



NORTH CAROLINA
Environmental Quality

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MEMORANDUM

TO: Coastal Resources Commission
FROM: Ken Richardson
SUBJECT: Ocean Hazard Area (OHA) Setbacks

At your November 2024 meeting National Park Service Superintendent Dave Hallac delivered a compelling presentation on the history of human development on the Outer Banks, specifically adjacent to the Cape Hatteras National Seashore. The presentation moved into the present day, showing that 10 oceanfront houses had collapsed into the ocean within the previous four years, releasing hazardous and toxic pollutants into the water, and producing debris fields that stretched for miles and shut down beaches to visitors. Mr. Hallac's presentation is available at <https://www.deq.nc.gov/hallac-crc-threatened-structures-presentation/open>.

Superintendent Hallac also posed a question, what happens when the CRC's oceanfront setback "expires", i.e., 30 years after a structure that uses a 30x setback multiplier is built? The question is relevant not just to the Outer banks, but across the North Carolina coast. According to Mr. Hallac and a broad range of scientists and other experts, including the CRC's Science Panel, future conditions related to shoreline position and water levels are not expected to improve on their own, and human interventions are expensive and require regular maintenance. It's a complicated question that will require a comprehensive response involving all of us.

To follow up on Superintendent Hallac's presentation staff thought it would be useful to review the program's history with oceanfront setbacks, through to the CRC's current regulatory approach and the bases for changes that were made over the past 45 years.

Early History:

Beginning in 1977, the CRC began a deliberate and carefully thought-out multi-year process of developing oceanfront regulations. This effort took eight years, involved many stakeholders and included the following elements:

1. Self-education about natural processes, the effects these processes have on development, what the threats are, and what is threatened.
2. A comprehensive survey and evaluation of the full range of management techniques.
3. An analysis of the accuracy and adequacy of hazard data and information.



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4. The development of consensus on clear objectives, and
5. A commitment to a process of openness to public input, and for reevaluation, reassessment and fine tuning throughout the time it took to put the program in place.

As the management program was developed, it expanded to incorporate several key elements. The primary focus was on creating regulations for development within the Areas of Environmental Concern (AECs), including setbacks, structural standards, and restrictions on shoreline hardening. During early planning discussions, it became evident that land acquisition might also be a necessary management tool, particularly in areas considered too hazardous to develop or difficult to regulate effectively. This prompted deliberations on potential funding strategies such as tax credits to encourage donations, discouraging public investments (infrastructure) in certain areas, and efforts were made to influence the Federal Flood Insurance program. However, ultimately, the program chose to prioritize public education and outreach, with an emphasis on improving understanding of the process and coastal management efforts.

To better understand the risks and affected areas, the CRC sought information to assess erosion and the extent of ongoing changes. During this time, there was a significant amount of reliable long-term erosion data available from North Carolina State University (NCSU), the U.S. Park Service, and other sources – specifically, Dr. Robert Dolan at University of Virginia who had conducted studies on the northern Outer Banks. However, at the time no storm erosion data existed, which prompted a contract with NCSU to gather this information. While the storm erosion data proved sufficient for defining the hazard and permit jurisdiction zone, later referred to in rule as the Ocean Erodible Area (OEA), it was not detailed enough to establish setbacks or guide individual permit decisions. At the same time, an internal study was conducted to identify inlet hazard zones, which would become the Inlet Hazard Areas (IHAs). The OEA and IHA ultimately defined most of the area within NC’s Ocean Hazard Areas (OHA).

As the methods for defining AEC boundaries evolved, the CRC spent a year considering setback rules pertaining to these AECs. The CRC acknowledged that areas seaward of the setback should be regarded as highly hazardous and dynamic zones, unsuitable for new permanent structures. However, they clarified that these areas were not intended to serve as precise predictions of where the shoreline would be in thirty years. Instead, they should be considered a hazard zone, inherently unsuitable for new permanent construction due to historical trends of shoreline movement caused by erosion and storms.

In a memo dated October 13, 1980 (CRC-135), the CRC outlined the following reasons for establishing setbacks for new permanent construction:

1. Mitigating losses of life and property resulting from storms and long-term erosion.
 - a. Preventing damage to structures and protecting occupants where structures may be constructed in more hazardous parts of the beach (forward of the setback).
 - b. Preventing damage to neighboring structures that might be properly set back.
 - c. Allowing buffer areas for protective dunes that can dissipate storm energy. At the time the CRC felt that a minimum of 60 feet was needed even if the beach appeared to be relatively stable because it was still subject to storms and short-term fluctuations.



2. Preventing encroachment of permanent structures on the public beach.
 - a. Even if structures are built to withstand worse case scenarios, long-term erosion could potentially leave them positioned on the beach or in the water. The state owns the land below MHW and has a legal obligation to protect public interest in the free use of these areas – in addition, the public also has the right to use the dry-sand beach. The existence of open, uncluttered beaches is essential to the economic prosperity of many coastal communities as their economy centers on recreation and tourism.
3. Reducing the public cost of poorly sited development. If development is located where it is likely to be damaged or destroyed, there are likely to be costs to the taxpayer as well as the owners of the property. The CRC identified four types of public costs that the setback is designed to minimize:
 - a. Flood insurance claims.
 - b. Disaster relief, both immediate (evacuations, food, shelter) and longer term (reconstruction loans).
 - c. Erosion control projects (i.e., beach nourishment, jetties, groins).
 - d. Infrastructure investments. Normal public services (roads, water, sewer, utilities) that are available to develop within the setback would also be subject to periodic damage and destruction, thereby generating public costs for repair, replacement, and protection.

Ocean Hazard Areas & Setbacks:

The Ocean Erodible Area of Environmental Concern and setback rules have been in effect since June 1, 1979. Currently, Ocean Hazard AEC boundaries are defined in 15A NCAC 07H .0304, and setback rules in 15A NCAC 07H .0306. Like many of the Commission’s rules, these have evolved over time as coastal changes, challenges and risks are better understood. The following summarizes setback rules and Ocean Erodible Area boundary changes since 1978:

- Setbacks 1978 (*initial concept*): on oceanfront lots which have no frontal dune formations, new construction must be located at least ten times the long-term erosion rate back from the dune line as defined in the NC Water Plan, Chapter 10 (1978 CRC Memo). This recommendation was short-lived and soon replaced.
- Setbacks 1979: adopted by the CRC in April 1979, effective June 1, 1979. Required that setbacks must be behind frontal dune, and 30 times the erosion rate measured from the vegetation line. Where no vegetation exists, the vegetation lines of adjacent areas shall be extended or connected to establish an interpolated vegetation line. The minimum setback is 60 feet (30 x erosion rate).
 - 1980 amendments: new development to be located behind the primary dune. Primary dune defined as elevation equal to 100-year flood elevation plus 6 feet. If no dune is present, setback is 30 times the erosion rate setback factor. Thirty (30) was chosen by the CRC because the Commission felt that it represented the minimum economic life of a new structure.



- If neither primary nor frontal dune exists, development shall be landward of setback line (30 x erosion rate setback factor).
 - If a primary dune exists, development shall be landward of the crest of the primary dune or setback line, whichever is farther away from vegetation.
 - If no primary dune exists, but a frontal dune does, development shall be landward of the crest of the frontal dune or setback line, whichever is farther away from vegetation.
- 1981 Note: The CRC adopted an exception to erosion rate setbacks for pre-existing lots (prior to June 1, 1979) meeting 60 feet minimum setback (15A NCAC 07H.0309(b)).
- Setbacks 1983: Adoption of increased setbacks for large structures. All structures must be located behind the erosion setback line, the crest of the primary dune, or the landward toe of the frontal dune, whichever is greater.
 - Small structure setbacks 30 times erosion rate setback factor (minimum of 60 feet).
 - Large structures setbacks (greater than 5,000 sqft), more than 4 dwelling unit multi-family or commercial, 60 times erosion rate setback factor. If the distance of the setback will be greater than 105 feet longer than the basic setback, then a distance of the setback plus 105 feet is used. *Example: for small structures in an area with an erosion rate of 10 ft/yr, the setback would be 300 feet (30 x 10). For a large structure, the setback would be 600 feet. Because the basic setback cannot be increased by 105 feet, the setback would be 405 feet (105 + 300).*
 - Ocean Erodible Area defined as 60 times erosion rate setback factor plus 100-Year Storm Recession Rate. *The 100-YSTR is where significant erosion can be expected during a major storm and varies from 145 to 700 added feet.*

By the early 2000s, the CRC recognized a significant trend toward larger oceanfront development. These expansive structures introduced multiple risks, including a heightened threat to human life and property caused by erosion. Additionally, they contributed to the potential loss or degradation of public beach areas, natural oceanfront features, and coastal ecosystems. The financial burden on public resources was also a significant concern, given increased costs associated with flood insurance, erosion control measures, storm protection infrastructure, disaster relief efforts, and the provision of essential public services such as water, sewer, and emergency response. Furthermore, the sheer size and permanence of these structures made relocation increasingly difficult and costly in the face of eroding shorelines. In an effort to mitigate these escalating risks, the CRC determined that greater oceanfront setbacks were necessary.

- 2009 to Present (2025): The current graduated setback rules went into effect on August 11, 2009. Setback distance corresponds to a structure's size and the erosion rate setback factor (Table 1). This approach aims to create greater distance between larger structures and coastal hazards, reducing the risks associated with erosion, storm damage, and shoreline retreat. For a structure less than 5,000 square feet, the minimum remains 60 feet (30 x 2).
 - Ocean Erodible Area: boundary is defined as erosion rate setback factor times 90 measured from the first line of stable natural vegetation, pre-project vegetation (formerly called static line), or measurement line; whichever is applicable.



Table 1. This table illustrates current oceanfront setback requirements per Rule 15A NCAC 07H .0306.

Structure Size	Setback (feet)	example “setback factor = 2”
< 5,000 sqft.	Minimum 60 feet, or 30 x setback factor	$2 \times 30 = 60 \text{ feet}$
$\geq 5,000$ sqft.	Minimum 120 feet, or 60 x setback factor	$2 \times 60 = 120 \text{ feet}$
$\geq 10,000$ sqft.	Minimum 130 feet or 65 x setback factor	$2 \times 65 = 130 \text{ feet}$
$\geq 20,000$ sqft.	Minimum 140 feet or 70 x setback factors	$2 \times 70 = 140 \text{ feet}$
$\geq 40,000$ sqft.	Minimum 150 feet or 75 x setback factor	$2 \times 75 = 150 \text{ feet}$
$\geq 60,000$ sqft.	Minimum 160 feet or 80 x setback factor	$2 \times 80 = 160 \text{ feet}$
$\geq 80,000$ sqft.	Minimum 170 feet or 85 x setback factor	$2 \times 85 = 170 \text{ feet}$
$\geq 100,000$ sqft.	Minimum 180 feet or 90 x setback factor	$2 \times 90 = 180 \text{ feet}$

Currently, because setbacks can help preserve spaces that can serve as undeveloped buffer areas for storms, the U.S. Federal Emergency Management Administration (FEMA) currently uses North Carolina’s erosion rate updates to award Community Rating System (CRS) points to qualified coastal communities. The CRS is used by FEMA to assess flood insurance rates for these communities. FEMA’s current policy allows North Carolina’s oceanfront erosion rates update to account for fifty (50) CRS points only if the state’s erosion rates are updated every five years. Loss of these points could potentially result in increased flood insurance rates for certain coastal communities.

Application of Setbacks Inside the Ocean Hazard AEC:

The Ocean Hazard Area setback for new oceanfront development is measured in a landward direction from the first line of stable and natural vegetation (vegetation line), the pre-project vegetation line, or the measurement line, whichever is applicable. Setback distance is calculated by multiplying a Setback Factor (a.k.a. “erosion rate”) times a graduated variable that corresponds to the size of the proposed structure (*see Table 1*). The Setback Factor represents the statistically smoothed and blocked, average annual, long-term shoreline change rates (“erosion rates”), which are updated approximately every 5 years. For purposes of establishing a minimum construction setback, “2” is the default minimum Setback Factor, which includes those areas with erosion rates less than 2 feet/year and areas where accretion is measured. The following summarizes these Ocean Hazard Area landforms in Rule 15A NCAC 07H .0305:

- **Vegetation Line, or First Line of Stable & Natural Vegetation (FLSNV)** The FLSNV is the primary reference feature for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, and the more stable uplands. If the vegetation has been planted, it may be considered “stable” when most of the plant stems are from continuous rhizomes rather than planted individual root sets. Planted vegetation may be considered “natural” when most of the plants are mature and



additional species native to the region have been recruited, providing stem and rhizome densities that are like adjacent areas that are naturally occurring.

While the vegetation line has been used as an oceanfront setback measurement line since 1979, the CRC has previously determined that when vegetation moves oceanward after a beach nourishment project, this represents an artificial situation that should not be considered “stable and natural” and therefore should not be used for measuring oceanfront setbacks. In 1995, the CRC codified a method of measuring setbacks on nourished beaches that utilizes the surveyed pre-project existing vegetation line, which became known as the Static Vegetation Line, and then Pre-Project Vegetation Line on August 1, 2022.

- **Pre-Project Vegetation Line (PPVL):** The PPVL is established in areas within the boundaries of a large-scale beach fill project (>300,000 cubic yards) and represents the vegetation line that existed within one year prior to the onset of project construction. A PPVL is established in coordination with the Division of Coastal Management. Once a PPVL is established, setbacks are measured from it or the vegetation line, whichever is more landward. In addition, once a PPVL is established it does not expire.

The CRC’s PPVL rule was based on three primary issues: 1) evidence that nourished beaches can have higher erosion rates than natural beaches, 2) no assurance that funding for future nourishment projects would be available for maintenance work as the original project erodes away, and 3) structures could be more vulnerable to erosion damage since their siting was tied to an artificially-forced system. The intent of the static line provisions has been to recognize that beach nourishment is an erosion response necessary to protect existing development but should not be a stimulus for new development on sites that are not otherwise suitable for building.

- **Beach Management Plan (*formerly called “Static Vegetation Line Exception”*):** Over time, the Commission found that some communities had demonstrated a long-term commitment to beach nourishment and maintenance of their nourished beaches. Due to this long-term commitment, beach vegetation had become stable and migrated oceanward of the PPVL. In many cases, proposed development on lots within these communities could meet the required setback from the new vegetation line but could not be permitted since they did not meet the setback from the PPVL.

To recognize local government efforts to address erosion through a documented long-term commitment to beach nourishment, and to offer relief from the PPVL requirements, the CRC adopted Static Vegetation Line Exception procedures in 2009, later to become Beach Management Plan (BMP) Rules (15A NCAC 07J.1200) in



August 2022. The BMP allows a community to measure setbacks from the vegetation line rather than the PPVL, but includes certain limitations and conditions.

To be eligible for a CRC approved BMP, a community must petition the CRC by providing a beach management plan that describes the project area and design; identify sediment sources; identify funding sources to maintain the initial large-scale project; and, provide an update on project effectiveness and how it will continue to be maintained. The plan must be updated and presented to the CRC every 5 years for reauthorization. With an approved BMP, development must meet the required setback from the vegetation line, no portion of a building or structure can be oceanward of the landward-most adjacent neighbor or an average line of construction is determined by DCM, and no swimming pools may be permitted seaward of PPVL.

Currently there are twenty-two North Carolina communities with a PPVL, and one pending. Eight of those communities either have or had CRC-authorized Static Vegetation Line Exceptions, with three currently having CRC approved Beach Management Plans (*see Table 2*).



Table 2. List of Communities with Pre-Project Vegetation Lines, Beach Management Plans or Static Line Exceptions.

Community	PPVL	SVL Exception	BMP
Ocean Isle	Yes	Yes	<i>Draft Pending</i>
Oak Island	Yes	<i>No</i>	Yes
Caswell Beach	Yes	<i>No</i>	<i>No</i>
Bald Head Island	Yes	<i>No</i>	<i>No</i>
Kure Beach	Yes	<i>No</i>	Yes
Carolina Beach	Yes	Yes	<i>Draft Pending</i>
Wrightsville Beach	Yes	<i>No*</i>	Yes
Figure Eight Island	<i>No</i>	<i>No</i>	<i>No</i>
Topsail Beach	Yes	<i>No</i>	<i>No</i>
Surf City	Draft	<i>No</i>	<i>No</i>
North Topsail Beach	Yes	<i>No</i>	<i>No</i>
Emerald Isle	Yes	Yes	<i>Draft Pending</i>
Indian Beach	Yes	Yes	<i>Draft Pending</i>
Salter Path	Yes	Yes	<i>Draft Pending</i>
Pine Knoll Shores	Yes	Yes	<i>Draft Pending</i>
Atlantic Beach	Yes	Yes	<i>Draft Pending</i>
Buxton	Yes	<i>No</i>	<i>No</i>
Rodanthe	Yes	<i>No</i>	<i>No</i>
Nags Head	Yes	<i>No</i>	<i>No</i>
Kill Devil Hills	Yes	<i>No</i>	<i>No</i>
Kitty Hawk	Yes	<i>No</i>	<i>No</i>
Southern Shores	Yes	<i>No</i>	<i>No</i>
Duck	Yes	<i>No</i>	<i>No</i>

- Measurement Line:** A Measurement Line represents the post-storm location of a vegetation line if a storm causes overwash or a loss of vegetation so that not enough vegetation exists to determine oceanfront setbacks. This line is located by using the most current pre-storm aerial photography to map the pre-storm vegetation line, and then moving it landward a distance equal to the average width of the beach recession caused by the storm. Measurement lines are generally temporary until the vegetation is re-established to the point where it can once again be used for determining oceanfront setbacks but may also be permanently designated by the CRC. Currently there are three communities with active Measurement Lines (Oak Island, Surf City, and North Topsail).

Appendix A: Rule 15A NCAC 07H .0304 – AECs with Ocean Hazard Areas

Appendix B: Rule 15A NCAC 07H.0305 – Definition and Description of Landforms

Appendix C: Rule 15A NCAC 07H .0306 – General Use Standards Inside Ocean Hazard Areas



Appendix A: Rule 15A NCAC 07H .0304 – AECs with 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 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 for each segment of the North Carolina coast is depicted on maps entitled "North Carolina 2019 Oceanfront Setback Factors & Long-Term Average Annual Erosion Rate Update Study" 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). 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>.
- (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 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 are incorporated by reference and are hereby designated as Inlet Hazard Areas, except for:
 - (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. 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.
- (3) Unvegetated Beach Area. Beach areas within the Ocean Hazard Area where no stable and natural vegetation is present may be designated as Unvegetated Beach Areas 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 due to 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 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 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.

- (4) State Ports Inlet Management Area. These are areas adjacent to and within Beaufort Inlet and the mouth of the Cape Fear River, providing access to a State Port via a channel maintained by the United States Army Corps of Engineers. These areas are unique due to the influence of federally-maintained channels, and the critical nature of maintaining shipping access to North Carolina's State Ports. These areas may require specific management strategies not warranted at other inlets to address erosion and shoreline stabilization. State Ports Inlet Management Areas shall extend from the mean low water line landward as designated on maps approved by the Coastal Resources Commission and available without cost from the Division of Coastal Management, and on the internet at the website at https://files.nc.gov/ncdeq/Coastal%20Management/GIS/state_port_aec.pdf.

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. April 1, 2020; July 1, 2016; September 1, 2015; May 1, 2014; February 1, 2013; January 1, 2010; February 1, 2006; October 1, 2004; April 1, 2004; August 1, 1998; Readopted Eff. December 1, 2020; Amended Eff. August 1, 2022; September 1, 2021.



Appendix B: Rule 15A NCAC 07H.0305 – Definition and Description of Landforms

This Rule 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. Primary dunes extend 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 the first mound of sand located landward of ocean beaches that has stable and natural vegetation present.
- (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. Planted 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 and 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) Pre-project 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 project construction shall be defined as the "pre-project vegetation line". The "onset of project construction" shall be defined as the date sediment placement begins, with the exception of projects completed prior to the original effective date of this Rule, in which case the award of the contract date will be considered the onset of construction. A pre-project 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 pre-project 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 pre-project vegetation line, the vegetation line shall be used as the reference point for measuring oceanfront setbacks. A pre-project vegetation line shall not be established where a pre-project 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 pre-project 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 in 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 pre-project 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.
- (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(3) of this Section. In areas designated pursuant to Rule .0304(3)(b) of this Section, the Division of Coastal Management shall establish a measurement line by:
 - (a) determining the average distance the pre-storm vegetation line receded at the closest vegetated site adjacent to the area designated by the Commission as the unvegetated beach AEC; and
 - (b) mapping a line equal to the average recession determination in Part (a) of this Subparagraph, measured in a landward direction from the first line of stable and natural vegetation line on the most recent pre-storm aerial photography in the area designated as an unvegetated beach AEC.

*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, 2020; April 1, 2016; April 1, 2008; August 1, 2002; August 1, 1998;
Readopted Eff. December 1, 2020;
Amended Eff. August 1, 2022.*



Appendix C: Rule 15A NCAC 07H .0306 – General Use Standards Inside 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 shall be measured in a landward direction from the vegetation line, the pre-project vegetation line, or the measurement line, whichever is applicable.
- (2) The ocean hazard setback shall be determined by both the size of development and the shoreline long term erosion rate as defined in Rule .0304 of this Section. "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 shall not be 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.
- (3) With the exception of those types of development defined in 15A NCAC 07H .0309(a), no development, including any portion of a building or structure, shall extend oceanward of the ocean hazard setback. 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 shall be 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 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 require a setback of 120 feet or 60 times the shoreline erosion rate, whichever is greater;
 - (K) Notwithstanding any other setback requirement of this Subparagraph, construction of a new building or other structure greater than or equal to 5,000 square feet in a community with an unexpired static line exception or Beach Management Plan approved by the Commission 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 vegetation line or measurement line, whichever is farthest landward; and
 - (L) Notwithstanding any other setback requirement of this Subparagraph, replacement of a structure with a total floor area no greater than 10,000 square feet shall be allowed provided that the structure meets the following criteria:
 - (i) the structure is in a community with an unexpired static line exception, Beach Management Plan approved by the Commission, or 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)(5) of this Rule;
 - (iv) the structure as replaced meets the minimum setback required under Part (a)(5)(A) of this Rule; a minimum setback of 60 feet or 30 times the shoreline erosion rate, whichever is greater; and
 - (v) the structure is rebuilt as far landward on the lot as feasible.
- (4) If a primary dune exists in the AEC, on or landward of the lot where the development is proposed, the development shall be landward of the applicable ocean hazard setback and the crest of the primary dune. For existing lots 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, and shall not be located on or oceanward of a frontal dune. For the purposes of this Rule, "existing lots" shall mean a lot or tract of land that, as of June 1, 1979, is specifically described in a recorded plat and cannot be enlarged by combining the lot or tract of land with a contiguous lot or tract of land under the same ownership.
 - (5) If no primary dune exists, but a frontal dune does exist in the AEC on or landward of the lot where the development is proposed, the development shall be set landward of the frontal dune or ocean hazard setback, whichever is farthest from the vegetation line, pre-project vegetation line, or measurement line, whichever is applicable.
 - (6) Structural additions or increases in the footprint or total floor area of a building or structure represent expansions to the total floor area and shall meet the setback requirements established in this Rule and 15A NCAC 07H .0309(a). New development landward of the applicable setback may be cosmetically but not be structurally attached to an existing structure that does not conform with current setback requirements.
 - (7) 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, nor shall such development increase the risk of damage to public trust areas. Development shall not encroach upon public accessways, nor shall it limit the intended use of the accessways.



- (8) Development setbacks in areas that have received large-scale beach fill as defined in 15A NCAC 07H .0305 shall be measured landward from the pre-project vegetation line as defined in this Section, unless an unexpired static line exception or Beach Management Plan approved by the Commission has been approved for the local jurisdiction by the Coastal Resources Commission in accordance with 15A NCAC 07J .1200.
- (9) 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 under the following conditions:
- (A) Development meets all setback requirements from the vegetation line defined in Subparagraphs (a)(1) and (a)(3) of this Rule;
 - (B) Development setbacks shall be calculated from the shoreline erosion rate in place at the time of permit issuance;
 - (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 habitable building or structure. 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. 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. If no structures exist within this distance, the proposed structure must meet the applicable setback from the Vegetation Line and will not be held to the landward-most adjacent structure or an average line of structures.
 - (D) With the exception of swimming pools, the exceptions defined in Rule .0309(a) of this Section shall be allowed oceanward of the pre-project vegetation line.
- (b) Development shall not cause irreversible damage to historic architectural or archaeological resources as documented by the local historic commission, the North Carolina Department of Natural and Cultural Resources, or the National Historical Registry.
- (c) 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.
- (d) 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.
- (e) 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. The acknowledgement shall state that the Coastal Resources Commission does not guarantee the safety of the development and assumes no liability for future damage to the development.
- (f) The relocation or elevation of structures shall require permit approval.

- (1) Structures relocated landward with public funds shall comply with the applicable ocean hazard setbacks and other applicable AEC rules.
- (2) Structures relocated landward entirely with non-public funds that do not meet current applicable ocean hazard setbacks may be relocated the maximum feasible distance landward of its present location. Septic tanks shall not be relocated oceanward of the primary structure.
- (3) Existing structures shall not be elevated if any portion of the structure is located seaward of the vegetation line.

(g) 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 eight 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 eight 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. This permit condition shall not affect the permit holder's right to seek authorization of temporary protective measures allowed pursuant to 15A NCAC 07H .0308(a)(2).

*History Note: Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;
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