STATE OF NORTH CAROLINA	BEFORE THE COASTAL RESOURCES COMMISSION
COUNTY OF PERQUIMANS	CRC-20-13
IN THE MATTER OF THE PETITION FOR RULEMAKING BY: **THOMAS & JUDITH LAMPLEY**	**RECOMMENDATION OF THE DIRECTOR OF THE DIVISION OF COASTAL MANAGEMENT**

INTRODUCTION

Thomas S. Lampley and Judith A. Lampley (Petitioners), have submitted a Petition for Rulemaking (Petition) pursuant to N.C.G.S § 150B-20, N.C.G.S § 113A-124, and 15A NCAC 7J .0605 requesting repeal and/or revision of certain provisions contained in 15A NCAC 7H .0209 Coastal Shorelines.

The Petition requests that the rule governing exceptions to non-water dependent uses within the 30-foot buffer area of the rules for the Coastal Shorelines Area of Environmental Concern (AEC), found at 15A NCAC 7H .0209(d)(10), be amended to expand non-water dependent uses within the buffer to include "patio-like structures no larger than 200 square feet and constructed in such a manner as to avoid potential storm water runoff into adjacent waterways…" through the inclusion of an additional exception in 15A NCAC 7H .0209(d)(10). Specifically, Petitioners seek to allow up to 200 square foot patios composed of materials such as pavers, bricks, stone, slate or similar materials spaced in sand, and sited at least four feet from bulkheads with at least a two-inch lip above the ground. The exception would also allow fire pits up to six feet in diameter and 18 inches high to be located within the patio area.

Under 7H .0209, the Coastal Shorelines AEC includes the Estuarine Shorelines and Public Trust Shorelines subcategories. Estuarine shorelines are defined as those non-ocean shorelines extending from the normal high water level (NHW) or normal water level (NWL) along the estuarine waters, estuaries, sounds, bays, fresh and brackish waters, and public trust areas as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Environmental Quality. The Estuarine Shoreline AEC extends from NHW or NWL landward a distance of 75 feet except in areas adjacent to waters classified as Outstanding Resource Waters (ORW) by the Environmental Management Commission (EMC), where it extends 575 feet. Public Trust Shorelines are located within the 20 coastal counties but inland of the dividing line between coastal fishing waters and inland fishing waters, and extend 30 feet landward of NHW or NWL. Pursuant to 15A NCAC 7H .0209(e), the Commission's buffer shall not apply in areas where the EMC has adopted regulatory buffer areas that are wider and more restrictive (Neuse and Tar-Pamlico river basins).

While development is generally prohibited within the 30-foot buffer, the Commission's rule lists ten exceptions. Petitioners propose additional exceptions as follows, (proposed changes in bold). A copy of the full text of 15A NCAC 7H .0209 is included in this packet.

Petitioners' Proposed Amendments to 15A NCAC 7H .0209(d)(10)(K)

(10) Within the Coastal Shorelines category (estuarine and public trust shoreline AECs), new development shall be located a distance of 30 feet landward of the normal water level or normal high water level, with the exception of the following:

(K) Residential, patio-like structures no larger than 200 square feet, provided:

(i) The surface of the patio is composed of materials such as pavers, bricks, stone, slate, or similar, spaced in sand so as to provide for water drainage within the 200 square foot surface area;

(ii) Any development in the 30-foot buffer zone may not be closer than 4 feet from a bulkhead and be situated on level ground;

(iii) The development must be surrounded with mature vegetation;

(iv) The location must be separated from the water by a bulkhead that shall have a 2-inch lip above the vegetated area; and

(v) Inclusion of a gas fire pit, not to exceed 6 feet in diameter, 18 inches in height, and with drainage directly into in-situ ground, shall be permitted, if constructed within the patio area.

HISTORY OF THE COMMISSION'S 30-FOOT BUFFER RULE

As background for this response, Staff reviewed Commission's meeting materials from the period during the development of the 30-foot Buffer Rule, copies of which are attached to this Director's Response. This information was also presented to the Commission at the September 2019 meeting as part of a discussion on potentially expanding non-water dependent uses in the 30-foot buffer to include up to 200 square feet pervious/permeable materials (pavers) in the buffer according to the associated installation requirements of the N.C. Division of Energy, Minerals and Land Resources' (DEMLR) Stormwater Design Manual, specifically DEMLR's Best Management Practices standards (15A NCAC 02H .1055 MDC FOR PERMEABLE PAVEMENT).

Buffer Rule Development

The Commission's consideration of upland development impacts to adjacent estuarine water quality began in 1985 with a report on urban stormwater runoff and management strategies to mitigate those impacts. A 1996 NC Sea Grant analysis of current AEC standards found they were not specific enough to protect critical estuarine habitats, specifically submerged aquatic vegetation, shallow sand bottom, oyster reefs, salt marshes, fish nursery areas and anadromous fish spawning areas. Fish kills, algal blooms, shellfish closures and increased coastal development during the late 1990's once again brought the issue of estuarine water quality to the Commission's attention.

In September 1997, as stated in a memo to the Commission, Staff reviewed the Commission's existing regulatory program and concluded that "additional protection is needed to implement the intent of the Coastal Area Management Act and the Commission's management goals for the Estuarine System Area(s) of Environmental Concern (AEC)" identifying five areas for review, including regulatory jurisdiction, different development zones, vegetated buffers, density and estuarine shoreline stabilization. With nonpoint source pollution becoming an increasing concern, the CRC in 1998 began a rulemaking effort to expand the Estuarine Shoreline AEC beyond the limit of the inland waters boundary through the Public Trust Areas AEC. The scientific basis for such an AEC is summarized in a January 7, 1998 memo to the Commission, attached.

A January 9, 1998 memo provided the Commission with information on methods to mitigate, protect and restore the quality of North Carolina's estuarine system through the use of vegetated buffers, shoreline stabilization methods, and impervious surface area density. The portion of this memo specific to vegetated buffers summarizes relevant scientific studies at the time. Staff recommended rule changes to require buffers along all shoreline types within the Commission's jurisdiction, and recommended the creation of a panel to develop specific rule language. The meeting minutes of the Commission's Implementation and Standards ("I&S") Committee from the January 23, 1998 meeting are attached and describe the discussion of both January 1998 memos noted above.

A March 9, 1998 memo to the Commission from the I&S Committee indicates that it had spent the prior nine months looking at shoreline jurisdiction rules, and made recommendations on how the Commission should proceed with rulemaking to both add a Public Trust Shoreline AEC upstream of the inland/coastal fishing waters line, and to update the rules for the Estuarine Shoreline AEC, including adding vegetated buffers. This memo indicates that at the time, the EMC's buffer for ORW was 30 feet, and for Nutrient-Sensitive Waters ("NSW") (at the time, the Neuse River Basin) was 50 feet. On page 8 of this memo, it shows a proposed 50-foot buffer for most waters and a 100-foot buffer for ORW/PNA/NSW designated waters.

A November 18, 1998 version of "Coastal Shoreline Protection Initiative: A Summary of the Commission's Draft Proposals" shows that the proposal was changed to a 75-foot vegetated buffer for all Coastal Shorelines AECs (both Estuarine Shoreline and Public Trust Shoreline AECs). Within the 75-foot buffer, water-dependent structures were allowed within the first 50 feet and within the last 25 feet, up to 200 square feet of "accessory structures" could be built.

The first version of the Commission's 30-foot Buffer Rule was the subject of 40 public hearings in coastal counties in 1999, and nearly 400 people commented on the rule, voicing opinions both in favor and in opposition. The Commission's 30-foot Buffer Rule was adopted in November 1999 after adding exceptions, and took effect in August 2000.

An October 24, 2000 memo to the Commission's I&S Committee noted that at the Commission's request, Staff surveyed the most common existing development within a 30-foot buffer area, and in this memo, Staff recommended what non-water dependent uses should be allowed within the 30-foot buffer based on their having little or no impact to water quality.

A March 2001 DCM informational sheet considering additional exceptions to the 30-foot Buffer Rule is attached. A July 2, 2001 memo to the Commission made recommendations for additional changes to the buffer rule exceptions that were being considered.

Recent Buffer Rule Discussions

In April 2017, Petitioners developed an approximately 450 square foot paver brick patio and fire pit along a portion of their bulkhead adjacent to Yeopim Creek. Petitioners did not contact DCM Staff to discuss this proposed development and whether it required a CAMA permit. On September 25, 2017, DCM issued a Notice of Violation No. 17-15A for the unauthorized development of the patio and fire pit in the 30-foot buffer area.

In November 2017, DCM issued a Notice of Continuing Violation No. 17-15A, which noted that DCM was looking into Petitioners' request to keep the development in place while seeking a variance or an appeal. In accordance with Commission Rules, requests for variances and appeals may be submitted upon the denial of a permit but are not to be submitted subsequent to the undertaking of unauthorized development until restoration of the site has occurred. It was later decided that the Petitioners could apply for a permit, have it denied, and seek a variance on both the procedural issues (the requirement to undertake site restoration before applying for a permit/seeking a variance) as well as a variance to retain the paver patio in the 30-foot buffer. The variances were heard at the Commission's February 2019 meeting, at which the Commission granted the variance on the procedural issue but denied the variance to keep the paver patio in the 30-foot buffer (variance order attached). After the denial of the variance, Petitioners per agreement with DCM removed all but 200 square feet of the patio and fire pit with the intention of submitting a petition for rulemaking at the September 2019 CRC meeting. The Lampleys submitted, but then withdrew a petition just prior to the September 2019 meeting. The Commission went ahead with a discussion on the issue, and, by consensus, rejected the concept of a rule change that would allow an exception for up to 200 square foot of permeable patios within the 30-foot buffer area. That exception would have incorporated DEMLR's Best Management Practices standards (15A NCAC 02H .1055 MDC FOR PERMEABLE PAVEMENT) by reference in the rule, and limited such development to 200 square feet, similar to the Commission's existing limitation on slatted, elevated decks.

Further restoration of the site (removal of the remaining 200 square feet of patio and firepit), as required under the original Notice of Violation, is pending the outcome of this new petition for rulemaking.

ITEMS OF NOTE FROM THE BUFFER RULE HISTORY

Staff's review of these documents shows several items of note as it relates to this Petition for Rulemaking, including:

- The development of the 30-Foot Buffer Rule was extensive and thorough, taking several years and including significant public input.

- The development of the 30-Foot Buffer Rule was part of a larger effort to improve water quality and preserve ecological systems within the estuarine system, as directed by the provisions of the CAMA.

- The 30-Foot Buffer attempts to mitigate the effects of turbidity, nutrient loading and contaminants on aquatic habitats. The Commission focused on a buffer zone, and particularly a vegetated buffer zone, due to their ability to effectively trap sediment and pollutants, absorb nutrients from surface runoff, enhance wildlife habitat, and reduce the speed of runoff thereby controlling erosion. Additionally, the Commission discussed the benefits of a shoreline buffer for the protection of scenic and aesthetic quality.

- The grading/excavation/landscaping provision [15A NCAC 7H .0209 (d)(10)(G)] was originally restricted to 500 square feet, with anything in excess of 500 square feet having to be certified by a licensed design professional so that it would not increase stormwater runoff into adjacent estuarine and public trust waters. This provision was removed in 2001 at the recommendation of DCM Staff as the limited amount of fill typically associated with shoreline stabilization projects did not warrant the expense of having it certified by a licensed design professional.

- The only exceptions to the original buffer rule were for water-dependent structures. The exceptions were later expanded in 2001 after DCM Staff conducted research on common non-water dependent uses within the buffer at that time. The specific uses considered were pile-supported signs and billboards, crab shedders, residential wells and pump houses, decks/observation decks, fences, grading/excavation/landscaping not associated with shoreline stabilization, stormwater detention ponds, and swales for stormwater. The intent was to include non-water dependent uses typically found along public trust and estuarine shorelines that could be authorized with little impact to water quality, ecological, or aesthetic values.

DIRECTOR'S RECOMMENDATION REGARDING PETITIONERS' PROPOSAL

The Commission's rules currently restrict development within the 30-foot buffer to water-dependent uses [See 15A NCAC 7H .0209(D)(10)(a)], and to a list of ten non-water-dependent structures which have limited impacts to water quality (pile-supported signs and fences, elevated and slatted wooden boardwalks, crab shedders, and decks/observation decks). The exceptions also allow grading, excavation, landscaping, and wetland fill when authorized through a permitted shoreline stabilization project.

In justifying the requested rule change, Petitioners state:

"Outdoor patios near the water are becoming ubiquitous and not atypical of landscaping projects overall. Additionally, as the result of new products and engineering techniques, patios and fire pits can be designed with appropriate protective measures (regardless of the permeability of the surface) and be as non-impactful as current non-water use exceptions."

Petitioners propose no engineering standards, instead relying on a "2-inch barrier lip" associated with a bulkhead cap which would be intended to capture stormwater on the property and allow of gradual infiltration of any runoff from the patio. Likewise, the allowance of an up to 6-foot diameter gas fire pit associated with the patio area only requires drainage "into in situ ground" to address stormwater concerns.

The Commission's management objective for the Coastal Shorelines AEC at 15A NCAC 7H .0209(c) requires that all shoreline development be compatible with the dynamic nature of coastal shorelines in a manner that perpetuates their biological, social, aesthetic and economic values. The use standards limit development activities to those that will not be detrimental to the public trust rights and the biological and physical functions of the estuarine system. The use standards further require all development projects to limit impervious surfaces within the AEC, and limit those areas not allowing natural drainage to only what is necessary to service the primary purpose of the lot being developed (15A NCAC 7H .0209(d)(2). The buffer area has been identified as critical to the protection of water quality since its inception, and the Commission has consistently restricted encroachment of impervious surfaces within the 30-foot buffer. Current Commission rules prohibit new impervious surfaces in the buffer except through a variance granted by the Commission.

The Division is opposed to the use of bulkhead caps as a means to capture and pond stormwater on waterfront properties. The Division of Water Resources has standards for stormwater control measures incorporating retention (15A NCAC 02H .1050), which include provisions for sizing, slopes, erosion protection, excess flows, dewatering, and an operation & maintenance plan. As the Petitioners' proposal does not address these standards, the Division of Coastal Management asserts that the simple ponding of stormwater on properties could cause significant impacts to water quality, habitat value, and aesthetics on an individual property, flooding on adjacent properties, and cumulative adverse impacts if applied to all Coastal Shorelines AECs within the Commission's jurisdiction.

The Commission had a firm basis for the initial adoption of its 30-Foot Buffer Rule and has been consistent in restricting non-water dependent amenities within the buffer that could undermine the

purposes and effectiveness of the buffer since its adoption in 2000. While the Commission has granted some variances, it has usually involved the encroachment of a habitable principal structure into the buffer, and these variances have almost always been conditioned on the use of an engineered stormwater system. These conditions include a stormwater management plan meeting 15A NCAC 7H .0209(d)(10)(J)(iv) – requiring the first one and one-half inches of rainfall from all impervious surfaces on the lot shall be collected and contained on-site in accordance with the design standards for stormwater management for coastal counties as specified in 15A NCAC 02H .1005.; that the stormwater system be designed by and certified by an individual who meets applicable State occupational licensing requirements for the type of system proposed; certification that the stormwater system has been installed in accordance with the permit; and an assurance that the obligation for operation and maintenance of the stormwater management system becomes a permanent obligation of future property owners.

The Division does not agree that the proposed rules offer a higher level of protection from stormwater runoff and associated impacts to water quality than the currently allowed exceptions. The Commission's buffer rule exceptions allow for decks/observation decks that are limited to slatted, wooden, elevated, and unroofed decks that do not singularly or collectively exceed 200 square feet. The provision for decks to be slatted and elevated is related to retaining the infiltration capacity of the buffer, so as to not diminish the natural drainage of the property. Slatted, elevated decks do retain the infiltration and nutrient removal functions of the subsurface inherently by their design. However, it is recognized that they are not completely without impact and therefore limited in overall size to 200 square feet. Elevated and slatted boardwalks perform similarly to elevated decks in that they retain the infiltration and nutrient removal functions of the buffer. While the petitioners' proposal may prevent direct stormwater discharge to receiving waters, it does not account for the loss of 200 square feet of the buffer's nutrient removal function due to the impervious nature of the materials used in construction of the patio and fire pit.

The Petitioners argue that the Coastal Shorelines AEC (15A NCAC 7H .0209) allows for 30% impervious surface coverage, and that an allowance should be made for impervious surfaces within the buffer area (first 30 feet of the 75 foot AEC) if existing/proposed development is below the 30% threshold. As mentioned above, the Commission had a clear intent with the initial adoption of its 30-foot buffer. If the 30% threshold were inclusive of the buffer and the remaining portions of the lot, impervious surfaces could end up being concentrated in the buffer, which is intended as a relatively undisturbed strip of land that will reduce the volume and velocity of runoff and filter pollutants.

Petitioners reference a previous discussion by the Commission (September 2019) regarding the incorporation of advances in technology that are intended to address stormwater runoff associated with traditional impervious surfaces. As described above, the Commission recently considered a potential exception for the use of "pervious" or permeable pavers in accordance with DEMLR's Best Management Practices standards (15A NCAC 02H .1055 MDC FOR PERMEABLE PAVEMENT). The Commission declined to include such provisions in the buffer rule, expressing concerns about the use of these materials, and noting issues surrounding maintenance and efficacy.

Petitioners assert that the existing standards are excessively burdensome, restrictive, and unnecessary, while their proposal would prevent "…*plain rainwater – not contaminated water or pollutants*…" from entering adjacent surface waters as runoff. In implementing a buffer along

Coastal Shorelines, the Commission has relied on scientific studies (See CRC-19-26, attached, for additional information on the Commission's development of the buffer rule), which show the ability of vegetated buffers to address non-point source runoff from upland areas that may be conveyed by rainwater. By slowing sheet flow across undeveloped soil and vegetation and maintaining limitations on impervious surfaces, buffers have been shown to be an effective strategy in protecting the state's estuarine system. The Petitioners' proposal would increase impervious surfaces on individual lots, and could have significant impacts if authorized in buffer areas along over 10,000 miles of estuarine shorelines in North Carolina.

CONCLUSION

In conclusion, my recommendation is that the Commission deny the petition for rulemaking.

This the 27th day of May 2020.

FOR THE DIVISION OF COASTAL MANAGEMENT

Dr. Braxton C. Davis, Director

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January 26, 2020

Via U.S. and Electronic Mail

Mr. Braxton Davis
Director
Division of Coastal Management
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Morehead City, NC 28557

Re: Petition for Rulemaking to Amend 15A N.C. Admin. Code 07H.0209

Mr. Davis:

The undersigned Petitioners hereby file this Petition for Rulemaking (Petition) pursuant to and in accordance with the North Carolina Administrative Procedure Act, N.C. Gen. Stat. § 150B-20 and 15A N.C. Admin. Code 07J.0605. These provisions allow any person wishing to adopt, amend, or repeal a rule of the North Carolina Coastal Area Management Act (CAMA) to submit a Rulemaking Petition to the Division of Coastal Management (DCM).

Before presenting our Petition below, however, we would like to thank you and the DCM staff for taking the earlier initiative to determine the Commission's interest in undertaking rulemaking for the purpose of expanding the very limited non-water dependent exceptions that currently exist for development within the 30-foot buffer zone. However, we were disappointed in hearing the Commission's lack of interest in undertaking further rulemaking as it was presented.

Unfortunately, what DCM presented did not address the specific issues we would like the Commission to consider, and as a result, warrants further consideration by the Commission, as outlined in our Petition for Rulemaking below.

In order to ensure that all shoreline development be compatible with the dynamic nature of coastal shorelines in a manner that perpetuates their biological, social, aesthetic, and economic values while also enabling all of its citizens to enjoy the widest range of beneficial uses of these areas, Petitioners seek to amend 15A N.C. Admin. Code 07H.0209(d)(10) by adding an additional exception to the non-water dependent uses currently listed in the rule that are allowed within the 30-foot buffer zone along Coastal Shorelines. (Attached as Exhibit A.)

The following sections of this Petition provide the information that is required of Rulemaking Petitions as set forth in 15A N.C. Admin. Code 07J.0605.

I. TEXT OF THE PROPOSED RULES

The text of the proposed rule is attached hereto as Exhibit B.

II. STATEMENT OF REASONS FOR ADOPTION OF THE PROPOSED RULE

The current rules allow for a limited number of non-water dependent exceptions to development within the 30-foot buffer along the Coastal Shoreline. Petitioners desire to expand on those non-water dependent uses by adding an exception that would have the equivalent impact, if not less of an impact, on the water quality and the environment than do other current allowable exceptions. Petitioners' proposed rule would add an exception (K) to allow patio-like structures no larger than 200 square feet and constructed in such a manner as to avoid potential storm water runoff into adjacent waterways and have little impact to water quality, ecological and aesthetic values.

It is important to remember that the intent of the restrictions on development within the 30-foot buffer is to prevent storm water runoff into adjacent waterways and negative impact on water quality.[1] As such, the focus and measure of merit in allowing further exceptions to development within the 30-foot buffer should be their collective effect on these characteristics. Provided the development does not allow for storm water runoff or negative impact on water quality, it should be allowed as an additional exception. The determination as to the allowability of our proposed new exception should not be dependent upon whether a permeable surface retains its permeability over time (as raised by the Commission at its September 18, 2019 hearing as a reason for denying DCM's suggestion for rulemaking.) Instead, it should be based on how the overall design of the development impacts storm water runoff, and thus water quality, taken in its totality. *This key point was not addressed in the Commission hearing and is at the crux of our Petition for Rulemaking.*

In developing the current exceptions to the 30-foot buffer rule, the DCM staff researched common non-water dependent uses within the buffer zone that might be allowed provided they would cause little impact to water quality, ecological and aesthetic values.[2]

Petitioners believe that not only would their proposed additional exception meet or exceed those criteria, but also would allow greater use by private property owners of their waterfront property, a stated intent of NC's environmental protection rules. (NCEPA *§ 113A-3)*

Outdoor patios near the water are becoming ubiquitous and not atypical of landscaping projects overall. Additionally, as the result of new products and engineering techniques, patios and fire pits can be designed with appropriate protective measures (regardless of the permeability of the surface) and be as non-impactful as current non-water use exceptions. When properly installed to specific standards, such as those included in the proposed rule, patio-like structures will not increase the risk of hazards associated with coastal storms, erosion, and flooding and could protect the estuarine shoreline against such risks as well if not better than the current rules.

[1] Memorandum dated October 24, 2000, from Mike Lopazanski to I&S Committee and N.C. Division of Coastal Management publication attached as Exhibit E.

[2] *Recommendation of the Director of the Division of Coastal Management,* CRC-19-18, July 8, 2019.

The specified criteria in the proposed rule would ensure there is no negative impact to the waterways or surrounding environment through storm water runoff, while at the same time permitting the widest beneficial use of the environment.

The proposed rule would require residential property owners seeking a permit to build a patio within the 30-foot buffer zone to limit the size of the patio-like structure to no more than 200 square feet, which is consistent with the total expanse allowed under one of the current exceptions (Exception F). The surface of the patio shall be composed of materials such as pavers, bricks, stone, slate, or similar, and spaced on a sand base so as to provide for water drainage within the 200 square foot surface area. The proposed rule would also require that the patio be placed no closer to a bulkhead than 4 feet and on level ground. It would also require that the 4-foot buffer area, and all areas surrounding the development, be filled with natural vegetation and that there be at least a 2-inch lip between the vegetated area and the bulkhead. Should the resident also be seeking a permit to include a gas fire pit, the fire pit would have to be constructed within the 200-square foot patio area and may not exceed 6 feet in diameter and 18 inches in height with drainage directly into in-situ ground.

Another concern that the Commission expressed at its September 18, 2019 hearing was the extra DCM enforcement time that would be necessary to monitor levels of permeability of development within the 30-foot buffer, presumably assuming no other vegetative barrier or mitigations such as a barrier lip at the bulkhead would be in place to prevent runoff. However, the new rule proposed in this Petition would require no further permitting and enforcement time on the part of DCM than currently is required. The rule is straightforward and requires the individual requesting the permit to have all of the required criteria met and signed off on by the proper authorities prior to submitting the request for a permit. DCM would only need to check that what the permit requester has submitted meets the rule's criteria, which is the same as is required under the current exceptions.

Overall, adding this proposed exception would allow North Carolina private waterfront property owners to have greater use of their property from which to enjoy the benefits of being on the water and a unique natural environment, while causing no harm, risk to health or safety, or degradation to the environment – again, all key objectives of the North Carolina Environmental Policy Act (NCEPA). The proposed exception is also a less arbitrary exception to the current non-water dependent use rules, and is more protective of the environment and water quality, than currently allowed exceptions.

Petitioners' proposed rule would remain consistent with the spirit and intent of North Carolina's environmental laws and regulations and not be detrimental to the public trust rights and the biological and physical functions of the estuarine system. Those laws and regulations were designed to protect the environment and waterways AND provide its citizens safe, healthful, productive, and aesthetically pleasing surroundings as well as the widest range of beneficial uses of the environment. (NCEPA *§ 113A-3).*

It has been almost 20 years since the current rules have been adopted and it is time to update them based on new and more innovative designs. It is the Petitioners' desire that DCM undertake a more comprehensive review of the current rules for non-water dependent uses within the 30' buffer zone. The Petitioners' proposed rule is offered as an example of how the current rules could be amended to achieve this purpose.

III. STATEMENT OF EFFECT ON EXISTING RULE

The proposed rulemaking will amend section 15A N.C. Admin. Code 07H.0209(d)(10). The proposed rule is not expected to affect any other existing rules.

IV. DATA IN SUPPORT OF PROPOSED RULE

A. Petitioners' proposed exception to the rule offers a higher level of protection from storm water runoff and less impact on water quality than do a number of currently allowable exceptions and practices.

Exception F, for example, currently permits the construction of a 200-square foot raised slatted wooden deck that could be placed right at the waterline or bulkhead, without regard to the underlying ground water absorption characteristics (i.e. heavily clayed ground that could reduce water absorption and result in runoff) or the added protection of a raised lip. Exception F includes no board spacing requirements or required distance from the water or height above the ground. Such a deck, with even a notional 1/8 inch spacing between each board, would consist of over 193 square feet of non-pervious material (over 96% of the surface), not even including the impervious pilings and substructure necessary to support the decking. Also, under the current rule, such a deck would likely result in runoff going directly into the water, as the rule requires no barriers or lip around the deck to prevent runoff from entering the water.

Notably, under our proposed rule, a 200-square foot patio-like structure (with spaced pavers on a sand base) would provide approximately the same square footage of impervious material as currently allowed under Exception F, but would also require such a patio to have a minimum of 4 feet between the patio and the water and be surrounded by mature vegetation and a 2-inch barrier lip (above which the water would have to rise to produce any runoff). If the patio-like structure included a 6-foot diameter open gas fire pit (even assuming no natural drainage from the spaced paver patio, which would not be the case under the proposed rule), the amount of impervious surface drops to 172 square feet or 11 percent less impervious surface than is already allowed under Exception F. Far more storm water is likely to run off from that allowable wooden deck than from the patio-like structure described in the proposed rule.

It should also be noted that Exception F was not derived through any engineering study or through empirical data supporting the rationale for this exception. Rather, like the other exceptions under 15A N.C. Admin. Code 07H.0209(d)(10), it was purely a notional standard arrived at by surveying typical non-water dependent uses within the 30-foot buffer area in the vicinity.[3] Normally such provisions are derived through professional engineering associations, building codes or through engineering studies that can validate their effectiveness—or excessive restrictiveness. This was not the case here when these exceptions were enacted. The 200-square foot raised wood deck criteria was an arbitrary exception without qualification. It was allowed because it did not have or would have very little impact to water quality. What we propose is not only more effective in preventing impact to the water quality than what is currently allowed, but also has been time-tested as proof of its effectiveness, with engineering studies validating this (previously submitted to DCM on an earlier appeal on this issue).

[3] *Recommendation of the Director of the Division of Coastal Management,* CRC-19-18, July 8, 2019.

Additionally, the proposed rule also is far less likely to cause storm water runoff than is currently allowed under Exception D to the rule in question. (15A N.C. Admin. Code 07H.0209(d)(10)(D)). Exception D permits an unlimited length of up to 6-foot wide, elevated, slatted, wooden boardwalk that could be placed directly along the water's edge. For the same empirical reasons cited above, this permissible exception would clearly have far greater runoff consequences than what is proposed in this Petition.

Furthermore, under the current rule, there is no prohibition against having both Exception D and Exception F on the same piece of property within feet of each other. These two structures together would clearly cause more storm water runoff and negative impact to water quality than what Petitioners' propose, and yet this would be allowable development under the current rule.

Another example of an allowable practice that could be more hazardous to water quality than Petitioners' proposal is allowing a yard that sloops down to the water with no barrier or bulkhead to prevent storm water runoff from the yard going directly into the water. (Exhibit D). Such a condition clearly introduces fertilizer, herbicides and other contaminants directly into the water—far more hazardous runoff than what Petitioners are proposing. Again, the current exceptions for non-water dependent uses within the 30' buffer zones are arbitrary, without any empirical data support, and are potentially more harmful to the environment than what the Petitioners propose.

Finally, 15A NCAC 07H .0209(d)(2), which allows for 30 percent of the Area of Environmental Concern (AEC) (that area which is 75 feet from the shoreline) to have impervious areas, should be taken into consideration. Where the development on the lot does not exceed the allowable amount, there ought to be some consideration given to the reduced overall impact of the total lot development as it pertains to storm water runoff. For example, to the extent that the impervious area within the AEC is significantly less than permitted, some additional allowance ought to be permitted within the 30-foot buffer, as it is already reducing total runoff from the property at large. Moreover, this rule also allows for greater than 30 percent as long as "the applicant can demonstrate, through innovative design, that the protection provided by the design would be equal to or exceed the protection by the 30 percent limitation," which the proposed rule does.

To be clear, Petitioners are not suggesting that any of the above current rule or exceptions be changed. The above examples are offered merely to demonstrate that what is being proposed in this Petition protects the environment better than existing exceptions do.

Current exceptions for development within the 30-foot buffer are too restrictive and do not allow for other structures such as that outlined in the Proposed Rule that are equally if not more protective of water quality, ecological and aesthetic value.

B. DCM's suggested use of the "DEQ Stormwater Design Manual, Section C-5" is excessively burdensome, restrictive and unnecessary when other more effective mitigations are readily available.

DCM previously has suggested that the stringent requirements of 15A NCAC 02H.1055, implemented in "DEQ Stormwater Design Manual, Section C-5," be incorporated into any patio-like development within the 30-foot buffer zone. Consequently, at the September 18 hearing, the Commission focused almost exclusively on the permeability of any development surface, regardless of its location relative to the shoreline or any additional protective measures to prevent runoff. However, as stated earlier in this Petition, the focus should not be on permeability, which is what 15A NCAC 02H.1055 addresses, but on

how the design and construction of the development will impact storm water runoff and water quality taken in its totality.

The C-5 criteria were developed and incorporated into the NCAC for the purpose of implementing G.S. 143-215.1, which "requires permits for control of sources of water pollution by providing the requirements and procedures for application and issuance of state NPDES permits for a discharge from an outlet, point source, or disposal system discharging to the surface waters of the state, and for the construction, entering a contract for construction, and operation of treatment works with such a discharge." (15A NCAC 02H.0101) This rule was designed primarily for major construction projects such as roadways and large parking lots where vehicular pollutants are an inherent and a major concern to the protection of the waterways. It was not designed for the construction of a 200-square foot residential patio within the 30-foot buffer zone, with a surrounding vegetated barrier, and a 2-inch lip between the patio and the water or bulkhead—all being mitigating measures prohibiting any possible runoff. Applying such a standard would be excessively burdensome, restrictive and unnecessary when other more effective mitigations are easily available.

What the Petitioners are requesting is not an exception that will allow for the discharge of waste or pre-treated waste into the surface waters of the state as was intended to be covered by the above-stated rule. At most, any highly improbable runoff under the proposed rule would be plain rainwater—not contaminated water or pollutants that 15A NCAC 02H.1055 was designed to prevent. Applying C-5 criteria for a 200-square foot residential patio is excessive and overly burdensome for the purposes under discussion and more importantly, adds less protection to the water quality than what the Petitioners propose.

Clearly, there is more than one method to achieve the same objective of preventing runoff and negative impact on water quality. In fact, even C-5 allows for the use of other types of materials provided they "demonstrate that the design functions adequately hydraulically and structurally."

Again, regardless of the permeability of a 200-square foot patio-like surface, especially with an open fire pit in the middle, if it is built on a relatively level surface, at least 4 feet from a bulkhead, surrounded completely by mature vegetation, and with a 2-inch lip between the vegetation and the bulkhead, there is virtually no possibility of storm water runoff that would negatively impact the adjacent water quality.

Petitioners suggest that the focus should be on the whole of the proposed patio-like structure, mitigation measures and their impact on storm water runoff, water quality, ecological and aesthetic values, and not solely on the permeability of the specific materials used.

V. STATEMENT OF THE EFFECT OF THE PROPOSED RULE ON EXISTING PRACTICES

The proposed rule will allow North Carolina private waterfront property owners to have greater use of their property from which to enjoy the benefits of being on the water and a unique natural environment, while causing no harm, risk to health or safety, or degradation to the environment. The proposed rule would not create any additional workload to DCM and would not require further maintenance inspections. The specified criteria in the proposed rule will ensure there is no negative impact to the waterways or surrounding environment while at the same time permitting the widest beneficial use of the environment.

VI. NAME AND ADDRESS OF PETITIONERS

Thomas S. Lampley
Judith A. Lampley
108 Virginia Court
Hertford, NC 27944

VII. CONCLUSION

The Coastal Resources Commission (CRC) has a duty to adopt rules to create "safe, healthful, productive and aesthetically pleasing surroundings," and to attain "the widest range of beneficial uses of the environment without degradation or risk to health or safety" and "it shall be the policy of the state to seek such for all of its citizens." (NCEPA § 113A-3)

Declining to consider alternative methodologies for achieving equal or better protections to the environment, while affording its citizens greater beneficial use of their properties, would be inconsistent with the State's policy.

Petitioners have proposed a rule that would allow the CRC to meet its obligation to protect NC waterways, without the requirement for additional CRC follow-up inspections or additional work, while still providing its citizens with a greater ability to enjoy those waterways.

The proposed rule is within the authority of the Commission and in the public interest.

For the reasons stated above, Petitioners request that the CRC adopt the proposed rule. Pursuant to N.C. Gen. Stat. § 150B-20, the CRC has 120 days to make a final determination regarding this Petition. Petitioners would appreciate the opportunity to discuss this Petition with the Commission. Petitioners also would welcome questions from DCM or the Commission at any time via phone (252-232-8677) or email (jlampley1227@gmail.com.)

Petitioners appreciate the Commission's consideration of their Petition.

Sincerely,

Thomas Lampley

Judith Lampley

cc Ron Renaldi
Mary L. Lucasse, Esq.
Christine A. Goebel, Esq.
Bob Steinburg, N.C. State Senator

EXHIBIT A

15A N.C. Administrative Code 07H.0209(d)(10)

(10) Within the Coastal Shorelines category (estuarine and public trust shoreline AECs), new development shall be located a distance of 30 feet landward of the normal water level or normal highwater level, with the exception of the following:

(A) Water-dependent uses as described in Rule 07H .0208(a)(1) of this Section;

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

(C) Post- or pile-supported fences;

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

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

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

(G) Grading, excavation and landscaping with no wetland fill except when required by a permitted shoreline stabilization project. Projects shall not increase stormwater runoff to adjacent estuarine and public trust waters;

(H) Development over existing impervious surfaces, provided that the existing impervious surface is not increased;

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

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

(ii) The residential structure development shall be located a distance landward of the normal high water or normal water level equal to 20 percent of the greatest depth of the lot. Existing structures that encroach into the applicable buffer area may be replaced or repaired consistent with the criteria set out in 15A NCAC 07J .0201 and .0211; and

(J) Where application of the buffer requirement set out in Subparagraph (d)(10) of this Rule would preclude placement of a residential structure on an undeveloped lot platted prior to June 1, 1999 that are 5,000 square feet or less that does not require an on-site septic system, or on an undeveloped lot that is 7,500 square feet or less that requires an on-site septic system, development shall be permitted within the buffer if all the following criteria are met:

(i) The lot on which the proposed residential structure is to be located, is located between:

(I) Two existing waterfront residential structures, both of which are within 100 feet of the center of the lot and at least one of which encroaches into the buffer; or

(II) An existing waterfront residential structure that encroaches into the buffer and a road, canal, or other open body of water, both of which are within 100 feet of the center of the lot;

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

(iii) Placement of the residential structure and pervious decking shall be aligned no further into the buffer than the existing residential structures and existing pervious decking on adjoining lots;

(iv) The first one and one-half inches of rainfall from all impervious surfaces on the lot shall be collected and contained on-site in accordance with the design standards for stormwater management for coastal counties as specified in 15A NCAC 02H .1005. The stormwater management system shall be designed by an individual who meets applicable State occupational licensing requirements for the type of system proposed and approved during the permit application process. If the residential structure encroaches into the buffer, then no other impervious surfaces shall be allowed within the buffer; and

(v) The lots shall not be adjacent to waters designated as approved or conditionally approved shellfish waters by the Shellfish Sanitation Section of the Division of Marine Fisheries of the Department of Environmental Quality.

EXHIBIT B

15A N.C. Administrative Code 07H.0209(d)(10)(K)

(10) Within the Coastal Shorelines category (estuarine and public trust shoreline AECs), new development shall be located a distance of 30 feet landward of the normal water level or normal highwater level, with the exception of the following:

. . . (K) Residential, patio-like structures no larger than 200 square feet, provided

(i) The surface of the patio is composed of materials such as pavers, bricks, stone, slate, or similar, spaced in sand so as to provide for water drainage within the 200 square foot surface area;

(ii) Any development in the 30-foot buffer zone may not be closer than 4 feet from a bulkhead and be situated on level ground;

(iii) The development must be surrounded with mature vegetation;

(iv) The location must be separated from the water by a bulkhead that shall have a 2-inch lip above the vegetated area; and

(v) Inclusion of a gas fire pit, not to exceed 6 feet in diameter, 18 inches in height, and with drainage directly into in-situ ground, shall be permitted, if constructed within the patio area.

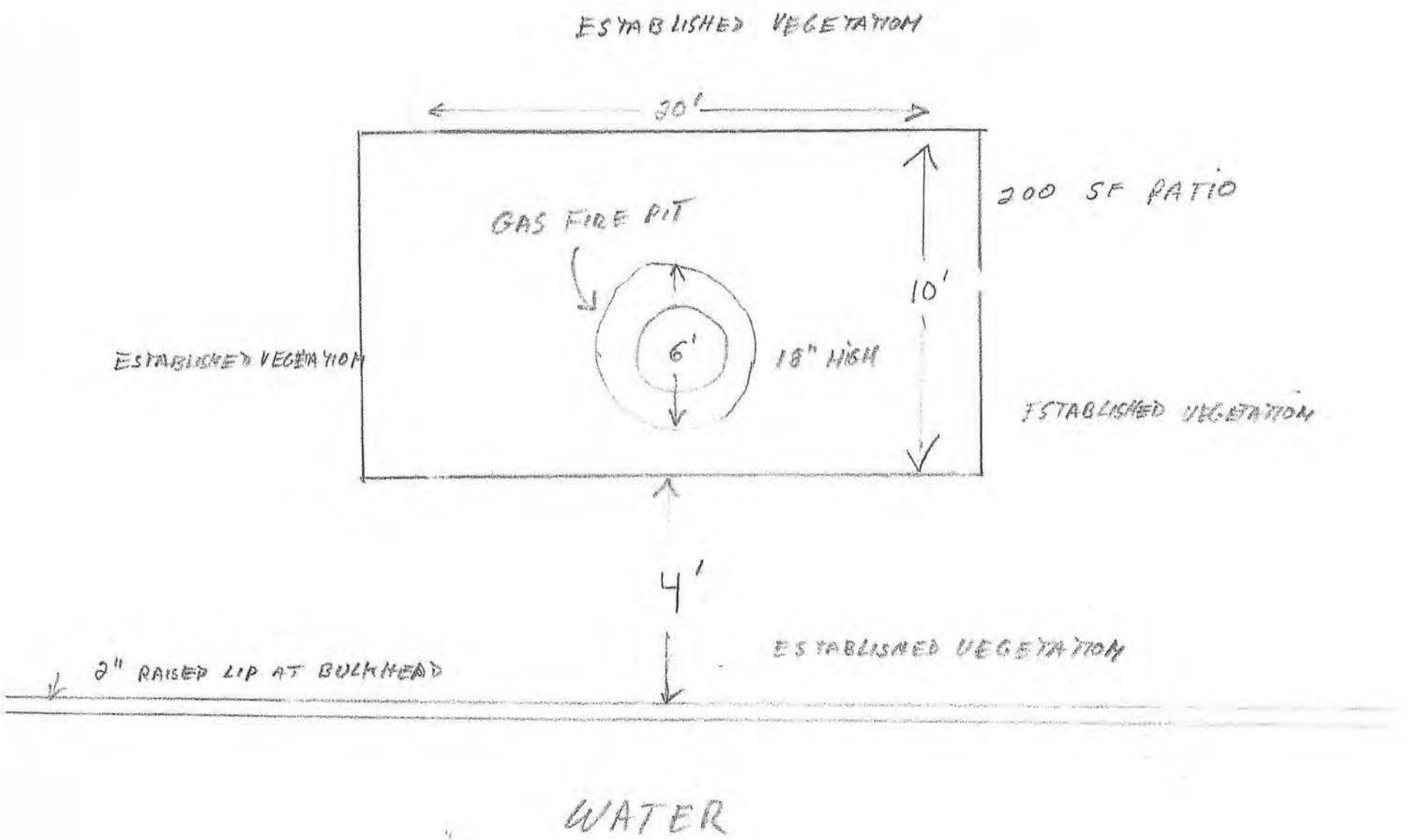
ESTABLISHED VEGETATION
30'
200 SF PATIO
GAS FIRE PIT
10'
ESTABLISHED VEGETATION
6'
18" HIGH
ESTABLISHED VEGETATION
4'
ESTABLISHED VEGETATION
2" RAISED LIP AT BULKHEAD
WATER

EXHIBIT C


Exhibit D

Exhibit E

October 24, 2000

I&S 00-16

MEMORANDUM

TO: I&S Committee

FROM: Mike Lopazanski

SUBJECT: Buffer Exceptions

At the September 28, 2000CRC meeting, the I&S Committee the I&S Committee was presented with a list of the most common existing water dependent and non-water dependent uses typically found in the 30' buffer area. The Committee felt there were some items which could be authorized since the uses did not have or would have very little impact to water quality. Staff was instructed to provide recommendations on which uses should be considered for buffer exceptions at the November meeting.

Attached is a list of activities recommended as buffer exceptions. Staff believes that these uses or uses with limitations will have no significant impacts on water quality of adjacent public trust and estuarine waters. Also attached for your information are two letters received with regard to bulkheads and retaining walls in the buffer. These uses will be further discussed at the upcoming meeting in Wrightsville Beach.

Allowable Non-water Dependent Uses Within the 30' Buffer

Advertising Signs and Billboards	
Boardwalks –	Must be exclusively for pedestrian use and must be six feet in width or less. The boardwalk may be greater than six feet in width if it is to serve a public use or need.
Crab Shedders –	Allowed if uncovered and elevated trays with no associated impervious surfaces except those necessary to protect the pump.
Residential Wells & Pumphouses	
Decks/ Observation Decks -	Limited to wooden, elevated and unroofed decks that shall not singularly or collectively exceed 200 square feet.
Fences	
Grading/Excavation/ Landscaping no associated with shoreline stabilization projects -	No wetlands fill and must be certified by a NC licensed design professional that there will be no increase in stormwater runoff to adjacent estuarine and public trust waters
Stormwater Detention Ponds	
Swales for Stormwater	

CRC considering additional exceptions to 30-foot buffer requirement

The N.C. Coastal Resources Commission (CRC) will hold a public hearing in July on proposed amendments to the rule requiring a 30-foot buffer along coastal shorelines.

The buffer rule, which took effect last summer, requires new homes, businesses and other non-water-dependent structures to be built at least 30 feet from the water along non-oceanfront coastal shorelines. The primary purpose of the rule is to protect coastal waters from pollutants carried by stormwater runoff. It also will reduce flood risks, because development will be located farther from the water.

The CRC is considering changing the rule to allow houses to be built within the buffer on small previously platted lots. The changes also would allow certain structures with non-water-dependent uses – such as fences and unroofed decks – inside the buffer.

The proposed exceptions

The first exception would apply to undeveloped lots that are:

- 5,000 square feet or less (7,500 square feet or less if an onsite septic system is required);
- platted prior to June 1, 1999;
- located in an intensely developed area (houses present on both sides immediately adjacent to the lot);
- not located adjacent to approved or conditionally approved shellfish waters.

The exception would allow property owners to align their houses with those of their neighbors. They would have to install a stormwater system to collect and contain on site the first 1½ inches of rainfall.

The exception would replace and expand a temporary version the CRC adopted last year in response to a directive from the General Assembly. The temporary rule, which would remain effective until the permanent version takes effect, only covers lots that are:

- 5,000 square feet or less;
- platted prior to June 1, 1999;
- located in intensely developed areas (houses present on both sides immediately adjacent to the lot).

Rule also proposes more flexibility for owners of larger lots

The proposed permanent rule also would change an existing exception for house construction on larger previously platted lots with configurations that may prevent building outside the buffer. The existing exception allows a new house to encroach into the buffer, but limits the amount of ground it can cover to 1,000 square feet.

The proposed exception would increase the footprint limit to 1,200 square feet. The change would allow for the construction of homes that are more consistent in size with existing structures.

Common uses inside the buffer

The second set of exceptions covers non-water-dependent structures and activities that commonly occur within 30 feet of the water but do not harm water quality.

The rule would allow the following activities and structures:

- pile-supported signs that comply with local government standards;
- post- or pile-supported fences;
- elevated, slatted, wooden boardwalks that are 6 feet wide or less and for pedestrian use (they may be larger if they serve a public use or need);

Published March 2001 by the North Carolina Division of Coastal Management – Donna D. Moffitt, Director
Raleigh: 919-733-2293 or 1-888-4RCOAST / Elizabeth City: 252-264-3901 / Morehead City: 252-808-2808
Washington: 252-946-6481 / Wilmington: 910-395-3900
E-mail: dcmfrontdesk@ncmail.net / Web: dcm2.enr.state.nc.us

- uncovered crab shedders that have elevated trays and no associated impervious surfaces except for those needed to protect the pump;
- unroofed decks and observation decks that are slatted, wooden and elevated and are 200 square feet or less in size;
- grading, excavation and landscaping with no wetland fill except when required by a permitted shoreline stabilization project (projects shall not increase stormwater runoff to adjacent estuarine and public trust waters and shall be certified by a state-licensed design professional);
- vertical expansion of existing structures, as long as the original footprint of the structure is not increased.

Replacement of existing structures allowed

One provision of the buffer rule that will not change is an exception that allows the replacement of existing structures. If an existing non-water-dependent structure becomes damaged to the point of needing to be replaced, the property owner **may rebuild** the structure in its original footprint and to its original dimensions, if the land is too small to allow replacement outside the buffer.

EMC's buffer rule takes precedence in Neuse and Tar-Pam river basins

Another provision in the CRC's rules will remain unchanged. The provision dictates that the buffer requirement **will not apply** to those coastal shorelines where the Environmental Management Commission (EMC) adopts its own buffer standards. The EMC enacts regulations to protect water quality statewide. EMC buffer rules already exist in the Neuse and Tar-Pamlico river basins.

What happens after the public hearing?

The CRC could vote on the amendments or send them back to the Division of Coastal Management staff for fine-tuning. Once the CRC adopts the amended rule, it will go to the state Rules Review Commission and the General Assembly. If neither body raises objections, the rule would take effect in summer 2002.

What the buffer does

The buffer plays an integral part in protecting North Carolina's coastal waters. The pollution addressed by the buffer rule – nonpoint source pollution – is the primary cause of decline in our state's coastal waters. All land-disturbing activities cause nonpoint source pollution. Maintaining a buffer adjacent to the estuarine and public trust shorelines can reduce the discharge of sediments and other pollutants.

Controlling nonpoint source pollution is an urgent need considering the rate at which our shorelines are being developed and the increase in seasonal and year-round populations in communities with estuarine and public trust shorelines.

History of the coastal shoreline buffer rule

The 30-foot buffer requirement was the result of more than two years of CRC discussions about ways to increase protection of coastal water quality.

The Division of Coastal Management sought extensive public comment on the buffer rule, conducting 40 public hearings in coastal counties in 1999. Nearly 400 people commented on the rule, voicing opinions both for and against it. The CRC adopted the rule in November 1999 after adding exceptions and other language suggested during the hearings. It took effect in August 2000.

Learn more at dcm2.enr.state.nc.us, or call your nearest Coastal Management office.

Elizabeth City – 252-264-3901
Morehead City – 252-808-2808
Raleigh – 919-733-2293 or 1-888-4RCOAST
Washington – 252-946-6481
Wilmington – 910-395-3900

STATE OF NORTH CAROLINA COUNTY OF PERQUIMANS	BEFORE THE NORTH CAROLINA COASTAL RESOURCES COMMISSION **CRC-VR-18-05**
IN THE MATTER OF: PETITION FOR VARIANCE BY **THOMAS AND JUDITH LAMPLEY**	**FINAL AGENCY DECISION**

This matter was heard on oral arguments and stipulated facts at the regularly scheduled meeting of the North Carolina Coastal Resources Commission (hereinafter Commission) on February 27, 2019 in Morehead City, North Carolina pursuant to N.C. Gen. Stat. § 113A-120.1 and 15A NCAC 7J .0700, *et seq*. Assistant General Counsel Christine A. Goebel, Esq. appeared for the Department of Environmental Quality, Division of Coastal Management (DCM). Charles D. Evans, Esq. appeared on behalf of Petitioners. Upon consideration of the record documents and the arguments of the parties, the Commission adopts the following:

STIPULATED FACTS

1. Petitioners Thomas S. Lampley and wife Judith A. Lampley ("Petitioners") own property at 108 Virginia Court, Hertford, Perquimans County, North Carolina (the "Site").

2. Petitioners obtained the Site, also known as Lot 19, Section EE, Bosher's Point, Phase 3 of Albemarle Plantation by general warranty deed dated August 17, 2007 and recorded in Book 333, Page 641 of the Perquimans County Registry of Deeds. A copy of the deed is a stipulated exhibit.

3. The Site is adjacent to Yeopim Creek, which is designated as "inland waters" by the NC Wildlife Resources Commission", is classified as SC waters by the Environmental Management Commission, and is closed to the harvest of shellfish by the NC Marine Fisheries Commission.

4. The Site is within the Public Trust Shorelines sub-category of the Coastal Shorelines Area of Environmental Concern ("AEC"), which includes uplands within 30 feet landward of normal water level.

5. After acquiring the property in 2007, Petitioners were granted General Permit No. 49979A on December 3, 2007 pursuant to the Coastal Area Management Act of 1974 ("CAMA")

authorizing the development of a bulkhead along the shoreline. A copy of this CAMA GP was provided to the Commission as a stipulated exhibit. The bulkhead was built several months after the permit was issued at the approximate normal water line.

6. Construction on the current residence began in October of 2015 and was completed in November of 2016. No CAMA minor permit was required as all proposed development was landward of the 30-foot wide Public Trust AEC. Petitioners moved into the house in November of 2016. A copy of the site plan for Petitioners' house was provided to the Commission as a stipulated exhibit.

7. In April 2017, Petitioners developed an approximately 450 square foot paver brick patio and fire pit along a portion of their bulkhead adjacent to Yeopim Creek. A sketch of development was provided as a stipulated exhibit. The pavers used to construct the patio and fire pit were not pervious pavers. Petitioners did not contact DCM Staff to discuss this proposed development and whether it required a CAMA permit. Petitioners used three separate contractors for the construction of the patio and fire pit; Lazy Weekends Yard Care Services, LLC (NC Landscaping Contractors License #CL1002); Crossroads Fuel Service, Inc. (NC License #20920); and KCI Associates of NC (NC License #0267644.) Petitioners stated they were not aware that this development required a CAMA permit. A copy of Petitioners' Affidavit was provided to the Commission as an exhibit.

8. In September 2017, Petitioner applied to DCM for a CAMA General Permit to construct a pier, platform, boathouse with lift and a PWC lift. CAMA General Permit No. 68701A was issued on September 12, 2017 for the pier facility. As part of the permit issuance, DCM Field Representative Lynn Mathis visited the Site on September 12, 2017. After issuing the permit, she observed the unpermitted patio and fire pit within the 30-foot buffer area of the Public Trust Shorelines sub-category of the Coastal Shorelines AEC. Ms. Mathis advised Petitioners that the patio constituted "development," which is not allowed within the 30-foot wide Public Trust Shorelines AEC, as set out in 15A NCAC 7H.0209 (d) (10).

9. On September 25, 2017, DCM issued a Notice of Violation No. 17-15A for the

unauthorized development of the patio and fire pit. A copy of the Notice of Violation (NOV) was provided to the Commission as a stipulated exhibit. With this NOV, DCM also included a restoration plan, directing the Petitioners to remove the patio and fire pit which were located within the 30-foot buffer area.

10. On November 9, 2017, DCM issued a Notice of Continuing Violation No. 17-15A, which noted that DCM looked into Petitioners' request to keep the development in place while seeking a variance or an appeal. DCM verified that requests for variances and appeals may be submitted upon the denial of a permit but are not to be submitted subsequent to the undertaking of unauthorized development absent restoration. A copy of the CNOV was provided to the Commission as a Stipulated Exhibit.

11. On December 15, 2017, Petitioners wrote to DCM Director Braxton Davis, requesting that he reconsider the issuance of NOV No. 17-15A and CNOV No. 17-15A and the associated restoration plan. A copy of this letter was provided to the Commission as a stipulated exhibit.

12. On March 5, 2018, DCM Director Braxton Davis responded to Petitioners' letter of December 15, 2017. He notified Petitioners that he did not find sufficient ground to overturn the NOV or change the restoration plan. He explained that paver patios and other hardscaping are "development" which is not allowed within the 30-foot buffer. A copy of this letter is a stipulated exhibit.

13. On May 17, 2018, Petitioners sent a letter to Frank Jennings, DCM District Manager in the Elizabeth City Office requesting that they be allowed to keep the patio and fire pit in place and also seeking a hearing to dispute the violation. A copy of this letter was provided to the Commission as a stipulated exhibit. Petitioners copied the letter to Director Braxton Davis and NC-Representative Bob Steinburg (who is now a state senator).

14. Petitioners contacted Representative Bob Steinberg about their NOVs, and asked Representative Steinberg to meet with them and DCM staff. On April 5, 2018, Petitioners and Representative Steinberg met with DCM District Manager Frank Jennings in the DCM Elizabeth City

office. At this meeting, DCM explained the CAMA permit process and possible routes forward. A second meeting was held at the DCM Washington Regional office on May 25, 2018 with Petitioners, Representative Steinberg and DCM Director Braxton Davis. At or following the meeting, Director Davis informed Petitioners they had three options: First, Petitioners could remove the patio and fire pit before seeking a permit and variance. Second, Petitioners could leave the development in place while applying for a permit and after the CAMA permit was denied, Petitioners could seek a procedural variance relieving them of the requirement that they undertake restoration before applying for a permit/seeking a variance and requesting a variance that would allow them to retain the paver patio in the 30-foot buffer. Finally, Petitioners could seek a declaratory ruling.

15. Following the meetings with DCM, Petitioners indicated they planned to leave the development in place while they applied for a CAMA permit. Once the application was denied (as it would be as it constitutes development in the 30-foot buffer), Petitioners planned to seek a variance from the Commission's rules requiring that: a) restoration take place before a CAMA permit application is accepted and processed, a permit is denied, and a variance is sought; and b) non water-dependent structures be set back at least 30 feet from normal water level.

16. DCM also advised Petitioners that they could seek a declaratory ruling from the Commission on the issue of whether the installation of paver patios and paver fire pits was "development' as defined by G.S. 113A-103(5) or landscaping which DCM generally determines is not development. To date, Petitioners have not submitted a request for a declaratory ruling.

17. On July 24, 2018, Petitioners filed their CAMA Minor Permit application with the DCM Elizabeth City office, seeking authorization for the paver patio and fire pit which had been previously constructed by Petitioners. A copy of the CAMA Minor Permit application and associated materials was provided to the Commission as a stipulated exhibit. The Commission was also provided with the invoices for the materials used to develop the patio and fire pit.

18. As part of the CAMA minor permit process, notice of the development was sent to the adjacent riparian owners. The Commission was provided with copies of these notices as stipulated exhibits. Both adjacent riparian property owners indicated they had no objection to the development of the patio and fire pit.

19. On July 30, 2018, DCM denied Petitioners' CAMA Minor Permit application as it was inconsistent with several provisions, including the Commission's rules requiring that restoration be complete before a permit is requested, the permit is denied and a variance is sought from the Commission, and from the provisions prohibiting development such as the paver patio and fire pit in the 30-foot buffer of the Public Trust Shoreline AEC per 15 NCAC 7H.0209 (d)(10). A copy of the denial letter was provided to the Commission as a stipulated exhibit.

20. In the denial letter, Petitioners were informed that the paver brick patio and fire pit did not fall within the exception set forth in 15 NCAC 7H.0209 (d)(10)(G) which allows "Grading, excavation and landscaping with no wetland fill …" within the 30-foot buffer.

21. On August 8, 2018, Petitioner through counsel, Charles D. Evans, Esq. submitted a Variance Petition, seeking a procedural variance from the Commission that would allow the variance to proceed without first requiring Petitioners restore the affected area as required by 15A NCAC 7J.0204(e) and a variance from the 30-foot buffer in order to keep the paver patio and fire pit constructed in the 30-foot buffer.

22. Notice of the variance request was provided to the adjacent riparian property owners on August 8, 2018. Copies of the required notice were provided as stipulated exhibits. No comments were received prior to the Commission's meeting.

23. For purposes of this variance request, Petitioners stipulated that the development and construction of the paver brick patio and fire pit at the Site is inconsistent with the CAMA and the Commission's rules as explained in the July 30, 2018 denial letter.

24. Petitioners have attached affidavits which describe their choice in purchasing this Site and state they were unaware that a CAMA permit was needed for construction of the patio and fire pit in the 30-foot buffer. Copies of these affidavits were provided to the Commission.

25. Petitioners engaged two engineering firms to provide studies in support of their claim that as constructed, the paver patio and fire pit allow sufficient drainage and prevents any runoff into Yeopim Creek, the adjacent waterway.

26. On October 9, 2018 following his inspection of the Site, Hal Goodman, P.E., SECB submitted a sealed letter opinion regarding the paver patio and fire pit. A copy of the sealed opinion was provided to the Commission. Mr. Goodman concludes that "there will be no stormwater runoff into Yeopim Creek."

27. Samir Dumpor, P.E., Regional Supervisor with DEQ's Division of Energy, Mineral, and Land Resources ("DEMLR") reviewed the written description of how the patio and fire pit were constructed, as well as the October 9, 2018 statement of Hal Goodman, P.E., SECB. In correspondence with DCM on October 30, 2018, Mr. Dumpor noted that while the design will infiltrate some stormwater, it was not designed pursuant to the DEQ Stormwater Design Manual's chapter on Permeable Pavement. A copy of that manual was provided to the Commission as a stipulated exhibit. In the manual, only the infiltrating permeable pavement that is designed per the MDC (Minimum Design Criteria) may be considered 100% pervious. In this particular case, the MDC 1, 2 and 5, as listed below, are not met.

MDC 1 - site-specific soil investigation - not provided;

MDC 2 - The minimum separation between the lowest point of the subgrade surface and the Seasonal High Water table (1 or 2 feet, depend on type of system used) - not provided;

MDC 5 - Washed aggregate base materials shall be used. "Crush n' run" does not meet that criteria.

28. For these reasons, Mr. Dumpor believes that the patio and fire pit do not meet the requirements of 15A NCAC 2H .1055.

29. Under a subsequent sealed opinion letter, submitted January 14, 2019 to the Coastal Resources Commission, Hal Goodman, P.E., SECB, supplemented his initial opinion letter of October 9, 2018, in response to the comments received from NCDENR and DEQ stating the following:

- MDC 1 – GET Solutions has been scheduled to come to the site and conduct a subsurface investigation to determine the infiltration rate for the on-site soils;
- MDC 2 – The seasonal high water table has been measured to be approximately four feet (4') below the patio surface;
- MDC 5 - The four inch (4") crushed stone base layer was placed and not compacted so it will remain free draining and will not impede the infiltration of stormwater or cause any runoff.

30. In addition, the finished grade of the patio slopes away from the bulkhead and Yeopim Creek to a low point on the pavers so that any potential runoff that might not immediately drain through the gaps in the pavers is temporarily contained on the low area of the patio as it infiltrates through the gaps in the pavers, the non-compacted crushed stone base and into the pervious subgrade soil. A copy of the sealed opinion letter is included in the Stipulated Exhibits provided to the Commission.

31. In a report dated January 14, 2019, signed and sealed by Gerald W. Stalls, Jr., P.E., GET Solutions, Inc., Mr. Stalls provides the following opinion based upon GET's shallow subsurface exploration and hydraulic conductivity testing conducted in and around the site of the paver patio and fire pit on January 7, 2019:

a. Testing indicated that the soil had a Unified Soil Classification System (USCS) of silty sands and sand mixtures with some clay;

b. Permeability testing indicated a Ksat Value of 2.1977 inches of water drainage per hour and a Ksat Classification of "Moderately High," meaning the soil is fairly well-drained; and

c. The report did not identify any restrictive clay layer that would cause water not to drain properly.

A copy of the sealed report was provided to the Commission as a Stipulated Exhibits.

32. Samir Dumpor, P.E. of DEMLR reviewed the additional reports of Hal Goodman dated

January 14, 2019 and Gerald Stalls dated January 14, 2019, which were submitted to DCM. Based on his review, he commented to DCM on January 28, 2019, that "based on the report by GET Solutions, it appears that MDC 1 and MDC 2 requirements are met, however; MDC 5 comment remains the same – Washed aggregate base materials shall be used. "Crush n' run" does not meet that criteria." Mr. Dumpor added as a reminder that "only the infiltrating permeable pavement that is per the MDC (Minimum Design Criteria) may be considered as 100% pervious."

33. Before DCM processed Petitioners' CAMA permit application and denial, DCM staff and counsel formally consulted with CRC Counsel regarding whether restoration was mandatory before allowing Petitioners to proceed with this variance request. Commission Counsel explained that DCM has some discretion in how to respond to an applicant who undertakes development in an AEC without first obtaining a CAMA permit, which is a prerequisite for a variance. Specifically, 15A NCAC 7H .0204(e) authorizes DCM to proceed with enforcement and to require restoration "[i]f the violation substantially altered the proposed project site, and restoration is deemed necessary." The purpose of the restoration is to allow DCM staff to assess the impacts. By implication, in situations where DCM staff can assess impacts without first requiring restoration, DCM may process a permit application without requiring restoration.

34. DCM agreed to allow the permit application and now the variance request to proceed before restoration occurred and to allow Petitioners to request a procedural variance from this requirement from this requirement.

35. On February 12, 2019, DCM submitted its Staff Recommendation to the Commission recommending that Petitioners' procedural variance be granted and its substantive request be denied on the grounds that Petitioners failed to carry its burden to show each of the four factors on which a request is granted.

STIPULATED EXHIBITS

The Commission reviewed the following Stipulated Exhibits which are the record documents:

1. Deed to property at Book 333, Page 641
2. CAMA General Permit #49979A authorizing the bulkhead
3. Plans for Petitioners' residence and building permit application
4. CAMA General Permit #68701A authorizing the pier and associated structures
5. September 25, 2017 NOV #17-15A with restoration plan
6. November 9, 2017 CNOV from DCM
7. December 15, 2017 letter from Petitioners to Director Davis
8. March 5, 2018 letter from Director Davis to Petitioners
9. May 17, 2018 letter from Petitioners to District Manager Jennings
10. July 24, 2018 CAMA Minor Permit Application with associated drawings and invoice
11. Notice to adjacent riparian owners of permit application
12. July 30, 2018 DCM Denial Letter
13. Notice to adjacent riparian owners of variance petition
14. Affidavits of Petitioners
15. Goodman opinion letter dated October 9, 2019
16. DEQ Stormwater Design Manual's Permeable Pavement chapter.
17. Goodman opinion letter dated January 14, 2019
18. Stalls opinion letter dated January 14, 2019
19. PowerPoint with aerial and ground level photos of Site and surrounding area

CONCLUSIONS OF LAW

1. Petitioners' first variance request is for a procedural variance from the Commission's rule at 15A NCAC 7J .0204(e) which requires that Petitioner restore of the affected area before the

Commission will proceed with a request for a substantive variance. In its Staff Recommendation, DCM agrees that it can fairly assess impacts of the unpermitted development without restoration. Accordingly, DCM did not object to the Commission proceeding with the substantive variance request before restoration was complete. Given the parties' agreement, and based on its review of the stipulated facts and exhibits, the Commission grants Petitioners' request for a procedural variance and will proceed to the merits of the Request.

2. The Commission has jurisdiction over the parties and the subject matter.

3. All notices for the proceeding were adequate and proper.

4. Turning to the substantive request for a variance from the 30-foot buffer rules, the Commission affirmatively finds that Petitioners have failed to meet the requirements in N.C.G.S. § 113A-120.1(a) and 15 NCAC 07J .0703(f) which must be found before a variance can be granted for the reasons set forth below.

a. Strict application of the Commission's 30-foot buffer rules will not cause unnecessary hardships.

The Commission affirmatively finds that strict application of the Commission's Rules for Coastal Shorelines, including the public trust shorelines, will not cause Petitioners unnecessary hardships. These rules are designed to ensure that development within the coastal shorelines is compatible with and does not harm the biological and physical functions of the shoreline system. To that end, within the public trust shoreline - the AEC located at the Site - new development is required to be located a distance of 30 feet landward of the normal water level or normal high water level unless it fits within an exception. 15A NCAC 07H .0209(d)(10). This rule is referred to as the Commission's the 30-Foot buffer rule.

In its Staff Recommendation, DCM asserts that strict application of the 30-foot buffer rule will not cause Petitioners unnecessary hardships. Specifically, DCM points out that although Petitioners selected the lot because of the expansive views from the proposed house and patio locations, any expectation that they could develop in the 30-foot buffer was unrealistic based on the long-standing 30-

foot buffer rule adopted by this Commission in 1999 (before Petitioners purchased the Site). Petitioners should have researched land use and other regulations or restrictions that applied to the Site, before making the purchase, before deciding on the location of the house, patio and fire pit on the lot, and certainly before constructing the patio and fire pit in the 30-foot buffer. If Petitioners had researched applicable regulations, Petitioners could have opted not to buy the lot or they could have shifted the location of the house, patio, or fire pit to avoid the 30-foot buffer area.

In analyzing this questions, the Commission points out that zoning ordinances limit what property owners can do with their property within zoning districts. These restrictions are compensated for by similar restrictions on neighboring property. "Such hardship, consistent with the hardship imposed on all other pieces of property in the district, is not a ground for a variance." Arden H. Rathdopf, et al., *The Law of Zoning and Planning*, § 58:5 (4th ed. Nov. 2018 update) (Emphasis added). To be considered an unnecessary hardship, a hardship must be different in kind from those generally affecting properties in the same zoning district. *Dupont v. Zoning Bd. of Appeals of Town of Manchester*, 834 A.2d 801, 803 (Conn. 2003) (citations and punctuation omitted); *see also*, Larrsen, supra, at §16. Likewise, the CAMA provisions impose some degree of hardship on all property within the twenty coastal counties. As long as the hardship is imposed on all similarly situated properties, such a restriction, without more, does not provide grounds for a variance. Here, the 30-foot buffer rule applies to all non-oceanfront coastal shorelines in North Carolina and is designed to programmatically limit development in the 30-foot strip between the upland areas and the public trust shoreline in order to protect the public trust shoreline and water resources. Protecting the shoreline is a valid and defensible purpose for keeping development out of the buffer and does not cause any additional or unusual hardship in this case.

The variance process is designed to allow a landowner "to use or build on land in a way prohibited by strict application of a zoning ordinance" if certain conditions are met. *See*, Laura Hunter Dietz & Anne E. Melley, *Variances, Generally; Authority to Grant*, Strong's North Carolina Index 41

Zoning §§107, 108, and 109 (Feb. 2019 update). It provides a means for a landowner to seek relief when the hardship imposed on an individual parcel of land outweighs the public benefit sought by the regulation and is out of proportion to the hardship shared in common with other property owners who also benefit from the restrictions. The ability to issue a variance has been described as a “safety valve” which waives strict application "of the zoning ordinance without sacrifice to its spirit and purposes." Eric M. Larsson, *Proof of Hardship Necessary for Zoning Variance*, 131 Am. Jur. Proof of Facts 3'd 253 (Nov. 2018 update). *See also, Husnander v. Town of Barnstead*, 139 N.H. 476,478,660 A.2d 477, 478 (1995) citing 3 E. Ziegler, Rathkopf's *The Law of Zoning and Planning*, § 38.01[1] (4th ed. 1994). The purpose of the variance process is to provide flexibility and to prevent practical difficulties and unnecessary hardships resulting from strict interpretations of zoning ordinances. James A. Webster, Jr., Patrick K. Hetrick & James B. McLaughlin, Jr., *Webster's Real Estate Law in North Carolina* § 18-19, at 874 (5th ed.1999); see also N.C. Gen. Stat.§ 160A-388(d) (2009).

A petitioner has a heavy burden to establish in requesting a variance:

> The power to grant variances from the strict application of zoning ordinances should be carefully and sparingly exercised, because unless great caution is used and variances are granted only in proper cases, the whole fabric of town-wide and city-wide [and coast-wide] zoning will be worn through in spots and raveled at the edges until its purpose in protecting the property values and securing the orderly development of the community is completely thwarted.

Larrson, supra, §13. To avoid rezoning by variance or spot zoning, variances should only be exercised in exceptional cases. *Lee v. Board of Adjustment*, 226 N.C. 107, 111,37 S.E. 2d 128, 132 (1946).

There "is no simple formula" for determining if a hardship is an unnecessary hardship. Each variance request is considered on a case-by-case basis on the evidence presented. Adam Lovelady, *Variance Standards: What is Hardship and When is it Unnecessary?* Coates Canons: NC Local Government Law Blog (May 27, 2014), https://canons.sog.unc.edu/variance-standards-what-is-hardship-and-when-is-it-unnecessary/ Factors relevant to an assessment of whether a hardship is unnecessary

may include such things as whether the property suffers a hardship out of proportion to other similarly situated properties, whether there is some condition peculiar to the property causing the hardship, or whether the spirit, purpose, and intent of the 30-foot buffer rule would be harmed by granting the request.

The Commission affirmatively finds that Petitioners have failed to demonstrate that the 30-foot buffer rule burdens their property more than other similarly situated property owners, in a way that is different in kind than other similarly situated properties, or because of some peculiar condition of the Site's location, size, or topography (see section b below). For these reasons, the Commission affirmatively finds that Petitioners have failed to establish the first factor without which a variance can be granted.

b. Petitioners have not shown that the hardship results from conditions peculiar to Petitioner's property.

The Commission affirmatively finds that Petitioners have failed to demonstrate that any hardship results from conditions peculiar to the property. Specifically, there is nothing about the location, size, topography, or other site conditions that cause a hardship for this property. Petitioners assert that the hardship is caused by the location of their property on the waterfront. In other words, Petitioners' argument is that their hardship is caused by the fact that Petitioners' preferred location for the patio and fire pit is in the public trust AEC. This argument is not persuasive. Petitioners are required to get a CAMA variance and permit before building in the public trust AEC. The fact that Petitioners' preferred location for the fire pit and patio is on the edge of the Site in the AEC is not a condition peculiar to the property. Petitioners' situation is the same as that of any other person whose preferred location for a proposed development is in an area of environmental concern. Everyone whose proposed development is located in an area of environmental concern is required to get a CAMA permit based on the CAMA guidelines and regulations. Petitioners have not identified any peculiar location, size, topography, or other site conditions that cause a hardship at this Site.

In order to prevail on this factor, Petitioners are required to show that strict application of the regulation causes an unequal burden on the property as a result of some unique aspect of the property different than the burden on neighboring properties. Petitioners have not identified any peculiar conditions in comparison with other waterfront properties that are subject to Coastal Area Management Act regulations along the thousands of miles of coastal and oceanfront shorelines in North Carolina. Accordingly, the Commission affirmatively finds that Petitioners have not demonstrated that this hardship results from conditions peculiar to the property. Therefore, Petitioners have not met the second factor required for the grant of its request for a variance.

c. Petitioners have failed to demonstrate that the hardship does not result from their actions.

Petitioners claim that any hardship is caused by the location of the Site and since they did not build or develop anything that changed this location, the hardship was not created by them. This argument misses the point. In its Staff Recommendation, DCM assesses the relevant facts more directly. DCM points out that Petitioners took title to this property in 2007, eight years after the Commission's 30-foot buffer rule was promulgated. Before buying the lot, Petitioners apparently failed to investigate (or ignored) the land-use and other regulations or restrictions applicable to the waterfront lot that would limit its development. In 2007, when Petitioner applied for and received a CAMA permit for a bulkhead, Petitioners could have discussed what limitations applied to development of the lot with the CAMA representative onsite. In 2010, when Petitioners had the lot surveyed, the surveyor included the "30' CAMA Setback" line on the survey. This was another opportunity for Petitioners to determine the implications of the 30-foot setback on development. See Stipulated Exhibit No. 10. In 2015, when the house was constructed, Petitioners could have asked for information about the development restrictions on the waterfront lot. Again, in the spring of 2017 when Petitioners constructed the patio and fire pit, they could have contacted local or CAMA officials to ask if a permit was required for the project and if there were any development restrictions that would apply to their plan. There was a series of missed

opportunities when Petitioners could have asked questions of local and state officials about what development restrictions applied to their lot and redesigned accordingly. If Petitioners had made these inquiries as part of their due diligence before installing the patio and fire pit, they would have understood that the patio and fire place were not allowed within the established 30-foot buffer. DCM contends that the Petitioners' stated lack of awareness of the 30-foot buffer is not a reason to grant a variance.

The Commission agrees that claimed ignorance of the law, cannot provide grounds on which to grant a variance. Such a position makes a mockery of the protections provided by CAMA and the Commission's rules. The policy implications if the Commission were to take such a position would result in untold harm. The Commission is charged with protecting coastal reasons through a considered plan of allowing for responsible development. If property owners who have constructed unauthorized and unpermitted development were able to get a permit after the fact by claiming ignorance of the law, the programmatic protections of CAMA would disappear.

DCM also points out that Petitioners have other options for a patio and fire-pit development. For example, the Commission's 30-foot buffer rule allows an exception for the development of "slatted, wooden, elevated and unroofed decks that shall not singularly or collectively exceed 200 square feet" in the buffer. Such a deck, coupled with a movable fire pit would offer a similar amenity within the buffer area on the lot without a variance. Additionally, as DCM pointed out in its staff recommendation, given the large three-quarters acre lot (33,105 square feet), there is room outside the 30-foot buffer to develop a similar-sized patio and fire pit.

Based on the stipulated facts and exhibits, the Commission affirmatively finds that by selecting an option for development of a patio and fire-pit that is not consistent with the Commission's rule, Petitioners caused the claimed hardship. Petitioners were responsible for knowing the rules impacting development in the 30-foot buffer. For these reasons, the Commission finds that any hardship was caused by Petitioners' actions. Thus, Petitioners have failed to establish the third factor required for a variance.

d. Petitioners have failed to demonstrated that the requested variance is consistent with the spirit, purpose and intent of the Commission's rules, will secure public safety and welfare, and will preserve substantial justice.

Petitioners have failed to demonstrate that (a) the requested variance is consistent with the spirit, purpose and intent of the Commission's rules, (b) will secure public safety and welfare, and (c) will preserve substantial justice.

As an initial matter, DCM points out in its Recommendation, and the Commission agrees, the issue before the Commission is not whether the proposed development is "landscaping" under the Commission's rules. If a petitioner contends that the DCM is misinterpreting the Commission's rules, the proper procedure is to seek a declaratory ruling from the Commission under 15A NCAC 7J .0601 - .0603 or appeal the permit denial to the Office of Administrative Hearings in accordance with 15A NCAC 7J .0300 et seq. As noted in the Stipulated Facts above, Petitioners were made aware that the declaratory ruling process was available to them (SF 16), but did not request a declaratory ruling. Instead, Petitioners proceeded with the variance process. The CAMA Permit Denial letter noted that the permit was denied, in part, because the proposed development did not meet the definition of "landscaping" (SF 20). Petitioners stipulated that "the development and construction of the paver brick patio and fire pit on Petitioner's property at 108 Virginia Court, adjacent to Yeopim Creek in Perquimans County is inconsistent with the Coastal Area Management Act (CAMA) and the Commission's rules noted in the July 30, 2018 denial letter." (SF 23) Given the procedural posture of this variance request, which does not allow Petitioners to switch arguments after waiving the opportunity to dispute DCM's interpretation of the rules, the Commission will disregard Petitioners' arguments related to the interpretation of "landscaping."

i. Request not consistent with spirit, purpose, and intent of 30-foot buffer rule.

The spirit, purpose, and intent of the Commission's 30-foot buffer rule includes limiting development on the shorelines which "serve as barriers against flood damage and control erosion between the estuary and the uplands." 15A NCAC 7H .0209(b). The Commission's 30-foot buffer rule is intended

"to ensure that shoreline development is compatible with the dynamic nature of coastal shorelines as well as the values and the management objectives of the estuarine and ocean system." The buffer reduces the development footprint along coastal shorelines, reduces impervious surfaces, restricts impacts to view sheds, retains habitat value, and keeps structures set back a minimum distance from hazards associated with coastal storms, erosion, and flooding. While the Commission's rules include an exception for up to two hundred square feet of elevated, wood, slatted decking (15A NCAC 7H .0209(10)(F)), the overall size of the patio and fire-pit exceeds this allowance by 250 square feet. In addition, impervious pavers (not wood slatted decking) was used to construct Petitioners' patio in the buffer.

Petitioners contend that the patio was designed and constructed to be permeable; that is, to allow rainwater to infiltrate sufficiently so as not to interfere with sheet flow across the property and/or result in increased volumes or rates of stormwater discharges into the adjacent waterbody. Certainly, the spirit, purpose, and intent of the rule is to reduce impervious surfaces in the buffer area. However, a review of the reports submitted by the Petitioners (Stipulated Exhibits 15, 17, 18) and the information provided by Mr. Dumpor, an engineer with the NC DEQ Division of Energy, Mineral, and Land Resource's (DEMLR) indicate that Petitioners have failed to establish the patio and fire pit are permeable. From a review of the engineering reports submitted, and the opinions provided by an engineer from DEMLR regarding the design and materials used, the Commission is aware that Petitioners used impervious pavers (as opposed to specially designed "pervious pavers") and laid these over a "crush n' run" foundation (this product is also known as crusher run and is comprised of pulverized stone and stone dust) rather than over "washed aggregate base materials." The long-term impact of impervious materials, including settling of the dust in the crush n' run has implications for the long-term performance of the design. Given the materials with which the patio was construction, in Mr. Dumpor's opinion, the patio does not meet the design standards considered by DEMLR in evaluating permeable pavement for stormwater permitting (See 15A NCAC 02H .1055).

In light of the evidence provided in the stipulated facts, the Commission affirmatively finds that Petitioners have failed to establish that the patio as designed results in a sufficiently permeable development in the buffer to meet the spirit, purpose and intent of the 30-foot buffer rule.

ii. Development in the buffer fails to protect public safety and welfare.

The second assessment to be made is whether Petitioners' request will impact public safety and welfare. The Commission finds that the purpose of the 30-foot buffer is to keep development out of a sensitive area in order to better protect the public trust area of environmental concern which in turn protects the waters of the coast. The addition of development in the buffer has the potential to reduce water quality and increase stormwater runoff. For these reasons, the Commission affirmatively finds that Petitioners have not demonstrated the development in the buffer is appropriately sited or that it is consistent with protecting public safety and welfare.

iii. Allowing Petitioners' development to remain in the buffer does not promote substantial justice.

Finally, the Commission affirmatively finds that granting Petitioners' request for a variance to allow the unauthorized development to remain in the buffer will not preserve substantial justice. The Commission's rules allow for certain considered exceptions allowing non-impactful development in the protective buffer. Petitioners' request for a 450 square foot patio built with a crush-and-run foundation and impervious pavers is not designed to stand up over time and maintain the necessary permeability to protect the natural resources the buffer was designed to protect. The request does not preserve substantial justice when others seeking permits to develop in the buffer must either meet the exceptions under the rule or show that the development was built with permeable materials so as to enhance permeability. In addition, the development does not preserve substantial justice, where the area impacted by the development is more than double the existing exception in the Commission's rules allowing up to 250 square feet of wooden decking.

* * * * *

For these reasons, the Commission affirmatively finds that Petitioners have failed to meet the fourth factor required by N.C.G.S. § 113A-120.1(a).

ORDER

THEREFORE, the requested variance from the Commission's 30-foot buffer rule to allow the unauthorized development to remain in the buffer is DENIED.

This the 25th day of March 2019.

M. Renee Cahoon

_____

M. Renee Cahoon Chair
Coastal Resources Commission

CERTIFICATE OF SERVICE

This is to certify that I have this day served the foregoing FINAL AGENCY DECISION upon the following persons by the methods indicated below:

Thomas and Judith Lampley 108 Virginia Court Hertford, North Carolina 27944	*Certified Mail/ Return Receipt Requested*
Charles D. Evans, Esq. 201 Ananias Dare Street Manteo, NC 27954	*U.S. Mail and Electronically at* charlese@kelloggandevans.com
Christine A. Goebel, Esq.Ass't General Counsel N.C. Department of Environmental Quality 217 West Jones Street Raleigh, NC 27602	*Electronically at* christine.goebel@ncdenr.gov
Braxton C. Davis, Director of DCM Angela Willis, Assistant to Director 400 Commerce Ave. Morehead City, NC 28557	*Electronically:* Braxton.Davis@ncdenr.gov Angela.Willis@ncdenr.gov
Sean Tunney, President Lazy Weekends Yard Care Services, LLC 124 Marine Dr., Unit 100 Edenton, NC 27932	*US Mail*
H. Lynn Keffer, President Crossroads Fuel Service, Inc. 700 Bedford St. Chesapeake, VA 23322	*US Mail*
KCI Associates of NC, PA 160 Mine Lake Ct., Suite 200 Raleigh, NC 27615	*US Mail*

This the 25th day of March, 2019.

Mary L. Lucasse

_____

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ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
BRAXTON C. DAVIS
Director

NORTH CAROLINA
Environmental Quality

CRC-19-26

August 30, 2019

MEMORANDUM

TO: Coastal Resources Commission
FROM: Mike Lopazanski
SUBJECT: Permeable Surfaces in the Buffer

A recent variance petition prompted a discussion of the Commission's exceptions to non-water dependent uses within the 30-foot buffer area of the rules for the Coastal Shorelines AEC, found at 15A NCAC 7H .0209(d)(10)(G). The variance requested expansion of non-water dependent uses within the 30-foot buffer area by allowing the use of impermeable materials (pavers) for a patio.

The Coastal Shorelines Area of Environmental Concern (AEC) includes the Estuarine Shorelines and Public Trust Shorelines subcategories. Estuarine shorelines are defined as "…those non-ocean shorelines extending from the normal high water level (HWL) or normal water level (NWL) along the estuarine waters, estuaries, sounds, bays, fresh and brackish waters, and public trust areas as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Environment and Natural Resources". The Estuarine Shoreline AEC extends from NHWL or NWL landward for a distance of 75 feet except in areas adjacent to waters classified as Outstanding Resource Waters by the Environmental Management Commission (EMC), where it extends 575 feet. Public Trust Shorelines are located inland of the dividing line between coastal fishing waters and inland fishing waters and extend 30 feet landward of NHWL or NWL. Pursuant to 15A NCAC 7H .0209(e), the Commission's buffer shall not apply in areas (Neuse and Tar-Pamlico) where the EMC has adopted buffers.

Your rules currently restrict development within the 30-foot buffer to water-dependent uses which are typically docks, piers, boat ramps, bulkheads and accessways. There are also exceptions for limited non-water dependent uses which include pile supported signs; elevated, slatted wooden boardwalks; crab shedders; decks/observation decks; grading, excavation, and landscaping with no wetland fill except when required by a permitted shoreline stabilization project.

The origin of the CRC's Buffer rules began with the Commission's consideration of upland development impacts to adjacent estuarine water quality in 1985 with a report on urban stormwater runoff and management strategies to mitigate those impacts. Other reports followed

including a 1996 NC Sea Grant analysis of current AEC standards concluding that the standards were not specific enough to protect critical estuarine habitats, specifically seagrass beds, shallow sand, oyster reefs, salt marshes, fish nursery areas and anadromous fish spawning areas.

Fish kills, algal blooms, shellfish closures and increased coastal development during the late 1990's once again brought the issue of estuarine water quality to the Commission's attention. In September of 1997, Staff reviewed the Commission's existing regulatory program and concluded that "additional protection is needed to implement the intent of the Coastal Area Management Act and the Commission's management goals for the Estuarine System Area(s) of Environmental Concern (AEC)" identifying five areas for review, including regulatory jurisdiction, different development zones, vegetated buffers, density and estuarine shoreline stabilization.

With nonpoint source pollution becoming an increasing concern, the CRC in 1998 began a rulemaking effort to expand the Estuarine Shoreline AEC beyond the limit of the inland waters boundary through the Public Trust Areas AEC and reviewed methods to mitigate, protect and restore the quality of North Carolina's estuarine system through the use of vegetated buffers, shoreline stabilization methods, and impervious surface area density. Staff recommended rule changes to require buffers along all shoreline types within the Commission's jurisdiction.

The Commission spent most of 1998 reviewing the shoreline jurisdiction rules, and recommendations on how to proceed with adding both a Public Trust Shoreline AEC upstream of the inland/coastal fishing waters line, and to update the rules for the Estuarine Shoreline AEC to include vegetated buffers.

In 1999 the CRC's draft proposals included a 75-foot vegetated buffer for all Coastal Shorelines AECs (both Estuarine Shoreline and Public Trust Shoreline AECs). Within the 75-foot buffer, water dependent structures were allowed within the first 50 feet and within the last 25 feet, up to 200 square feet of accessory structures could be built. This recommendation was later reduced to a 30-foot buffer and was subsequently adopted in November of 1999 after adding exceptions and took effect in August of 2000. The exceptions were the result of a Staff survey regarding the most common existing development within a 30-foot buffer area, with recommendations of what non-dependent uses should be allowed within the 30-foot buffer based on their having little or no impact to water quality.

The Commission has had a clear intent since the initial adoption of its 30-foot buffer rule, and since its adoption in 2000, has been consistent in not allowing non-water-dependent amenities within the buffer that could undermine the purposes and effectiveness of the buffer. The buffer area has been identified as crucial in protecting water quality by filtering contaminants from runoff, allowing infiltration, stabilizing soil, slowing floodwaters and preserving the natural character of the shoreline. When the Commission has granted variances, it has usually involved a habitable structure, and these variances have typically been conditioned on the use of an engineered stormwater system.

However, there have been advances in technology that are intended to address stormwater runoff associated with traditional impervious surfaces. The use of “pervious” pavement, pavers and associated installation requirements have been promoted by various institutions and the Division

of Energy, Minerals and Land Resources' (DEMLR) Stormwater Design Manual includes specifications for construction of "hard" surfaces that capture stormwater through voids in the materials surfaces.

The Commission's buffer rule exceptions allow for decks/observation decks that are limited to slatted, wooden, elevated and unroofed decks that do not singularly or collectively exceed 200 square feet. As the provision for decks to be slatted and elevated is related to retaining the infiltration capacity of the buffer, development standards could be incorporated that allow similarly functioning structures that also maintain the infiltration capacity of the buffer. If the Commission is interested in allowing this type of amenity within the buffer area, the limitations on non-water dependent structures could be amended to incorporate DEMLR's Best Management Practices standards (15A NCAC 02H .1055 MDC FOR PERMEABLE PAVEMENT) for pervious pavement by reference in the rule and limiting such development to 200 square feet, in a manner similar to the limitation on slated, elevated decks.

Staff looks forward to discussing the Buffer Rule and guidance for the development of amendments at our upcoming meeting in Wilmington.

SUBCHAPTER 7H - STATE GUIDELINES FOR AREAS OF ENVIRONMENTAL CONCERN

SECTION .0200 – THE ESTUARINE AND OCEAN SYSTEMS

15A NCAC 07H .0209 COASTAL SHORELINES

(a) Description. The Coastal Shorelines category includes estuarine shorelines and public trust shorelines.

(1) Estuarine shorelines AEC are those non-ocean shorelines extending from the normal high water level or normal water level along the estuarine waters, estuaries, sounds, bays, fresh and brackish waters, and public trust areas as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Environmental Quality [described in Rule .0206(a) of this Section] for a distance of 75 feet landward. For those estuarine shorelines immediately contiguous to waters classified as Outstanding Resource Waters (ORW) by the Environmental Management Commission (EMC), the estuarine shoreline AEC shall extend to 575 feet landward from the normal high water level or normal water level, unless the Coastal Resources Commission establishes the boundary at a greater or lesser extent following required public hearing(s) within the affected county or counties.

(2) Public trust shorelines AEC are those non-ocean shorelines immediately contiguous to public trust areas, as defined in Rule 07H .0207(a) of this Section, located inland of the dividing line between coastal fishing waters and inland fishing waters as set forth in that agreement and extending 30 feet landward of the normal high water level or normal water level.

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

(c) Management Objective. All shoreline development shall be compatible with the dynamic nature of coastal shorelines as well as the values and the management objectives of the estuarine and ocean system. Other objectives are to conserve and manage the important natural features of the estuarine and ocean system so as to safeguard and perpetuate their biological, social, aesthetic, and economic values; to coordinate and establish a management system capable of conserving and utilizing these shorelines so as to maximize their benefits to the estuarine and ocean system and the people of North Carolina.

(d) Use Standards. Acceptable uses shall be those consistent with the management objectives in Paragraph (c) of this Rule. These uses shall be limited to those types of development activities that will not be detrimental to the public trust rights and the biological and physical functions of the estuarine and ocean system. Every effort shall be made by the permit applicant to avoid or minimize adverse impacts of development to estuarine and coastal systems through the planning and design of the development project. Development shall comply with the following standards:

(1) All development projects, proposals, and designs shall preserve natural barriers to erosion, including peat marshland, resistant clay shorelines, and cypress-gum protective fringe areas adjacent to vulnerable shorelines.

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

(3) All development projects, proposals, and designs shall comply with the following mandatory standards of the North Carolina Sedimentation Pollution Control Act of 1973:

(A) All development projects, proposals, and designs shall provide for a buffer zone along the margin of the estuarine water that is sufficient to confine visible siltation within 25 percent of the buffer zone nearest the land disturbing development.

(B) No development project proposal or design shall propose an angle for graded slopes or fill that is greater than an angle that can be retained by vegetative cover or other erosion-control devices or structures.

(C) All development projects, proposals, and designs that involve uncovering more than one acre of land shall plant a ground cover sufficient to restrain erosion within 30 working days of completion of the grading; unless the project involves clearing land for the purpose of forming a reservoir later to be inundated.

(4) Development shall not have a significant adverse impact on estuarine and ocean resources. Significant adverse impacts include development that would directly or indirectly impair water quality increase shoreline erosion, alter coastal wetlands or Submerged Aquatic Vegetation (SAV), deposit spoils waterward of normal water level or normal high water, or cause degradation of shellfish beds.

(5) Development shall not interfere with existing public rights of access to, or use of, navigable waters or public resources.

(6) No public facility shall be permitted if such a facility is likely to require public expenditures for maintenance and continued use, unless it can be shown that the public purpose served by the facility outweighs the required public expenditures for construction, maintenance, and continued use.

(7) Development shall not cause irreversible damage to valuable, historic architectural or archaeological resources as documented by the local historic commission or the North Carolina Department of Natural and Cultural Resources.

(8) Established common-law and statutory public rights of access to the public trust lands and waters in estuarine areas shall not be eliminated or restricted. Development shall not encroach upon public accessways nor shall it limit the use of the accessways.

(9) Within the AECs for shorelines contiguous to waters classified as ORW by the EMC, no CAMA permit shall be approved for any project that would be inconsistent with rules adopted by the CRC, EMC or MFC for estuarine waters, public trust areas, or coastal wetlands. For development activities not covered by specific use standards, no permit shall be issued if the activity would, based on site-specific information, degrade the water quality or outstanding resource values.

(10) Within the Coastal Shorelines category (estuarine and public trust shoreline AECs), new development shall be located a distance of 30 feet landward of the normal water level or normal high water level, with the exception of the following:

(A) Water-dependent uses as described in Rule 07H .0208(a)(1) of this Section;

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

(C) Post- or pile-supported fences;

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

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

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

(G) Grading, excavation and landscaping with no wetland fill except when required by a permitted shoreline stabilization project. Projects shall not increase stormwater runoff to adjacent estuarine and public trust waters;

(H) Development over existing impervious surfaces, provided that the existing impervious surface is not increased;

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

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

(ii) The residential structure development shall be located a distance landward of the normal high water or normal water level equal to 20 percent of the greatest depth of the lot. Existing structures that encroach into the applicable buffer area may be replaced or repaired consistent with the criteria set out in 15A NCAC 07J .0201 and .0211; and

(J) Where application of the buffer requirement set out in Subparagraph (d)(10) of this Rule would preclude placement of a residential structure on an undeveloped lot platted prior to June 1, 1999 that are 5,000 square feet or less that does not require an on-site septic system, or on an undeveloped lot that is 7,500 square feet or less that requires an on-site septic system, development shall be permitted within the buffer if all the following criteria are met:

(i) The lot on which the proposed residential structure is to be located, is located between:

(I) Two existing waterfront residential structures, both of which are within 100 feet of the center of the lot and at least one of which encroaches into the buffer; or

(II) An existing waterfront residential structure that encroaches into the buffer and a road, canal, or other open body of water, both of which are within 100 feet of the center of the lot;

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

(iii) Placement of the residential structure and pervious decking shall be aligned no further into the buffer than the existing residential structures and existing pervious decking on adjoining lots;

(iv) The first one and one-half inches of rainfall from all impervious surfaces on the lot shall be collected and contained on-site in accordance with the design standards for stormwater management for coastal counties as specified in 15A NCAC 02H .1005. The stormwater management system shall be designed by an individual who meets applicable State occupational licensing requirements for the type of system proposed and approved during the permit application process. If the residential structure encroaches into the buffer, then no other impervious surfaces shall be allowed within the buffer; and

(v) The lots shall not be adjacent to waters designated as approved or conditionally approved shellfish waters by the Shellfish Sanitation Section of the Division of Marine Fisheries of the Department of Environmental Quality.

(e) The buffer requirements in Paragraph (d) of this Rule shall not apply to Coastal Shorelines where the EMC has adopted rules that contain buffer standards.

(f) Specific Use Standards for ORW Coastal Shorelines.

(1) Within the AEC for estuarine and public trust shorelines contiguous to waters classified as ORW by the EMC, all development projects, proposals, and designs shall limit the built upon area in the AEC to no more than 25 percent or any lower site specific percentage as adopted by the EMC as necessary to protect the exceptional water quality and outstanding resource values of the ORW, and shall:

(A) provide a buffer zone of at least 30 feet from the normal high water line or normal water line; and

(B) otherwise be consistent with the use standards set out in Paragraph (d) of this Rule.

(2) Single-family residential lots that would not be buildable under the low-density standards defined in Subparagraph (f)(1) of this Rule may be developed for single-family residential purposes so long as the development complies with those standards to the maximum extent possible.

(g) Urban Waterfronts.

(1) Description. Urban Waterfronts are waterfront areas, not adjacent to ORW, in the Coastal Shorelines category that lie within the corporate limits of any municipality duly chartered within the 20 coastal counties of the state. In determining whether an area is an urban waterfront, the following criteria shall be met:

(A) the area lies wholly within the corporate limits of a municipality; and

(B) the area has a central business district or similar commercial zoning classification where there are mixed land uses, and urban level services, such as water, sewer, streets, solid

waste management, roads, police and fire protection, or in an area with an industrial or similar zoning classification adjacent to a central business district.

(2) Significance. Urban waterfronts are recognized as having cultural, historical and economic significance for many coastal municipalities. Maritime traditions and longstanding development patterns make these areas suitable for maintaining or promoting dense development along the shore. With proper planning and stormwater management, these areas may continue to preserve local historical and aesthetic values while enhancing the economy.

(3) Management Objectives. To provide for the continued cultural, historical, aesthetic and economic benefits of urban waterfronts. Activities such as in-fill development, reuse and redevelopment facilitate efficient use of already urbanized areas and reduce development pressure on surrounding areas, in an effort to minimize the adverse cumulative environmental effects on estuarine and ocean systems. While recognizing that opportunities to preserve buffers are limited in highly developed urban areas, they are encouraged where practical.

(4) Use Standards:

(A) The buffer requirement pursuant to Subparagraph (d)(10) of this Rule shall not apply to development within Urban Waterfronts that meets the following standards:

(i) The development shall be consistent with the locally adopted land use plan;

(ii) Impervious surfaces shall not exceed 30 percent of the AEC area of the lot. Impervious surfaces may exceed 30 percent if the applicant can demonstrate, through a stormwater management system design, that the protection provided by the design would be equal to or exceed the protection by the 30 percent limitation. The stormwater management system shall be designed by an individual who meets any North Carolina occupational licensing requirements for the type of system proposed and approved during the permit application process. Redevelopment of areas exceeding the 30 percent impervious surface limitation shall be permitted if impervious areas are not increased and the applicant designs the project to comply with the intent of the rule to the maximum extent feasible; and

(iii) The development shall meet all state stormwater management requirements as required by the EMC;

(B) Non-water dependent uses over estuarine waters, public trust waters and coastal wetlands shall be allowed only within Urban Waterfronts as set out below.

(i) Existing structures over coastal wetlands, estuarine waters or public trust areas may be used for commercial non-water dependent purposes. Commercial, non-water dependent uses shall be limited to restaurants and retail services. Residential uses, lodging and new parking areas shall be prohibited.

(ii) For the purposes of this Rule, existing enclosed structures may be replaced or expanded vertically provided that vertical expansion does not exceed the original footprint of the structure, is limited to one additional story over the life of the structure, and is consistent with local requirements or limitations.

(iii) New structures built for non-water dependent purposes are limited to pile-supported, single-story, unenclosed decks and boardwalks, and shall meet the following criteria:

(I) shall provide for enhanced public access to the shoreline;

(II) may be roofed, but shall not be enclosed by partitions, plastic sheeting, screening, netting, lattice or solid walls of any kind;

(III) shall require no filling of coastal wetlands, estuarine waters or public trust areas;

(IV) shall not extend more than 20 feet waterward of the normal high water level or normal water level;

(V) shall be elevated at least three feet over the wetland substrate as measured from the bottom of the decking;

(VI) shall have no more than six feet of any dimension extending over coastal wetlands;

(VII) shall not interfere with access to any riparian property and shall have a minimum setback of 15 feet between any part of the structure and the adjacent property owners' areas of riparian access. The line of division

of areas of riparian access shall be established by drawing a line along the channel or deep water in front of the properties, then drawing a line perpendicular to the line of the channel so that it intersects with the shore at the point the upland property line meets the water's edge. The minimum setback provided in the rule may be waived by the written agreement of the adjacent riparian owner(s) or when two adjoining riparian owners are co-applicants. Should the adjacent property be sold before construction of the structure commences, the applicant shall obtain a written agreement with the new owner waiving the minimum setback and submit it to the permitting agency prior to initiating any development;

(VIII) shall be consistent with the US Army Corps of Engineers setbacks along federally authorized waterways;

(IX) shall have no significant adverse impacts on fishery resources, water quality or adjacent wetlands and there shall be no alternative that would avoid wetlands. Significant adverse impacts include the development that would impair water quality standards, increase shoreline erosion, alter coastal wetlands or Submerged Aquatic Vegetation (SAV), deposit spoils waterward of normal water level or normal high water level, or cause degradation of shellfish beds;

(X) shall not degrade waters classified as SA or High Quality Waters or ORW as defined by the EMC;

(XI) shall not degrade Critical Habitat Areas or Primary Nursery Areas as defined by the NC Marine Fisheries Commission; and

(XII) shall not pose a threat to navigation.

History Note: *Authority G.S. 113A-107(b); 113A-108; 113A-113(b); 113A-124;*
Eff. September 1, 1977;
Amended Eff. April 1, 2001; August 1, 2000; August 3, 1992; December 1, 1991; May 1, 1990; October 1, 1989;
Temporary Amendment Eff. October 15, 2001 (exempt from 270 day requirement-S.L. 2000-142);
Temporary Amendment Eff. February 15, 2002 (exempt from 270 day requirement-S.L. 2001-494);
Amended Eff. April 1, 2019; March 1, 2010; April 1, 2008; August 1, 2002.

15A NCAC 02H .1055 MDC FOR PERMEABLE PAVEMENT

The purpose of this Rule is to set forth the design requirements for permeable pavement systems that are constructed to meet the requirements of this Section.

(1) SOIL INVESTIGATION. For infiltrating pavement systems, site-specific soil investigation shall be performed to establish the hydraulic properties and characteristics within the proposed footprint and at the proposed elevation of the permeable pavement system.

(2) SHWT REQUIREMENTS. The minimum separation between the lowest point of the subgrade surface and the SHWT shall be:

(a) two feet for infiltrating pavement systems; however, the separation may be reduced to a minimum of one foot if the applicant provides a soils report that demonstrates that the modified soil profile allows for infiltration of the design volume within 72 hours; and

(b) one foot for detention pavement systems.

(3) SITING. Permeable pavement shall not be installed in areas where toxic pollutants are stored or handled.

(4) SOIL SUBGRADE SLOPE. The soil subgrade surface shall have a slope of less than or equal to two percent.

(5) STONE BASE. Washed aggregate base materials shall be used.

(6) PAVEMENT SURFACE. The proposed pavement surface shall have a demonstrated infiltration rate of at least 50 inches per hour using a head less than or equal to 4 inches.

(7) RUNOFF FROM ADJACENT AREAS. Runoff to the permeable pavement from adjacent areas shall meet these requirements:

(a) The maximum ratio of additional built-upon area that may drain to permeable pavement is 1:1. Screened rooftop runoff shall not be subject to the 1:1 loading limitation.

(b) Runoff from adjacent pervious areas shall be prevented from reaching the permeable pavement except for incidental, unavoidable runoff from stable vegetated areas.

(8) DRAW DOWN TIME. Infiltrating permeable pavement systems shall be designed to dewater the design volume to the bottom of the subgrade surface within 72 hours. In-situ soils may be removed and replaced with infiltration media or infiltration media may be placed on top of in-situ soils if the applicant provides a soils report that demonstrates that the modified soil profile allows for infiltration of the design volume within 72 hours.

(9) OBSERVATION WELL. Permeable pavement shall be equipped with a minimum of one observation well placed at the low point in the system. If the subgrade is terraced, then there shall be one observation well for each terrace. Observation wells shall be capped.

(10) DETENTION SYSTEMS. Pavement systems may be designed to detain stormwater in the aggregate for a period of two to five days.

(11) EDGE RESTRAINTS. Edge restraints shall be provided around the perimeter of permeable interlocking concrete pavers (PICP) and concrete grid pavers.

(12) GRADE WHEN DRY. The soil subgrade for infiltrating permeable pavement shall be graded when there is no precipitation.

(13) INSPECTIONS AND CERTIFICATION. After installation, permeable pavement shall be protected from sediment deposition until the site is completed and stabilized. An in-situ infiltration permeability test shall be conducted and certified on the pavement after site stabilization.

History Note: *Authority G.S. 143-214.7B; 143-215.1; 143-215.3(a);*
Eff. January 1, 2017.

15A NCAC 02H .1050 MDC FOR ALL STORMWATER CONTROL MEASURES

The purpose of this Rule is to set forth the design requirements for all Stormwater Control Measures (SCMs) that are constructed to meet the requirements of this Section. These Minimum Design Criteria (MDC) are required for every SCM. SCMs shall adhere to the MDC associated with the specific type of SCM being implemented.

(1) SIZING. The design volume of SCMs shall take into account the runoff at build out from all surfaces draining to the system. Drainage from off-site areas may be bypassed. The combined design volume of all SCMs on the project shall be sufficient to handle the required storm depth.

(2) CONTAMINATED SOILS. SCMs that allow stormwater to infiltrate shall not be located on or in areas with contaminated soils.

(3) SIDE SLOPES. Side slopes of SCMs stabilized with vegetated cover shall be no steeper than 3:1 (horizontal to vertical). Retaining walls, gabion walls, and other engineered surfaces may be steeper than 3:1. Steeper vegetated slopes may be accepted on a case-by-case basis if the applicant demonstrates that the soils and vegetation shall remain stable.

(4) EROSION PROTECTION. The inlets of SCMs shall be designed to protect the SCM from erosion resulting from stormwater discharges. The outlets of SCMs shall be designed so that they do not cause erosion downslope of the discharge point during the peak flow from the 10-year storm event as shown by engineering calculations.

(5) EXCESS FLOWS. SCMs shall include an overflow or bypass device for inflow volumes in excess of the treatment volume, or, if applicable, the peak attenuation volume.

(6) DEWATERING. SCMs shall have a method to draw down any standing water to facilitate maintenance and inspection.

(7) CLEAN OUT AFTER CONSTRUCTION. Every SCM impacted by sedimentation and erosion control during the construction phase shall be cleaned out and converted to its approved design state.

(8) MAINTENANCE ACCESS. Every SCM installed pursuant to this Section shall be made accessible for maintenance and repair. Maintenance accesses shall:

(a) have a minimum width of ten feet;

(b) not include lateral or incline slopes that exceed 3:1 (horizontal to vertical); and

(c) extend to the nearest public right-of-way.

(9) EASEMENTS. All SCMs and associated maintenance accesses on privately owned land except for those located on single family residential lots shall be located in permanent recorded easements. The SCM shall be shown and labeled within the easement. These easements shall be granted in favor of the party responsible for enforcing the stormwater program under which the SCMs were approved.

(10) SINGLE FAMILY RESIDENTIAL LOTS. Plats for residential lots that contain an SCM shall include:

(a) the specific location of the SCM on the lot;

(b) a typical detail for SCM to be used; and

(c) a note that the SCM on the property has been required to meet stormwater regulations and that the property owner may be subject to enforcement procedures as set forth in G.S. 143, Article 21 if the SCM is removed, relocated, or altered without prior approval.

(11) OPERATION AND MAINTENANCE AGREEMENT. The owner of the SCMs shall enter into a Operation and Maintenance (O&M) Agreement with the party responsible for implementing the stormwater program under which the SCMs were approved. The O&M Agreement shall require the owner to maintain, repair, or reconstruct the SCMs in accordance with the approved design plans and the O&M Plan. The O&M Agreement shall be referenced on the final plat and shall be recorded with the county Register of Deeds upon final plat approval. If no subdivision plat is recorded for the site, then the O&M Agreement shall be recorded with the county Register of Deeds so as to appear in the chain of title of all subsequent purchasers.

(12) OPERATION AND MAINTENANCE PLAN. There shall be an O&M Plan for every project subject to this Rule. The O&M Plan shall specify all operation and maintenance work necessary for the function of all SCM components, including the stormwater conveyance system, perimeter of the device, inlet(s), pretreatment measures, main treatment area, outlet, vegetation, and discharge point. The O&M plan shall specify methods to be used to maintain or restore the SCMs to design specifications in the event of failure. O&M plans shall be signed by the owner and notarized. The owner shall keep maintenance records and these shall be available upon request by the party responsible for enforcing the stormwater program under which the SCMs were approved.

(13) SCM SPECIFIC MINIMUM DESIGN CRITERIA (MDC). Every SCM shall follow the applicable device specific MDC pursuant to Rules .1051 through .1062 of this Section.

(14) SCM DESIGNER QUALIFICATIONS FOR THE FAST-TRACK PERMITTING PROCESS. For the fast-track permitting process as set forth in Rules .1043 and .1044 of this Section, SCMs and components of SCMs shall be designed by persons licensed under Chapters 89A, 89C, 89E, or 89F of the General Statutes.

(15) NEW STORMWATER TECHNOLOGIES. Applicants shall have the option to request Division approval of new stormwater technologies and associated MDC. The applicant shall submit to the Division the standards for siting, site preparation, design, construction, and maintenance of the stormwater technology as well as research studies demonstrating that the stormwater technology functions in perpetuity and is equally or more protective of water quality than the requirements of this Section. In accordance with G.S. 143-215.1 and 143-215.3, the Commission may delegate the review and approval of new stormwater technologies to Division staff and the Commission or its designee may request additional information deemed necessary to evaluate the stormwater technology. If the Commission or its designee deems that the applicant has demonstrated that the new stormwater technology shall be the same or more protective than the requirements of this Section, then the Division shall approve the use of the new stormwater technology to satisfy the requirements of this Section.

(16) NO EXCEPTIONS TO UNAUTHORIZED PROFESSIONAL PRACTICE. This Rule creates no exceptions to the unauthorized practice of the professions described in Chapters 89A, 89C, 89E, or 89F of the General Statutes, or the rules, standards, or codes of professional conduct promulgated by the applicable professional licensing boards.

History Note: *Authority G.S. 143-214.7B; 143-215.1; 143-215.3(a);*
Eff. January 1, 2017.

MEMORANDUM

TO: Implementation and Standards Committee

FROM: Charles Jones

SUBJECT: Shoreline Jurisdiction Rules

DATE: March 9, 1998

Over the last nine months, the Committee has heard many presentations on problems staff has identified with the Commission's current rules and regulatory jurisdiction of the Estuarine Shoreline Area of Environmental Concern (AEC) (7H.0209). Staff reported that, although the rules are effective, they are not effective enough to meet the Coastal Resources Commission's (CRC) stated management objectives. The January meeting was dedicated to a review of the existing "science" concerning the impacts of adjacent development to estuarine and public trust resources and potential mitigating measures that might be employed to minimize those impacts.

There are several options that can be considered towards achieving the goal of protecting coastal habitat areas. The purpose of this memorandum is to provide a staff overview of some potential CRC rule changes and implementation scenarios. We have also identified other regulatory authorities that may have concurrent jurisdiction in these areas and some possible non-regulatory initiatives.

Staff believes it is appropriate for the Committee and the Commission to move forward on drafting rules to address some of the problems that have been identified. We recommend that the CRC take a phased approach to providing additional protection for estuarine and public trust resources. In Phase I, staff recommends the CRC amend the existing Estuarine Shoreline AEC rules. This action would address staff findings that the current rules are not sufficient to meet the CRC's objectives. Phase II would involve extending AEC protection and rules to adjacent public trust waters. An outline of this option is attached for your review.

In a separate memorandum, Kim Crawford has provided a summary of an effort the CRC undertook in 1986 to amend the estuarine shoreline rules. This may be helpful background material for consideration during the discussion of proposed rule changes.

Another option for the CRC to consider is moving forward with a single action that would include both the changes to the current estuarine shoreline AEC rules *and* extending CAMA shoreline jurisdiction adjacent to public trust waters.

Recommended Actions:

A1: Regulatory Jurisdiction

What: As Phase I, staff recommends that the current estuarine shoreline jurisdiction be expanded landward for a distance of 200', except for those shorelines adjacent to Outstanding Resource Waters, which would remain at 575'. Specific use standards would apply to development proposals within this AEC.

As Phase II, staff recommends that shoreline jurisdiction (including the new rule changes) be extended to include shorelines adjacent to Public Trust Areas.

Where: This first action expands the landward boundary of the Estuarine Shoreline AEC, adjacent to all estuarine waters within the 20 coastal counties. The second action extends the jurisdictional boundary to include the shorelines adjacent to public trust waters within the 20 coastal counties.

How: The current permitting process (majors, minors, and exemptions) would be used. It is anticipated that the majority of development would be eligible for exemptions. Prior to the adoption of each of the actions, the Commission must hold a public hearing in each of the 20 coastal counties.

In a non-regulatory effort, state guidelines should also be developed to assist local governments in addressing development within the estuarine shoreline. This would likely be through land use planning and public education/information.

A2: Different Development Zones

What: Staff recommends additional protection to the shorelines adjacent to some of the most significant and critical water bodies in the coastal area. As such, we recommend that increased protection be afforded to Outstanding Resource Waters (ORWs), Primary Nursery Areas (PNAs) and Nutrient Sensitive Waters (NSWs). The existing AEC jurisdiction area for ORWs (575') could remain the same, but more stringent development standards should apply than what exist today. The shorelines adjacent to PNAs and NSWs would also be given the same jurisdictional coverage and development standards as ORWs.

Where: This increased protection would be afforded to all ORWs, PNAs and NSWs within the 20 coastal counties.

How: Staff proposes to use the existing regulatory framework (i.e. majors, minors, exceptions) for the implementation of these changes. It is anticipated that the majority of these activities would be eligible for exceptions.

In addition, staff plans to develop a public education and information program to complement the regulatory changes, This education program would be geared towards promoting property owner and community level awareness of nonpoint source pollution and to identifying steps that can be taken by an individual and a local government to reduce this pollution.

B1: Vegetated Buffers

What: Staff recommends requiring vegetated buffers for all non-water dependent development adjacent to jurisdictional waters. Except for a 30' wide buffer adjacent to ORWs, there are currently no CRC requirements for buffers adjacent to surface waters or wetlands. Staff proposes requiring a minimum vegetated buffer of 50' along all jurisdictional shorelines except for those areas adjacent to ORWs, NSWs and PNAs, where the buffer would be 100'. Non-water dependent development would also have to maintain a minimum buffer of 10' from any wetland, unless a practical difficulty exists on the lot, such as being able to obtain access to a building site.

Where: The requirement for vegetated buffers would be for all non-water dependent structures within the 20 coastal counties.

How: Staff proposes to use the current regulatory framework (majors, minors, exceptions) for the implementation of vegetated buffers. It is anticipated that the majority of the development projects would be eligible for an exemption. For development on existing lots that cannot meet the buffer requirement, a grandfathering rule will be developed to allow them to build, while meeting the intent of the rule to the maximum extent practicable. Public hearings would have to be held in each of the 20 coastal counties.

Staff also plans to develop a public education and information program to complement regulatory changes. This education program would be geared to promoting property owner and community level awareness of the importance of undisturbed natural vegetative buffers to reduce nonpoint source pollution.

B2: Built Upon Areas (Density)

What: Staff recommends requiring limits on the amount of impervious, or built upon, surfaces within the shorelines adjacent to jurisdictional waters. This limitation will be increased for those developments being undertaken adjacent to ORWs, PNAs and NSWs. Presently, CRC rules limit the amount of impervious surfaces adjacent to Estuarine Waters to 30%, and areas adjacent to ORW's to 25%. Development may exceed the 30% requirement if innovative designs are employed. Innovative designs are not allowed adjacent to ORWs.

Staff proposes that the amount of built upon surfaces be limited to 20% along estuarine and public trust shorelines, while keeping the options of innovative designs available only to those grandfathered lots that have to build over the standard. For developments adjacent to ORWs, built upon surfaces would be reduced to 12%. The grandfathering of existing lots would be similar to the CRC's existing rules for pre-existing lots.

Where: The requirement for density limitations will apply to all development in the jurisdictional shorelines.

How: Staff proposes to use the existing regulatory framework of majors, minors and exemptions to implement these changes. The CRC would have to conduct pubic hearings in all 20 coastal counties.

In a nonregulatory effort, staff should develop guidelines to help local governments address nonpoint source runoff in their land use plans. This guidance could also be used by local governments to amend their existing land use regulations to address the extent of impervious surfaces within their jurisdictions.

Other authorities that have some jurisdiction over activities adjacent to estuarine shorelines

Regulatory Jurisdiction:

The Divisions of Water Quality (DWQ) and Land Quality could have concurrent jurisdiction if the development requires a sedimentation and erosion control plan or a major CAMA permit. The DWQ also has jurisdiction if the development is occurring within a 50' zone adjacent to the Neuse River basin area. The US Army Corp of Engineers could also have permitting jurisdiction if federally protected wetlands are impacted, which would also require a water quality certification from DWQ. However, it is anticipated that the overwhelming majority of development will be subject only to the CAMA minor permit process.

Different Development Zones:

The NC Marine Fisheries Commission (MFC) and the NC Wildlife Resources Commission (WRC) establish primary nursery areas (PNAs), but have no regulatory jurisdiction for upland development occurring adjacent to those water bodies. The MFC has also been given the legislative responsibility to develop fisheries habitat management plans.

The Environmental Management Commission (EMC) has recently been given authority to regulate certain types of development within the Neuse River basin and has had authority for the designation of ORWs and NSWs. The EMC has established density limitations within ORWs that are only applied to developments having to obtain a sedimentation and erosion control plan or a CAMA major permit.

CAMA allows the CRC to designate estuarine primary nursery areas as AECs and the contiguous land needed to maintain water quality and resource values. The CRC currently recognizes the ORWs in their AEC jurisdictional area and has specific development standards for these areas. Since the majority of upland development does not require any EMC approvals, it is anticipated that most development would be approved under the CAMA minor permit process.

Vegetated Buffers:

The EMC requires buffers from ORWs (30'), buffers for development within the Neuse River basin (NSWs) (50'), and for developments meeting the low density options (30') under EMC's stormwater regulations. Except within the Neuse River Basin, EMC buffer rules only apply when a CAMA major permit or a sedimentation and erosion control plan is required. Since the majority of developments do not meet those requirements, most would be subject only to the CAMA minor permit process.

Built Upon Areas:

The EMC has established density restrictions for developments adjacent to ORW's (25% or less) and for low density development under their storm water regulations. These restrictions are dependent on a project having to obtain a sedimentation and erosion control plan or a CAMA major permit. It is anticipated that most of the development proposals would be approved under the CAMA minor permit process.

B3: Shoreline Stabilization

What: Staff recommends encouraging the use of non-structural erosion control techniques where feasible. To achieve this, the permit authorization required for preparing a site for marsh plantings should be simplified. Exemptions and General Permit standards for shoreline stabilization should be amended to require an eroding shoreline as a prerequisite. The protection of eroding fringe wetlands should be encouraged by the development/amendments of general permits that allow the placement of riprap material on the waterward side.

Where: The standards for shoreline protection would apply to stabilization projects along the public trust shoreline within the 20 coastal counties.

How: Staff proposes to amend the CRC's existing use standards for shoreline stabilization found in the specific use standards in General Permits, exemptions and the CRC's general and specific use standards. It is not anticipated that any proposed rule change would require individual public hearings in each of the counties.

Staff would also prepare education/information materials for property owners that will show the environmental and economic benefits of alternative designs for shoreli stabilization.

Options: Staff does not feel there are any options other than moving forward with appropriate rule development.

Other Authorities:

The US Army Corps of Engineers has authority to regulate the construction of erosion control structures along the shoreline of the twenty coastal counties. The NC Division of Water Quality also regulates the placement of fill material associated with shoreline stabilization projects through the issuance of 401 water quality certifications.

In summary, staff believes it is appropriate for the Commission to move forward in drafting rules to better protect coastal resources. Regardless of which options are chosen, we feel it is imperative to have as much public input into the process as possible. This effort should include involving the various stakeholders, including local governments, that have an interest in the Commission's decisions.

Estuarine and Public Trust Shoreline Strategy

PHASE I

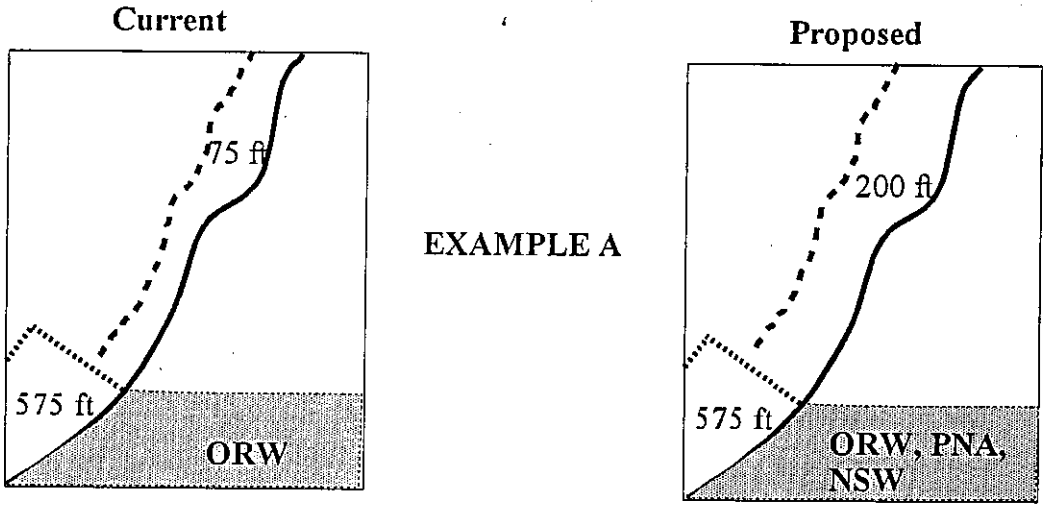
1. Changes to current Estuarine Shoreline AEC Rules
   - A) Increase width of the current Estuarine Shoreline AEC [7H .0209 (b)]
     - 1) Standard shoreline
     - 2) Development zones
       - a) Outstanding Resource Waters (ORW's)
       - b) Primary Nursery Areas (PNA's)
       - c) Nutrient Sensitive Waters (NSW's)
       - d) Others?
   - B) Change rules regarding currently regulated areas
     - 1) Vegetated buffers - new rules [7H .0208 (*new*)]
       - a) standard AEC shoreline
       - b) ORW's
       - c) PNA's
       - d) NSW's
       - e) Others?
     - 2) Impervious areas (Built-upon) - change rules [7H .0209 (e 2) & (f 1)]
       - a) standard AEC shoreline
       - b) ORW's
       - c) PNA's
       - d) NSW's
       - e) Others?
     - 3) Shoreline stabilization [7H .0208 (*new*)]
       - a) bulkheads (change /new rules)
       - b) breakwaters (new rules)
     - 4) Other weak areas, and clarifications, consistencies [7H & 7K]
       - a) ditches
       - b) beach nourishment
       - c) others (7B)
     - 5) Grandfathering rules

PHASE II

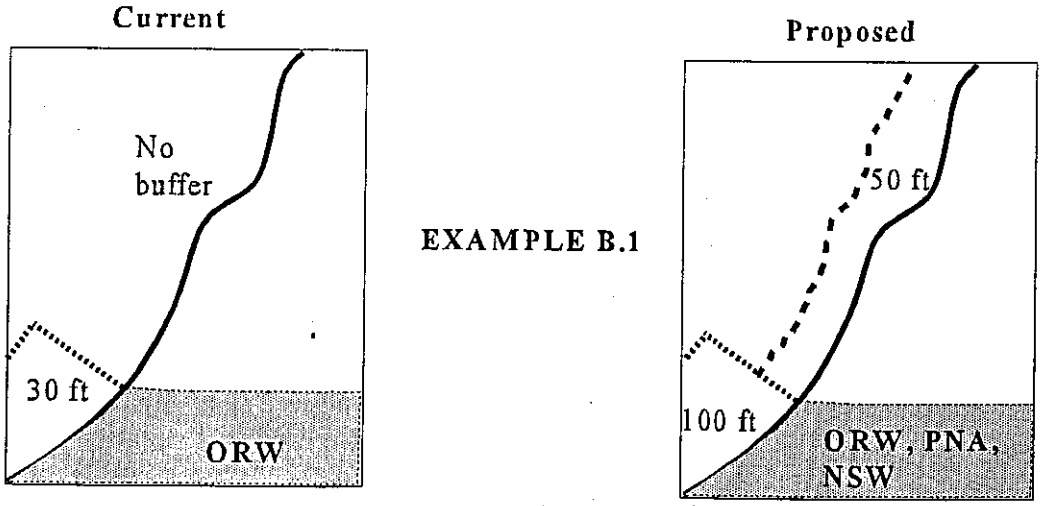
2. Extend the Estuarine and Public Trust Shoreline AEC upstream to capture the current estuarine shoreline and the shoreline adjacent to the public trust areas AEC - forming a new AEC and eliminating the current estuarine shoreline AEC in favor of the new shoreline AEC [7H .0209 (b)]

Basic Proposals
PHASE 1

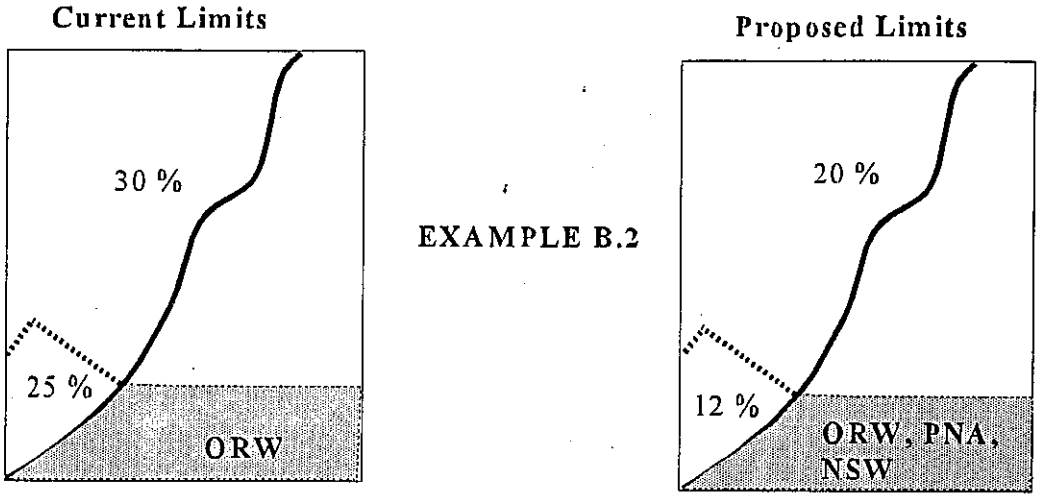
1. Changes to current Estuarine Shoreline AEC Rules
   - A) Increase landward width of the current Estuarine Shoreline AEC
     - 1) Standard shoreline
     - 2) Special shoreline areas (ORW's, PNA's, NSW's)
   - B) Change rules regarding currently regulated areas



1) Vegetated buffers



2) **Impervious areas (Built-upon) - change rules**



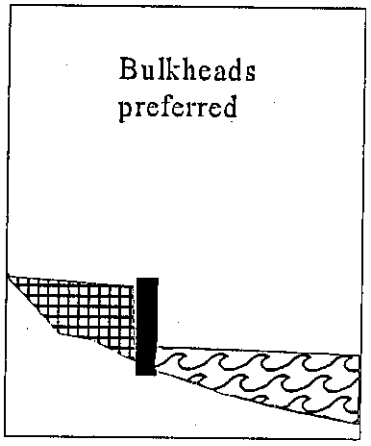
Phase I: Landward expansion of AEC jurisdiction and changes in the rules

		AEC Jurisdiction	Buffer	Limit of Built-upon area
Current	Estuarine Shoreline AEC	75 feet	none	30%
	Outstanding Resource Waters	575 feet	30 feet	25%

Proposed	Estuarine Shoreline AEC	200 feet	50 feet	20%
	Outstanding Resource Waters, Primary Nursery Areas, and Nutrient Sensitive Waters	575 feet	100 feet	12%

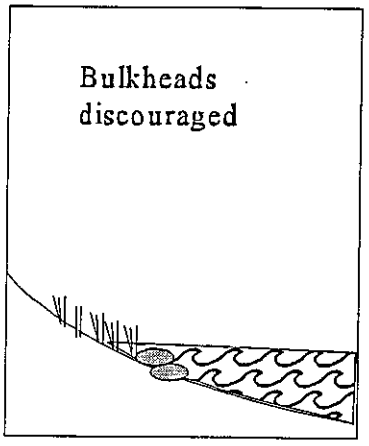
3) Shoreline stabilization

Current



EXAMPLE B.3

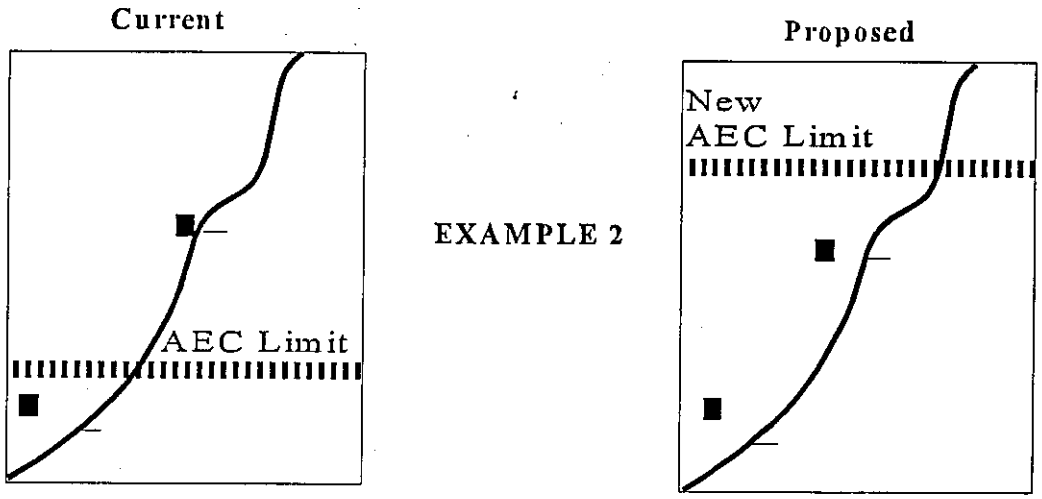
Proposed



- Public hearing process to amend CMP.

PHASE II

Phase II: Extension of AEC jurisdiction to include the shoreline adjacent to public trust areas as well as existing estuarine shoreline



		AEC Jurisdiction	Buffer	Limit of Built-upon area
After Implementation of Phase I	Shoreline adjacent to public trust areas	none	none	none
	Estuarine Shoreline AEC	200 feet	50 feet	20%
	Outstanding Resource Waters	575 feet	100 feet	12%
Proposed Phase II	Estuarine & Public Trust Shoreline AEC *estuarine shoreline AEC and shoreline adjacent to public trust areas*	200 feet	50 feet	20%
	Outstanding Resource Waters, Primary Nursery Areas, and Nutrient Sensitive Waters	575 feet	100 feet	12%

ATTACHMENT 2

IMPLEMENTATION AND STANDARDS COMMITTEE
JANUARY 23, 1998

Submerged Lands Mining Rules

Robin Smith reported that the Rules Review Commission had stated some objections to the proposed ocean mining rules that the CRC adopted last September. There was some confusion over the term "significant" and questions regarding the determination or identification of "unique geological features" and "nearshore" benthic communities. There were also objections made to the Rules Review Commission by the NC Aggregates Association, which objects to the fundamental policies the commission has established, rather than language ambiguities.

Robin, Kim Crawford and Doug Huggett have developed some slight wording changes to the proposed rules and have organized the rules slightly differently to separate the development standards from the paragraphs referring to restoration, mitigation and monitoring. These are all clarifications of the rules -- or minor technical amendments -- and would not require going back to public hearing. Robin sent a memo to the Rules Review Commission staff stating that it was not the responsibility of the CRC, at this stage of the rulemaking process, to negotiate these rules with one particular stakeholder group.

The I&S Committee voted to endorse these technical amendments, which will be submitted to the Rules Review Commission for its consideration at its next meeting (February).

High Hazard Flood AEC

Charles Jones began the discussion by informing the Committee of recent changes to the Flood Insurance Rate Maps (FIRM) for several beachfront communities in the central and southern areas. The FIRM maps establish the areas within a community which are subject to flooding and sets appropriate base flood elevation which determines the first floor height of buildings. The maps also determine flood insurance rate zones. Charles explained how the V zones in the FIRM maps are also High Hazard Flood AECs and as a result of the changes to the maps, the Ocean Hazard AEC has significantly expanded in some communities. CAMA permits are now required for development in those areas. Spencer Rogers gave the history of the development of the rate insurance maps in NC and how recent changes have resulted in erosion events being factored into the V zones calculations. Jones explained the implications of the expanded AEC and how it may prohibit mobile homes which are not located within mobile home parks. This was an informational idem and no Committee action was taken.

Jurisdictional Boundaries (I&S-424a) Mike Lopazanski

Mike Lopazanski reviewed for the Committee the justification for extending CRC jurisdictional boundaries upstream of the inland waters boundary, as well as beyond the current 75' from mean high water. Mike stated that numerous studies have demonstrated that upstream land-based

activities contribute to down stream environmental impacts. He showed examples of the how the resources the current Estuarine Shoreline AEC rules are designed to protect as well as the development activities regulated continue upstream beyond the inland waters boundary. Mike outlined how upland vegetation influences the quality of rivers and streams flowing into the estuarine system and how development activities in the riparian area can lead to greater water quality degradation than similar development in more upland areas. Mike advised that upland disturbance will affect the water quality enhancing functions of a wetland depending on its association with lower or higher order streams. Lower order streams are the smaller unbranched tributaries in headwater areas. Upland disturbance will impact a greater length of a 1st order stream than a similar disturbance along a higher order stream. This would suggest placing greater emphasis on impacts around lower order streams like the ones found outside of the CRC's jurisdiction. Mike reviewed the development impacts to swamp forests and bottomland hardwood forests which are the most common wetland type upstream and landward of CRC jurisdiction. He advised that development pressure is increasing on the undeveloped areas of the coast regardless of location of suitability. Staff is seeing a trend toward development activities in areas that have more wetland involvement, including headwater areas and interior isolated wetlands. These development activities are also having to meet other standards, such as for septic systems, setbacks and other local ordinances. Mike stated that staff has found the current rules for development along coastal shorelines to be inadequate for water quality protection. Staff recommends expanding the CRC's permit jurisdiction upstream of the inland waters boundary as well as beyond the 75' landward of mean high water. Mike advised that neither expansion should take place without a thorough review of the Estuarine Shoreline AEC use standards.

Buffers, Shoreline Stabilization and Impervious Surfaces (I&S-424b) Bill Crowell

Bill Crowell presented information on vegetated buffers, shoreline stabilization and impervious surface areas. The information provided a basic overview of the scientific literature with the following staff recommendations:

- Vegetated buffers should be required in shoreline AECs.
- Buffer widths and types should be dependent on the resource to be protected.
- Only allow hardened shorelines where excessive erosion is documented and other methods are not feasible.
- Promote the use of nontoxic materials in the construction of protection devices.
- More stringent limits on impervious surfaces.
- Use only proven engineered alternatives.
- Encourage local governments to implement planning and zoning which mitigates the effects of impervious surfaces.

At the end of the discussion, Hackney requested staff to development strategies for implementation of the recommendations.

Replacement of Permitted Sandbags (I&S-425)

Charles Jones began the discussion by passing out a modified revision to the I&S- 425 for

North Carolina
Department of Environment and Natural Resources
Michael F. Easley, Governor
Sherri Evans-Stanton, Acting Secretary

January 11, 2001

I&S 01-02

MEMORANDUM

TO: I&S Committee

FROM: Mike Lopazanski

SUBJECT: Draft Language for Buffer Exceptions

At the November 16, 2000 CRC meeting, the I&S Committee was presented with a list of the most common existing non-water dependent uses typically found in the 30' buffer area which staff believed could be authorized with very little impact to water quality. Staff was instructed to provide draft language for inclusion in the Coastal Shorelines rule for consideration at the January 2001 meeting.

Attached is draft rule language to be included in 7H .0209 (d)(10). Staff believes that these uses and uses with limitations will have no significant impacts on water quality of adjacent public trust and estuarine waters. The draft language will be further discussed at the upcoming meeting in Kill Devil Hills.

North Carolina
Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Donna D. Moffitt, Director

July 2, 2001

MEMORANDUM **Information Item**

TO: Coastal Resources Commission

FROM: Charles Jones

SUBJECT: Staff Recommendations for Additional Buffer Exceptions

The exceptions to the buffer rule were approved for public hearing by the CRC at the March 2001 meeting in New Bern. Since that time, staff has received additional comments from interested parties and has responded to a number of variance requests that indicate a need to address the buffer exceptions further. A number of variances have also been granted for development over existing impermeable surfaces. Staff suggests amending the rule by adding the expansion of structures over existing impervious surfaces provided that existing impervious surfaces are not increased. This exception would eliminate similar variance requests and will not result in additional impacts on water quality.

Staff also suggests eliminating the requirement that grading, excavating and landscaping associated with permitted shoreline stabilization projects be certified by a NC licensed professional. The limited amount of fill involved with these projects does not justify the expense of having them certified by a design professional. Staff believes that other existing standards should address the off-site sedimentation issues that the Commission is concerned about.

We have attached a revised copy of the rule incorporating the changes (shaded) and will be available at the upcoming meeting in Raleigh to answer any questions.

MEMO

To: Coastal Resources Commission
From: Charles Jones
Subject: Estuarine Shoreline Issues and Options
Date: September 22, 1997

Since the adoption of the Coastal Area Management Act (CAMA) in 1974 and the Commission's development of use standards for permitting development in 1978, the immediate shoreline along the creeks, bays and rivers of North Carolina has experienced unprecedented growth. The intensity and location of this growth has resulted in some unexpected adverse impacts to public trust and estuarine resources.

Staff has reviewed the Commission's existing regulatory program and believe that additional protection is needed to implement the intent of the Coastal Area Management Act and the Commissions's management goals for the Estuarine System Area(s) of Environmental Concern (AEC). Staff has identified the following five key issues which we feel the Commission should review.

1. Regulatory Jurisdiction - Staff believes the current regulatory jurisdiction for upland development adjacent to water bodies is arbitrary and ineffective in many cases. One example is the division line separating the areas adjacent to estuarine and public trust waters and the development standards which only applies to estuarine shorelines. The present division line is based upon an agreement reached between the NC Wildlife and Marine Fisheries Commissions in 1976. The main consideration at that time was deciding where inland fishing licenses would or would not be required. The boundary lines were often picked to follow convenient geographical landmarks such as bridges and power lines and the resources were not fully considered. It has long been known that fisheries resources, stormwater and sediment runoff don't adhere to such geographical landmarks. Staff feels the Commission should consider providing AEC protection to the shorelines directly adjacent to public trust waters.

   The present geographical extent of the existing Estuarine Shoreline AEC should also be examined. Is the present extent of the Estuarine Shoreline enough to protect water quality or should consideration be given to increasing the AEC shoreline coverage to include those developments which are now building just outside the AEC?

   The Commission should also review the need for permit jurisdiction in areas directly adjacent to coastal wetlands. In many cases, the current AEC jurisdiction for coastal wetlands ends at the landward edge of the these wetlands and offers no protection to contiguous wetlands. Development often occurs in such close proximity to cause direct and indirect impacts to those resources.

2. Different Development Zones - With the exception of those shorelines adjacent to Outstanding Resource Waters (ORWs), the current CRC's standards for development within the Estuarine Shoreline do not differentiate between areas with significant estuarine resources, habitat or special water quality features. For instance, CRC use standards require the same development zone and standards be applied equally to development proposals in urban settings like Wilmington and New Bern and to the more fragile areas such as primary nursery areas.

   The same development zone and standards also apply to those areas having different water classifications and water quality use standards as assigned by the NC Environmental Management Commission. As an example, developments adjacent to waters classified as SC and closed to the harvesting of shellfish have the same performance use standards as developments which are adjacent to waters designated as SA and are open to shellfishing.

3. Vegetated Buffers - Vegetated buffers are important because they filter upland runoff, thus reducing the amounts of sediments and nutrients from entering the water. Presently, the only buffer requirement applies to those developments located within the estuarine shorelines adjacent to ORWs. In those areas, a buffer zone of at least 30' from the mean high water line must be provided. The vast majority of development proposals, however, are not located within ORW shorelines and no minimum buffer or setback applies. Non-water development structures are sometimes permitted at the waters edge which have direct stormwater and sedimentation impacts to adjacent waters.

   Also by not having minimal buffers, we are encouraging people to build closer to the water thus increasing the likelihood of flooding and erosion problems. The Commission may want to consider requiring a minimum buffer area for all shorelines.

4. Density - With the exception of rules adopted for ORW shorelines in 1989, the rules governing impervious coverage adjacent to estuarine waters haven't significantly changed since 1979. At that time, the use standards which were adopted limited the amount of impervious surfaces to 30% within the Estuarine Shoreline AEC. In the 1980's, the CRC amended the rule to allow for this percentage to be increased if innovative designs were incorporated into the project or if the project represented a redevelopment of a previously impervious area.

   Since 1979, a number of scientific studies have been undertaken concerning the impacts of impervious coverage to coastal resources. In light of these studies, it would be appropriate for the CRC to re-examine its rules to see if existing impervious coverages are appropriate or if modifications are warranted. It may also be appropriate to set higher standards for land base development adjacent to the most critical and fragile areas like

ORW and primary nursery areas and limit the availability of innovative designs.

The CRC may also want to provide additional requirements in the land use planning guidelines for local governments to further address the impacts of impervious coverage and development density in and outside of AECs . Incentives could be developed and given to local governments who implement innovative land use controls to address density impacts.

5. Estuarine Shoreline Stabilization - Staff feels there is an opportunity to allow greater use of non-traditional measures for shoreline stabilization in order to afford greater protection to coastal marshes and shallow water habitat. Such methods may include the manipulation of shorelines to enhance areas for marsh plantings or encouraging the protection of fringe wetland areas before they erode. During the next year the staff will be working with the NC Coastal Federation on several demonstration projects which will employ non-traditional shoreline stabilization methods. These projects will be monitored during and after construction to determine their rate and degree of success. If successful, these projects will result in staff suggesting revisions to CRC rules to promote these types of alternative measures.

The Commission may also consider other rule amendents such as developing addditional General Permits to facilitate the placement of certain erosion control devices on the waterward side of wetlands and other incentives to promote the integrity of coastal wetlands along the shoreline.

The above lists are five issues which the staff has identified for potential review. We look forward to working with the Commission in their deliberations on these and other issues.

HISTORIC

Tags. Permit Required Major Coastal Wetland

MICHAEL F. EASLEY
ATTORNEY GENERAL

State of North Carolina
Department of Justice
P. O. BOX 629
RALEIGH
27602-0629

Reply to: Robin W. Smith
Environmental Division
Tel: (919) 716-6600
Fax: (919) 716-6767

July 21, 1998

Donna Moffitt, Director
Division of Coastal Management
P.O. Box 27687
Raleigh, N.C. 27611-7687

Re: Advisory letter on the authority of the Coastal Resources Commission to require permits under N.C.G.S. §113A-118 for certain shoreline activities.

Dear Donna :

By letter of June 2, 1998, Roger Schecter requested an opinion from this office concerning the scope of the Coastal Resources Commission's (CRC) authority to regulate two categories of shoreline activities. The questions presented and my responses are set out below.[1]

(1) Does the Coastal Resources Commission have the authority to regulate the alteration of shoreline vegetation or coastal wetlands (by cutting, pruning, burning, etc.) ?

Under N.C.G.S. § 113A-118, a Coastal Area Management Act (CAMA) permit is required for development in an area of environmental concern (AEC). N.C.G.S. §113A-103(5)a defines "development" to include:

> any activity.... involving, requiring, or 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**; or placement of a floating structure in an area of

[1]This letter has not been reviewed and approved under the procedures for issuance of an Attorney General's Opinion.

> environmental concern identified in G.S. 113A-113(b)(2) or (b)(5). [Emphasis added.]

In defining the scope of the permitting jurisdiction, the legislature also establishes the parameters of the Commission's regulatory authority.

In construing a statute, the first rule is to determine legislative intent while giving the language of the statute its natural and ordinary meaning. *Turlington v. McLeod*, 323 N.C. 591, 374 S.E.2d 394 (1988). Another general guideline for statutory construction provides that when a statute lists the situations to which it applies, it implies the exclusion of situations not contained in the list. *See, Evans v. Diaz*, 333 N.C. 774, 430 S.E.2d 244 (1993). The only language in N.C.G.S. § 113A-103(5)(a) specifically referring to removal of vegetation from upland areas is circumscribed by its characterization as "clearing or alteration of land as an adjunct of construction". This description would not cover mowing, pruning, selective cutting and similar post-construction maintenance activities.[2]

Under this language, land-clearing preparatory to construction and landscaping associated with new construction requires a CAMA permit. As a result, those activities are clearly subject to regulation by the Commission. The Commission can exercise that authority by imposing buffer requirements for all land-clearing activities or otherwise restricting the type of vegetation that may be removed in preparation for construction or landscaping of new development.

The definition as currently written does not otherwise subject removal of nonwetland vegetation to CAMA permitting requirements. The statute also specifically excludes the use of land for "planting, growing, or harvesting plants, crops, trees or other agricultural or forestry products" from the definition of "development" requiring a CAMA permit. N.C.G.S. §113A-103(5)(b).

The Commission can exercise some additional control over removal of vegetation through conditions on CAMA permits for other regulated development. For example, the Commission could vary the width of any required buffer based on the degree of disturbance of the natural vegetation -- requiring a wider buffer where the owner converts the area to lawn and reducing the width of the buffer where the area is left undisturbed. The permit condition then becomes the means of enforcing

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[2] Since this language covers "alteration of land", the later reference to "alteration of the shore, bank or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake, or canal" appears intended to describe only activities directly affecting water bodies and their immediate interface with the shoreline.

restrictions on future removal of vegetation.[3]

The situation with respect to coastal wetland vegetation is somewhat different. The legislature recognized the special value of coastal wetlands by identifying coastal wetlands as a discrete category for designation as an area of environmental concern. The legislature also indirectly provided for consideration of the removal or alternation of coastal wetlands as a basis for denying a CAMA permit. N.C.G.S. § 113A-120(b)(1) states that a CAMA permit shall be denied if the development "would contravene an order that has been or could be issued pursuant to G.S. 113-230." Under N.C.G.S. §113-230, the Secretary is authorized to issue orders "regulating, restricting or prohibiting dredging, filling, removing or otherwise altering coastal wetlands."[4] As a result, removal or alteration of coastal wetlands may be grounds for denial of a CAMA permit where: (1) "development" has been proposed;[5] and (2) the Secretary has issued a protective order prohibiting removal or alteration of coastal wetland vegetation.

Certain activities that may occur in wetlands, such as excavation and filling, are specifically included in the CAMA definition of "development" and require a CAMA permit in any case. If the activity resulting in alteration or removal of coastal wetland vegetation does not involve one of the listed activities, it may still fall within the scope of the N.C.G.S. §113A-103(5)(a) definition of "development" to include "alteration of the shore, bank or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake or canal". Coastal wetlands are, by statutory definition, areas subject to regular or irregular flooding by tides. As a result, coastal wetlands function as a part of the estuarine water body. Those coastal wetlands located below the mean high water line are also public trust areas under N.C.G.S. §113A-113(b)(5).

Because of the integral relationship between coastal wetlands and the adjoining water body, alteration or removal of coastal wetland vegetation may also alter the "shore, bank or bottom" of the water body within the meaning of N.C.G.S. §113A-103(5)(a). To find that the proposed activity

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[3] Continuing enforcement of those permit conditions as the property changes ownership raises again the issue of providing notice of permit conditions to prospective purchasers.

[4] This authority has never been exercised and under the Administrative Procedure Act, N.C.G.S. Ch. 150B, issuance of such orders may constitute rulemaking that would require adherence to the notice and hearing requirements of the APA. This advisory letter does not attempt to address procedural questions surrounding exercise of the Secretary's authority under the statute.

[5] As discussed further below, the removal or alteration of coastal wetlands may in itself constitute "development" under N.C.G.S. §113A-103(5)(a) in some instances.

constitutes "development" under this section of the definition, however, it will be necessary to find that removal or alteration of the wetlands would, in turn, alter the "shore, bank or bottom" of the adjoining water body. Wetland alteration that would change the nature of the shoreline or water bottom-- by impairing its ability to support fish and wildlife, for example --would require a CAMA permit.

In sum, land-clearing activities associated with upland development requires a CAMA permit, but normal post-construction mowing, pruning and cutting of upland vegetation does not. Removal or alteration of coastal wetlands may constitute "development" requiring a CAMA permit if the activity: (1) involves excavation, dredging, filling or some other activity specifically included in the CAMA definition of "development"; or (2) would result in the alteration of the "shore, bank or bottom" of the adjoining water body. Otherwise, removal or alteration of coastal wetlands would not in itself require a CAMA permit and could only be considered in review of other development activities requiring a CAMA permit. In those circumstances, the CAMA permit could be denied if alteration of the wetlands would violate an order issued by the Secretary of the Department of Environment and Natural Resources under N.C.G.S. § 113-230.

(2) Can the CRC prohibit or regulate facilities for the storage and processing of animal wastes or are these facilities covered by the agricultural exemption in CAMA?

The legislature has exempted most agricultural and forestry activities from CAMA permitting requirements under N.C.G.S. §113A-103(5)(b)(4) which states as follows:

> The use of any land for the purposes of planting, growing, or harvesting plants, crops, trees, or other agricultural or forestry products, including normal private road construction, **raising live-stock or poultry, or for other agricultural purposes** except where excavation or filling affecting estuarine waters (as defined in G.S. 113-229) or navigable waters is involved. [Emphasis added.]

As noted above, the fundamental rule of statutory construction is to give effect to legislative intent. In doing so, words in a statute should be understood according to their common and ordinary meaning unless they have a technical meaning or one definitely indicated by their context. *State v. Brown*, 320 N.C. 179, 358 S.E.2d 1, cert. denied, 484 U.S. 970 (1987).

The use of land for "raising livestock or poultry" would generally be understood to include the facilities necessary to do so. In decisions interpreting the statutory exemption of "bona fide farm[s]" from local zoning authority under N.C.G.S. § 153A-340, our courts have held that such

ancillary activities as construction of driveways, use of the driveway by large trucks, operation of large fans and the selling of plants fall within the scope of the farming exemption because those activities are "so essential to large-scale agricultural production that their exclusion from the exemption would render it meaningless." *Sedman v. Rijdes*, 127 N.C.App. 700, 429 S.E.2d 620 (1997).

Applying the same analysis to the CAMA exemption, disposal of animal waste is similarly essential to raising livestock and poultry. Subjecting animal waste management facilities to CAMA permit requirements would appear to frustrate the legislature's intent and make the CAMA exemption for agriculture, particularly as applied to raising livestock and poultry, meaningless. Thus, as currently written, N.C.G.S. § 113A-103 exempts such facilities from the CAMA permit requirement.

I hope this response is helpful to the Commission's further consideration of proposed estuarine shoreline rules. Please call if you have other questions.

Very truly yours,

Robin W. Smith
Assistant Attorney General

cc: Courtney Hackney
Daniel F. McLawhorn

ep/25834(wp)

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF COASTAL MANAGEMENT

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

ROGER N. SCHECTER
DIRECTOR

MEMORANDUM

JUN 4

TO: Robin Smith
FROM: Roger Schecter
SUBJECT: Advisory Opinion
DATE: June 2, 1998

Robin,

We would like to request an advisory opinion from the Office of Attorney General on the follow topics related to CAMA and T15.0200 of the Administrative Code.

1) Does the Coastal Resources Commission have the authority to regulate the alteration (cutting, pruning, burning, etc.) of shoreline vegetation or coastal wetlands? If we implement a vegetated buffer zone, can we regulate the management of any vegetative material?

2) Are the storage and processing of animal wastes covered by the agricultural exemption in CAMA? Can we prohibit or regulate these facilities in the shoreline AEC?

Thank you for your prompt response, since we are drafting new shoreline rules this information is vital to the process.

P.O. BOX 27687, RALEIGH, NC 27611-7687 / 2728 CAPITAL BLVD., RALEIGH, NC 27604
PHONE 919-733-2293 FAX 919-733-1495

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF COASTAL MANAGEMENT

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

ROGER N. SCHECTER
DIRECTOR

MEMORANDUM

TO: Robin Smith

FROM: John Parker

SUBJECT: Marsh Mowing

DATE: June 4, 1998

On or about June 2 a memorandum was submitted to you from the Director requesting certain formal opinions on shoreline alterations, etc., including marsh mowing. As a result of the larger effort to rewrite sections of 7H, Charles Jones has approved my sending you ... "A Different Viewpoint" ... for your use. My proposal is more specific and was developed before I had knowledge of the draft rules. Of course, I am not requesting an individual ruling. But, if I am on target, this may be something that could be put into place long before new rules, of any form, are approved.

Attachment

P.O. BOX 27687, RALEIGH, NC 27611-7687 / 2728 CAPITAL BLVD., RALEIGH, NC 27604
PHONE 919-733-2293 FAX 919-733-1495

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

ROGER N. SCHECTER
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF COASTAL MANAGEMENT

MEMORANDUM

TO: Charles Jones

FROM: John Parker

SUBJECT: Marsh Mowing -- A Different Viewpoint

DATE: March 19, 1998

In the writer's opinion, marsh mowing is by definition - "development" - subject to the Division's regulatory authority. I offer the following opinion of the applicability of the statue based on a "plain English reading" of same:

113A-103 (5) a. "Development" means any activity in a duly designated area of environmental concern .... involving .... clearing or alteration of land as an adjunct of construction; .... alteration of the shore, bank .... of .... any sound, bay, river, creek, stream .... .

"Clearing" as an adjunct, I believe is applicable, especially in new subdivision development of the type we are seeing in Pamlico County, e.g., because many of the lots would not be purchased if mowing was not done before the sale; and perhaps an indication provided by the seller that mowing could continue as desired for view, etc. One definition of adjunct, incidentally, is: "A nonessential attribute of a thing .... ". The thing in this case is the upland or other development, usually a residence or pier.

If the route to "Development" appears somewhat circuitous in the first definition, I suggest that the second is most direct: "alteration of the shore, bank .... of .... any creek" requires no explanation. However, to further my mission, I suggest that .... mowing a seven foot tall stand of giant cordgrass to one inch and maintaining that height until the plant dies, is - "alteration".

If marsh mowing is a form of development, is it major or minor development? Technically, it would be minor. I believe we will all agree that there will be no other players other than a round of applause from resource agencies and some public. More importantly, I'm not aware of any rule or policy that precludes the Division from exercising authority over minor development, as needed.

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A general permit could be developed for mowing to provide access corridors, or other essential needs. I am fully aware of the variations on the subject, ranging from a five foot marsh fringe along a long established residential lot to a ten acre mow in a new subdivision. Another variation would be large tract mowing (or burning) by the Wildlife Resources Commission or hunt club to attract geese to feed on new plant shoots. Burning is a form of clearing, but I am not suggesting we go there -- yet. Burning is not (safely) available to most landowners. It does not cause subsidence and rutting as does wheeled equipment and is not applicable to regrowth of green plants. I will also not suggest we go to the point of asking if any clearing or altering the 75' shoreline AEC is development. Not yet. But have we had our own 3,000 mile "buffer" all these years without recognizing it? The issue here is high value, scientifically described plant species listed in the statue.

I call your attention to the attached photo copy which shows several acres of mowing at Windsong S/D on Cambell Creek. If you will look at the actual photos with a hand lens, you can see wheel ruts, (a mosquito breeding enhancement) from what I believe was made by a tractor and bush-hog. This is one of many examples. Staff could provide new photographs and background information as needed. One staff person reported recently on another subdivision with several acres mowed with widths of hundreds of feet to the water. Some staff have suggested that after repeated mowing, there is an attempt to convert the marsh to lawn grass and later request bulkheading, etc. This activity will increase as subdivision activity moves up the estuaries. Raleigh staff received an inquiry this week wherein the caller ask if mowing was legal.

If conversion is successful, or tried, staff may be, perhaps has been, confronted with the problem of deciding jurisdiction for excavation and fill, if such work is later requested.

Regardless if you agree or disagree with my "take" on statutory authority, I am convinced that over time, if this practice is not strictly regulated, coastal Carolina will lose hundreds of acres of marsh, small tract by small tract.

The history of the Division position on mowing as it is now is not important. However, it is probably not unlike the position that a four man, all weather duck blind with boat slip is not a structure, or development, but a single tie pile is. If regulating mowing appears to be a reach under the N.C. Coastal Management Program, than I call your attention to the Gaston Pipe Line and the Global Transpark. In my opinion, we need no further authority to advance this over-due marsh protection. And I find nothing in 7K or G.S. 113A-103(5)b that exempts the subject activity. A GP is recommended, however.

Finally, I call your attention to the attached letter from Dr. Steve Broome on the adverse effects of repeated mowing. Although I would welcome an opportunity to carry out an in-depth review of the subject, I will end this exercise with two "Parkerisms": "once mowed -- always mowed", and "you can kill it, but you can't fill it".

Attachment

North Carolina State University is a land-grant university and a constituent institution of The University of North Carolina

Department of Soil Science
College of Agriculture and Life Sciences

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February 20, 1998

Mr. John R. Parker, Jr.
North Carolina Division of Coastal Management
P.O. Box 27687
Raleigh, NC 27611-7687

Dear Mr. Parker:

I am writing in response to your letter of October 16, 1997 regarding the effects of mowing on irregularly flooded high marsh dominated by *Spartina cynosuroides* (big cordgrass) and *Juncus roemerianus* (black needlerush). Continuous mowing will obviously affect both the structure and function of these marshes and is likely to eventually eliminate both species.

Loss of the aboveground portion of the plants destroys wildlife and bird habitat and reduces primary production. If less biomass is produced, less food is available for grazing insects and for detritus, which may be exported to the estuary where it is utilized by filter feeders.

The stems and leaves of marsh vegetation are also effective in dampening waves, thereby reducing shoreline erosion.

Continuous mowing will eventually kill big cordgrass and black needlerush by eliminating the source of photosynthate that supports the roots and rhizomes. In our sampling of marsh vegetation we have found that black needlerush is particularly sensitive to clipping. When plots were clipped in the fall, plants did not grow back during the following spring and summer.

In summary, repeated mowing (or burning) eliminates the life support and erosion control values generally attributed to high marshes and will eventually cause a change in the dominant plant species composition.

Sincerely,

Steve Broome

Stephen W. Broome
Professor

Proposed language for authorizing the Coastal Resources Commission to adopt temporary rules to allow additional exceptions to and common non-water dependent uses within its 30-foot buffer rule (15A NCAC 7H.0209) and to allow for structural modifications to existing piers so as to prevent damage from the elements (15A NCAC 7H.2000)

D R A F T

The General Assembly of North Carolina enacts:

Section 1. Notwithstanding G.S. 150B-21.3(a) and 26 NCAC 2C.0102(11), the Coastal Resources Commission may adopt temporary rules for development that would otherwise be prohibited under rules adopted by the Commission pursuant to Article 7 of Chapter 113A of the General Statutes to:

(1) establish additional criteria for exceptions to the regulatory requirement, effective 1 August 2000, of a 30-foot development setback along public trust and estuarine waters to allow construction of residences on lots platted before June 1, 1999, of 7,500 square feet or less with on-site septic systems and that are located in intensely developed areas; and

(2) increase the footprint limit from 1,000 square feet to 1,200 square feet on lots platted before June 1, 1999 that are larger than 5,000 square feet located along public trust and estuarine waters whenever encroachment of new residential construction inside the 30-foot development setback is unavoidable; and

(3) allow common non-water dependent uses, such as fences, that have little or no impact on water quality to be placed inside the 30-foot development setback, and

(4) allow structural modifications to existing piers so as to prevent damage from the elements.

Section 2. The temporary rules shall become effective upon their adoption by the Commission and shall remain in effect until permanent rules that replace the temporary rules become effective.

Section 3. This act is effective when it becomes law.

Prepared by Donna Moffitt, Division of Coastal Management, April 11, 2001

CRC considering additional exceptions to 30-foot buffer requirement

The N.C. Coastal Resources Commission (CRC) will hold a public hearing in July on proposed amendments to the rule requiring a 30-foot buffer along coastal shorelines.

The buffer rule, which took effect last summer, requires new homes, businesses and other non-water-dependent structures to be built at least 30 feet from the water along non-oceanfront coastal shorelines. The primary purpose of the rule is to protect coastal waters from pollutants carried by stormwater runoff. It also will reduce flood risks, because development will be located farther from the water.

The CRC is considering changing the rule to allow houses to be built within the buffer on small previously platted lots. The changes also would allow certain structures with non-water-dependent uses – such as fences and unroofed decks – inside the buffer.

The proposed exceptions

The first exception would apply to undeveloped lots that are:

- 5,000 square feet or less (7,500 square feet or less if an onsite septic system is required);
- platted prior to June 1, 1999;
- located in an intensely developed area (houses present on both sides immediately adjacent to the lot);
- not located adjacent to approved or conditionally approved shellfish waters.

The exception would allow property owners to align their houses with those of their neighbors. They would have to install a stormwater system to collect and contain on site the first 1½ inches of rainfall.

The exception would replace and expand a temporary version the CRC adopted last year in response to a directive from the General Assembly. The temporary rule, which would remain effective until the permanent version takes effect, only covers lots that are:

- 5,000 square feet or less;
- platted prior to June 1, 1999;
- located in intensely developed areas (houses present on both sides immediately adjacent to the lot).

Rule also proposes more flexibility for owners of larger lots

The proposed permanent rule also would change an existing exception for house construction on larger previously platted lots with configurations that may prevent building outside the buffer. The existing exception allows a new house to encroach into the buffer, but limits the amount of ground it can cover to 1,000 square feet.

The proposed exception would increase the footprint limit to 1,200 square feet. The change would allow for the construction of homes that are more consistent in size with existing structures.

Common uses inside the buffer

The second set of exceptions covers non-water-dependent structures and activities that commonly occur within 30 feet of the water but do not harm water quality.

The rule would allow the following activities and structures:

- pile-supported signs that comply with local government standards;
- post- or pile-supported fences;
- elevated, slatted, wooden boardwalks that are 6 feet wide or less and for pedestrian use (they may be larger if they serve a public use or need);

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- uncovered crab shedders that have elevated trays and no associated impervious surfaces except for those needed to protect the pump;
- unroofed decks and observation decks that are slatted, wooden and elevated and are 200 square feet or less in size;
- grading, excavation and landscaping with no wetland fill except when required by a permitted shoreline stabilization project (projects shall not increase stormwater runoff to adjacent estuarine and public trust waters and shall be certified by a state-licensed design professional);
- vertical expansion of existing structures, as long as the original footprint of the structure is not increased.

Replacement of existing structures allowed

One provision of the buffer rule that will not change is an exception that allows the replacement of existing structures. If an existing non-water-dependent structure becomes damaged to the point of needing to be replaced, the property owner **may rebuild** the structure in its original footprint and to its original dimensions, if the land is too small to allow replacement outside the buffer.

EMC's buffer rule takes precedence in Neuse and Tar-Pam river basins

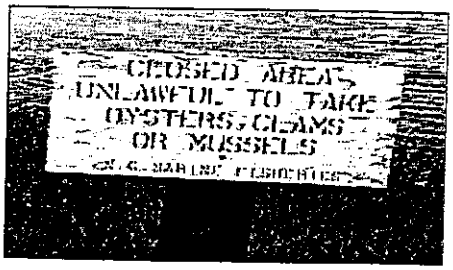
Another provision in the CRC's rules will remain unchanged. The provision dictates that the buffer requirement **will not apply** to those coastal shorelines where the Environmental Management Commission (EMC) adopts its own buffer standards. The EMC enacts regulations to protect water quality statewide. EMC buffer rules already exist in the Neuse and Tar-Pamlico river basins.

What happens after the public hearing?

The CRC could vote on the amendments or send them back to the Division of Coastal Management staff for fine-tuning. Once the CRC adopts the amended rule, it will go to the state Rules Review Commission and the General Assembly. If neither body raises objections, the rule would take effect in summer 2002.

What the buffer does

The buffer plays an integral part in protecting North Carolina's coastal waters. The pollution addressed by the buffer rule – nonpoint source pollution – is the primary cause of decline in our state's coastal waters. All land-disturbing activities cause nonpoint source pollution. Maintaining a buffer adjacent to the estuarine and public trust shorelines can reduce the discharge of sediments and other pollutants.



Controlling nonpoint source pollution is an urgent need considering the rate at which our shorelines are being developed and the increase in seasonal and year-round populations in communities with estuarine and public trust shorelines.

History of the coastal shoreline buffer rule

The 30-foot buffer requirement was the result of more than two years of CRC discussions about ways to increase protection of coastal water quality.

The Division of Coastal Management sought extensive public comment on the buffer rule, conducting 40 public hearings in coastal counties in 1999. Nearly 400 people commented on the rule, voicing opinions both for and against it. The CRC adopted the rule in November 1999 after adding exceptions and other language suggested during the hearings. It took effect in August 2000.

Learn more at dcm2.enr.state.nc.us, or call your nearest Coastal Management office.

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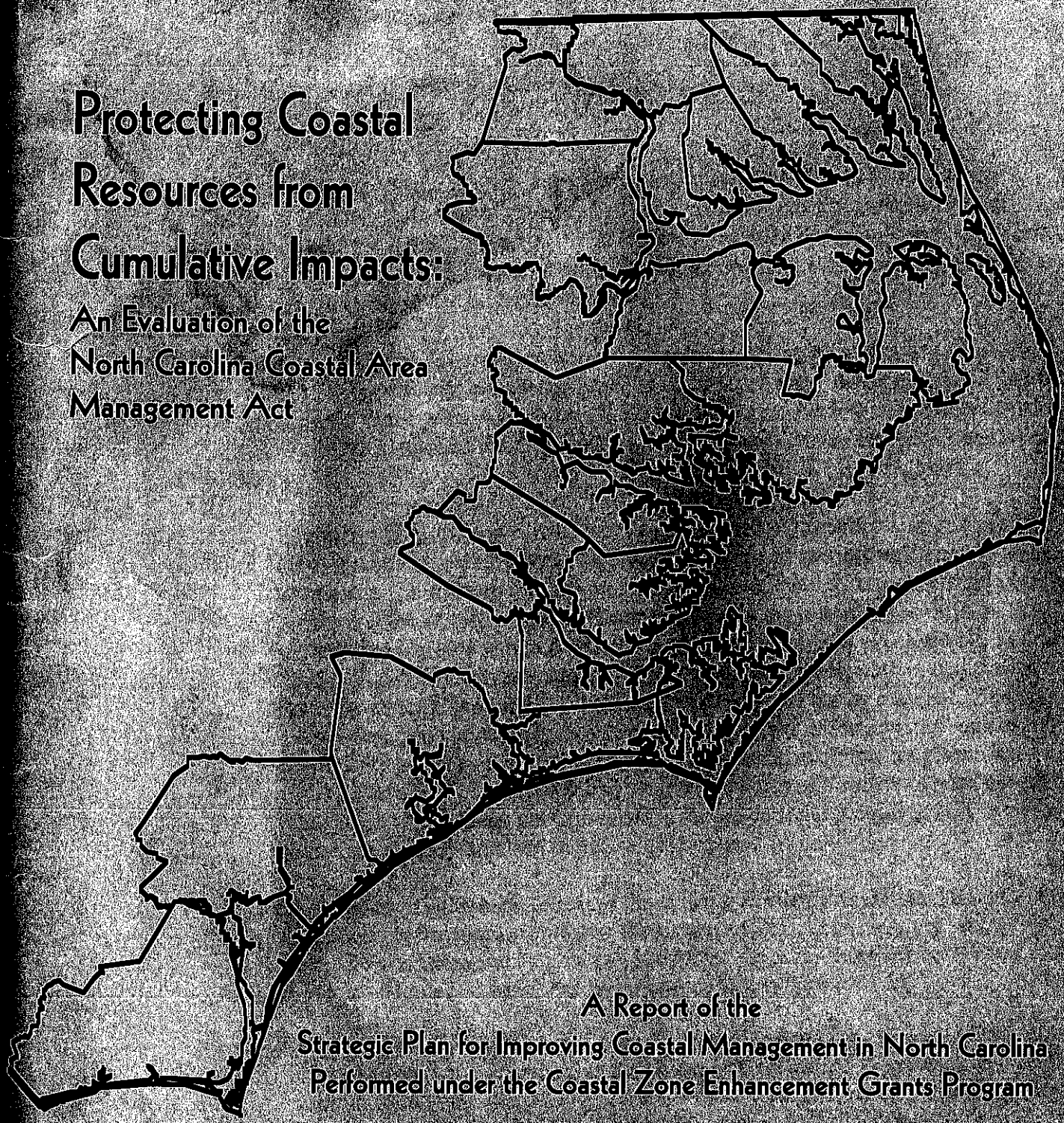
Protecting Coastal Resources from Cumulative Impacts:

An Evaluation of the North Carolina Coastal Area Management Act



A Report of the
Strategic Plan for Improving Coastal Management in North Carolina
Performed under the Coastal Zone Enhancement Grants Program

North Carolina Sea Grant College Program
Division of Coastal Management, N.C. Department of Health, Environment and Natural Resources

Coastal Shoreline Protection Initiative:

A Summary of the CRC's Draft Proposals

Why Change Is Needed

The health of our waters and shoreline habitats is critical to the vitality of our coastal area. Yet the Coastal Resources Commission's rules for protecting those waters have not changed in 20 years. In that time, North Carolina has grown, and the number of people building in the coastal area has increased.

In recent years, we have seen signs of stress in our coastal waters, including algal blooms, sediment plumes, increasing shellfish area closures and fish kills. These problems highlight the need to do a better job — now — of protecting coastal resources.

This need isn't new. In 1994, the Coastal Futures Committee, a blue-ribbon panel that examined coastal protection in North Carolina, noted that the CRC's shoreline rules are not adequate for protecting water quality.

The CRC agreed after spending several months reviewing studies that show clear links between development and runoff pollution. The CRC also reviewed reports that demonstrate the benefits of buffers, impervious surface limits, and alternative methods of shoreline stabilization. The Commission also looked at the rules of other states, especially land use regulations along the Chesapeake Bay in Maryland and Virginia.

The CRC wants to protect water quality and habitat while it still can. To do this, the Commission is focusing on four areas:

- Permit Area
- Vegetated Buffers
- Built-upon area
- Shoreline stabilization

Permit Area

Within the 20 CAMA counties, the Coastal Resources Commission regulates development only in critical resource areas known as Areas of Environmental Concern, or AECs.

Right now, the Estuarine Shoreline AEC extends 75 feet landward along all estuarine waters, unless the water is an Outstanding Resource Water, where the AEC extends 575 feet.

The current AEC does not cover all shorelines. It stops at the dividing line between the jurisdictions of the Division of Marine Fisheries and the Wildlife Resources Commission. Upstream of that line, the CRC currently does not regulate development on shore.

If development along these shorelines remains unregulated, North Carolina could miss an important opportunity to reduce the amount of runoff pollution that reaches coastal waters.

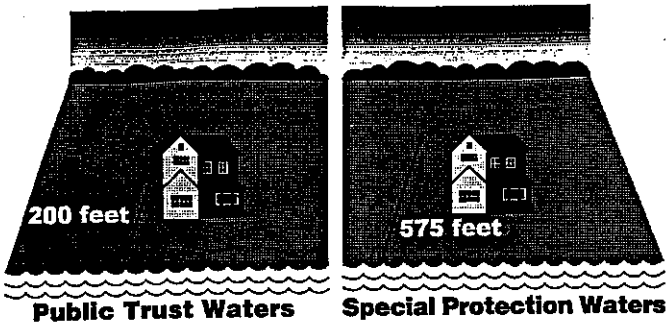
What's proposed:

The CRC is proposing to expand its permit area in two directions: landward and upstream. The new permit area, called the Coastal Shoreline AEC, would encompass all public trust waters, including estuarine waters. The Coastal Shoreline AEC would replace the current Estuarine Shoreline AEC.

The new AEC would extend landward 200 feet from the edge of public trust waters, or the landward edge of coastal wetlands, if any are present. Along waters needing special protection (Outstanding Resource Waters, Primary Nursery Areas and Nutrient-Sensitive Waters), the AEC would extend 575 feet.

*** November 18, 1998 version. These proposals are subject to change. ***

Proposed Permit Area



Notes:

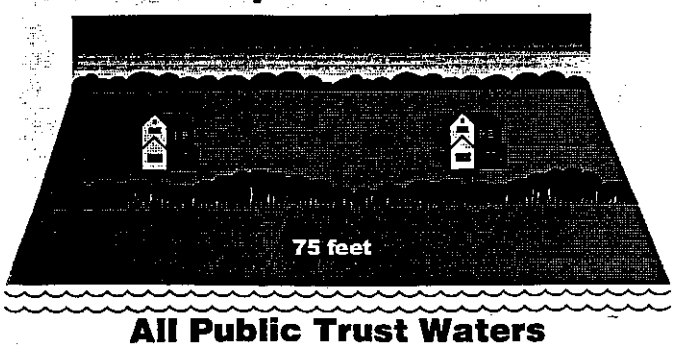
- An AEC is not a setback. If your property falls in the Coastal Shoreline AEC, you might might have to get a CAMA permit to develop.
- Public trust waters are waters that are "navigable in fact." If you can float a canoe in it, it's probably a public trust water.
- Most permits required in the new AEC would be minor permits, issued at the local level.

Development Standards

Vegetated Buffers

Vegetated buffers serve a number of important functions. They protect water quality by filtering pollution from runoff, and they help preserve fish and wildlife habitat. Buffers stabilize soil and slow floodwaters. And they help preserve the natural character of a shoreline.

Proposed Buffer



What's Required Now:

A 30-foot vegetated buffer is required only along Outstanding Resource Waters.

What's Proposed:

75-foot vegetated buffers would be required along shorelines throughout the Coastal Shoreline AEC.

What the Buffer Means for Landowners:

There will be limits on what you are allowed to do in the buffer:

- In the first 50 feet, measured from the water, you could build water-dependent structures, such as boat ramps and docks. Grading, filling or excavating for other uses would not be allowed.
- In the last 25 feet, you could build up to 200 square feet in accessory structures such as sheds.
- You could trim vegetation in the buffer.

Notes:

- Grandfathering: The CRC has not yet finalized its proposals for grandfathering and is expected to discuss the issue further before the rules go to public hearing.

Built-upon Area

Research shows a strong link between impervious surface and water quality: As the amount of impervious surface increases, water quality declines. So the more square footage of rooftops, driveways, sidewalks and roads we have, the more we put our waters at risk.

What's Required Now:

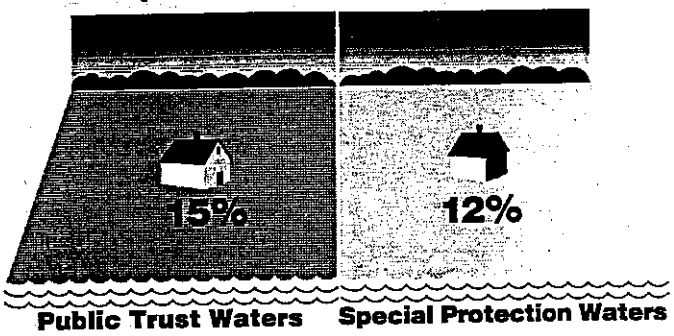
The CRC's current rules set a 30 percent limit on built-upon areas in the Estuarine Shoreline AEC — unless property owners show that they can provide equal protection using a stormwater control system. On lots along Outstanding Resource Waters (in the current AEC), the built-upon area is limited to 25 percent.

What's Proposed:

Built-upon areas in the Coastal Shoreline AEC would be limited to 15 percent of a lot or development project. Built-upon areas could be larger (25 percent) if the property owner could demonstrate that an engineer-approved stormwater system will provide the same amount of protection.

Along special protection waters (Outstanding Resource Waters, Primary Nursery Areas or Nutrient Sensitive Waters), built-upon areas would be limited to 12 percent. Greater coverage could be allowed with an engineered stormwater system.

Proposed Built-Upon Area Limits



Notes:

- If part of your lot is outside the AEC, the built-upon limits apply only to that portion of your lot inside the AEC.
- Grandfathering: The CRC has not finalized its proposals for grandfathering and is expected to discuss the issue further before the rules go to public hearing.
- **Urban redevelopment:** The CRC continues to address redevelopment issues. The Division of Coastal Management is working with the CRC to ensure that the rules don't prevent redevelopment of urban areas.

Shoreline Stabilization

Vertical bulkheads are common along inland coastal waters. However, these bulkheads can damage ecologically important areas at the water's edge, including wetlands and shallow-water habitat.

What's Required Now:

The CRC's current rules for shoreline stabilization require that sloping riprap, gabions or vegetation be used *where possible.*

What's Proposed:

The CRC is considering tailoring shoreline stabilization to site conditions. The CRC's proposal would allow vertical bulkheads only on sites where other methods are not likely to work. The proposed stabilization methods are outlined below:

- In areas with low-wave energy or where there are viable wetlands, you could use plantings to stabilize the shoreline or manage existing vegetation.
- For shorelines where vegetation alone won't work, a combination of vegetation and structure could be allowed. Those structures could include low-profile or sloping breakwaters or groins, or riprap.
- If that combination won't work, you could use low-profile or sloping structures alone.
- Vertical bulkheads would be allowed if site conditions are such that other methods aren't likely to solve the erosion problem.

Notes:

- The CRC has proposed creating a new general permit to make it easier for property owners to install riprap to protect eroding wetlands. General permits are quicker and less expensive to obtain than major permits.
- The CRC also has proposed amending an existing general permit to allow breakwater use in front of all wetlands, not just coastal wetlands.
- The proposed rules DO NOT ban bulkhead use.

What happens next:

These proposals are not final. The Commission is still working on them. Public hearings probably will be in the spring of 1999, or later. If the CRC approves the proposals in 1999, the changes would become effective in August 2000.

Please contact CRC or Coastal Resources Advisory Council members if you have concerns about these proposals. Be specific in your comments, and if you don't like something about a proposal, please suggest an alternative.

Draft copies of the coastal shoreline protection rules are on the Coastal Management web site at http://dcm2.enr.state.nc.us. Go to the page marked "Current Issues."

Questions about the proposals?

Call Mike Lopazanski at 919-733-2293, or write him at: NC Division of Coastal Management, PO Box 27687, Raleigh NC 27611-7687. Or you can e-mail him at Mike_Lopazanski@mail.enr.state.nc.us

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- Morehead City: 252-808-2808
- Elizabeth City: 252-264-3901
- Washington: 252-946-6481
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October 24, 2000

I&S 00-16

MEMORANDUM

TO: I&S Committee

FROM: Mike Lopazanski

SUBJECT: Buffer Exceptions

At the September 28, 2000CRC meeting, the I&S Committee the I&S Committee was presented with a list of the most common existing water dependent and non-water dependent uses typically found in the 30' buffer area. The Committee felt there were some items which could be authorized since the uses did not have or would have very little impact to water quality. Staff was instructed to provide recommendations on which uses should be considered for buffer exceptions at the November meeting.

Attached is a list of activities recommended as buffer exceptions. Staff believes that these uses or uses with limitations will have no significant impacts on water quality of adjacent public trust and estuarine waters. Also attached for your information are two letters received with regard to bulkheads and retaining walls in the buffer. These uses will be further discussed at the upcoming meeting in Wrightsville Beach.

Allowable Non-water Dependent Uses Within the 30' Buffer

Advertising Signs and Billboards	
Boardwalks –	Must be exclusively for pedestrian use and must be six feet in width or less. The boardwalk may be greater than six feet in width if it is to serve a public use or need.
Crab Shedders –	Allowed if uncovered and elevated trays with no associated impervious surfaces except those necessary to protect the pump.
Residential Wells & Pumphouses	
Decks/ Observation Decks -	Limited to wooden, elevated and unroofed decks that shall not singularly or collectively exceed 200 square feet.
Fences	
Grading/Excavation/ Landscaping no associated with shoreline stabilization projects -	No wetlands fill and must be certified by a NC licensed design professional that there will be no increase in stormwater runoff to adjacent estuarine and public trust waters
Stormwater Detention Ponds	
Swales for Stormwater	

January 7, 1998

MEMORANDUM **I&S 424(a)**

TO: Implementation and Standards Committee

FROM: Mike Lopazanski

SUBJECT: Justification for Estuarine Shoreline AEC Expansion

At the November meeting, staff presented the Commission with background information to consider in the potential changes to the Estuarine Shoreline AEC. One of the changes being considered is expansion of the estuarine shoreline jurisdiction beyond the limits of the "inland waters" boundary (7H .0206(a)) as well as further landward of the current 75 feet landward from the water's edge (7H .0209 (b)). This important change should be considered since development activities outside the CRC's jurisdiction not only have impacts on the estuarine system as a whole, but also on specific habitats that occur in these areas.

Estuarine shorelines are considered a component of the estuarine system because of the close association with the adjacent estuarine waters. The CRC currently has permitting jurisdiction and use standards for a distance of 75' landward of mean high water up to the "inland waters" boundary (575' for shorelines along Outstanding Resource Waters). Although the Commission has authority to regulate development beyond the "inland waters" boundary, the current rules are limited to managing impacts on Public Trust Areas and associated resources (7H .0207). The Commission must therefore, rely on other state agencies and programs to address the upland component of projects in this area and beyond the 75' Estuarine Shoreline AEC.

There is a scientific basis for expanding jurisdiction authority. The rivers and streams in the coastal area transport significant quantities of nutrients, pathogens, metals and other pollutants into the estuarine system which can have a significant impact on estuarine resources. The transport of water and sediments by rivers and streams is influenced by the interaction of geologic, climatic, hydrologic and biotic factors (Platte et al. 1987). Functional relationships in riparian zones are influenced by hydrology, topography, vegetation and their interactions (Chapman et al. 1982). Vegetation in riparian zones contributes to the geomorphic and hydrologic functioning of these areas.

Disruptions of normal geomorphic or hydrologic function, or the vegetation on which it depends, usually results in impairment to the overall riparian resources value and function (Van Haveren and Jackson, 1986).

Nonpoint source pollutant loading into a waterbody is a product of the contaminant concentration and the runoff rate. The average annual precipitation in coastal NC is about 50 inches and the average annual evapotranspiration (evaporation from the soil combined with water used by plants) is about 34 inches per year. The average annual runoff is therefore about 16 inches per year (Bales, 1993). In non-urbanized watersheds of the coastal area, about two thirds of the average annual runoff reaches a waterbody through the ground water system. The remaining third reaches it as overland flow. In an undeveloped watershed, only the immediate riparian area (the stream and a few feet on either side) contribute to the overland flow of runoff. The overland flow of runoff begins in the areas adjacent to streams because they have shallow water tables and little storage capacity. Because of this, development in the riparian areas will lead to greater water quality degradation than similar development in more upland areas (Bales, 1993). Studies have also shown that the 75' AEC is treated as a buffer with no impervious surfaces, it is inadequate for addressing nonpoint source pollution issues (Phillips, 1989).

Pollutant loading has been shown to be related to the percent amount of impervious surfaces of upland areas (Klein, 1979; Kobriger et al., 1984; Polls and Lanyon, 1980). Impervious surfaces associated with development cover soils and destroy vegetation that would normally slow and absorb runoff. While wetlands associated with upland areas can filter, catch and retain dissolved and suspended matter carried by surface runoff, it is the upland vegetation that is particularly effective at controlling sedimentation and turbidity. Without benefit of this "first stage" filtration, sediments carried by runoff can fill wetland areas and impair their water quality enhancing functions (Talyor et. al; 1997).

There have been numerous studies which demonstrate that upstream land-based activities contribute to downstream environmental impacts. The APES Technical Analysis of Status and Trends (1991) states that the maintenance of estuarine water quality depends on the quality of the inflowing rivers. Managing inputs to estuarine waters includes the consideration of the rates of freshwater entering the system which are altered by upland land use (Pate, 1981), increased loading rates of toxic pollutants such as metals from polluted freshwater streams (Riggs, 1993; Cunningham 1992). Sediment loads can change bottom sediment composition, transport additional toxic substances adsorbed to particles as well as bury benthic organisms (McCullough 1985).

The 1991 NC Coastal Marine Fisheries Management Plan cites toxic pollutant contamination as potentially the most devastating threat to coastal waters. Most of the

toxic pollutants such as heavy metals, pesticides and PCBs tend to accumulate in the finer sediments of the estuary, which over time can reach concentration levels harmful to aquatic organisms (Cunningham, 1992). In addition to wastewater treatment plants and certain industries, stormwater runoff is a primary source of toxic substances in estuarine waters (Doll, 1996).

Development activities in the upper reaches of the estuaries can contribute to increased turbidity and rates of sedimentation. The source of turbidity (runoff, erosion, bottom disturbance, waste discharges or algal blooms) determines the effects it has on the aquatic habitat. Residential/commercial development, forestry operations, agriculture, construction etc. are well documented sources of sediment. In addition to smothering benthic organisms, reduced light penetration can affect temperature ranges and oxygen concentrations from the surface to the bottom of the waterbody. Sometimes this can lead to stratification, in which warm oxygen rich water remains at the surface and does not mix with cooler oxygen poor water near the bottom, making it difficult for bottom-dwelling organisms to survive (Doll, 1996).

In addition to impacts on the estuarine system as a whole, development activities outside the CRC's jurisdiction have direct impacts on coastal resources. NC Sea Grant has recently analyzed the Commission's rules for their ability to protect coastal resources from cumulative impacts. This analysis found that the current AEC standards were not specific enough to adequately safeguard critical estuarine habitats which are identified as seagrass beds, shallow sand, oyster reef, salt marshes, fish nursery areas and anadromous fish spawning areas (Doll, 1996).

Of particular concern at the limits of CRC jurisdiction are nursery areas. The Division of Marine Fisheries has designated 361 nursery areas (305 PNA and 56 secondary nursery areas) in fragile estuarine waters that support juvenile populations of economically important species (1997-1998 NC Marine Fisheries Rules). According to the APES Comprehensive Conservation Management Plan, primary nursery areas cover almost 25,000 acres, or 1.5% of the regions total water area (Waite, 1994). In addition, the Wildlife Resources Commission has designated 23 inland nursery areas, of which the designation applies to entire length of 19 streams (WRC Rules T15A: 10C .0500). The inland waters are particularly important to anadromous species which depend on the upper freshwater and less saline areas for spawning and development. Blue crabs are also known to use the low-salinity creeks for part of their development and foraging (Ortega et al. 1991; Street 1989).

According to NC Sea Grant, there are five primary causes of nursery habitat loss; increased turbidity, hydrologic imbalance, increased nutrient loading, nutrient recycling and the presence of toxic compounds (Doll, 1996). Sediment from land altering activities reduces light penetration to submerged vegetation, which changes the growth and distribution of the habitat as well as smother benthic organisms on which juvenile

fish feed. Increased freshwater runoff from developed areas as well as hydromodification not only causes drastic changes in salinity, but also transports toxic pollutants and excessive nutrients that can further degrade the habitat (Riggs, 1993; Cunnigham, 1992; EPA, 1994).

Floodwater storage and water quality maintenance are two well known functions of wetlands. These functions vary according to stream orders. Stream order is a classification of stream size, where the smallest, unbranched tributaries of a drainage basin are designated first order streams. Where two first order streams join, a second order stream is formed; and where two second order streams join, a third order stream is formed, etc. (The Mississippi River is 10th order). For purposes of water quality standards application, stream order is determined from USGS topographic maps with a scale of 1:24,000. Streams in headwater areas determine the biochemical state (i.e. nutrient and pollutant content) for the larger drainage area. The wetlands of these areas are a crucial first step in the movement of water from uplands to streams and the opportunities for wetlands to alter water quality are far lower by the time water reaches higher order streams (Brinson, 1993).

Several studies conducted in NC have documented that the upland-wetland interface is a major sink for water pollutants (Jacobs and Gilliam, 1984; Cooper et al., 1987; Cooper and Gilliam, 1987). These studies have also shown that streamside zones of vegetation are highly active in reducing the amounts of nutrients, contaminants and sediment from upland areas into the channels of low order streams. Upland disturbance has also been shown to affect the functions of wetlands depending on their association with lower or higher order streams. This difference is measured along the length of the stream. A one acre disturbance (removal of forest cover or impervious surfaces) along a 1st order stream will affect a greater length of that stream as opposed to the same disturbance along a 5th order stream (Brinson, 1993). This would suggest the need to place more emphasis on avoiding impacts to wetlands of lower order streams, such as are found outside CRC jurisdiction, than wetlands associated with higher order streams if water quality improvement is the objective.

The CRC has permit jurisdiction in coastal wetlands even when they occur in Public Trust Areas. The current AEC jurisdiction for coastal wetlands, however, ends at the landward edge of these wetlands and offers no protection to contiguous wetlands. In many cases, staff has found that development is now occurring in such close proximity to coastal wetlands to cause direct and indirect impacts upon the resource.

The most common type of wetlands landward of the CRC's jurisdiction (both upstream and landward of 75') are swamp forests and bottomland hardwood forests (DCM, 1998). These wetland types perform similar water quality functions as those adjacent to open water. Inland forested wetlands comprise the largest segment, almost 50%, of the remaining wetlands in the lower 48 states (Tiner, 1987). Development pressure is

increasing on all the undeveloped areas of the coast regardless of location or suitability. As the more suitable areas are developed, staff has seen a trend toward development activities in areas that have more wetland involvement, including headwater areas and interior isolated wetlands. These development activities also have trouble meeting other standards such as for septic systems, setbacks and other local ordinances (Huggett, 1998).

Staff has noted some issues of concern in the areas just beyond the CRC's jurisdiction such as bluff grading, significant land disturbing activities less than an acre in size, vegetation clearing and general land clearing activities, in some cases up to the water's edge. There are also non-environmental issues just outside the CRC's jurisdiction. Development in the inland water area, particular along bluffs, could have impacts on prehistoric Native American sites. Unless a particular development activity requires another state agency permit, the Department of Cultural Resources may not have an opportunity to review and comment. One social implication is that the notification of adjacent neighbors, which is a major permit requirement, is also lost in these areas. In some instances, DCM has had a mediating role during project review along estuarine shorelines.

Current CRC rules for development along coastal shorelines are not adequate to protect water quality. Staff recommends expanding the CRC's permit jurisdiction to include public trust shorelines located upstream of the "inland waters" boundary. Staff also recommends broadening the CRC's permit jurisdiction beyond the current 75 feet landward of mean high water. ***However, neither expansion should not occur without a thorough review of, and subsequent amendments to, the current Estuarine Shoreline AEC use standards.***

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State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Coastal Management

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary
Roger N. Schecter, Director

DEHNR

MEMORANDUM

TO: Coastal Resources Commission **I&S 424b**
FROM: Bill Crowell
SUBJECT: Estuarine Shoreline Initiative
DATE: January 9, 1998

INTRODUCTION

Recent events, such as fish kills, algal blooms, shellfish closures, sediment washes, hurricanes, increased coastal development, tourism and recreation, loss of wildlife habitat, and scenic degradation of coastal view sheds have increased our awareness of the need to preserve, protect and restore our coastal resources. In recent meetings the CRC and DCM staff have discussed their concerns about the CRC's current estuarine shoreline rules. This is not the first time that the Commission has reviewed the adequacy of these rules in maintaining coastal water quality and in protecting coastal resources. Twelve years ago, staff reported to the CRC on nonpoint source pollution and the estuarine shoreline. At that time the staff stated that "it is evident that existing regulations are not adequately protecting our fragile estuarine waters from the activities taking place adjacent to them."(McCullough, 1985)

This memorandum will provide information on methods designed to mitigate, protect and restore the quality of North Carolina's estuarine system through the use of **vegetated buffers (1)**, various **shoreline stabilization methods (2)**, and limits on **impervious surface area - density (3)**. The information provided is not intended to be a complete review of the scientific literature.

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1. VEGETATED BUFFERS

The term vegetated buffer "is currently used in many contexts, and there is no agreement on any single concept of what constitutes a buffer, what activities are acceptable in a buffer zone, or what is an appropriate buffer width" (EPA, 1993). Although numerous definitions for vegetated buffers exist in the literature, a buffer in this text is generally a naturally vegetated transitional zone between differing land uses that functions as a barrier to, and filter of, surface water runoff. The effectiveness of any buffer zone is related to its width, slope, soil type, vegetation coverage, type of surface water runoff, and size of drainage area.

Vegetated buffer zones have been applied since the 1950's as best management practices (BMPs) in the fields of forestry and agriculture to protect in-stream habitats from degradation by inputs from sediments and nutrients. Today, vegetated buffer zones are routinely applied in both engineered and natural settings for the control of nonpoint source pollutants (Desbonnet *et al.*, 1994).

Coastal buffer zones provide multiple benefits. Where applied, these benefits include, but are not limited to, the following: protection of water quality, protection of coastal habitat, erosion and flood control, and protection of scenic and aesthetic quality. These multiple benefits and uses signify the inherent ability of vegetated buffers to perform a diverse array of functions. Numerous studies have shown that vegetated buffer zones reduce the negative impacts of runoff (see attached extended bibliography). Vegetated buffers and wetlands along the shoreline have been shown to stabilize soil, reduce sediment runoff (Lee *et al.*, 1989), reduce runoff speed (Williams and Nicks, 1986), and enhance infiltration. Buffers have also been shown to reduce bacterial loads (Castelle *et al.*, 1992), nutrient loads (Gilliam 1994), pollutant loads (Zirschky *et al.*, 1989), and viral and bacterial dispersion (Groffman *et al.*, 1991). Vegetated buffers also provide and enhance wildlife habitat (Groffman *et al.*, 1991) and contribute to the overall scenic quality of the shoreline environment. The multiple benefits/uses of vegetated buffers provide a solid means for justification of vegetated buffer implementation along North Carolina's sensitive shoreline.

Protection of water quality

Vegetated buffer zones along the margin of coastal water bodies are effective in trapping sediments and pollutants, absorbing nutrients from surface runoff, and promoting groundwater flow. These buffers function to reduce adverse impacts to water quality by controlling the severity of soil erosion and removing a variety of pollutants from storm water runoff (Shisler *et al.*, 1987). Removal of pollutants, sediments and bacteria by vegetated buffer zones can be of particular importance in areas abutting poorly flushed bodies of water. Gilliam (1994) reported that buffers remove as much as 90 percent of sediment and nitrate and up to 50 percent of phosphorous. The effectiveness of vegetated buffer zones is dependent on their ability to reduce the velocity of surface flow to allow for the deposition of sediments, and the filtration and biological removal of nutrients and bacteria. Fundamentally, the effectiveness of any buffer zone is related to its width, slope, soil type and vegetation type.

Buffer Width

Buffer widths vary greatly and are dependent on the site's slope, soil type, vegetation coverage, type of surface water runoff, and the size of drainage area. While the buffer width is changeable, the factors that are used to determine the width are often unchangeable (*i.e.*, soil type, slope). Buffers effective in controlling nonpoint source pollution which remove at least 50%, and up to 90% of sediments and nutrients range from 15 feet (5 meters) to 600 feet (185 meters) in width (Desbonnet *et al.*, 1994). Phillips (1989) studied nonpoint source pollution from estuarine shoreline development in Carteret County's estuarine *ACE*. The results indicated that a 75 foot (23 meter) buffer is an inadequate width for filtering the pollutant runoff and recommended a 260 foot (80 meter) buffer width. Appendix 1 contains several tables of recommended buffer widths based on various criteria.

Slope

Slope is very important in the effectiveness of a buffer. Steep slopes generally increase surface flow velocity and often do not allow for adequate retention time for absorption of pollutants, nutrients, and sediments. Slopes of less that 15 percent reportedly allow adequate retention time and pollutant removal (Palstrom 1991 as reported in Desbonnet *et al.*, 1994). Clark (1977) provides some examples of minimum buffer widths for the protection of water quality, according to slope and soil erodibility: 10 meters for areas with no slope on slightly erodible soil, extending to 50 meters for 30 percent slopes on severely erodible soils. Others have suggested adding an additional 0.6 to 1.2 meters of vegetation for water quality protection (Desbonnet *et al.*, 1994).

Even some densely vegetated steep slopes are ineffective at removing sediments, nutrients and pollutants. Some very steep slopes promote erosion and channelization of surface runoff. In order for a vegetated buffer to be effective in removing pollutants, nutrients and sediments, the surface water flow through the buffer zone must be slow, shallow and uniform (Dillaha *et al.*, 1989a). The slow flow allows for the deposition of sediments (which often have pollutants attached) into the surface soil layer (Lee *et al.*, 1989). The slow flow and settling also allow for the utilization of nutrients by plants. A proper functioning buffer depends on its ability to resist channelization (Broderson, 1973). Channelization through buffer areas greatly reduces (40 to 95 percent) the effectiveness of the buffer to absorb sediment and nutrients (Lee *et al.*, 1989). The channelization of water through buffers was reported as a major problem and limit to buffer effectiveness during a review of riparian buffers implemented on agricultural lands in Virginia (Desbonnet *et al.*, 1994). In order for buffers to be effective, the surface flow should be evenly spread into sheet flow (Dillaha *et al.*, 1989b). Williams and Nicks (1988) reported that rough surfaces reduce flow velocity, promoting sheet flow and resulting in a greater pollutant, nutrient and sediment removal than found with smooth surfaces.

Soils

As with slope, soils are very important in the effectiveness of a buffer to trap and filter pollutants and nutrients. As pollutants enter the soil layer, they become incorporated through physical, chemical, and biological interactions (Desbonnet *et al.*, 1994). Numerous studies have shown that most pollutants and nutrients transported by surface runoff are attached to sediments. Runoff that contains sediment-bound pollutants need only to move through a buffer that is able

to remove the sediment load. The effectiveness of this buffer zone is related to its soil (sediment load and buffer area), slope, width type, vegetation type, and pollutant concentration.

Pollutants contained in surface runoff are generally bound to small soil particles such as silts and clays. Thus the overall effectiveness of a buffer is related to its ability to remove the finer materials. As particle size decreases, the buffer width required to remove a greater percentage of those particles increases (Karr and Schlosser, 1978). Neibling and Alberts (1979) reported that 37 percent of clay-sized sediments and particles were removed within a 0.6 meter (~2 feet) width of a grassed buffer, while 91 percent of the total sediment load was removed within the same buffer width.

Relatively narrow buffers, provided they promote shallow sheet flow (generally with little or no slope), will effectively remove coarse-grained sediments and their associated pollutants (Desbonnet *et al.*, 1994). Wider buffers are generally required to remove the smaller particles and pollutants. Greater sized buffers may be required to trap pollutants in dissolved forms, as they may require removal by chemical interactions, plant uptake, or microbial transformation (Desbonnet *et al.*, 1994).

Vegetation

The vegetated cover contributes to the overall effectiveness of the buffer by removing pollutants and nutrients, providing various habitat, and creating an aesthetic quality. Vegetation within a buffer zone assists in soil stabilization, reduces velocity of surface water runoff, and reduces channelization, while promoting absorption and infiltration. The type, density, structure and age of the vegetation are important in determining functioning properties of the buffer. Vegetation can be manipulated, often in a cost-effective manner, to better achieve the purpose of the buffer (Desbonnet *et al.*, 1994). Vegetation reduces the erosional effects of water movement by minimizing undercutting and bank collapse (Barling and Moore, 1994).

Vegetation in buffer zones in the coastal area aid in controlling flooding and damage from flooding by reducing velocity of runoff and by encouraging infiltration of precipitation and runoff into the ground rather than into low lying areas. Additionally, the use of a vegetated buffer necessitates that structures and development be set back for areas that would naturally be prone to flooding.

Vegetated buffers may be natural or planted. Buffers may be either grass, shrubs, or forested. Grass buffers are effective in reducing flow velocities and in trapping nutrients and sediment. Gilliam *et al.* (1997) demonstrated that the effectiveness of a well maintained grass buffer in sediment removal may be as high as 90-95 percent. Forested buffers may remove various nutrients that grassed areas are unable to uptake. Although it is not practical in many areas, the ideal buffer would have a grass buffer leading to a forested zone, then to the shoreline.

Protection of coastal habitat

Native plants and animals are essential to the preservation of North Carolina's coastal ecosystem. Vegetated buffer zones provide habitat for native plants and animals. Vegetation provides cover from predation and weather, and habitat for nesting and feeding by resident and

migratory species. Several species found in this transition area from open water and wetland habitats to uplands are now relatively uncommon, while others are considered rare, threatened or endangered. Buffers are especially important along rivers that serve as spawning areas for anadromous fish (Rulifoson as cited in Doll and Coburn, 1996). In order to protect anadromous fish, buffers should extend to the point of identified anadromous fish spawning areas that are currently used and those that were historically known (Doll and Coburn, 1996).

While most studies have focused on the use of buffers for water quality and pollution abatement, buffers have also been noted for their importance to wildlife. Values of wetland buffers include: increased species richness, sites for foraging, corridors for dispersal, refuge from flooding, sites for hibernation, areas for breeding and nesting, areas of predator protection, and refuge from upland and open water disturbances (*i.e.*, construction, jet skis) (Groffman *et al.*, 1991). Effectiveness of vegetated buffers as natural habitat is dependent on buffer width and vegetation type. In general, wider buffers provide greater values as wildlife habitat. Most importantly, buffers which possess native vegetation provide a move valuable habitat for sustaining resident species and promote a greater diversity of species within the buffer and the region overall (Desbonnet *et al.*, 1994).

Erosion control and flood control

Buffer zones provide a natural transition zone between open water or wetlands and uplands. As stated previously, vegetation within a buffer zone assists in soil stabilization, reduces velocity of surface water runoff, reduces channelization, and promotes absorption and infiltration. Roots of vegetation also reduce the tendency of the soil to erode during coastal storms by stabilizing underlying soils (Desbonnet *et al.*, 1994). Vegetation reduces undercutting and bank collapse (Barling and Moore, 1994). Vegetated buffers have been used as best management practices to control erosion and the offsite impacts of construction activities for many years.

Vegetated buffers also have value as flood control areas. Vegetated buffer zones in coastal areas aid in controlling flooding and damage from flooding by reducing velocity of runoff and by encouraging infiltration of precipitation and runoff into the ground rather than into low lying areas. The use of buffers requires that structures and development be set back for areas that would naturally be prone to flooding. The capacity of the buffer area to provide flood protection will be dependent on the local rainfall and runoff intensity, as well as the amount of adjoining buffer lands (Desbonnet *et al.*, 1994). Under ideal conditions the ability of a buffer to act as a flood mitigation area will be related to the water source area (*i.e.*, surface runoff flooding vs. river flooding).

Protect of scenic and aesthetic quality

One of the unique benefits and qualities of North Carolina's coastal area is its scenic value. Vegetated buffers may be used in order to preserve the natural character of the shoreline, while mitigating the visual impacts of development. The aesthetic value of vegetated buffers is mainly based on subjective factors, and therefore not fully transferable to economic or protective terms. "Although no criteria for aesthetic values of vegetated buffers exist, aesthetics will continue to be included as an intrinsic value" (Desbonnet *et al.*, 1994).

Summary

Vegetated buffer zones provide multiple benefits. Buffers provide protection of water quality by trapping sediments, pollutants, pathogens and absorbing nutrients from surface runoff and promoting groundwater flow. Vegetated buffer zones aid in the protection of coastal habitat for wildlife, fish, and other organisms, by increased species richness, and providing sites for refuge, foraging, breeding, nesting and dispersal (Groffman *et al.*, 1991). Buffer zones promote flood and erosion control. Additionally buffers protect the scenic and aesthetic quality that is important to many of the people who live, work or visit in coastal counties. These multiple benefits and uses signify the inherent ability of vegetated buffers to perform a diverse array of functions. They generally work by slowing and spreading surface flow, increasing time for infiltration and settling to occur, and providing mechanisms for the absorption of nutrients.

Although there is no agreement on any single concept of what constitutes a buffer, the effectiveness of any buffer is related to its width, slope, soil type, vegetation coverage, type of surface water runoff, and size of drainage area. Vegetated buffer zones are routinely and successfully applied in both engineered and natural settings. Vegetated buffers are an important tool in protecting the aquatic environment from land based activities. Appendix 2 contains a listing of buffer and setback widths used by other states in their coastal management programs.

Staff Recommendations

The staff recommends that vegetated buffers be used in the protection of coastal waters and shorelines. We recognize that the current rules promoting the use of buffers are inadequate for the protection of North Carolina's coastal resources. Vegetated buffers are needed along all shorelines to protect aquatic resources from land based activities. Buffer widths and types should be dependent on the resource to be protected, the adjoining land development, slope, soil type, and size of drainage area. However, rules must reflect a realistic implementation of standards (*i.e.*, a buffer size and type requirements should be based on the adjoining water body's classifications or types of upland development). We recommend that a panel be assembled to develop draft rule changes that will implement the use of vegetated buffers along North Carolina's shorelines.

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2. ESTUARINE SHORELINE STABILIZATION

As North Carolina's coastal population grows, the development pressure along the estuarine shoreline also increases. Many waterfront property owners (mainly residential) have applied for permits for the construction of bulkheads. There is growing concern about the effects of bulkheads on sediment transport, foreshore erosion, marsh migration and estuarine organisms.

Bulkheads and other shoreline stabilization measures are placed in dynamic ecotones that form transition areas between water and upland. These areas are ecologically unique, combining many of the characteristics of both upland and aquatic environments. They harbor a diverse array of plants and provide habitat to many different organisms. " A major physical intrusion, such as a bulkhead, has many ramifications" (Watts, 1987).

The negative impacts of bulkheads and other shoreline stabilization measures are often questioned, and there is some dispute concerning the magnitude of the impacts. As construction of bulkheads and other shoreline stabilization measures continues on our estuarine shoreline, environmental management must be based on our best existing knowledge. The purpose of this memorandum is to synthesize the existing information on the effects of bulkheads and other shoreline stabilization measures. Vegetated buffers are often used to mitigate the effects of erosion along the land water interface, while bulkheads, riprap, breakwaters, groins and vegetation are used to protect the shoreline from erosion. The use of bulkheads is of the highest environmental concern for shoreline stabilization and will be the topic of this review. Riprap is also often used as a shoreline stabilization measure and depending on its placement and use, may have some of the same effects as bulkheads. Breakwaters, and groins are often constructed of the same material as bulkheads and also change the littoral flow, thus many of the concerns are the same. Vegetation and bioengineering methods are beginning to be used more frequently and are generally preferred to hardened structures.

Impacts of bulkheads

Bulkheads are generally vertical structures that are built parallel to the shoreline in order to prevent erosion of the upland. Bulkheads are often constructed of wood, metal (steel or aluminum), concrete or vinyl sheet piling that is driven into the substrate to an approximate depth of 4 feet. The height above the water surface varies from location to location. Tie rods are used to add support to the structure by anchoring the wall on the landward side. Filter cloth is often used behind the sheet pile to reduce fill seepage through the bulkhead. Bulkheads may have a non-vertical face, but this is rare in North Carolina.

Short-term effects

Several short-term impacts are the result of bulkhead construction activities: bank erosion, suspension of sediments, underwater sediment accretion, and general habitat disturbance (Watts, 1987). Soil disturbing construction activities (*i.e.*, tie rod placement, pile driving, backfilling) often cause short-term bank erosion, which can in turn cause an increase in the suspended sediment in the water column. These suspended sediments reduce light and may lead to a temporary decrease in primary production. The sediment may also interfere with the

respiratory and feeding mechanisms of fishes and other organisms (Watts, 1987). Construction activities may also cause the resuspension of bottom sediments, releasing heavy metals and other toxins (Mulvihill *et al.,* 1980). Sea grasses, such as eelgrass, may be able to cope with short-term light reductions but may not survive the sediment accretion that results from the upland erosion (Thayer *et al.,* 1984). Severe sediment accretion may also kill many benthic organisms including some shellfish, such as oysters. Recovery can then only occur through the repopulation by organisms from non-impacted areas.

Long-term effects

Bulkheads have several long-term effects on the estuarine shoreline. Bulkheads have several long-term effects on the estuarine shoreline. Long-term effects include: increased non-point pollution, increased wave scour, and increased erosion of adjacent lands. Hardened shorelines also produce losses in shellfish habitat, shallow water habitat, juvenile fish nursery areas, submerged vegetation, wildlife and ecotone habitat, and wetland areas.

Placement Impacts

The construction of a bulkhead generally destroys the established vegetation in the ecotone between open water or wetlands and the upland. In the majority of cases, the land is graded and sloped toward the bulkhead. Then the area is planted with grasses and other lawn species, effectively removing the natural buffer for surface water runoff. This activity sets the stage for an increase in runoff of nutrients and toxins. The increase in nutrients (mainly fertilizers) used to maintain the lawns is allowed direct runoff into the estuarine waters. These nutrients may cause algal blooms and reduce oxygen in adjacent waters (Watts, 1987). This reduction in oxygen often leads to fish kills. Toxins (pesticides, petroleum, etc.) may be carried in surface runoff with storm water into the adjacent waters, where they may accumulate in the native organisms (*i.e.*, shellfish). The buildup of toxins in shellfish may pose a human health hazard. The increased runoff velocity may enhance the numbers of bacterial and viral agents that reach the estuarine waters (Kirby-Smith, pers. comm.). The degree of damage is related to the proximity to the water, type of vegetation, type of soil, the type of drainage, the amount of runoff and the time and method of application (Clark, 1974).

Physical Impacts

Bulkheads, seawalls and other hard structures have been prohibited on North Carolina's oceanfront since the passage of CAMA in 1974. One of the main reasons these structures are forbidden is their effect on reducing the beach area over time. Bulkheads in the estuarine environment produce the same effect. These structures promote scour, or the removal of underwater material by waves and currents, especially at the base or toe of a shoreline structure. As waves break against a vertical structure, the wave energy is deflected upward and downward. Scouring occurs as the downward movement of water dislodges bottom sediments. The power and extent of the erosion is dependent on many different facts such as fetch, orientation, soils, boat traffic and storm frequency (Pilkey as cited in Watts, 1987).

Scouring results in the destruction of any beach in front of the bulkhead that is subject to wave action. In some locations, the scouring wave action may only take place during storms. Bulkheads placed adjacent to a shallow water habitat will scour and eventually deepen the area.

Beaches in front of bulkheads are almost certain to disappear (Rogers, 1981) Bulkheads change the irregular shoreline into a linear shoreline. In oceanfront studies, the wave impact increases with the length of the seawall structures (McDougal *et al.*, 1987); thus the cumulative impact of adjacent bulkheads may have a large scale detrimental effect on the estuarine shoreline ecosystem. The greater the length of the bulkhead, the greater the scouring action.

Within CAMA permits, bulkheads are placed on the water's edge or landward of significant wetland vegetation. Bulkheads can lead to destruction of these wetlands in two different ways. First, bulkheads do not allow the landward retreat of wetland vegetation as the sea level rises. The bulkhead provides a physical barrier to the natural migration of wetlands. Bulkheads may also contribute to the increased flooding and expansion of neighboring wetlands (Titus *et al,*. 1984) . Secondly, the redirected wave energy disrupts the substrate, and diminishes the suitable habitat for wetland plants. The turbulence and scouring often prohibits vegetation from reestablishing after construction or from establishing as the water depth changes (Knutson, 1977). Garbisch and others (1973) showed that *Spartina alternifolia* (smooth saltmarsh cordgrass) plantings in front of a bulkhead experienced a 63 percent fatality while those in front of a natural shoreline averaged a 12 percent fatality. Tidal flats, beaches and some wetlands are often replaced by permanently flooded areas, destroying the habitat of any organism that required the previous conditions.

Bulkheads also accelerate the erosion of adjacent shorelines (COE, 1984). This often requires the adjacent property owner to take action to stop the erosion process. The erosion may result from deflected wave energy or an alteration of the circulation pattern or from an obstruction of the littoral drift of sediments (Mulvihill *et al.*, 1980). By affecting the littoral drift, adjacent wetland areas may lose the sediment load necessary for their continued existence. Zabawa *et al.* (1981) showed that bulkheads removed the protected shore as a sediment source, but did not change the sediment budget. Thus the annual amount of sediment movement was generated for the areas seaward of the bulkheads and the estuary. However, the hardening of the shoreline does reduce upland erosion and may lead reduced littoral movement of sediments that are necessary for sustaining sand on oceanfront beaches (COE, 1984).

Fish and Wildlife Impacts

In addition to the vegetation loss associated with bulkheads, wildlife, fisheries, and shellfish habitat are also disturbed or eliminated. Routes of access are also destroyed for many animals (Watts, 1987). Turtles, frogs, raccoons, and many birds must find non-bulkheaded routes to reach the water. Additionally, the change in water depth and loss of vegetation due to scouring is often responsible for loss of juvenile fish habitat. Hylton and others (1986) determined that bank stabilization structures did reduce littoral fish populations. Ellifrit and others (1972) found that bulkheads provide less favorable conditions for clam larvae (*Venerupis japanica*) settling and survival, and a reduced availability of nutrients and food. These factors lead to fewer clams in bulkheaded areas than in adjacent natural areas (Ellifrit *et al.*, 1972). Gilmorte and Trent (1974) found that benthic macro-invertebrates were more abundant in marshes than in bulkheaded canals, and crustaceans were over three times as abundant in the marsh. Mock (1966) compared the abundance of brown shrimp (*Penaeus aztecus*) and white shrimp (*Penaeus stiferus*) in front of a naturally vegetated shoreline and a bulkheaded shoreline.

The study found that the number of shrimp were five times greater along the vegetated shoreline than the bulkheaded shore. The difference was attributed to the lower organic detritus and benthic macro-invertebrates, deeper water and reduced intertidal vegetation.

Chemical Impacts

Wooden bulkheads comprise approximately ninety percent of all permitted shoreline stabilization projects in North Carolina (Skrabel, pers. comm, 1997). Most of the structures have involved the use of pressure treated lumber. The wood is injected with toxins to prevent marine organisms from consuming the organic material. The wood is most often injected with a chromated copper arsenate mixture (CCA). Each of these chemicals is toxic to marine organisms. Chromium is carcinogenic and mutagenic and has been reported to accumulate in phytoplankton (Weis and Weis, 1994). Copper in high levels is toxic to algae and mollusks. Arsenic is known to be carcinogenic, mutagenic, and teratogenic (Weis and Weis, 1994), and has been shown to bioaccumulate in estuarine ecosystems (Sanders *et al*, 1994). Studies have indicated that leachates from the treated wood are toxic to a variety of estuarine organisms such as fiddler crabs, sea urchin embryos, and some fish embryos. These toxins may be transferable to consumers from the affected species, often resulting in deleterious effects to the consumer (Weis and Weis, 1996). The local effects of these leachates may be minimal, but the cumulative effect of miles of wooden bulkheads may pose a concern for the health of the estuarine system. Presently some state and local governments are restricting the use of CCA-treated products in the interest of protecting the shallow estuarine environment.

Summary

There is growing concern about the effects of bulkheads and other hardened shoreline structures on sediment transport, foreshore erosion, marsh migration and estuarine organisms. Bulkheads can lead to destruction of these wetlands by not allowing the natural landward retreat of wetland vegetation as the sea level rises, and by producing conditions that accelerate the loss of suitable habitat for wetland plants, submerged plants and shallow water habitat. Bulkheads also accelerate the erosion of adjacent shorelines, often requiring the adjacent property owner to take action to stop the erosion process. Bulkheads installations often leads to the loss of important habitats. In addition to the vegetation loss associated with bulkheads, wildlife, fisheries, and shellfish habitat are also disturbed or eliminated. Erosion related to bulkheads is often responsible for loss of juvenile fish habitat, reduced littoral fish populations and loss of shellfish habitat.

Most of the shoreline protection structures in North Carolina involve the use of chromated copper arsenate pressure treated lumber. Each of the chemicals is toxic to marine organisms and have been reported to bioaccumulate in estuarine ecosystems. The cumulative effect of miles of wooden bulkheads may pose a concern for the overall health of the estuarine system.

Staff Recommendations

The staff recommends that hardened structures only be used in areas where there is a demonstrated need for the protection of upland property from excessive erosion when no other alternative is feasible. Vegetated buffers should also be used in conjunction with any shoreline protection measure. Nontoxic methods of erosion abatement are preferred. The staff recognizes that current rules regarding the installation of harden structures are inadequate for the protection of our coastal resources. We recommend that a panel be assembled to develop draft rule changes. The panel will outline the requirements for demonstrating the erosional need for a hardened structure, and set forth rules for the implementation of these recommendations along North Carolina's shorelines.

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3. IMPERVIOUS SURFACE AREA - DENSITY

As North Carolina's coastal population grows, the development pressure along the estuarine shoreline also increases. The population density of a given area is correlated with its percentage of impervious cover (Arnold and Gibbons, 1996). Land development alters the natural balance between runoff and natural absorption areas by replacing pervious areas with greater amounts of impervious surface. Therefore, imperviousness is directly proportional to the degree of land development. Research shows a strong correlation between the imperviousness of a drainage basin and the health of its receiving waters. Impervious coverage is a readily identifiable, measurable aspect of the landscape, facilitating its use in both planning and regulatory applications (Arnold and Gibbons, 1996).

Definition

Impervious surfaces can be defined as any impenetrable material that prevents infiltration of water into the soil. Rooftops, roads and parking lots are the most prevalent and easily identified impervious surfaces, although the list also includes sidewalks, patios, gravel drives, bedrock outcrops, and compacted soil. As development alters the natural landscape in coastal counties, the percentage of the land covered by impervious surfaces increases, initiating a chain of events that begins with alterations in the hydrologic cycle, works its way through physical and ecological impacts on riparian areas, adds water pollution, and culminates in degraded water resources (Arnold and Gibbons, 1996). Water is often conveyed from impervious areas by pipes, gutters and ditches, which promotes increased runoff velocity and volumes due to the absence of areas for infiltration and absorption. In turn, impervious areas often add to the volume of toxins, nutrients and pollutants associated with stormwater runoff.

Transportation related impervious areas that are in the public domain are often overlooked in estimates of imperviousness. The transportation component can, in terms of totally impervious area created, exceed the rooftop component within a watershed. Additionally, these areas often exert a greater hydrological impact than rooftop or residential imperviousness (Schueler, 1994). In residential areas runoff can be spread over pervious areas such as lawns. Roads, bridges and parking lots are usually directly connected to storm drainage systems, which in this case is most often observed in suburban areas. Measurements of impervious surface area in eleven residential, multifamily and commercial areas revealed that transportation related imperviousness comprised 63 percent to 70 percent of the total impervious surface cover (City of Olympia, 1994). Additionally, streets have been shown to produce the highest pollutant loads in most lost use categories (Bannerman et al., 1993).

Impacts

Imperviousness is integrative, indicating cumulative water resource impacts without regard to specific factors. Research from the past 15 years consistently demonstrates a strong correlation between the imperviousness of a drainage basin and the health of its receiving waters (Arnold and Gibbons, 1996). Many studies have focused on macroinvertebrate diversity and populations, fish population and health, shellfish habitat, and water quality.

The loss of many of our water related natural resources can be correlated with increases in impervious surface development. A number of studies have examined the link between imperviousness and the biologic diversity in streams (Schueler, 1994). Degradation of stream habitat is reported to occur at a 30 percent to 100 percent impervious coverage. The threshold of initial degradation fall within the 10 to 20 percent range. This range of initial degradation is exceptionally consistent under different methods of analysis (Schueler, 1994). Therefore, impervious coverage is often a reliable indicator of the impact of development on water resources.

Macroinvertebrate Impacts

Macroinvertebrates are often used as indicators of the overall health of aquatic ecosystems. Klein (1979) found the macroinvertebrate diversity dropped sharply in urban streams when the watershed impervious surface area exceeded 10 to 15 percent. Jones and Clark (1987) monitored benthic insect diversity in Northern Virginia, and found a change in composition after the watershed population exceeded four individuals per acre. The population density roughly translates to half-acre or one acre lots residential land use (10 to 20 percent imperviousness). Shaver *et al,* (1995) reported a sharp drop in macroinvertebrate diversity at 12 to 15 percent imperviousness in streams in the coastal plain and piedmont of Delaware.

Fishery Impacts

Few studies have been completed on the effects of imperviousness on fish habitats and populations. Holland (1997) reported that finfish populations in coastal creeks in South Carolina markedly decrease at a 30 percent impervious coverage. Anadromous fish eggs and larvae have been noted to sharply decline after a 10 percent impervious threshold was surpassed (Limburg and Schmidt, 1990).

Shellfish Impacts

Even relatively low levels of development can yield high levels of bacteria, derived from surface runoff or failing septic systems (Schueler, 1994). Shellfish harvesting areas are often closed in areas that receive high runoff. Some North Carolina shellfish areas are closed only after rainfall has occurred in the area, indicating that surface runoff is a major pollutant source. Fecal coliform counts are often high in areas that receive increased stormwater runoff. Shellfish closure has also been attributed to septic system failure. The density of development may play a role in increased bacterial loads. Duda (1982) presented that is difficult to prevent closure of shellfish areas when more than one septic drain field is present per seven acres. As the population in the coastal counties increases, the amount of impervious area also increases with development and in turn the number of shellfish closure areas has increased. The resulting increase in closed shellfish areas and possible closure in recreation areas can have severe economic impacts on North Carolina (Maiolo and Tschetter, 1981).

Water Quality Impacts

Impervious surfaces collect and accumulate pollutants deposited from various sources (Schueler, 1994). Stormwater runoff rapidly transports these pollutants to pipes, gutters, ditches, and eventually to an aquatic system. In some areas, stormwater runoff is sent to retention and detention ponds for the settling of sediments and pollutants. Others are sent through vegetated buffer zones before reaching open water. This action promotes increased

runoff velocity and volumes due to the absence of areas for infiltration and absorption. In turn, impervious areas often add to the volume of toxins, nutrients and pollutants associated with stormwater runoff. Monitoring and modeling studies have consistently indicated that urban pollutant loads are directly related to watershed impervious surface coverage (Schueler, 1994). Many nonpoint source pollutant problems can be tied to the amount and location of impervious surfaces.

Limiting impervious surface areas

Limiting impervious cover is a management technique that mitigates the adverse effects inherent to development. Impervious cover limitations and buffer zone requirements have been proven to maintain the basic hydrologic balance (Arnold and Gibbons, 1996). Limiting imperviousness reduces the potential for flooding and the discharging of pollutants into aquatic systems. Maintaining natural hydrologic conditions benefits water quality by reducing erosion, pollution, and by maintaining salinity levels.

Imperviousness is rarely specified or addressed in community goals, policies or regulations (Arnold and Gibbons, 1996). When addressed, zoning has strongly emphasized and regulated the rooftops, commercial development and general residential development (*i.e.*, tennis courts, driveways) and largely neglected the transportation component. While the rooftop component is may be fixed in density zoning, the transportation component is not. As an example, many zoning codes set forth the maximum density for an area, based on dwelling units (Schueler, 1994). Thus, in a given area, no more than one single family home can be located on each acre of land, and so forth. Thus, a wide range in impervious cover is often seen for the same zoning classification.

Limits on impervious surface area is implemented by several methods. While analysis is often conducted on a watershed level; it may not be always feasible to apply limits at this scale. This is particularly true in watersheds with existing development. Regulations limiting impervious surface area are often conducted on a lot-by-lot basis with resource protection as a goal. Other methods involve zoning standards based on land use intensity or resource protection. Reducing impervious through planning and design often reduce expenses in construction and maintenance for local governments.

Summary

Research shows a strong correlation between the imperviousness of a drainage basin and the health of its receiving waters. Impervious coverage is a readily identifiable, measurable aspect of the landscape, facilitating its use in both planning and regulatory applications. The loss of many of water-related natural resources can be associated with increases in impervious surface development. A number of studies have examined the link between imperviousness and ecosystem health. The threshold of initial degradation of many organisms fall within the 10 to 20 percent imperviousness range. The biodiversity of macroinvertebrates and anadromous fish eggs and larvae have been shown to drop within this range. Finfish populations are reported to markedly decrease at a 30 percent impervious coverage. Impervious areas often add to the volume of toxins, nutrients and pollutants associated with stormwater runoff. Shellfish resources and general water quality are also reported to be effected by a number of different impacts taht can be associated with the magnitude of impervious.

Limiting impervious cover is a management technique that mitigates the adverse effects inherent to development. Limiting imperviousness reduces the potential for flooding and the discharging of pollutants into aquatic systems. Transportation related impervious areas are often overlooked in estimates of imperviousness and often exert a greater hydrological impact than rooftop or residential imperviousness. Imperviousness is rarely addressed in community policies or regulations. Limits on impervious surface area can be implemented by several methods. Regulations limiting impervious surface areas are often conducted on a lot-by-lot basis with resource protection as a goal. Other methods involve zoning standards based on land use intensity or protection of a particular resource. Reducing impervious through planning and design often reduce expenses in construction and maintenance for local governments and landowners.

Staff Recommendations

The staff recognizes that current rules regarding impervious surfaces and density of development are inadequate for the protection of North Carolina's coastal resources. Based solely on scientific information available, limits on impervious surface area should be implemented on a watershed basis. It is recognized by the staff that implementation of a watershed-based method is currently not feasible. Therefore, the staff recommends that a more stringent limit on impervious surface areas be developed for application on a lot-by-lot basis, within all jurisdictional areas along North Carolina shorelines — perhaps lowering the current standard to 10 to 20 percent imperviousness, or even lower for highly sensitive resource areas (*e.g.*, primary nursery areas, shellfish beds, outstanding resource waters). Transportation surfaces should be included in the watershed impervious count. Engineered alternatives are acceptable if documented to be successful in similar applications. Local governments should be encouraged to implement zoning and planning which mitigates the effects of imperviousness. We recommend that a panel be assembled to develop draft rule changes that will implement these recommendations.

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Appendix 1.
Tables from Desbonnet *et al.*, (1994)

Table 3. Recommended vegetated buffer widths for pollutant removal, giving the desired effect of the implemented buffer. The reported values are generally intended as minimum buffer width values to achieve the desired purpose. [1 meter = 3.28 feet]

Author(s)	Width (m)	Objective	Specifics
in: Comerford et al. 1992	2	Maintain stream channel stability	Ozark Mts
Ahola. 1990	2 - 10	Stream habitat protection	
Ahola. 1990	5 - 20	River/lake protection	
Scheuler and Bley. 1987	[illegible]	Low level pollutant removal	Grassed buffer
in: Comerford et al.. 1992	7 - 12	General purpose use	Low slope: rural land
Palmstrom. 1991	7.6	General purpose use	
Doyle et al.. 1975	7.6	Protect water quality from animal wastes	Forested buffer
in: Comerford et al.. 1992	8	Protect general water quality	
in: Comerford et al.. 1992	9	Protect water quality from ground-based herbicide applications	
Martin et al.. 1985	10	Protect water quality from clear-cut	Forested buffer
Clark. 1977	10	General purpose use	0% slope over slightly erodible soils
Swift. 1986	10 - 19	Protect general water quality	Road runoff sediment
Trimble & Sartz. 1957	10.6 - 12.2	Protect water quality from logging	<10% slope
Florida Div. Forestry. 1990	11	Protect general water quality	Primarily streamside
in: Comerford et al.. 1992	11	Protect small stream water quality	Forested buffer
in: Comerford et al.. 1992	12 - 24	Protect general water quality	Forested buffer
in: Comerford et al.. 1992	12 - 85	Moderate erosion protection	Forested
in: Comerford et al.. 1992	15	Protect water quality from pesticides	
Phillips. 1989b	15 - 60	Protect general water quality	Well-drained soils
in: Comerford et al.. 1992	15 - 105	Severe erosion protection	Forested buffer
Corbett & Lynch. 1985	20 - 30	Protect water quality from logging	Forested buffer
Clark. 1977	23	Protect water quality from logging	Forested buffer
Moring. 1982	30	Protect salmon egg and juvenile development	Forested buffer
Erman et al.. 1977	30	Protect stream water quality from logging	Forested buffer
USACE. 1991	30	90% removal of TSS	Grassed buffer
in: Comerford et al.. 1992	30	Protect water quality from aerial herbicide applications	
in: Comerford et al.. 1992	31	Protect large stream/river water quality	Forested buffer
Phillips. 1989b	40-80	Protect general water quality	Poorly drained soils
Clark. 1977	45	Protect general water quality	30% slope over severely erodible soils
Clark. 1977	46	Protect general water quality	
in: Comerford et al.. 1992	91	Protect private residences from aerial herbicide applications	
Phillips. 1989b	95	Protect stream water quality	Under all conditions
Roman & Good. 1983	100	Wetland protection	NJ Pinelands habitat
Brown et al.. 1990	178	Protect wetland water quality	

Table 4. A summary of pollutant removal effectiveness values according to width of the vegetated buffer. Removal efficiency values are given as percent removal for each of the various pollutants treated in the vegetated buffer — sediment, TSS, total nitrogen, total phosphorus, and nitrate-nitrogen. [1 meter = 3.28 feet]

		Pollutant Removal (%)				
Author(s)	Width (m)	Sediment	TSS	N	P	NO_3
Doyle et al., 1977	0.5				9%	0%
Neibling & Alberts, 1979	0.6	91%				
Neibling & Alberts, 1979	0.6	37%				
Neibling & Alberts, 1979	1.2	78%				
Doyle et al., 1977	1.5				8%	57%
Neibling & Alberts, 1979	2.4	82%				
Doyle et al., 1975	3.8			95%	99%	
Doyle et al., 1977	4.0				62%	68%
Young et al., 1980	4.06			84%	83%	9%
Dillaha et al., 1988	4.6		31%	0%	2%	
Dillaha et al., 1988	4.6		87%	61%	63%	
Dillaha et al., 1988	4.6		76%	67%	52%	3%
Magette et al., 1987	4.6		72%	17%	41%	
Dillaha et al., 1986b	4.6	63%		63%	63%	
Neibling & Alberts, 1979	4.9	83%				
Neibling & Alberts, 1979	6.1	90%				
Doyle et al., 1975	7.6			96%	99%	
Schellinger & Clausen, 1992	7.6		4%	15%	6%	
Schellinger & Clausen, 1992	7.6		27%	16%	18%	
Dillaha et al., 1988	9.1		58%	7%	19%	
Dillaha et al., 1988	9.1		95%	77%	80%	4%
Dillaha et al., 1988	9.1		88%	71%	57%	17%
Dillaha et al., 1986b	9.1	78%		78%	78%	
Magette et al., 1987	9.2		86%	51%	53%	
Thompson et al., 1978	12			45%	55%	46%
Bingham et al., 1978	13			28%	25%	28%
Mannering & Johnson, 1974	15	45%				
Doyle et al., 1977	15.2			97%	99%	
Lake & Morrison, 1977	15.2	46%				
Peterjohn & Correll, 1984	19	90%		62%	0%	60%
Young et al., 1980	21.3	81%				
Young et al., 1980	21.3	75%				
Schwer & Clausen, 1989	26		95%	92%	89%	
Young et al., 1980	27.4	93%				
Young et al., 1980	27.4		66%	87%	88%	
Young et al., 1980	27.4		82%	84%	81%	
Edwards et al., 1983	30		23%	31%	29%	
Doyle et al., 1975	30.5			98%	99%	
Patterson et al., 1977	35		71%			
Thompson et al., 1978	36			69%	61%	62%
Wong & McCuen, 1982	45	90%				
Woodard, 1988	57	99%				
Edwards et al., 1983	60		87%	83%	84%	
Baker & Young, 1984	79			99%		
Karr & Schlosser, 1978	91	55%	50%			
Karr & Schlosser, 1978	215	97.5%	90%			
Karr & Schlosser, 1978	304	99%	97%			
Lowrance et al., 1984				85%	30-42%	83%
Jacobs & Gilliam, 1985						99%
Rhodes et al., 1985						99%
Reuter et al., 1992			85%		97%	85-90%
Schipper et al., 1989						98%

Table 4. A summary of pollutant removal effectiveness values according to width of the vegetated buffer. Continued

Runoff source	Vegetation	Slope	Other
Dairy manure	Grass-fescue	10%	90 mT/ha
Bare soil	Grass	7%	For coarse-grained sediments
Bare soil	Grass	7%	For clay-sized particles
Bare soil	Grass	7%	For clay-sized particles
Dairy manure	Grass		90 mT/ha
Bare soil	Grass	7%	For clay-sized particles
Dairy manure	Forest/scrub	35-40%	Gravely, silt-loam soils
Dairy manure	Grass		
Dairy feedlot		4%	
Dairy manure	Orchard grass	5%	Concentrated flow
Dairy manure	Orchard grass	11%	Av. 10,000 kg/ha manure application
Dairy manure	Orchard grass	16%	Av. 10,000 kg/ha manure application
Dairy manure	Forest/scrub	35-40%	Gravely, silt-loam soils
Fertilized cropland	Orchard grass		
Bare soil	Grass	7%	For clay-sized particles
Bare soil	Grass	7%	For clay-sized particles
Dairy yard runoff	Fescue & rye mix	2%	Poorly drained, surface sample
Dairy yard runoff	Fescue & rye mix	2%	Poorly drained, subsurface sample
Dairy manure	Orchard grass	5%	Concentrated flow
Dairy manure	Orchard grass	11%	Av. 10,000 kg/ha manure application
Dairy manure	Orchard grass	16%	Av. 10,000 kg/ha manure application
Dairy manure	Orchard grass		
Poultry manure	Fescue	6-8%	
	Bluegrass sod		
Dairy manure	Forest/scrub	35-40%	90 mT/ha; Gravely, silt-loam soils
	Bluegrass sod		
Agricultural runoff	Forested		
Feedlot runoff	Corn	4%	
	Oats	4%	
Milk house waste	Fescue & rye mix	2%	
	Corn	4%	25-year, 24-hour storm simulation
	Orchard grass	4%	25-year, 24-hour storm simulation
	Sorgnum/grass	4%	25-year, 24-hour storm simulation
Feedlot runoff	Fescue	2%	Settling basin, then through 60 m of grass buffer
Dairy manure	Forest/scrub	35-40%	Gravely, silt-loam soils
Liquid dairy waste	Fescue	3.4%	
	Natural, mixed		
Feedlot effluent	Fescue	2%	Moved through 2 consecutive 30m VFS
Fertilizers	Grass		
	Bermuda grass		
	Forested		
	Forest/wetland		79.5 ha undisturbed watershed
Fertilized field runoff	Man-made gravel		
Sewage spray	Forested pine		

Table 6. Recommended buffer widths for wildlife habitat. The reported widths are generally intended as minimum values to provide the desired habitat requirement to meet the given objective. [1 meter = 3.28 feet]

Author(s)	Width (m)	Objective	Specifics
Triquet et al., 1990	15 - 25	General avian habitat	Riparian wooded area
Snisler et al., 1987	15 - 30	Protect wetland habitat from low-intensity disturbances	Densely growing mixed species buffer
Tassone, 1981	30	Wildlife travel corridor	
Snisler et al., 1987	30 - 45	Protect wetland habitat from high-intensity disturbances	Densely growing mixed species buffer
Howard and Allen, 1989	60	General wildlife habitat	
Tassone, 1981	60	Breeding sites for fragment-sensitive bird species	
Groffman et al., 1991b	60 - 100	General wildlife habitat	
Cross, 1985	67	Small mammal habitat	Wooded riparian area
Groffman et al., 1991b	91.5	Protect significant wildlife habitat	Natural vegetation
Brown et al., 1990	178	Wetland habitat protection	
Scheuler, 1987	200	Diverse songbird community	
U.S. ACE, 1991	<200	For all but large mammals	Riparian forest

Appendix 2.
Table from Desbonnet *et al.*, (1994)

Table 8. A listing of buffer and setback widths that coastal states have established through their coastal zone management programs. M denotes the width is mandated, while R denotes that the width is recommended only. [1 foot = 0.305 meters]

State	Buffer Width	Status	Setback Width	Status	Comments
Alabama			40'; Applies to Gulf Coast only	M	Primarily for dune protection and preservation
Alaska			100' city/state lands: 66' private property	M	Applies only to timber harvest operations
California	100' around wetlands	R			Mainly for habitat preservation
Connecticut					Through local ordinances
Delaware			50' from mean high water mark	M	Also through local ordinances
Florida					Through local ordinances
Georgia					No CZMP at present
Hawaii			40' from shoreward vegetation line: 20' if hardship shown	M	Applies to all islands in the Hawaiian islands group
Louisiana					Through local ordinances
Maine	75' along entire coast: 250' along sensitive wetland areas	M			Also has a buffer management program
Maryland	100' along Chesapeake Bay shore	M			Case-by-case on non-Chesapeake Bay shores
Massachusetts					In process of development
Mississippi					Rarely case-by-case
New Hampshire	100' along wetlands	M			The definition of wetlands includes the entire NH coast
New Jersey	0-300' on a case-by-case basis	R			Only along sensitive areas; local zoning supersedes state
New York			75' from wetlands (30' in New York City)	M	Vegetation not required in the setback
North Carolina	30' around significant waters	M			Vegetation not required in buffer
Oregon					Through local ordinances
Rhode Island	0-200' on a case-by-case basis	R	50' from the coastal feature	M	New buffer program being reviewed
South Carolina			Variable, according to erosional rates	R	Only applicable in coastal dunes; vegetation not required
Texas					CZMP being developed
Virginia	100' along Chesapeake Bay shore	M			Not required along other state coastal areas
Washington					Through local ordinances

15A NCAC 07H .0209 COASTAL SHORELINES

(a) Description. The Coastal Shorelines category includes estuarine shorelines and public trust shorelines.

(1) Estuarine shorelines AEC are those non-ocean shorelines extending from the normal high water level or normal water level along the estuarine waters, estuaries, sounds, bays, fresh and brackish waters, and public trust areas as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Environmental Quality [described in Rule .0206(a) of this Section] for a distance of 75 feet landward. For those estuarine shorelines immediately contiguous to waters classified as Outstanding Resource Waters (ORW) by the Environmental Management Commission (EMC), the estuarine shoreline AEC shall extend to 575 feet landward from the normal high water level or normal water level, unless the Coastal Resources Commission establishes the boundary at a greater or lesser extent following required public hearing(s) within the affected county or counties.

(2) Public trust shorelines AEC are those non-ocean shorelines immediately contiguous to public trust areas, as defined in Rule 07H .0207(a) of this Section, located inland of the dividing line between coastal fishing waters and inland fishing waters as set forth in that agreement and extending 30 feet landward of the normal high water level or normal water level.

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

(c) Management Objective. All shoreline development shall be compatible with the dynamic nature of coastal shorelines as well as the values and the management objectives of the estuarine and ocean system. Other objectives are to conserve and manage the important natural features of the estuarine and ocean system so as to safeguard and perpetuate their biological, social, aesthetic, and economic values; to coordinate and establish a management system capable of conserving and utilizing these shorelines so as to maximize their benefits to the estuarine and ocean system and the people of North Carolina.

(d) Use Standards. Acceptable uses shall be those consistent with the management objectives in Paragraph (c) of this Rule. These uses shall be limited to those types of development activities that will not be detrimental to the public trust rights and the biological and physical functions of the estuarine and ocean system. Every effort shall be made by the permit applicant to avoid or minimize adverse impacts of development to estuarine and coastal systems through the planning and design of the development project. Development shall comply with the following standards:

(1) All development projects, proposals, and designs shall preserve natural barriers to erosion, including peat marshland, resistant clay shorelines, and cypress-gum protective fringe areas adjacent to vulnerable shorelines.

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

(3) All development projects, proposals, and designs shall comply with the following mandatory standards of the North Carolina Sedimentation Pollution Control Act of 1973:

(A) All development projects, proposals, and designs shall provide for a buffer zone along the margin of the estuarine water that is sufficient to confine visible siltation within 25 percent of the buffer zone nearest the land disturbing development.

(B) No development project proposal or design shall propose an angle for graded slopes or fill that is greater than an angle that can be retained by vegetative cover or other erosion-control devices or structures.

(C) All development projects, proposals, and designs that involve uncovering more than one acre of land shall plant a ground cover sufficient to restrain erosion within 30 working days of completion of the grading; unless the project involves clearing land for the purpose of forming a reservoir later to be inundated.

(4) Development shall not have a significant adverse impact on estuarine and ocean resources. Significant adverse impacts include development that would directly or indirectly impair water quality increase shoreline erosion, alter coastal wetlands or Submerged Aquatic Vegetation (SAV), deposit spoils waterward of normal water level or normal high water, or cause degradation of shellfish beds.

(5) Development shall not interfere with existing public rights of access to, or use of, navigable waters or public resources.

(6) No public facility shall be permitted if such a facility is likely to require public expenditures for maintenance and continued use, unless it can be shown that the public purpose served by the facility outweighs the required public expenditures for construction, maintenance, and continued use.

(7) Development shall not cause irreversible damage to valuable, historic architectural or archaeological resources as documented by the local historic commission or the North Carolina Department of Natural and Cultural Resources.

(8) Established common-law and statutory public rights of access to the public trust lands and waters in estuarine areas shall not be eliminated or restricted. Development shall not encroach upon public accessways nor shall it limit the use of the accessways.

(9) Within the AECs for shorelines contiguous to waters classified as ORW by the EMC, no CAMA permit shall be approved for any project that would be inconsistent with rules adopted by the CRC, EMC or MFC for estuarine waters, public trust areas, or coastal wetlands. For development activities not covered by specific use standards, no permit shall be issued if the activity would, based on site-specific information, degrade the water quality or outstanding resource values.

(10) Within the Coastal Shorelines category (estuarine and public trust shoreline AECs), new development shall be located a distance of 30 feet landward of the normal water level or normal high water level, with the exception of the following:

(A) Water-dependent uses as described in Rule 07H .0208(a)(1) of this Section;

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

(C) Post- or pile-supported fences;

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

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

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

(G) Grading, excavation and landscaping with no wetland fill except when required by a permitted shoreline stabilization project. Projects shall not increase stormwater runoff to adjacent estuarine and public trust waters;

(H) Development over existing impervious surfaces, provided that the existing impervious surface is not increased;

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

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

(ii) The residential structure development shall be located a distance landward of the normal high water or normal water level equal to 20 percent of the greatest depth of the lot. Existing structures that encroach into the applicable buffer area may be replaced or repaired consistent with the criteria set out in 15A NCAC 07J .0201 and .0211; and

(J) Where application of the buffer requirement set out in Subparagraph (d)(10) of this Rule would preclude placement of a residential structure on an undeveloped lot platted prior to June 1, 1999 that are 5,000 square feet or less that does not require an on-site septic system, or on an undeveloped lot that is 7,500 square feet or less that requires an on-site septic system, development shall be permitted within the buffer if all the following criteria are met:

(i) The lot on which the proposed residential structure is to be located, is located between:

(I) Two existing waterfront residential structures, both of which are within 100 feet of the center of the lot and at least one of which encroaches into the buffer; or

(II) An existing waterfront residential structure that encroaches into the buffer and a road, canal, or other open body of water, both of which are within 100 feet of the center of the lot;

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

(iii) Placement of the residential structure and pervious decking shall be aligned no further into the buffer than the existing residential structures and existing pervious decking on adjoining lots;

(iv) The first one and one-half inches of rainfall from all impervious surfaces on the lot shall be collected and contained on-site in accordance with the design standards for stormwater management for coastal counties as specified in 15A NCAC 02H .1005. The stormwater management system shall be designed by an individual who meets applicable State occupational licensing requirements for the type of system proposed and approved during the permit application process. If the residential structure encroaches into the buffer, then no other impervious surfaces shall be allowed within the buffer; and

(v) The lots shall not be adjacent to waters designated as approved or conditionally approved shellfish waters by the Shellfish Sanitation Section of the Division of Marine Fisheries of the Department of Environmental Quality.

(e) The buffer requirements in Paragraph (d) of this Rule shall not apply to Coastal Shorelines where the EMC has adopted rules that contain buffer standards.

(f) Specific Use Standards for ORW Coastal Shorelines.

(1) Within the AEC for estuarine and public trust shorelines contiguous to waters classified as ORW by the EMC, all development projects, proposals, and designs shall limit the built upon area in the AEC to no more than 25 percent or any lower site specific percentage as adopted by the EMC as necessary to protect the exceptional water quality and outstanding resource values of the ORW, and shall:

(A) provide a buffer zone of at least 30 feet from the normal high water line or normal water line; and

(B) otherwise be consistent with the use standards set out in Paragraph (d) of this Rule.

(2) Single-family residential lots that would not be buildable under the low-density standards defined in Subparagraph (f)(1) of this Rule may be developed for single-family residential purposes so long as the development complies with those standards to the maximum extent possible.

(g) Urban Waterfronts.

(1) Description. Urban Waterfronts are waterfront areas, not adjacent to ORW, in the Coastal Shorelines category that lie within the corporate limits of any municipality duly chartered within the 20 coastal counties of the state. In determining whether an area is an urban waterfront, the following criteria shall be met:

(A) the area lies wholly within the corporate limits of a municipality; and

(B) the area has a central business district or similar commercial zoning classification where there are mixed land uses, and urban level services, such as water, sewer, streets, solid waste management, roads, police and fire protection, or in an area with an industrial or similar zoning classification adjacent to a central business district.

(2) Significance. Urban waterfronts are recognized as having cultural, historical and economic significance for many coastal municipalities. Maritime traditions and longstanding development patterns make these areas suitable for maintaining or promoting dense development along the shore. With proper planning and stormwater management, these areas may continue to preserve local historical and aesthetic values while enhancing the economy.

(3) Management Objectives. To provide for the continued cultural, historical, aesthetic and economic benefits of urban waterfronts. Activities such as in-fill development, reuse and redevelopment facilitate efficient use of already urbanized areas and reduce development pressure on surrounding areas, in an effort to minimize the adverse cumulative environmental effects on estuarine and ocean systems. While recognizing that opportunities to preserve buffers are limited in highly developed urban areas, they are encouraged where practical.

(4) Use Standards:

(A) The buffer requirement pursuant to Subparagraph (d)(10) of this Rule shall not apply to development within Urban Waterfronts that meets the following standards:

(i) The development shall be consistent with the locally adopted land use plan;

(ii) Impervious surfaces shall not exceed 30 percent of the AEC area of the lot. Impervious surfaces may exceed 30 percent if the applicant can demonstrate, through a stormwater management system design, that the protection provided by the design would be equal to or exceed the protection by the 30 percent limitation. The stormwater management system shall be designed by an individual who meets any North Carolina occupational licensing requirements for the type of system proposed and approved during the permit application process. Redevelopment of areas exceeding the 30 percent impervious surface limitation shall be permitted if impervious areas are not increased and the

applicant designs the project to comply with the intent of the rule to the maximum extent feasible; and

(iii) The development shall meet all state stormwater management requirements as required by the EMC;

(B) Non-water dependent uses over estuarine waters, public trust waters and coastal wetlands shall be allowed only within Urban Waterfronts as set out below.

(i) Existing structures over coastal wetlands, estuarine waters or public trust areas may be used for commercial non-water dependent purposes. Commercial, non-water dependent uses shall be limited to restaurants and retail services. Residential uses, lodging and new parking areas shall be prohibited.

(ii) For the purposes of this Rule, existing enclosed structures may be replaced or expanded vertically provided that vertical expansion does not exceed the original footprint of the structure, is limited to one additional story over the life of the structure, and is consistent with local requirements or limitations.

(iii) New structures built for non-water dependent purposes are limited to pile-supported, single-story, unenclosed decks and boardwalks, and shall meet the following criteria:

(I) shall provide for enhanced public access to the shoreline;

(II) may be roofed, but shall not be enclosed by partitions, plastic sheeting, screening, netting, lattice or solid walls of any kind;

(III) shall require no filling of coastal wetlands, estuarine waters or public trust areas;

(IV) shall not extend more than 20 feet waterward of the normal high water level or normal water level;

(V) shall be elevated at least three feet over the wetland substrate as measured from the bottom of the decking;

(VI) shall have no more than six feet of any dimension extending over coastal wetlands;

(VII) shall not interfere with access to any riparian property and shall have a minimum setback of 15 feet between any part of the structure and the adjacent property owners' areas of riparian access. The line of division of areas of riparian access shall be established by drawing a line along the channel or deep water in front of the properties, then drawing a line perpendicular to the line of the channel so that it intersects with the shore at the point the upland property line meets the water's edge. The minimum setback provided in the rule may be waived by the written agreement of the adjacent riparian owner(s) or when two adjoining riparian owners are co-applicants. Should the adjacent property be sold before construction of the structure commences, the applicant shall obtain a written agreement with the new owner waiving the minimum setback and submit it to the permitting agency prior to initiating any development;

(VIII) shall be consistent with the US Army Corps of Engineers setbacks along federally authorized waterways;

(IX) shall have no significant adverse impacts on fishery resources, water quality or adjacent wetlands and there shall be no alternative that would avoid wetlands. Significant adverse impacts include the development that would impair water quality standards, increase shoreline erosion, alter coastal wetlands or Submerged Aquatic Vegetation (SAV), deposit spoils waterward of normal water level or normal high water level, or cause degradation of shellfish beds;

(X) shall not degrade waters classified as SA or High Quality Waters or ORW as defined by the EMC;

(XI) shall not degrade Critical Habitat Areas or Primary Nursery Areas as defined by the NC Marine Fisheries Commission; and

(XII) shall not pose a threat to navigation.

History Note: *Authority G.S. 113A-107(b); 113A-108; 113A-113(b); 113A-124;*
Eff. September 1, 1977;
Amended Eff. April 1, 2001; August 1, 2000; August 3, 1992; December 1, 1991; May 1, 1990; October 1, 1989;
Temporary Amendment Eff. October 15, 2001 (exempt from 270 day requirement-S.L. 2000-142);
Temporary Amendment Eff. February 15, 2002 (exempt from 270 day requirement-S.L. 2001-494);
Amended Eff. April 1, 2019; March 1, 2010; April 1, 2008; August 1, 2002.

SECTION .0600 - DECLARATORY RULINGS AND PETITIONS FOR RULEMAKING

15A NCAC 07J .0605 PETITIONS FOR RULEMAKING

(a) Any person wishing to request the adoption, amendment, or repeal of a rule shall make this request in a petition addressed to the Division of Coastal Management. The petition shall specify it is filed pursuant to G.S. 150B-20 and shall contain the following information:

(1) either a draft of the proposed rule or a summary of its contents;
(2) a statement of reasons for adoption of the proposed rule(s);
(3) a statement of the effect on existing rules or orders;
(4) any data in support of the proposed rule(s);
(5) a statement of the effect of the proposed rule on existing practices; and
(6) the name and address of the petitioner.

(b) The petition will be placed on the agenda for the next regularly scheduled commission meeting, if received at least four weeks prior to the meeting, and the director shall prepare a recommended response to the petition for the Commission's consideration. Petitions will be considered in accordance with the requirements of G.S. 150B-20.

History Note: *Authority G.S. 113A-124; 150B-20;*
Eff. January 1, 1989;
Amended Eff. October 1, 1992.

SECTION .0700 – PROCEDURES FOR CONSIDERING VARIANCE PETITIONS

15 NCAC 07J .0701 VARIANCE PETITIONS

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

(b) The procedure in this Section shall be used for all variance petitions except when:

(1) the Commission determines that more facts are necessary; or

(2) there are controverted facts that are necessary for a decision on the variance petition.

(c) Variance petitions shall be submitted on forms provided by the Department of Environment and Natural Resources. The following information shall be submitted before a variance petition is considered complete:

(1) the case name and location of the development as identified on the denied permit application;

(2) a copy of the deed to the property on which the proposed development would be located;

(3) a copy of the permit application and denial for the development in question;

(4) the date of the petition, and the name, address, and phone number of the petitioner and his or her attorney, if applicable;

(5) a complete description of the proposed development, including a site drawing with topographical and survey information;

(6) a stipulation that the proposed project is inconsistent with the rule from which the petitioner seeks a variance;

(7) notice of the variance petition sent certified mail, return receipt requested to the adjacent property owners and persons who submitted written comments to the Division of Coastal Management or the Local Permit Officer during the permit review process and copies of the documents which indicate that the certified mail notices were received or that deliveries were attempted;

(8) an explanation of why the petitioner believes that the Commission should make the following findings, all of which are necessary for a variance to be granted:

(A) that unnecessary hardships would result from strict application of the development rules, standards, or orders issued by the Commission;

(B) that such hardships result from conditions peculiar to the petitioner's property such as the location, size, or topography of the property;

(C) that such hardships did not result from actions taken by the petitioner; and

(D) that the requested variance is consistent with the spirit, purpose and intent of the Commission's rules, standards or orders; will secure the public safety and welfare; and will preserve substantial justice.

(9) a proposed set of stipulated facts, for staff's consideration, containing all of the facts relied upon in the petitioner's explanation as to why he meets the criteria for a variance; and

(10) proposed documents, for the staff's consideration, that the petitioner wants the Commission to consider.

(d) Petitions shall be mailed to the Director of the Division of Coastal Management, Department of Environment and Natural Resources, 400 Commerce Avenue, Morehead City NC 28557 and to Air and Natural Resources Section, Environmental Division, Attorney General's Office, 9001 Mail Service Center, Raleigh, NC 27699-9001.

(e) A variance petition shall be considered by the Commission at a scheduled meeting. Petitions shall be scheduled in chronological order based upon the date of receipt of a complete variance petition by the Division of Coastal Management. A complete variance petition, as described in Paragraph (c) of this Rule, shall be received by the Division of Coastal Management at least six weeks in advance of a scheduled Commission meeting to be considered by the Commission at that meeting. If the petitioner seeks to postpone consideration of his or her variance request, the request shall be treated as though it was filed on the date petitioner requested postponement and scheduled for hearing after all then pending variance requests.

(f) Written notice of a variance hearing or Commission consideration of a variance petition shall be provided to the petitioner and the permit officer making the initial permit decision.

History Note: *Authority G.S. 113A-120.1; 113A-124;*
Eff. December 12, 1979;
Amended Eff. December 1, 1991; May 1, 1990; March 1, 1988, February 1, 1983;
Temporary Amendment Eff. December 20, 2001;
Temporary Amendment Expired October 12, 2002;
Temporary Amendment Eff. December 1, 2002;
Amended Eff. March 1, 2009; June 1, 2005; August 1, 2004.

15A NCAC 07J .0702 STAFF REVIEW OF VARIANCE PETITIONS

(a) The Division of Coastal Management, as staff to the Commission, shall review petitions to determine whether they are complete according to the requirements set forth in Rule .0701. Incomplete petitions and a description of the deficiencies shall be returned to the petitioner. Complete variance petitions shall be scheduled for the appropriate Commission meeting.

(b) The staff and the petitioner shall determine the facts that are relevant to the Commission's consideration of the variance petition. For all facts upon which staff and the petitioner agree, a document entitled Stipulated Facts shall be prepared and signed by both parties.

(c) After the facts agreed upon by the petitioner and staff, the staff shall prepare a written recommendation which shall be submitted to the Commission before the petition is considered. The staff recommendation shall include:

(1) a description of the property in question;
(2) a description of how the use of the property is restricted or otherwise affected by the applicable rules;
(3) the Stipulated Facts;
(4) staff's position on whether the petition meets or does not meet each of the requirements for a variance; and
(5) petitioner's position on each of the variance criteria.

Copies of the staff recommendation shall be provided to the petitioner and the permit officer making the initial permit decision at the same time as it is provided to the Commission. If the Stipulated Facts are not agreed upon at least four weeks prior to a scheduled Coastal Resources Commission meeting, the variance petition shall be considered at the next scheduled Commission meeting.

(d) If the staff determines that agreement cannot be reached on sufficient facts on which to base a variance decision, the petition shall be considered by means of an administrative hearing to determine the relevant facts.

History Note: *Authority G.S. 113A-120.1; 113A-124;*
Eff. December 12, 1979;
Amended Eff. December 1, 1991; May 1, 1990; October 1, 1988; March 1, 1988;
Temporary Amendment Eff. December 20, 2001;
Temporary Amendment Expired October 12, 2002;
Temporary Amendment Eff. December 1, 2002;
Amended Eff. July 3, 2008; August 1, 2004.

15A NCAC 07J .0703 PROCEDURES FOR DECIDING VARIANCE PETITIONS

(a) The Commission may review the variance petition and staff recommendation and hear oral presentation by the petitioner, if any, in full session or may appoint a member or members to do so. In cases where a member or members are appointed, they shall report a summary of the facts and a recommended decision to the Commission.

(b) The Commission or its appointed member or members shall be provided with copies of the petition, the stipulated facts, and the staff recommendation before considering the petition.

(c) At the Commission's request, staff shall orally describe the petition to the Commission or its appointed member(s) and shall present comments concerning whether the Commission should make the findings necessary for granting the variance. The petitioner shall also be allowed to present oral arguments concerning the petition. The Commission may set time limits on such oral presentations.

(d) The final decision of the Commission may be made at the meeting at which the matter is heard or in no case later than the next scheduled meeting. The final decision shall be transmitted to the petitioner by certified mail, return receipt requested within 30 days of the meeting at which the Commission reached its decision. In the event that the Commission cannot reach a final decision because it determines that more facts are necessary, it shall remand the

matter to staff and the petitioner with instructions for the parties to either agree to the necessary fact(s) or to request a hearing in the Office of Administrative Hearings.

(e) Final decisions concerning variance petitions shall be made by concurrence of a majority of a quorum of the Commission.

(f) To grant a variance, the Commission must affirmatively find each of the four factors listed in G.S. 113A-120.1(a).

(1) that unnecessary hardships would result from strict application of the development rules, standards, or orders issued by the Commission;

(2) that such hardships result from conditions peculiar to the petitioner's property such as location, size, or topography;

(3) that such hardships did not result from actions taken by the petitioner; and

(4) that the requested variance is consistent with the spirit, purpose and intent of the Commission's rules, standards or orders; will secure the public safety and welfare; and will preserve substantial justice.

History Note: *Authority G.S. 113A-120.1;*
Eff. December 12, 1979;
Amended Eff. December 1, 1991; March 3, 1981;
Temporary Amendment Eff. December 20, 2001;
Temporary Amendment Expired October 12, 2002;
Temporary Amendment Eff. December 1, 2002;
Amended Eff. March 1, 2009; August 1, 2004.

SECTION .0800 - DREDGE AND FILL: PERMIT PROCESSING PROCEDURE: STANDARD

15A NCAC 07J .0801 DEFINITIONS
15A NCAC 07J .0802 APPLICATION FORMS
15A NCAC 07J .0803 PREPARATION OF WORK PLATS: GENERAL
15A NCAC 07J .0804 PREPARATION OF WORK PLATS: SPECIFIC
15A NCAC 07J .0805 ADJACENT RIPARIAN LANDOWNER NOTIFICATION
15A NCAC 07J .0806 APPLICATION PROCESSING
15A NCAC 07J .0807 FIELD INVESTIGATION
15A NCAC 07J .0808 AGENCY REVIEW AND COMMENTS
15A NCAC 07J .0809 CRITERIA FOR PROJECT PLANNING AND EVALUATION
15A NCAC 07J .0810 FINAL ACTION
15A NCAC 07J .0811 NOTICE OF DENIAL
15A NCAC 07J .0812 APPEAL OF DEPARTMENTAL ACTION
15A NCAC 07J .0813 PERMIT ISSUANCE AND TRANSFER
15A NCAC 07J .0814 PERMIT EXPIRATION
15A NCAC 07J .0815 PERMIT RENEWAL
15A NCAC 07J .0816 PERMIT MODIFICATION
15A NCAC 07J .0817 PERMIT CONDITIONS
15A NCAC 07J .0818 PROJECT MAINTENANCE
15A NCAC 07J .0819 MAINTENANCE REQUEST
15A NCAC 07J .0820 CONDITIONS FOR MAINTENANCE
15A NCAC 07J .0821 GRANT OR DENIAL OF MAINTENANCE REQUEST
15A NCAC 07J .0822 VIOLATION OF PERMIT

History Note: *Authority G.S. 113A-118(c); 113A-119(a); 113A-124(c)(5); 113-229;*
Eff. February 1, 1976;
Amended Eff. January 1, 1984; August 1, 1983; October 15, 1981; August 30, 1980;
Repealed Eff. July 1, 1989.

SECTION .0900 - DREDGE AND FILL: EMERGENCY PERMIT PROCEDURE

15A NCAC 07J .0901 PURPOSE
15A NCAC 07J .0902 DEFINITIONS
15A NCAC 07J .0903 INITIATION OF EMERGENCY PROCESS: ON-SITE INVESTIGATION
15A NCAC 07J .0904 PROCEDURES FOR EXEMPTING EMERGENCY MAINTENANCE: REPAIRS
15A NCAC 07J .0905 APPLICABILITY OF EMERGENCY CAMA: DREDGE AND FILL PERMITS
15A NCAC 07J .0906 PREPARATION OF EMERGENCY PERMIT APPLICATION
15A NCAC 07J .0907 NOTIFICATION OF ADJACENT RIPARIAN LANDOWNERS

History Note: *Authority G.S. 113A-103(5)b.5; 113A-118 1.c.; 113-229 (e1);*
Eff. February 1, 1976;
Amended Eff. December 1, 1985; August 1, 1983; September 8, 1980; July 31, 1980;
Repealed Eff. July 1, 1989.

15A NCAC 07J .0908 REVIEW AND ISSUANCE OF EMERGENCY PERMIT
15A NCAC 07J .0909 LIMITATION OF EMERGENCY WORK

History Note: *Authority G.S. 113A-118 1.c.; 113A-119; 113A-229(e1);*
Eff. September 8, 1980;
Amended Eff. December 1, 1985; September 1, 1983; August 1, 1983;

Repealed Eff. July 1, 1989.

SECTION .1000 - DREDGE AND FILL: REVIEW HEARING PROCEDURES

15A NCAC 07J .1001 WHO IS ENTITLED TO HEARING
15A NCAC 07J .1002 PARTIES
15A NCAC 07J .1003 PROCEDURES

History Note: *Authority G.S. 113-229; 150B, Article 3; 150B-26;*
Eff. February 1, 1976;
Amended Eff. December 1, 1982; August 30, 1980;
Repealed Eff. July 1, 1989.

15A NCAC 07J .1004 HEARING OFFICER
15A NCAC 07J .1005 REQUEST FOR HEARING
15A NCAC 07J .1006 TIME FOR HEARING
15A NCAC 07J .1007 VENUE
15A NCAC 07J .1008 PARTIES
15A NCAC 07J .1009 INTERVENTION
15A NCAC 07J .1010 NOTICE
15A NCAC 07J .1011 HEARING OPEN TO PUBLIC
15A NCAC 07J .1012 PRE-HEARING CONFERENCE
15A NCAC 07J .1013 SIMPLIFICATION OF ISSUES
15A NCAC 07J .1014 STIPULATIONS
15A NCAC 07J .1015 SUBPOENAS
15A NCAC 07J .1016 DEPOSITIONS AND DISCOVERY
15A NCAC 07J .1017 BURDEN OF PROOF
15A NCAC 07J .1018 NO EX PARTE COMMUNICATION: EXCEPTIONS
15A NCAC 07J .1019 PRESENTATION OF EVIDENCE
15A NCAC 07J .1020 CONDUCT OF THE HEARING
15A NCAC 07J .1021 POST HEARING PROCEDURE
15A NCAC 07J .1022 DECISION
15A NCAC 07J .1023 RECORD OF DEPARTMENT ACTION AND HEARING
15A NCAC 07J .1024 JUDICIAL REVIEW

History Note: *Authority G.S. 113-229; 150B-23 through 150B-28;*
150B-31 through 150B-36; 150B-43;
Eff. February 1, 1976;
Amended Eff. August 30, 1980; January 1, 1979;
Repealed Eff. December 1, 1982.

SECTION .1100 - GENERAL PERMIT PROCEDURE

15A NCAC 07J .1101 PURPOSE

The purpose of this Section is to establish a procedure for issuing general permits for development having insignificant impacts on areas of environmental concern and which should not require public review and comment. These Rules are established according to G.S. 113A-118.1 and G.S. 113-229(C)(1) and will apply to projects requiring either Dredge and Fill and/or CAMA Major or Minor development permits. The CRC may, after following the procedures set forth in these Rules, issue general permits for certain catagories of development which require Dredge and Fill and/or CAMA Major or Minor development permits. After a general permit is issued, individual activities falling within these categories may be further authorized by the procedures set forth in these Rules.

History Note: *Authority G.S. 113A-107; 113A-118.1; 113-229(c1);*
Eff. September 1, 1983;
Amended Eff. December 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 6, 2018.

15A NCAC 07J .1102 CATEGORIES OF DEVELOPMENT

The Commission shall include as candidates for general permits only those activities that are substantially similar in nature that cause only minimal adverse environmental impacts when performed separately, and that will have only a minimal adverse cumulative effect on the environment. In identifying these categories, the Commission shall consider:

(1) the size of the development;
(2) the impact of the development on areas of environmental concern;
(3) how often the class of development is carried out;
(4) the need for on-site oversight of the development; and
(5) the need for public review and comment on individual development projects.

History Note: *Authority G.S. 113A-107; 113A-118.1; 113A-124(c)(5); 113-229(c)(1);*
Eff. September 1, 1983;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 6, 2018.

15A NCAC 07J .1103 DESIGNATION PROCEDURES

The staff shall prepare all information needed to establish each category of general permit. This may include a generic description of the development, anticipated cumulative impacts, projected number of individual projects, and permit histories. The staff shall prepare a draft permit to include a clear and accurate description of the development to be authorized, implementation or processing procedures, general conditions, and special conditions. The draft permit shall be reviewed and issued according to provisions in in G.S. 113A-107.

Recommendations for consideration of specific activities for inclusion in a general permit category may be made in writing to the Commission by any individual, organization, or agency. The Commission will assign the request to the staff for evaluation according to the procedures of this Rule within 90 days of its receipt.

History Note: *Authority G.S. 113A-107; 113A-118.1; 113A-124(c)(5); 113-229(c)(1);*
Eff. September 1, 1983;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 6, 2018.

15A NCAC 07J .1104 PERMIT MODIFICATION

The Commission may modify at any time any category of general permit. Modification shall be made according to the provisions of G.S. 113A-107. The Commission may also revoke any general permit at any time according to the provisions of G.S. 113A-107 if it is determined that the permit is no longer in the public interest.

History Note: *Authority G.S. 113A-107; 113A-118.1; 113A-124(c)(5); 113-229(c)(1);*
Eff. September 1, 1983;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 6, 2018.

15A NCAC 07J .1105 APPLICATION PROCEDURES

Authorization to initiate development covered by the general permit shall comply with the procedures outlined in each permit. The procedures shall be established to explain in detail the application process, notification requirements, and permit fees. Individual developments carried out under the provisions of general permits shall not be subject to the mandatory notice provisions of G.S. 113A-119.

History Note: *Authority G.S. 113A-107; 113A-118.1; 113A-124(c)(5); 113-229(c)(1);*
Eff. September 1, 1983.

15A NCAC 07J .1106 PERMIT CONDITIONS

Each general permit shall have a set of general and specific conditions. Additionally, the implementing authority may add appropriate special conditions to each instrument of authorization if necessary to protect the public interest. The issuing authority may, on a case-by-case basis, override the general permit and require an individual application and review if this individual review is deemed to be in the public interest. Provisions for individual review by state agencies of requests for general permit authorization may be made for each category if this review is deemed necessary to protect coastal resources or other aspects of public interest.

History Note: *Authority G.S. 113A-107; 113A-118.1; 113A-124(c)(5); 113-229(c)(1);*
Eff. September 1, 1983.

15A NCAC 07J .1107 PERMIT COMPLIANCE

All development authorized through the general permit must be done in compliance with all general, specific and special conditions. Development undertaken without proper authorization or in violation of permit conditions and/or failure to comply with operational permit conditions shall be a violation subject to the penalties set out in G.S. 113A-126 and/or G.S. 113-229.

History Note: *Authority G.S. 113A-107; 113A-118.1; 113A-124(c)(5); 113-229(c)(1);*
Eff. September 1, 1983;
Amended Eff. March 1, 1985.

15A NCAC 07J .1108 GENERAL PERMIT REVIEW

The Commission shall review each category of general permit on an annual basis. This review shall include compilation and evaluation of the number of projects approved in each category and the impacts of these projects. The Commission may modify or revoke any permit subject to this review according to the provisions of Rule .1104 of this Section. A written summary of this review shall be sent to each state and federal agency included in the normal permit review process.

History Note: *Authority G.S. 113A-107; 113A-118.1; 113-229(c1);*
Eff. September 1, 1983;
Amended Eff. December 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 6, 2018.

SECTION .1200 – STATIC AND VEGETATION LINE EXCEPTION PROCEDURES

15A NCAC 07J .1201 REQUESTING THE STATIC LINE EXCEPTION

(a) A petitioner subject to a static vegetation line pursuant to 15A NCAC 07H .0305 may petition the Coastal Resources Commission for an exception to the static vegetation line in accordance with the provisions of this Section. A "petitioner" shall be defined as:

(1) Any local government;
(2) Any group of local governments involved in a regional beach fill project;
(3) Any qualified homeowner's association 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; or
(4) A permit holder of a large-scale beach fill project.

(b) A petitioner shall be eligible to submit a request for a static vegetation line exception after the completion of construction of the initial large-scale beach fill project(s) as defined in 15A NCAC 07H .0305 that required the creation of a static vegetation line(s). For a static vegetation line in existence prior to the effective date of this Rule, the award-of-contract date of the initial large-scale beach fill project, or the date of the aerial photography or other survey data used to define the static vegetation line, whichever is most recent, shall be used in lieu of the completion of construction date.

(c) A static vegetation line exception request applies to the entire static vegetation line within the jurisdiction of the petitioner, including segments of a static vegetation line that are associated with the same large-scale beach fill project. If multiple static vegetation lines within the jurisdiction of the petitioner are associated with different large-scale beach fill projects, then the static vegetation line exception in accordance with 15A NCAC 07H .0306 and the procedures outlined in this Section shall be considered separately for each large-scale beach fill project.

(d) A static vegetation line exception request shall be made in writing by the petitioner. A complete static vegetation line exception request shall include the following:

(1) A summary of all beach fill projects in the area for which the exception is being requested including the initial large-scale beach fill project associated with the static vegetation line, subsequent maintenance of the initial large-scale projects(s) and beach fill projects occurring prior to the initial large-scale projects(s). To the extent historical data allows, the summary shall include construction dates, contract award dates, volume of sediment excavated, total cost of beach fill project(s), funding sources, maps, design schematics, pre-and post-project surveys and a project footprint;
(2) Plans and related materials including reports, maps, tables and diagrams for the design and construction of the initial large-scale beach fill project that required the static vegetation line, subsequent maintenance that has occurred, and planned maintenance needed to achieve a design life providing no less than 30 years of shore protection from the date of the static line exception request. The plans and related materials shall be designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for said work;
(3) Documentation, including maps, geophysical, and geological data, to delineate the planned location and volume of compatible sediment as defined in 15A NCAC 07H .0312 necessary to construct and maintain the large-scale beach fill project defined in Subparagraph (d)(2) of this Rule over its design life. This documentation shall be designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for said work; and
(4) Identification of the financial resources or funding sources necessary to fund the large-scale beach fill project over its design life.

(e) A static vegetation line exception request shall be submitted to the Director of the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557. Written acknowledgement of the receipt of a completed static vegetation line exception request, including notification of the date of the meeting at which the request will be considered by the Coastal Resources Commission, shall be provided to the petitioner by the Division of Coastal Management.

(f) The Coastal Resources Commission shall consider a static vegetation line exception request no later than the second scheduled meeting following the date of receipt of a complete request by the Division of Coastal Management, except when the petitioner and the Division of Coastal Management agree upon a later date.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;*
Eff. March 23, 2009;
Amended Eff. April 1, 2016.

15A NCAC 07J .1202 REVIEW OF THE STATIC LINE EXCEPTION REQUEST

(a) The Division of Coastal Management shall prepare a written report of the static line exception request to be presented to the Coastal Resources Commission. This report shall include:

(1) A description of the area affected by the static line exception request;
(2) A summary of the large-scale beach fill project that required the static vegetation line as well as the completed and planned maintenance of the project(s);
(3) A summary of the evidence required for a static line exception; and
(4) A recommendation to grant or deny the static line exception.

(b) The Division of Coastal Management shall provide the petitioner requesting the static line exception an opportunity to review the report prepared by the Division of Coastal Management no less than 10 days prior to the meeting at which it is to be considered by the Coastal Resources Commission.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;*
Eff. March 23, 2009.

15A NCAC 07J .1203 PROCEDURES FOR APPROVING THE STATIC LINE EXCEPTION

(a) At the meeting that the static line exception is considered by the Coastal Resources Commission, the following shall occur:

(1) The Division of Coastal Management shall orally present the report described in 15A NCAC 07J .1202.
(2) A representative for the petitioner may provide written or oral comments relevant to the static line exception request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.
(3) Additional parties may provide written or oral comments relevant to the static line exception request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.

(b) The Coastal Resources Commission shall authorize a static line exception request following affirmative findings on each of the criteria presented in 15A NCAC 07J .1201(d)(1) through (d)(4). The final decision of the Coastal Resources Commission shall be made at the meeting at which the matter is heard or in no case later than the next scheduled meeting. The final decision shall be transmitted to the petitioner by registered mail within 10 business days following the meeting at which the decision is reached.

(c) The decision to authorize or deny a static line exception is a final agency decision and is subject to judicial review in accordance with G.S. 113A-123.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;*
Eff. March 23, 2009.

15A NCAC 07J .1203 PROCEDURES FOR APPROVING THE STATIC LINE EXCEPTION

(a) At the meeting that the static line exception is considered by the Coastal Resources Commission, the following shall occur:

(1) The Division of Coastal Management shall orally present the report described in 15A NCAC 07J .1202.
(2) A representative for the petitioner may provide written or oral comments relevant to the static line exception request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.
(3) Additional parties may provide written or oral comments relevant to the static line exception request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.

(b) The Coastal Resources Commission shall authorize a static line exception request following affirmative findings on each of the criteria presented in 15A NCAC 07J .1201(d)(1) through (d)(4). The final decision of the Coastal

Resources Commission shall be made at the meeting at which the matter is heard or in no case later than the next scheduled meeting. The final decision shall be transmitted to the petitioner by registered mail within 10 business days following the meeting at which the decision is reached.
(c) The decision to authorize or deny a static line exception is a final agency decision and is subject to judicial review in accordance with G.S. 113A-123.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;*
Eff. March 23, 2009.

15A NCAC 07J .1204 REVIEW OF THE LARGE-SCALE BEACH-FILL PROJECT AND APPROVED STATIC LINE EXCEPTIONS

(a) Progress Reports. The petitioner that received the static line exception shall provide a progress report to the Coastal Resources Commission at intervals no greater than every five years from date the static line exception is authorized. The progress report shall address the criteria defined in 15A NCAC 07J .1201(d)(1) through (d)(4) and be submitted in writing to the Director of the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557. The Division of Coastal Management shall provide written acknowledgement of the receipt of a completed progress report, including notification of the meeting date at which the report will be presented to the Coastal Resources Commission to the petitioner.
(b) The Coastal Resources Commission shall review a static line exception authorized under 15A NCAC 07J .1203 at intervals no greater than every five years from the initial authorization in order to renew its findings for the conditions defined in 15A NCAC 07J .1201(d)(2) through (d)(4). The Coastal Resources Commission shall also consider the following conditions:

(1) Design changes to the initial large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2) provided that the changes are designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for the work;
(2) Design changes to the location and volume of compatible sediment, as defined by 15A NCAC 07H .0312, necessary to construct and maintain the large-scale beach fill project defined in 15A NCAC 07J .1201(d)(2), including design changes defined in this Rule provided that the changes have been designed and prepared by the U.S. Army Corps of Engineers or persons meeting applicable State occupational licensing requirements for the work; and
(3) Changes in the financial resources or funding sources necessary to fund the large-scale beach fill project(s)defined in 15A NCAC 07J .1201(d)(2). If the project has been amended to include design changes defined in this Rule, then the Coastal Resources Commission shall consider the financial resources or funding sources necessary to fund the changes.

(c) The Division of Coastal Management shall prepare a written summary of the progress report and present it to the Coastal Resources Commission no later than the second scheduled meeting following the date the report was received, except when a later meeting is agreed upon by the local government or community submitting the progress report and the Division of Coastal Management. This written summary shall include a recommendation from the Division of Coastal Management on whether the conditions defined in 15A NCAC 07J .1201(d)(1) through (d)(4) have been met. The petitioner submitting the progress report shall be provided an opportunity to review the written summary prepared by the Division of Coastal Management no less than 10 days prior to the meeting at which it is to be considered by the Coastal Resources Commission.
(d) The following shall occur at the meeting at which the Coastal Resources Commission reviews the static line exception progress report:

(1) The Division of Coastal Management shall orally present the written summary of the progress report as defined in this Rule.
(2) A representative for the petitioner may provide written or oral comments relevant to the static line exception progress report. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.
(3) Additional parties may provide written or oral comments relevant to the static line exception progress report. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;*
Eff. March 23, 2009.

15A NCAC 07J .1205 REVOCATION AND EXPIRATION OF THE STATIC LINE EXCEPTION

(a) The static line exception shall be revoked immediately if the Coastal Resources Commission determines, after the review of the petitioner's progress report identified in 15A NCAC 07J .1204, that any of the criteria under which the static line exception is authorized, as defined in 15A NCAC 07J .1201(d)(2) through (d)(4) are not being met.

(b) The static line exception shall expire immediately at the end of the design life of the large-scale beach fill project defined in 15A NCAC 07J .1201(d) (2) including subsequent design changes to the project as defined in 15A NCAC 07J .1204(b).

(c) In the event a progress report is not received by the Division of Coastal Management within five years from either the static line exception or the previous progress report, the static line exception shall be revoked automatically at the end of the five-year interval defined in 15A NCAC 07J .1204(b) for which the progress report was not received.

(d) The revocation or expiration of a static line exception is considered a final agency decision and is subject to judicial review in accordance with G.S. 113A-123.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;*
Eff. March 23, 2009.

15A NCAC 07J .1206 LOCAL GOVERNMENTS AND COMMUNITIES WITH STATIC VEGETATION LINES AND STATIC LINE EXCEPTIONS

A list of static vegetation lines in place for petitioners and the conditions under which the static vegetation lines exist, including the date(s) the static line was defined, shall be maintained by the Division of Coastal Management. A list of static line exceptions in place for petitioners and the conditions under which the exceptions exist, including the date the exception was granted, the dates the progress reports were received, the design life of the large-scale beach fill project and the potential expiration dates for the static line exception, shall be maintained by the Division of Coastal Management. Both the static vegetation line list and the static line exception list shall be available for inspection at the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6), 113A-124;*
Eff. March 23, 2009.

SECTION .1300 – DEVELOPMENT LINE PROCEDURES

15A NCAC 07J .1301 REQUESTING THE DEVELOPMENT LINE

(a) Any local government, group of local governments involved in a regional beach fill project, or qualified owner's association with territorial jurisdiction over an area that is subject to ocean hazard area setbacks pursuant to 15A NCAC 07H .0305 may petition the Coastal Resources Commission for a development line for the purpose of siting oceanfront development in accordance with the provisions of this Section. A "qualified owner's association" is an owner's association, as defined in G.S. 47F-1-103(3), that has authority to approve the locations of structures on lots within the territorial jurisdiction of the association and has jurisdiction over at least one mile of ocean shoreline.

(b) A development line request shall apply to the entire large-scale project area as defined in 15A NCAC 07H .0305(a)(7) and, at the petitioner's request, may be extended to include the entire oceanfront jurisdiction or legal boundary of the petitioner.

(c) In determining where to position a requested development line, the petitioner shall use an adjacent neighbor sight-line approach, resulting in an average line of structures. In areas where the seaward edge of existing development is not linear, the petitioner may determine an average line of construction on a case-by-case basis. In no case shall a development line be established seaward of the most seaward structure within the petitioner's oceanfront jurisdiction.

(d) An existing structure that is oceanward of an approved development line may remain in place until damaged greater than 50 percent in accordance with Rule .0210 of this Subchapter. At that time it may only be replaced landward of the development line and shall meet the applicable ocean hazard setback requirements as defined in 15A NCAC 07H .0306(a).

(e) A request for a development line or amendment shall be made in writing by the petitioner and submitted to the CRC by sending the written request to the Director of the Division of Coastal Management. A complete request shall include the following:

(1) A detailed survey of the development line using on-ground observation and survey or aerial imagery along the oceanfront jurisdiction or legal boundary, including;
  (A) The development line, static vegetation line, mean high water line, and any other information necessary for a review of the petitioner's proposed development line, such as a pre-nourishment project mean high water line, local ordinances, or easements; and
  (B) Surveyed development line spatial data in a geographic information systems (GIS) format referencing North Carolina State Plane North American Datum 83 US Survey Foot, to include Federal Geographic Data Committee (FGDC) compliant metadata;
(2) All local regulations associated with the development line;
(3) A record of local adoption of the development line by the petitioner; and
(4) Documentation of incorporation of a development line into local ordinances or rules and regulations of an owner's association.

(f) Once a development line is approved by the Coastal Resources Commission, only the petitioner may request a change or reestablishment of the position of the development line.

(g) A development line request shall be submitted to the Director of the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557. Written acknowledgement of the receipt of a completed development line request, including notification of the date of the meeting at which the request will be considered by the Coastal Resources Commission, shall be provided to the petitioner by the Division of Coastal Management.

(h) The Coastal Resources Commission shall consider a development line request no later than the second scheduled meeting following the date of receipt of a complete request by the Division of Coastal Management, unless the petitioner and the Division of Coastal Management agree upon a later date.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;*
Eff. April 1, 2016;
Amended Eff. September 1, 2017.

15A NCAC 07J .1302 PROCEDURES FOR APPROVING THE DEVELOPMENT LINE

(a) At the meeting that the development line request is considered by the Coastal Resources Commission, the following shall occur:

(1) A representative for the petitioner shall orally present the request described in Rule .1301 of this Section. The Chairman of the Coastal Resources Commission may limit the time allowed for oral presentations based upon the number of speakers wishing to present.

(2) Additional persons may provide written or oral comments relevant to the development line request. The Chairman of the Coastal Resources Commission may limit the time allowed for oral comments based upon the number of speakers wishing to speak.

(b) The Coastal Resources Commission shall approve a development line request if the request contains the information required and meets the standards set forth in Rule .1301 of this Section.

(c) The final decision of the Coastal Resources Commission shall be made at the meeting at which the matter is heard or in no case later than the next scheduled meeting. The final decision shall be transmitted to the petitioner by registered mail within 10 business days following the meeting at which the decision is reached.

(d) The decision to authorize or deny a development line is a final agency decision and is subject to judicial review in accordance with G.S. 113A-123.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6); 113A-123; 113A-124; Eff. April 1, 2016.*

15A NCAC 07J .1303 LOCAL GOVERNMENTS AND COMMUNITIES WITH DEVELOPMENT LINES

A list of development lines in place for petitioners and any conditions under which the development lines exist in accordance with 15A NCAC 07J .1300, including the date(s) the development lines were approved, shall be maintained by the Division of Coastal Management. The list of development lines shall be available for inspection at the Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557, during business hours or on the Division's website nccoastalmanagement.net.

History Note: *Authority G.S. 113A-107; 113A-113(b)(6), 113A-124; Eff. April 1, 2016.*

§ 150B-20. Petitioning an agency to adopt a rule.

(a) Petition. - A person may petition an agency to adopt a rule by submitting to the agency a written rule-making petition requesting the adoption. A person may submit written comments with a rule-making petition. If a rule-making petition requests the agency to create or amend a rule, the person must submit the proposed text of the requested rule change and a statement of the effect of the requested rule change. Each agency must establish by rule the procedure for submitting a rule-making petition to it and the procedure the agency follows in considering a rule-making petition. An agency receiving a rule-making petition shall, within three business days of receipt of the petition, send the proposed text of the requested rule change and the statement of the effect of the requested rule change to the Office of Administrative Hearings. The Office of Administrative Hearings shall, within three business days of receipt of the proposed text of the requested rule change and the statement of the effect of the requested rule change, distribute the information via its mailing list and publish the information on its Web site.

(b) Time. - An agency must grant or deny a rule-making petition submitted to it within 30 days after the date the rule-making petition is submitted, unless the agency is a board or commission. If the agency is a board or commission, it must grant or deny a rule-making petition within 120 days after the date the rule-making petition is submitted.

(c) Action. - If an agency denies a rule-making petition, it must send the person who submitted the petition a written statement of the reasons for denying the petition. If an agency grants a rule-making petition, it must inform the person who submitted the rule-making petition of its decision and must initiate rule-making proceedings. When an agency grants a rule-making petition, the notice of text it publishes in the North Carolina Register may state that the agency is initiating rule making as the result of a rule-making petition and state the name of the person who submitted the rule-making petition. If the rule-making petition requested the creation or amendment of a rule, the notice of text the agency publishes may set out the text of the requested rule change submitted with the rule-making petition and state whether the agency endorses the proposed text.

(d) Review. - Denial of a rule-making petition is a final agency decision and is subject to judicial review under Article 4 of this Chapter. Failure of an agency to grant or deny a rule-making petition within the time limits set in subsection (b) is a denial of the rule-making petition.

(e) Repealed by Session Laws 1996, Second Extra Session, c. 18, s. 7.10(b). (1973, c. 1331, s. 1; 1985, c. 746, s. 1; 1991, c. 418, s. 1; c. 477, s. 2; 1996, 2nd Ex. Sess., c. 18, s. 7.10(b); 1997-34, s. 2; 2003-229, s. 1; 2017-211, s. 1(a).)