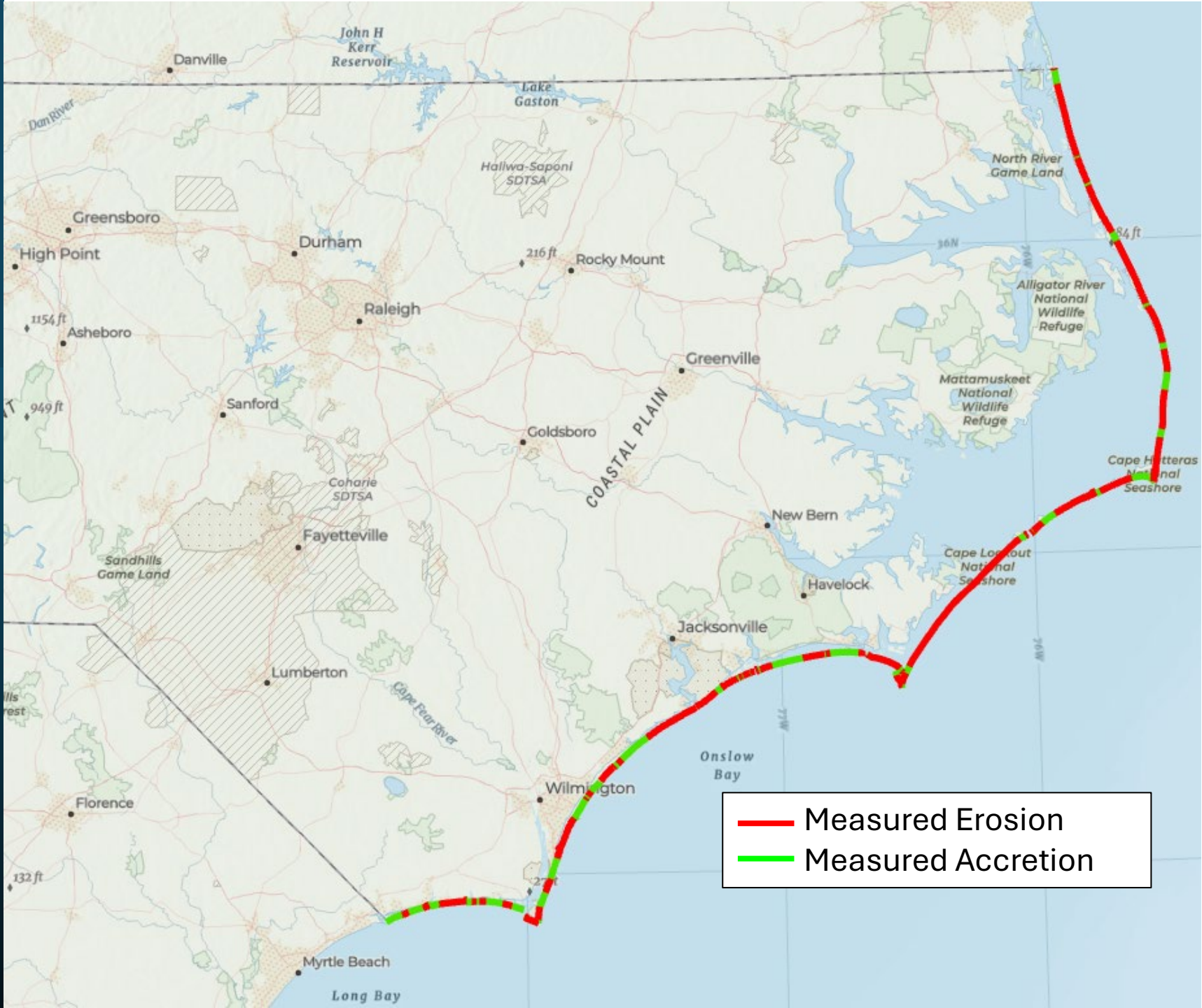
# Structures Inside Inlet Hazard Areas (Current vs. Updated)

Location	Current IHAs	Updated IHAs	Difference
<b>Tubbs Inlet</b> – Sunset Beach	206	17	-189
<b>Tubbs Inlet</b> – Ocean Isle	41	30	-11
<b>Shallotte Inlet</b> – Ocean Isle	0	200	200
<b>Shallotte Inlet</b> – Holden Beach	59	144	85
<b>Lockwood Folly Inlet</b> – Holden Beach	4	42	38
<b>Lockwood Folly Inlet</b> – Oak Island	43	105	62
<b>Carolina Beach Inlet</b> – Carolina Beach	0	18	18
<b>Masonboro Inlet</b> – Wrightsville Beach	0	3	3
<b>Mason Inlet</b> – Wrightsville Beach	1	16	15
<b>Mason Inlet</b> – Figure Eight	36	10	-26
<b>Rich Inlet</b> – Figure Eight	36	62	26
<b>New Topsail Inlet</b> – Topsail Beach	177	17	-160
<b>New River Inlet</b> – North Topsail Beach	84	125	41
<b>Bogue Inlet</b> – Emerald Isle	96	77	-19
<b>Total:</b>	<b>783</b>	<b>866</b>	<b>+83</b>

# Ocean Erodible Area (OEA): Boundaries & Erosion Rates

## Erosion Rate Summary:

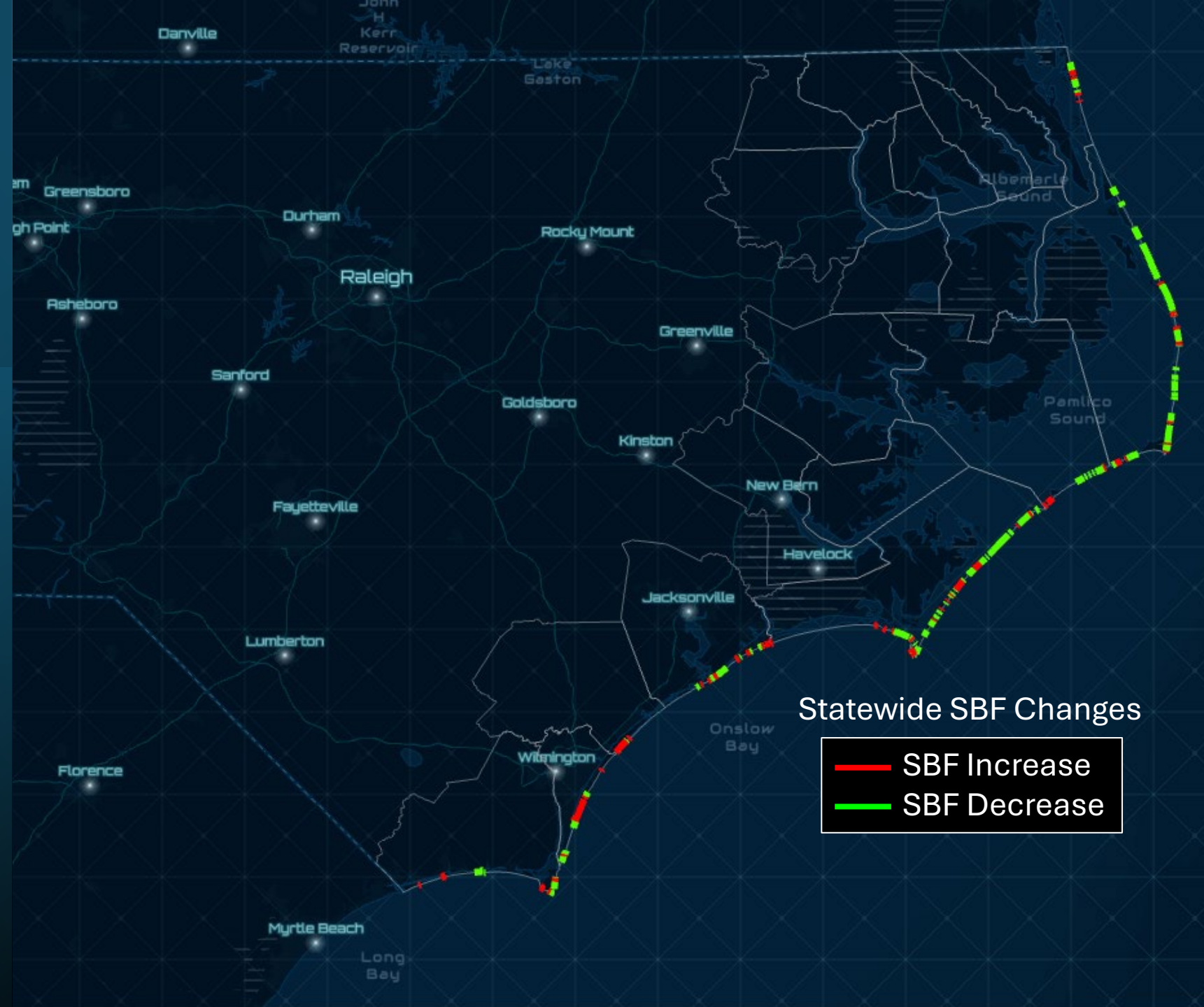
- Statewide Avg. = -1.9 ft/yr
- Erosion = 218 miles
  - Avg. = -4.2 ft/yr
  - Max. = -234 ft/yr
- Accretion = 99 miles
  - Avg. = 3.1 ft/yr
  - Max. = 69 ft/yr



# Ocean Erovable Area (OEA): Erosion Rate Setbacks

## Developed Shoreline Only:

- 144.6 Miles (~46% of total)
  - 124.9 miles (86%) = No Change
  - 17.7 miles (12%) = Decreased SBF
    - Range = 0.5 to 3.5
  - 2.0 miles (2%) = Increased SBF
    - Range = 0.5 to 3.5



# Ocean Erodible Area (OEA)

## Results Compared to Previous Studies

Statewide Summary	2025 Miles %	2020 Miles %	2013 Miles %	2004 Miles %	1997 Miles %	1986 Miles %	1980 Miles %
<b>Miles of Shoreline Mapped/Analyzed</b>	<b>317.8</b>	<b>304.5</b>	<b>307.4</b>	<b>312</b>	<b>300</b>	<b>237*</b>	<b>245*</b>
<b>SBF = 2</b>	<b>193.7</b> 61%	<b>174.6</b> 57.3%	<b>190.2</b> 61.9%	<b>193</b> 62%	<b>165</b> 55%	<b>144</b> 61%	<b>149</b> 61%
<b>SBF = 2.5 to 5.0</b>	<b>66.5</b> 20.9%	<b>67.1</b> 22.1%	<b>62.1</b> 20.2%	<b>64</b> 21%	<b>54</b> 18%	<b>43</b> 18%	<b>52</b> 21%
<b>SBF = 5.5 to 8.0</b>	<b>33.7</b> 10.6%	<b>38.7</b> 12.7%	<b>31.5</b> 10.2%	<b>28</b> 9%	<b>30</b> 10%	<b>20</b> 8%	<b>22</b> 9%
<b>SBF &gt; 8.0</b>	<b>23.8</b> 7.5%	<b>22.7</b> 7.4%	<b>20.8</b> 6.8%	<b>27</b> 8%	<b>32</b> 10.7%	<b>22</b> 9%	<b>22</b> 9%
<b>No Data</b>	<b>0.0</b>	<b>1.4</b> <0.5%	<b>2.8</b> <1%	<b>0</b>	<b>19</b> 6%	<b>8</b> 4%	<b>0</b>

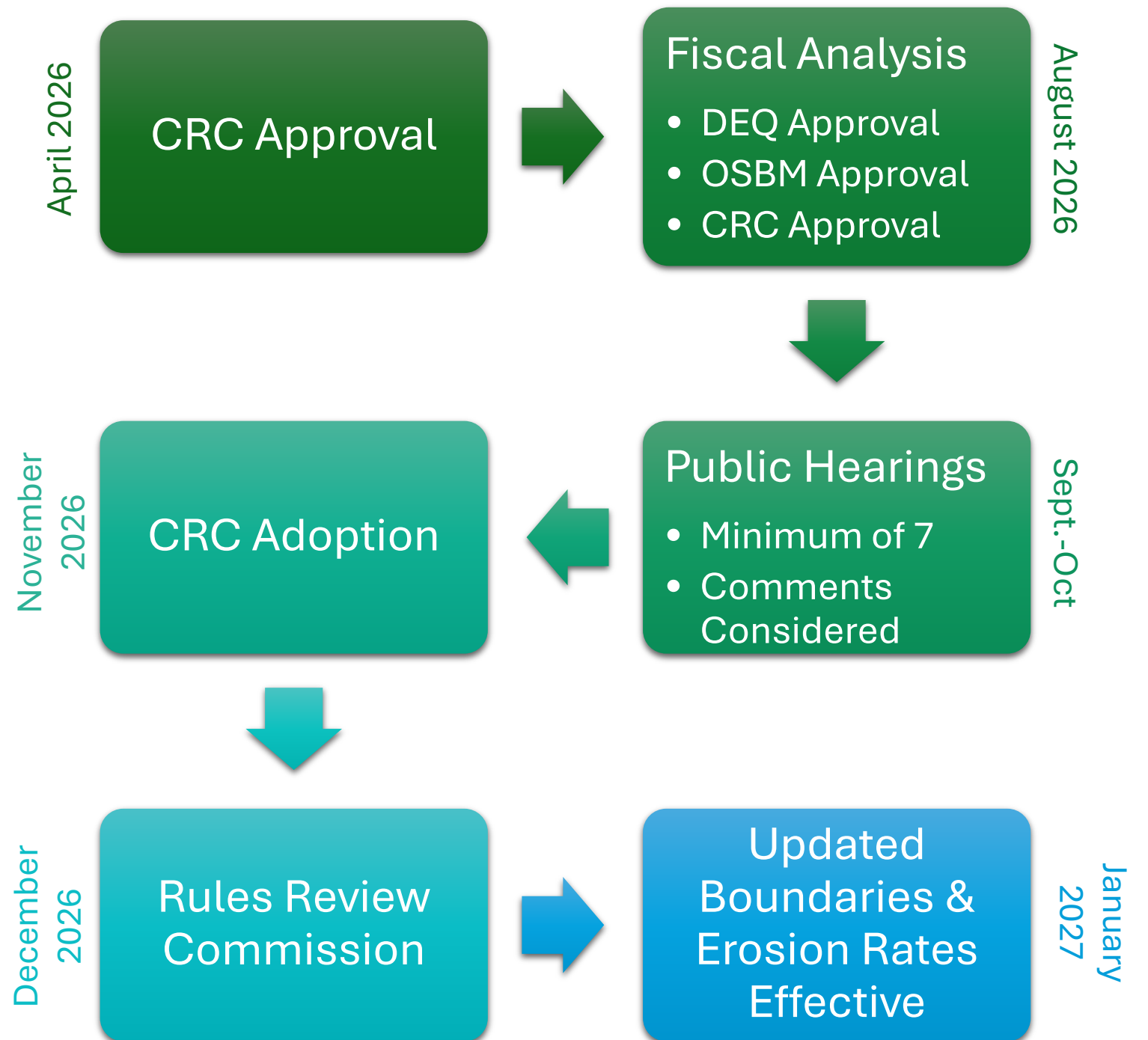
# Ocean Erodible Area (OEA)

Transitioning to Updated Erosion Rates: How they compare

Transition to New Setback Factors	No Change miles %	SBF Increase miles %	SBF Decrease miles %
<b>2020 to Updated</b>	124.9 86%	2 1.4%	17.7 12%
<b>2013 to 2020</b>	120.5 86%	20.3 14%	3.8 2.6%
<b>2004 to 2013</b>	118.3 82%	10.3 7%	16 11%
<b>1997 to 2004</b>	111.6 77%	10.4 7%	22.6 16%

SBF = Setback Factor

# Rule-Making Process



# Questions?

## **Reports & Maps are available online:**

<https://www.deq.nc.gov/about/divisions/division-coastal-management>

## **DCM's Online Map Viewer (AGOL):**

- Viewed
- Data downloaded
- Web Data Services

## **Contact:**

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